



# IJeP

International Journal of ePortfolio

**Volume 12 • Number 1 • 2022**

ISSN 2157-622X



A Publication of the  
American Association of Colleges and Universities

## Executive Editors

### C. Edward Watson

CIO & Associate Vice President for Curricular and Pedagogical Innovation  
*Association of American Colleges and Universities*, Washington, DC, United States

### Jessica Chittum

Director of Assessment and Pedagogical Innovation  
*Association of American Colleges and Universities*, Washington, DC, United States

## Associate Editors

### Andrew Albenesius

Community Engagement Coordinator and Documentation Specialist  
*Digication*, Providence, RI, United States

### J. Elizabeth Clark

Professor, Department of English  
*LaGuardia Community College--The City University of New York*, Long Island City, NY

## Editorial Board

**Trent Batson**, *Retired*, United States

**Gerd Bräuer**, *University of Education / Zurich University of Applied Science*, Germany & Switzerland

**Gary Brown**, *Association of Authentic, Experiential, and Evidenced-Based Learning (AAEEBL)*, United States

**Darren Cambridge**, *American Institutes for Research*, United States

**Shelley Johnson Carey**, *Association of American Colleges and Universities (AAC&U)*, United States

**Susan Clark**, *Virginia Tech*, United States

**Bret Eynon**, *LaGuardia Community College*, United States

**Wende Garrison**, *Portland State University*, United States

**Simon Grant**, *University of Bolton*, United Kingdom

**Wendy Harper**, *Queensland University of Technology*, Australia

**Kate McConnell**, *Association of American Colleges and Universities (AAC&U)*, United States

**Allison Miller**, *Australian Flexible Learning Framework*, Australia

**Terrel L. Rhodes**, *Association of American Colleges and Universities (AAC&U)*, United States

**Marij Veugelers**, *Universiteit van Amsterdam*, Netherlands

**Ruth Wallace**, *Charles Darwin University*, Australia

**Kathleen Yancey**, *Florida State University*, United States

## Affiliates of the *International Journal of ePortfolio*

Association for Authentic, Experiential and Evidence-Based Learning (AAEEBL)  
 ePortfolio and Identity Conference

## Manuscript Review Board

**Nate Angell**, *rSmart*, Scottsdale, United States

**Igor Balaban**, *University of Zagreb*, Croatia

**S.R. Balasundaram**, *National Institute of Technology*, India

**Lee D. Ballantyne**, *City of Glasgow College*, United Kingdom

**Helen Barrett**, *Electronic Portfolios and Digital Storytelling to Support Lifelong and Life Wide Learning*, United States  
**Linda Bastone**, *Purchase College, State University of New York*, United States  
**Lisa Bolding**, *Oxford College at Emory University*, United States  
**Gerd Bräuer**, *University of Education / Zurich University of Applied Science*, Germany & Switzerland  
**Eileen Brennan**, *Mercy College*, United States  
**Joanne Britland**, *Framingham State University*, United States  
**Gary Brown**, *Association of Authentic, Experiential, and Evidenced-Based Learning (AAEEBL)*, United States  
**Rachel Challen**, *Loughborough College*, United Kingdom  
**J. Elizabeth Clark**, *LaGuardia Community College - CUNY*, United States  
**Theresa Conefrey**, *Santa Clara University*, United States  
**Kirstie Coolin**, *University of Nottingham*, United Kingdom  
**Ruth Cox**, *San Francisco State University*, United States  
**Steve Culver**, *Virginia Tech*, United States  
**Elizabeth Davis**, *University of Georgia*, United States  
**Claudio Diaz**, *Universidad de Concepción*, Chile  
**Stephen Ehrmann**, *University System of Maryland*, United States  
**Teddi Fishman**, *Clemson University*, United States  
**Yitna Firdyiwek**, *University of Virginia*, United States  
**Pamela Frazier**, *Radford University*, United States  
**Laura M. Gambino**, *Stella and Charles Guttman Community College*, United States  
**William Goettler**, *Yale University*, United States  
**Leslie Gordon**, *University of Georgia*, United States  
**Lynne Groves**, *Minnesota State Colleges and Universities*, United States  
**Milton Hakel**, *Bowling Green University*, United States  
**Alexis Hart**, *Allegheny College*, United States  
**Corey Hickerson**, *James Madison University*, United States  
**Klaus Himpsl-Gutermann**, *Danube University*, Austria  
**Megan Hodge**, *Randolph-Macon College*, United States  
**Ruth Hodges**, *South Carolina State University*, United States  
**David Hubert**, *Salt Lake Community College*, United States  
**Jayne Jacobson**, *University of Idaho*, United States  
**Susan Kahn**, *Indiana University - Purdue University Indianapolis (IUPUI)*, United States  
**Sara Kajder**, *University of Georgia*, United States  
**Stefan Keller**, *University of Applied Sciences Northwestern Switzerland*, Switzerland  
**Khusro Kidwai**, *Northwestern University*, United States  
**Paul Kim**, *Stanford University*, United States  
**Michael LaMagna**, *Delaware County Community College*, United States  
**Romy Lawson**, *University of Technology*, Australia  
**Phil Long**, *University of Texas at Austin*, United States  
**Debbie Lord**, *Central Piedmont Community College*, United States  
**Jean Mach**, *College of San Mateo*, United States  
**Kyle Mackie**, *University of Guelph*, Canada  
**Jeton McClinton**, *Jackson State University*, United States  
**Kenyetta McCurty**, *Amridge University*, United States  
**Patricia McGee**, *University of Texas at San Antonio*, United States  
**Lisa McNair**, *Virginia Tech*, United States  
**Victor McNair**, *University of Ulster*, United Kingdom  
**Julie Meek**, *Indiana School of Nursing*, United States  
**Heather Moorefield-Lang**, *University of South Carolina*, United States  
**Carlos Morales**, *TCC Connect Campus, Tarrant County College District*, United States  
**Delia Muir**, *University of Leeds*, United Kingdom  
**Christopher Murray**, *University of Leeds*, United Kingdom  
**Nancy O'Laughlin**, *University of Delaware*, United States  
**Julia O'Sullivan**, *The Royal College of Surgeons of England*, United Kingdom  
**Judith Patton**, *Portland State University*, United States  
**Tracy Penny Light**, *Thompson Rivers University*, Canada  
**Clovis C. Perry, Jr.**, *Bluegrass Community & Technical College*, United States

**Marlene Preston**, *Virginia Tech*, United States  
**Candyce Reynolds**, *Portland State University*, United States  
**Rich Rice**, *Texas Tech University*, United States  
**Muhammad Safdar**, *International Islamic University*, Pakistan  
**Ken Scott**, *Amridge University*, United States  
**Uri Shafir**, *University of Toronto*, Canada  
**Ashfaq Ahmad Shah**, *University of Sargodha*, Pakistan  
**Greg Sherman**, *Radford University*, United States  
**Karen Singer-Freeman**, *Purchase College, State University of New York*, United States  
**David Sowden**, *University of Hull*, United Kingdom  
**Benjamin Stephens**, *Clemson University*, United States  
**Teggin Summers**, *Virginia Tech*, United States  
**Neal Sumner**, *City University London*, United Kingdom  
**Tilisa Thibodeaux**, *Lamar University*, United States  
**Paul Treuer**, *University of Minnesota*, United States  
**Kam H. Vat**, *University of Macau*, China  
**Paul Wasko**, *University of Alaska*, United States  
**Jerry Whitworth**, *Texas Woman's University*, United States  
**Marc Zaldivar**, *Virginia Tech*, United States

# IJeP

## International Journal of ePortfolio

**Volume 12 • Number 1 • 2022**

### **Instructional Articles**

- |   |       |
|---|-------|
| A Reflection Upon Capstone ePortfolio Projects and Their Alignment With Learning Theories<br><i>Rita Zuba Prokopetz</i>                               | 1-15  |
| A Report from the Field: How ePortfolios Can Improve Student Transition from Secondary to Post-Secondary Education in Alaska<br><i>Shamai Thacker</i> | 17-33 |
| Enhancing Emotional Intelligence Through ePortfolio Self-Initiated Strategies<br><i>Sarah Kim, Marie Abate, Louis Slimak, and Mary Euler</i>          | 35-45 |
| School Administrators' Perceptions of Electronic Portfolios and the Hiring of K-12 Teachers<br><i>Miguel (Niko) Nino &amp; Scott Hicks</i>            | 47-58 |

### **Technology, Policy, and Management Article**

- |  |       |
|--|-------|
| "A Sort of Roadmap to Success...": A Model for Piloting ePortfolios and Lessons Learned From a Rehabilitation Sciences Curriculum<br><i>Jennifer Wescott and Orit Schwartz</i> | 59-70 |
|--|-------|



## A Reflection Upon Capstone ePortfolio Projects and Their Alignment With Learning Theories

Rita Zuba Prokopetz  
*Educational Consultant*

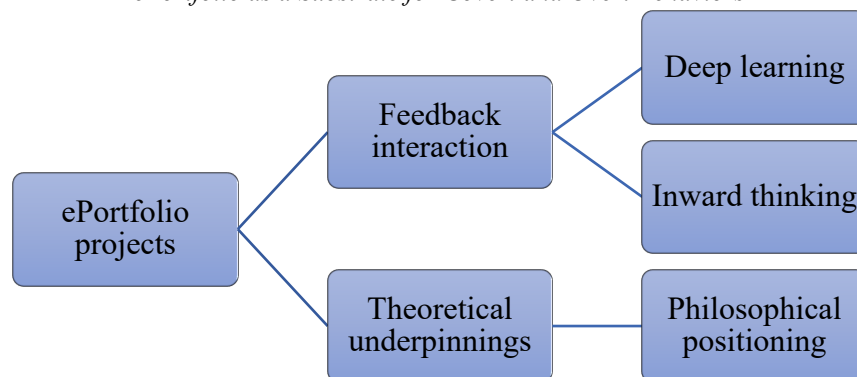
ePortfolios, initially viewed as a technology in 1990s, gathered momentum a decade later and began to position themselves as a powerful pedagogy in education. Experience over three years with five groups of intermediate-level English as a second language learners (before and during the pandemic) has cemented the notion that the core value of an ePortfolio is predicated on the ability of the students to become aware of their learning history. A blended course (with a capstone project in the fifth and final module) developed for a learning center in Canada helped make visible student engagement during peer-feedback interactions which led to critical reflection throughout the ePortfolio development process. In this paper, I (a language instructor) share direct practical experience implementing ePortfolios as a capstone project in five iterations of a blended course with five stand-alone modules. I also describe the evidence-based theoretical constructs undergirding the development of the projects and the interconnectedness with ePortfolio learning episodes in the designing, developing, and evaluating stages of the capstone project. As a robust field of inquiry and a digital transformation pedagogy, ePortfolio projects are part of a growing movement in the field of education. They are a substrate for a variety of learning behaviours among students, demonstrate alignment with some of the learning theories, and capacitate instructor and student philosophical positioning.

As a curricular and pedagogical innovation, capstone ePortfolio projects embrace authentic experiential assessment practices (Acosta & Liu, 2006; Barrett, 2007; Batson, 2018; Chen & Penny Light, 2010; Conrad & Openo, 2018; Hoven, 2014; Lorenzo & Ittelson, 2005; Pelliccione & Dixon, 2008; Penny Light et al., 2012; Smith & Tillema, 2003). As part of an open education movement, ePortfolio pedagogy is fair, interactive, and inclusive. Bates (2018) defined open education pedagogy as an approach to teaching that removes possible financial, personal, or physical barriers in a learning environment. As such, ePortfolio pedagogy is barrier-free—inclusive, interactive, and unique. Direct practical experience implementing ePortfolios as a capstone project in five iterations of a course for intermediate-level English language learners at a learning center in Canada has provided additional insights into this digital pedagogy. In a blended course of five stand-alone modules designed for English learners, the capstone ePortfolio project was the fifth module. During the course introduction and overview of the five modules, students became familiar with the idea of a capstone project in the form of an electronic portfolio (ePortfolio) as part of a final speaking assessment task. Although initially apprehensive regarding the use of technology, the students embraced the opportunity to highlight their learning in a digital project. In each of the four preceding modules, learning activities were available in the discussion forum where students posted artifacts to demonstrate their understanding of various concepts (e.g., paragraph structure). More often than not, student artifacts underwent several iterations after feedback from peers and course instructor was acknowledged and incorporated. Each learning episode consisted of activities supported by and aligned with

course competencies (Canadian Language Benchmarks, 2012), resources to connect with prior knowledge and substantiate assertions, interaction with peers and instructor to guide the learning process, and creation of artifacts to show evidence of growth. After the completion of the four modules, students chose artifacts in some of the competencies in each of the four language skill areas—listening, speaking, reading, writing—to include in their capstone ePortfolio projects in the final module. These projects, a substrate for feedback interaction, deep learning, inward thinking, and theoretical underpinnings, capacitate instructor and student philosophical positioning (Figure 1). In online environments, they act as “an enabler for increasing meaningful personal contact” (Feldstein & Hill, 2016, p. 26) and a place to reflect on learning to date (Barrett & Richter, 2018; Barrett, 2004; Batson, 2018; Chen & Patel, 2017; Eynon & Gambino, 2017, 2016; Eynon et al., 2014; Farrell, 2019; Hood, 2017; Hoven, 2020; Kuh, 2008; Penny Light et al., 2012; Stolins, 2017; Watson et al., 2016) as well as interact with instructor, peers, and course content (Moore, 1989).

During the project development, covert and overt behaviors are both experienced and articulated, thus providing further intuitive understanding of this innovative pedagogy. These observable actions demonstrate that the core value of ePortfolios is predicated on the ability of the students to become aware of their learning history resulting from purposeful feedback that leads to inward thinking and further learning. By posting various iterations of artifacts in the forum (e.g., drafts to show understanding of types of paragraph structure), students document their learning history which later underpins their reflection during the creation of their projects.

Figure 1  
*ePortfolio as a Substrate for Covert and Overt Behaviors*



### Reflexivity

It was during my master's studies at Central Michigan University (CMU) in the early-2010s that I underwent my first ePortfolio experience. The creation of the project compelled me to revisit the content of every course and the requirement for each assignment (what), evaluate the artifacts created in various formats (how), and reflect on the choices I made based on the knowledge available to me during each learning experience (why). I also began to question the implication of the new knowledge (what if?) for me not only as a graduate student but also as a person and as a professional. It was at this point in my learning journey that I realized that a more meaningful learning experience could be available in my practice if my students (i.e., a group of language learners and a group of college educators at the time) learned to create an ePortfolio project to present to their peers at the end of the course. I was also reminded of the educational principles of Bloom et al. (1956) and chose to further study ePortfolio pedagogy (knowledge acquisition) before introducing capstone projects in my practice (knowledge application).

### Project Description

Since I had undergone an ePortfolio development process and was familiar with the creation of the product, I chose to implement capstone projects as the final task in an 8-week course I developed for college educators in the certificate of adult education (CAE) and in a 5-month program for students of English as a second language (ESL) at the same educational institution in Canada. What became salient at the time was that, during the initial stages of these projects, the feelings experienced by the college educators in the CAE program differed from the ones shared by the ESL

students. There were mixed emotions regarding the use of technology to learn among the CAE participants in a course that was first offered in-person and then via eTV with its final offerings being entirely online (even before the pandemic).

### Modules for College Educators

The eight stand-alone modules developed for college educators were part of the final course in a 33-credit diploma program. The final assessment task was an in-person presentation of the first two pages of their learning ePortfolio—an introductory page and another with artifacts to show understanding and possible application of the learning theories in their practice.

### Modules for Language Learners

The five stand-alone modules for ESL students were developed for teaching and learning that could be offered as blended or entirely at a distance. Unlike the cohort of college educators, this group of students chose to embrace the new course modality (blended), as it comprised innovative ways to show knowledge production. The first 5-month course (one module per month) for ESL students was offered in the spring of 2018 with subsequent ones in the fall and spring thereafter. The fifth and final offering of the course was in the spring of 2020 when the pandemic started. The experience of the 20 language learners pivoting from blended to entirely online learning on March 13, 2020 was smooth in terms of modality since the students were already comfortable with their online platform (technology). In this 5-month originally blended course, the sessions were online two out of 5 days a week; as such, the students were used to interacting and submitting learning activities openly via the discussion forum. However, the day a paradigm shift of seismic



proportion presented itself in the middle of the academic semester, the students had not yet been introduced to the web-conferencing tool adopted by the learning center. Stemming from this volatile situation, there was an immediate need to engage in a self-development process to fill existing gaps, first and foremost, related to a knowledge of (or lack of) technological skills. In order to ensure a smooth transition when the group pivoted to a new way of communicating (entirely at a distance), some of Mayer's (2009) theoretical principles were embraced in an attempt to properly apply the science of learning to distance education. As such, during the first COVID-19 weekend in mid-March 2020, the students received one slide with their instructor's photo and a personalized audio message containing instructions on how to join a class mediated by a web-conference tool (to which they had not yet been introduced). Information on how to create an account and claim a personal meeting room was also provided to encourage students to host meetings on their own. By then, the second module was half over, and two of the four groups of students had previously shared their learning-to-date in the form of a presentation in one of our in-person instructional days.

During the first fully online session on May 16, 2020, the students seemed calm and comfortable as they experimented with the new technology; a few members of various groups took turns uploading slides and sharing their screen in preparation for the remaining presentations later that week. The focus of these initial group presentations was to provide opportunities for students to conduct group research, interact with one another and course content, create and modify proposed timelines, show leadership, and manage projects in collaboration with peers.

### ***Learning Episodes and Feedback Interaction***

The topics covered in the first four modules of the course for ESL students ranged from concrete (e.g., introduction to blended learning and academic strategies) to more abstract concepts (e.g., critical thinking and transferable skills); Module 5, the final module, housed the capstone ePortfolio project activities (Zuba Prokopetz, 2020). A constant in the modules was the ongoing use of the discussion forum as a place to gather thoughts, submit coursework for feedback, and engage in co-construction of knowledge. Since the capstone in the fifth module would embrace the learning history from the term, students were aware that, during project completion, there would be a reliance on these learning episodes (pedagogy) and each other (interaction).

**Stimuli-Response Approach.** The learning activities in the first two modules were equal in format, number of tasks, and level of difficulty. The goal was to

have students embrace a new blended modality and to stimulate discussion and interaction with content and peers in the forum—the place where the community members gathered at least twice weekly. Since this course was designed for learners of English as a second language in Canada, the learning tasks in skill-building and skill-using had to be aligned with the guide (Canadian Language Benchmarks, 2012). Thus, students were required to show evidence of attainment of competencies in the four language skill areas: listening, speaking, reading, and writing. In order to introduce digital learning to this community of ESL students, digital resources were supplied to facilitate language learning (e.g., connecting words and paragraph structure) and serve as a model during the creation of artifacts (e.g., visualization of a concept). As students began sharing their artifacts in the forum, they engaged in peer-feedback interaction to learn from and show interest in the work of their peers. For each comment posted, there was usually another with affirmation and/or request for further information—a behavioristic approach to stimuli-response in a digital community of ePortfolio creators.

**Social-Learning and Information-Processing Approach.** Feedback, as a form of assessment (self-assessment and peer-assessment), was an acquired skill that was prevalent in many of the learning tasks in the course. This community comprised of 20 students, an instructor, and a few guests strengthened itself by embracing the notion that, albeit at different stages of a digital pedagogical journey, the skills of each member were equally valued. Ongoing modeling, as a form of knowledge transmission, was practiced openly in the forum. This example of social learning was strategically implemented to further enhance language acquisition and application since feedback and comments were provided in the form of complete sentences (e.g., “you may consider changing . . .”; i.e., use of a modal followed by a verb and gerund). Students overtly and covertly processed information by first acknowledging and then discerning prior to accepting or discarding the feedback received from their peers and instructor—the sense of student agency was prevalent throughout the course.

### ***Embracing Differences and Modifying Legacy Mindset***

The value of ePortfolios reaches beyond content learning and academic education—it is entrenched in a subculture in internet spaces (Zuba Prokopetz, 2021). Their merit resides in their transformational and emancipatory capabilities that may lead to a change in mindset and philosophical (re)positioning. For such transformation to happen, these projects necessitate proper implementation to enable students and instructors to rely on this impactful instructional

practice to demonstrate learning and teaching, facilitate connection of students with learning artifacts, and foster collaboration and interaction (Eynon & Gambino, 2017; Kuh, 2008; Watson et al., 2016). ePortfolio practitioners and proponents are among those who have experienced a positive change in the educational system—an academic structure that includes fairness, inclusivity, as envisioned by McNair et al. (2020), and flexibility in addition to proper application of innovation. These advocates have begun to adjust their theoretical and philosophical positioning to better align with a “new imagined ecology”—an environment that necessitates a modified curriculum (Batson, 2015a, para. 4). Still unrecognized by many is the notion that the focus of this evolving digital environment is on the human element rather than on the technical aspect. Technology, when properly applied, connects humans to each other and to information as well as to inward thinking to help usher in a period of transformation. Changes in processes of thought and perception of knowledge are both difficult and inevitable if we are to engage in a pursuit of growth mindset. As purported by Siemens (2006), “changes do not manifest themselves significantly in society until they are of sufficient weight and force” (p. 3); this line of thinking necessitates an ongoing pursuit of knowledge (Zuba Prokopetz, 2016)—an endeavor that is much more onerous for those whose mindset is fixed.

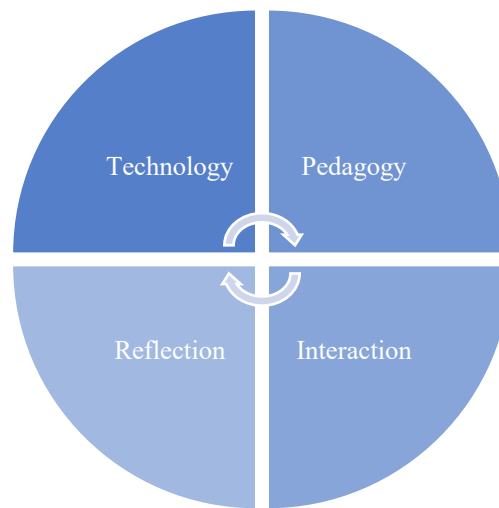
**Modeling and Connecting Approach.** Open discussions on content-specific topics in online forums, as I have experienced with my three groups of learners in the past decade—college educators, ESL students, and graduate students (in my doctoral studies)—seem to bring forth in the students a need to learn through observation and modeling (Bandura, 1977). In addition, since the rise of learning technologies has resulted in a certain mechanisation of the learning process (Harasim, 2017), this digital form of learning necessitates today’s educators not only to review the theories of learning that have stood the test of time but also to embrace—or at least learn about—the contemporary ones that align with learners in the 21st century (e.g., connectivism). These emerging learning principles help us better understand the contribution of social networks to a new pedagogical landscape since learning episodes are gradually moving learning theories into a digital age (Siemens, 2005). As purported by Cambridge (2010), there is research interest in learning and knowledge creation attained by participating “in social networks that is not sanctioned or initiated by institutions” (p. xiv); study results thus far have included topics related to “distributed cognition, emergence, crowdsourcing, long-tail communities of practice, and connectivist and networked learning” (p. xiv). Explorative research on these topics, as Cambridge (2010) suggested, would ground future scholarship. Long-tail communities of

practice, for example, rely on niche knowledge that is created, provided, and shared among members of a community that is broad and diverse enough to enable, as Siemens (2005) explained, connections via nodes that when altered “have ripple effects on the whole” (Networks, para. 1)—an endeavour that has similarities with ePortfolio communities as a subculture of internet culture (Zuba Prokopetz, 2021). Further research on how members of an ePortfolio subculture establish their agendas toward project completion would enable ePortfolio practitioners to gain additional knowledge related to ePortfolio pedagogy and alignment of theoretical underpinnings in course design. It is noteworthy to state that, as Yancey (2019) purported, curricular knowledge and practice aligned with ePortfolio composing differs from “models [that] require students only upload artifacts” (p. 2) during artifact creation that is not underpinned by the “selecting, designing, composing, and assembling—of the ePortfolio itself” (p. 3).

### Theoretical Paradigms

I was introduced to the ADDIE Process of analyzing, designing, developing, implementing, and evaluating resources in my graduate studies (Zuba Prokopetz, 2012). It was only natural that when I began designing learning for online and blended spaces a year later, I would rely on this process originally created for the U.S. Army at the Center of Educational Technology at Florida State University (Branson et al., 1975; Watson, 1981). In addition, recognizing that the human brain is only able to process a certain amount of information at any given time, I also relied on a cognitive theory of multimedia learning as one of the foundations for my course design (Mayer, 2009) to properly facilitate and gently guide the online learning process of my students, who were college educators and ESL students at the time. I realized then that these theoretical paradigms seemed to align with the designing, developing, and evaluating stages I had experienced with my first ePortfolio as a terminal project at CMU. I also recognized that theoretical assumptions I may have made during my observation of different groups of students with their projects necessitate further research if they are to be substantiated. Thoughts similar to mine were most likely shared by early ePortfolio proponents whose feelings were “hampered by no prescription or even direction” (Cambridge et al., 2009, p. 2) of what might emerge when they attempted to implement ePortfolios in their practice. As we know, it was in the early-2000s when ePortfolios emerged as a reflective pedagogy; as a technology tool that disrupted instruction, it began positioning itself in a new educational movement

Figure 2  
*Evidence-Based Theoretical Constructs*



*Note.* Adapted from “Electronic Portfolios: Research Site in Internet Spaces,” by R. Zuba Prokopetz, 2021, *International Journal of ePortfolio*, 11(1), p. 31 (<http://www.theijep.com/pdf/IJEP354.pdf>).

(Batson, 2015b; Cambridge, 2010; Eynon & Gambino, 2017; Ravet, 2005). Two decades later, the theoretical underpinnings necessitate going beyond the cognitive domains in order to align with the ways of thinking and learning in the 21st century. Comparable to the influence of the taxonomy on programming in the previous century (Bloom et al., 1956), ePortfolios have become prominent enough in education to be the driving force behind collaborative efforts to organize 21st-century-compliant instruction, authentic assessment, innovative programming, and competency-based learning episodes. Therefore, there is an effort to transform current education to make it more equitable, inclusive, and diverse. In consequence, there is a renewed awareness of the affective domain (i.e., human emotion) in addition to a more ecological approach to constructivism (i.e., human cognition) to better align with the new thinking processes of digital learners. My ongoing observations of three distinct groups of learners at various stages of their learning process (language learning program, adult education certification, graduate studies) spanning a decade has enabled me to examine the overlap of the cognitive and affective domains (Anderson et al., 2001; Bloom et al., 1956; Krathwohl et al., 1964) in the activities of the students, as they learned to rely on their capabilities during the development of their digital projects. It is noteworthy to mention the interplay of an ePortfolio process and theories of learning—classic and contemporary—in existence today. In my online ethnography with graduate students (Zuba Prokopetz, 2021), I noticed an alignment of different theories of learning with student behavior at

various stages of their capstone ePortfolio project—an aspect that was also salient in capstone courses with two other groups of students—language learners and college educators. As I continued my observations, I also became aware of how the technology influenced the pedagogy, and how the project development relied on both interaction and reflection. This interconnected set of constructs became even more salient as I observed different groups of students during their ePortfolio development. I was able to perceive an interplay of some aspects of the theories of learning with the constructs in Figure 2: technology (information processing), pedagogy (leveraging affordances), interaction (reproducing information), and reflection.

### **Constructs Underpinning ePortfolio Implementation**

The capstone projects in the final module of a 5-month program of studies for ESL students were undergirded by evidence-based theoretical constructs that interconnected with the learning activities. Students relied on modeling from the course instructor (vicarious learning) and feedback from peers (social learning) during the creation of digital artifacts to show understanding of course concepts. As the course progressed, there was an apparent level of discomfort with the technology (i.e., the choice of platform for the project) which subsided after some of the eager students began posting the link to the first few pages of their project in the discussion forum. As argued by Shepherd and Bolliger (2011), despite challenges during ePortfolio implementation, students tend

to demonstrate the ability to help in the project development process of their peers. As a result, in each course, students from previous course iterations would be invited to present their projects and subsequently address questions and concerns related to their platform of choice. There was a visible manifestation of four key aspects in the planning and development of these projects: (a) learning the technology, (b) experiencing the pedagogy, (c) interacting with peers, and (d) reflecting on the learning to date (Figure 2).

### ***Technology***

In her research studies on digital immediate gratification, Renard (2005) reminded educators to keep pace with new developments in technology to better understand how the new generation learns. She alerted those involved with students in the institution of education about consequences of their “having to wait so little time for so much information” (p. 44). Since “technology can play a pivotal role in student learning” (Renes & Strange, 2011, p. 203), it would be of good judgement to implement an ePortfolio project to guide students when they apply technology to learn, as was the experience of various groups of ESL students in five offerings of a capstone project course. The choice of platform (what) and the process involved in creating and populating the pages of a collection (how) were initially the main focus of discussion in a class of language learners embarking on their first ePortfolio journey. This phase is where technology and pedagogy come into play and have a direct effect on each other. The ePortfolio technology, or platform of choice, provides opportunities for additional learning during the selection of artifacts and recollection of learning.

### ***Pedagogy***

Recent research projects sponsored by the American Association of Colleges and Universities (AAC&U) and the Center for Urban Education created at the University of Southern California focused on racial equity in higher education. McNair et al. (2020) are among the scholars who challenge educators to engage in institutional and systemic change as related to racial equity. They further posit that because our professional practice develops over a period of time, there is a need for “an honest assessment of . . . hidden biases” (p. xvi) pervasive in the institution of education. As a powerful pedagogy, ePortfolios facilitate critical reflection on what occurred (a form of reflectivity) and the perception of that occurrence (a form of reflexivity). By internalizing thoughts during the project development, project creators begin to embark on a journey of self-discovery—a pivotal point in the shift toward a more receptive mindset. Unlike some inward-

mindset people with ego-controlled thoughts, the receptive- and outward-mindset individuals derive energy from helping others. They rely on comments from peers (peer-feedback interaction) to be able to accomplish their objectives—in this case scenario, the completion of their projects.

### ***Interaction***

As subculture of internet culture, capstone ePortfolio projects become an agent for culture sharing; such culture, the learning and sharing within a community, strengthens with each course iteration (Zuba Prokopetz, 2021). Some of the characteristics of cultures, as suggested by Foster (1997), are the relationships generated and nurtured within a group during peer-interactions. These cultures become stronger with each successive course when students of previous course iterations return to share experiences with new cohorts of students who rely on the legacy of learners in previous courses (Zuba Prokopetz, 2019a, 2019b). Such interactions help students experience, as suggested by Wiggins and McTighe (1998), knowledge of self, and thus gain perspective of what they understand during their feedback interactions; in consequence, community members have a chance to deepen their ability to interpret ideas and empathize with feelings associated with the diverse experiences.

### ***Reflection***

As students perceive what may benefit them during their projects, they take part in reflection-in-action (i.e., engagement of thoughts at a certain point in time)—a time when action and reflection occur simultaneously (Schön, 1983). Their process of thinking back after the completion of an action and then reflecting on it was differentiated by Schön (1983) as reflection-on-action—which facilitates discoveries of possible outcomes. In the view of Barrett and Richter (2018), thoughts that are considered reflection-in-action are among those which may not have been properly formulated or even perceptible. The type of reflective thoughts that form the basis to an action was referred by Rose (2013) as reflection-then-action; collectively, such thoughts may help “restore personal and social balance, perspective, and mindfulness” and subsequently create “more space for reflection” (p. 31). These forms of reflection are both experienced and (well) articulated in online communities where the ePortfolio pedagogy is present—even in the ones where members speak English as another language. Opportunities for experiential learning unveiled to ePortfolio users may be attributed to many factors—learner characteristics, course content and design, and class size, among others. The ability and opportunities for students to reflect on

the learning-to-date, however, is closely connected with the theoretical underpinnings of the course per se and the positionality of the instructor.

### **Theoretical Underpinnings and Philosophical Positioning**

As the development and expansion of the study of human learning continues, so too do ideas from various theoretical traditions “give rise to improvements in teaching and learning” (Schunk, 2012, p. x) in all educational settings, modalities, and age groups. Theoretical principles, as affirmed by Schunk (2012), along with the learning of new concepts and research findings, are (or should be) present in all learning and teaching settings. As such, educators, in their quest for professional self-development (Zuba Prokopetz, 2018) may consider engaging in a philosophical and pedagogical journey to gain new insights into their own learning process and of those who rely on them for guidance.

ePortfolio projects, a robust field of inquiry and a digital transformation pedagogy, are part of a growing movement in the field of education. They demonstrate alignment with many of the learning theories and capacitate instructor and student philosophical positioning. ESL students completing their projects (in a blended class and then entirely online during the pandemic) applied theories of learning ranging from behaviorism (from late-1920s) to constructivism (to late-2000s), thus demonstrating the theoretical alignment with various phases of an ePortfolio project development.

The eportfolio in capstone projects are a substrate for a variety of learning behaviours among students, which include

- stimuli-response behavior (Skinner, 1953; Thorndike, 1932; Pavlov, 1927),
- modeling behavior (Bandura, 1977; Schunk, 1981; Zimmerman, 1998),
- information processing behavior (Anderson, 1990; Baddeley, 2001; Loftus, 1991),
- individual and social constructivist behavior (Bransford et al., 2005; Bruner, 1966; Hatano & Ignagaki, 1991; Piaget, 1970),
- acts of reflecting on affordances in the environment (Hoven, 2008; Hoven & Palalas, 2016; Palalas, 2015), and
- social cultural behavior (Gauvain, 2001; Lave & Wenger, 1991; Rogoff, 1990; Vygotsky, 1978).

### ***Thinking Metaphorically***





Educators have been designing learning episodes for their students since their teaching practicum as

student-teachers in a traditional setting. They continue to do so online albeit in a modified format. In either modality, the learning activities, most likely created with a learning theory in mind, contribute to deep learning. To be both effective and meaningful, learning experiences necessitate a foundation ingrained in principles of instructional design which, in turn, are guided by theories of learning. Surface learning may prevail, however, in the absence of a theoretical foundation for such learning episodes. As posited by Christensen (2008), choosing a theoretical underpinning from the onset may be of help during the design of instruction, the analysis of learning tasks, and subsequent assessment of learning.

Regardless of the theoretical camp with which designers and educators associate, learning unveils itself in a gradual fashion during sense making—factual, analytical, and metacognitive (Marzano & Kendall, 2007). Moving from concrete knowledge up the ladder toward analytical thinking necessitates that the learners connect with content, instructor, and peers to provide co-construction of knowledge as an outcome. As Siemens (2006) suggested, learners “do not always construct (which is high cognitive load), but [they] do constantly connect” (p. 27). As we aim to construct knowledge, we make connections between what we understand and how we visualize that knowledge; as such, we may rely on metaphors to provide aid to our understanding. Bruner (1986) recognized that science is full of metaphors which are used as “crutches to help us get up the abstract mountain” (p. 48). As visual creatures, human beings are better at grasping information in graphic form than, if presented solely in words, may elude them (Mason, 2019). In consequence, the deployment of metaphors to help illustrate the various theoretical positions may help novice instructors who are learning to apply them. Relatedly, “while the theories suggest different ways in which all people learn, they do not automatically tell teachers or instructors how to teach” (Bates, 2014, Conclusion section); yet, they aid in grounding the teaching that may eventually take place.

Using vision as a means to thinking metaphorically, Christensen (2008) shared a heuristic framework to help with the identification of instructional problems and their connection to theoretical perspectives, methods of analysis, and assessment strategies. Relying on a number of metaphors to illustrate different theoretical views, Christensen (2008) shared assumptions on the nature of knowledge underpinning them. Figure 3 illustrates possible alignment of these metaphors with some of the learning theories from the standpoint of a language provider as experienced in various phases of a capstone project development in her ESL classes.

Figure 3  
*Learning Theories, Metaphors, and ePortfolio Project Development*

Behaviorism	Social Learning	Information Processing	Constructivism
			 classroomclipart.com
Box: unveil artifacts	Camera: model actions	Computer: process choices	Rhizome: make connections

*Note.* Adapted from “The Role of Theory in Instructional Design: Some Views of an ID Practitioner,” by T. K. Christensen, 2008, *Performance Improvement*, 47(4), p. 27 (<http://dx.doi.org/10.1002/pfi.199>).

### **Learning Theories**

Learning theories seem to undergird the various stages of the development of ePortfolios—from displaying the artifacts, and modeling (Bandura, 1986), to expressing agency and enabling connection.

As a digital learning site, eportfolios capacitate introspective learning that can be translated into overt behaviors such as attitudes and expressions of both satisfaction and frustration. This aspect of the experience, or affect, enables the user to emotionally interpret knowledge connected not only to content but also to each other (Huitt & Cain, 2005). These corresponding behaviours align with the information processing theory that frames the individual as a processor of information and also with social cultural theory that values the social environment and its influence on perceptions. ePortfolio events also connect with aspects of the Taxonomy of Learning Domains (Bloom, 1956) and principles of Ecological Constructivism (Hoven & Palalas, 2016; Palalas, 2015).

Having an at-a-glance view of the various theories of learning aid in the conceptualizing of where to position instruction to better support the learners in capstone ePortfolio courses. Concepts illustrated in Figure 3 help substantiate the notion of ePortfolios as a substrate for a variety of overt and covert behaviors among students—from selecting and displaying artifacts, to relying on modeling, and making connections. As illustrated in Figure 4, the development of capstone projects aligns with a number of the learning theories. It is our sense-making toward an understanding of these theories that helps unveil our philosophical and pedagogical beliefs. These intentional acts of inward thinking will subsequently have an impact on future practice, and, as posited by Ragan (1999), cause sustainable changes in behavior.

### **Philosophical and Pedagogical Beliefs**

The development process of ePortfolios is intense; as such, it provides the proper terrain that capacitates

instructor and student philosophical positioning. When we hold on to nonsense during our sense making, we engage in what Homes (2015) suggested as the power of not knowing. By letting go of our fixed mindset, we enable some form of change to happen, so we can embrace a mindset that embodies growth. In consequence, we may start to find comfort (rather than distress) when, as vulnerable beings, we allow for expressions of confusion during, as Homes (2015) described, moments of “nervous laughter, embarrassed smiles, . . . hesitations, and perplexed glances” (p. 2). Adherence to a pedagogical stance adds another pillar of support for educators as they attempt to reach out to their students at a distance. Identifying our own philosophical and pedagogical positionality has become even more prominent now that we search for an anchor to help us keep our bearings in—what is for many—still a new landscape.

### **Axiological Approach**

My axiological assumptions became salient during the online interactions of the students with their ePortfolio projects in the Discussion Forum. My co-presence within the setting caused me to develop a solidarity with the participants in the course (Hine, 2016), albeit temporarily, and thus start to influence some of their choices. As such, as the course instructor and an ePortfolio creator and user, I made an effort to be cognizant of the personal values I brought along with me (Creswell, 2013) during the feedback interactions and the various student iterations of their projects. I achieved a less partial view of what I was seeing, hearing, and experiencing by engaging in a process of reflecting on myself—my motives, actions, and beliefs. As “part of [a] digitally mediated classroom space” (Cicchino et al., 2021), both ePortfolios and the discussion forum necessitate that members of the academy, as suggested by Coley (2012), possess a certain level of literacy in digital ethics—I aimed to demonstrate mine as I modeled

Figure 4  
*Learning Theories: Possible Alignment With ePortfolios*

Theories	Theorists	Alignment With ePortfolios
<b>BEHAVIORISM</b>	Ivan Pavlov (1927) B. F. Skinner (1953) Edward Thorndike (1932)	<ul style="list-style-type: none"> <li>• Stimulus, response, and reducing unproductive behaviors</li> </ul>
Behaviorism main metaphor: Black box • Role of performer: Student obtains and shows use of knowledge -ePortfolio: Showing behaviors that lead to certain outcomes		
<b>SOCIAL LEARNING THEORY</b>	Albert Bandura (1977) Dale Schunk (1981) Barry Zimmerman (1998)	<ul style="list-style-type: none"> <li>• Modeling, incentives, and reciprocal causation where behavior is controlled by self through cognitive processes, environment, social events</li> </ul>
Social learning theory main metaphor: Video camera • Role of observer: Copies knowledge from others -ePortfolio: Modeling during peer-feedback interaction to help trigger reflection		
<b>INFORMATION PROCESSING THEORY</b>	Joan Anderson (1990) Alan Baddeley (2001) Elizabeth Loftus (1991)	<ul style="list-style-type: none"> <li>• Individual (similar to a computer) is a processor of information</li> <li>• Possible to study the internal mental processes that lie between the stimuli (environment) and the output (response)</li> </ul>
Information processing theory main metaphor: Computer • Role of processor: Strategizes to obtain and use knowledge -ePortfolio: Learning the technology to develop the capstone project		
<b>CONSTRUCTIVISM: INDIVIDUAL AND SOCIAL CONSTRUCTIVISM</b>	John Bransford (2005) Jerome Bruner (1966) Giyoo Hatano (1991) Jean Piaget (1970)	<ul style="list-style-type: none"> <li>• People construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences</li> <li>• People understand better together</li> </ul>
<b>ECOLOGICAL CONSTRUCTIVISM</b>	Debra Hoven (2008) Aga Palalas (2015)	<ul style="list-style-type: none"> <li>• Engagement in the internal reflection aspect of learning</li> <li>• Perception of the affordances in the environment</li> </ul>
<b>SOCIAL CULTURAL THEORY</b> Vygotsky's Theory of Cognitive Development	Mary Gauvain (2001) Jean Lave (1991) Lev Vygotsky (1978) Barbara Rogoff (1990)	<ul style="list-style-type: none"> <li>• Importance of social environment in one's development</li> <li>• View of how cultural backgrounds influence thoughts, behaviors, perceptions</li> </ul>
Constructivism main metaphor (cognitive and social): Rhizome • Role of explorer (cognitive): Discovers knowledge by interacting with the environment and others in it • Role of collaborator (social): Makes sense of knowledge by negotiating, collaborating, interacting socially -ePortfolio: Finding congruence in their own experiences with the affordances of the environment		

*Note.* Adapted from “The Role of Theory in Instructional Design: Some Views of an ID Practitioner,” by T. K. Christensen, 2008, *Performance Improvement*, 47(4), p. 27 (<http://dx.doi.org/10.1002/pfi.199>); “Resolving Conflict in Distance Education Situations: Changing Roles to Break Down Barriers” [Paper presentation], by D. Hoven, 2008, ALT-C Conference (<https://www.slideshare.net/debrah/alt-c-pres08hoven>); *Essentials of Educational Psychology* (pp. 19-20), by J. E. Ormrod, 2009, Pearson; and, “The ecological perspective on the ‘anytime anyplace’ of Mobile-Assisted Language Learning,” by A. Palalas, in E. Gajek (Ed.), *Technologie Mobilne w Kształceniu Językowym* (pp. 29-48), 2015, Texter.

certain behaviors. As Penny Light et al. (2012) pointed out, various stakeholders can benefit from the “learning that is being documented in ePortfolios” (p. 21). This meaningful personalized documentation may be used to underpin good practices “to address not only today’s learners but also the complex problems faced by our ever-changing society” (Penny Light et al., 2012, p. 23). Among the performance standards the authors recommend for practice across the curriculum are civic and intercultural knowledge, ethical reasoning, and lifelong learning.

### ***Ontological Approach***

As members of an online language community, our activities encompassed many realities constructed through interactions which aligned with a social constructivist approach (Creswell, 2013). As an ontological view on the access to reality, interpretivism aligned with my seeing the reality of the course participants through many perspectives. There was a sense of being there—with the students and their projects—which helped me rely on first-hand accounts of these rich activities (Hine, 2016). My role was to immerse myself in the *vivencia*, or life experiences (Fals Borda, 1997), of this online community of language learners in the final module of their 5-month, five-module program of studies. During times of questions or concerns, my personal way of seeing contributed toward a more authentic report on the different views of our realities (Creswell, 2013). I aimed to position myself as a personally and socially responsible instructor and to apply ethical reasoning and action (Penny Light et al., 2012) throughout the term.

### ***Epistemological Approach***

My epistemological view on the nature of knowledge—as a proponent of constructivism/interpretivism—is that knowledge is experienced in a subjective way; it is dependent on a personal belief, opinion, and preference. Knowledge can be shaped by individual efforts (Creswell, 2013) at each stage of a learning journey. Throughout the project development phase, I made attempts to understand the complexities of the activities from the point of view of the students (Schwandt, 1994). As Creswell (2013) suggested, proponents of this epistemological philosophy develop “varied and multiple” (p. 24) subjective meanings of their experiences; they “look for the complexity of views rather than narrow the meanings into a few categories or ideas” (p. 24). Based on that perspective, I adopted a more ecological constructivist approach (Hoven & Palalas, 2016; Palalas, 2015) to show that I

was letting the student interactions inform my views of what I perceived as affordances of their online environment. The lenses through which we interpret our participation in student ePortfolio experiences align with our identity and help us engage in reflexivity as a “disciplined [form] of self-reflection” (Wilkinson, 1988, p. 493). As such, they influence which outcomes to consider important in this subjective way of viewing knowledge. In terms of initial thinking processes of ePortfolio project implementation, some of the learning outcomes considered essential include those developed by AAC&U (2009); among other areas, these outcomes relate to the type of learning (what) and the use of ePortfolio in other contexts (how, why). As described by Penny Light et al. (2012), they include knowledge (of human cultures), skills (of intellectual and practical nature), and responsibility (on a personal and social level)—the latter includes “civic knowledge and engagement and ethical reasoning and action” (p. 45).

### **Recommendations for Practice**

My observations of ePortfolio creators at various stages of their project development process spanning a decade has enabled me to view an alignment of the capstone ePortfolio projects with some of the learning theories (Figure 4). Further examination of the overlap of the cognitive and affective domains (Anderson et al., 2001; Bloom et al., 1956; Krathwohl et al., 1964) during ePortfolio activities of the students made me aware of their reliance on their capabilities during the development of their digital projects. The following recommendations for practice are based on my observations as an instructor of courses that included a capstone ePortfolio project—for ESL students (five 5-month courses), for college educators (six 8-week courses), and for students in a graduate program (three 3-month courses).

Instructors in university, college, and K-12 as well as pre-service teachers considering implementing ePortfolio projects in their practice may benefit from

- Reviewing the theories of learning that have stood the test of time and learning about the contemporary ones that align with learners in the 21st century (Connectivism and Ecological Constructivism);
- Applying metaphors to help illustrate the various theoretical positions for student teachers in pre-service teacher education;
- Revisiting the levels in Bloom’s Taxonomy of Cognitive and Affective Domains (Anderson et al., 2001; Bloom et al., 1956; Krathwohl et al., 2001);



- Gaining further knowledge of the pedagogical application of higher order learning processes as outlined in the Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics by AAC&U (2009);
- Identifying aspects of the ADDIE Process of analyzing, designing, developing, implementing, and evaluating in ePortfolio course design (Branson et al., 1975; Watson, 1981);
- Aligning aspects of ADDIE with the process of artifact creating, selecting, designing, composing, and assembling in ePortfolio curriculum design (Yancey, 2019); and
- Creating an ePortfolio reflective project as professional self-development (Zuba Prokopetz, 2018) while learning to apply the science of learning to distance education (Mayer, 2009).

### Conclusion

As an evolution and a transformation of past practice, ePortfolios are being utilized beyond the initial field of education in some nations (Ravet, 2005). In academia, their benefits for educators and learners are far reaching. Their worth resides in the transformational and emancipatory experiences that may lead the way to a change in mindset and philosophical (re)positioning of learners and educators alike. As educators, our goal is to make “humans better through developing and instilling deep learning skills and abilities practiced at higher order levels of complexity” (Rhodes, 2018, p. 89). An ePortfolio project is “multilayered and involves learning about learning, deep immersion in thought processes, and relationship building”; the ePortfolio continues to gather momentum and is positioning itself as a sophisticated pedagogy, an elegant research site, and a technology-mediated professional self-development option (Zuba Prokopetz, 2019a, p. 24). As pedagogy, capstone projects align with different theories of learning since they “reflect different positions on the nature of knowledge” (Bates, 2014, Conclusion). As research site, ePortfolios are well positioned in the linked-data space of the web (Berners-Lee, 2009) to be included in labs where members of a global community can collaborate. In this constantly evolving digital ecosystem, researchers worldwide are now able to more easily advance discourse on “ePortfolio’s role in promoting liberal learning” (Rhodes, 2018, p. 87) and to continue “thinking about why we encourage utilization of ePortfolios” (p. 87) in our practice. As we connect with each other in various parts of the world, we begin to understand better how “the connections that enable us to learn more are more important than our current state of knowing” (Siemens, 2005, p. 5).

The implementation and development of ePortfolio projects are undergirded by a theoretical foundation that aligns with the thinking and reasoning of the members of each ePortfolio community. These projects

necessitate proper guidance to instill trust among members and foster a certain level of comfort with being vulnerable; co-construction of knowledge is an unavoidable outcome. As suggested by Siemens (2006), learners “dance and court the knowledge of others in ways the original creators did not intend” (p. 7). A close connection between the axiological (nature of values and value judgements), ontological (nature of reality), and epistemological (nature of knowledge) assumptions is powerful enough to ground community members’ assertions during the development process. These philosophical paradigms undergird thought processes, provide contextual information, and aid with the understanding of the worldview of ePortfolio creators (educators and learners alike).

ePortfolios are a robust field of inquiry, a digital transformation pedagogy, and continue to be part of a growing movement in the field of education. As a substrate for a variety of learning behaviours among students, they exemplify alignment with some of the learning theories and capacitate philosophical positioning of educators and learners. As suggested by Rhodes (2018), ePortfolios “involve educators and learners in a shared dance of give and take” (p. 87). They place the instructor at the back of the orchestra and the students in the front row, as per my experience with five groups of intermediate-level English as a second language learners before and during the pandemic. My immersion in the *vivencia*, or life experiences (Fals Borda, 1997) of this online community of language learners as they completed their capstone projects in the final module of their program of studies affirmed the core value of ePortfolios—they enable students to become aware of their learning history and facilitate their philosophical positionality.

### References

- Acosta, T., & Liu, Y (2006). ePortfolios: Beyond assessment. In A. Jafari & C. Kaufman (Eds.), *Handbook of research on ePortfolio* (pp. 15-23). Idea Group.
- Anderson, J. R. (1990). *Cognitive psychology and its implications* (3rd ed.). Freeman.
- Anderson, L. W., Krathwohl, D. R., Airasian, P.W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., & Wittrock, M. C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom’s taxonomy of educational objectives*. Longman.
- American Association of Colleges and Universities (AAC&U). (2009). *VALUE rubrics*. <https://www.aacu.org/initiatives/value-initiative/value-rubrics>
- Baddeley, A. D. (2001). Is working memory still working? *American Psychologist*, 56(11), 851-864. <http://dx.doi.org/10.1037/0003-066X.56.11.851>

- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.
- Bandura, A. (1977). *Social learning theory*. Prentice Hall.
- Barrett, H. C. (2007). Researching electronic portfolios and learner engagement: The REFLECT initiative. *Journal of Adolescent & Adult Literacy*, 50(6), 436-449. <https://doi.org/10.1598/JAAL.50.6.2>
- Barrett, H. C. (2004). *Electronic portfolios as digital stories of deep learning: Emerging digital tools to support reflection in learner-centered portfolios*. <http://electronicportfolios.org/digistory/epstory.html>
- Barrett, H. C., & Richter, J. (2018). Reflection4Learning. <https://sites.google.com/site/reflection4learning/>
- Bates, T. (2018, December 26). 2018 review of online learning: Open pedagogy. *Online Learning and Open Education Resources, Contact North*. <https://www.tonybates.ca/2018/12/26/2018-review-of-online-learning-open-pedagogy/>
- Bates, T. (2014, July 29). Learning theories and online learning. *Online Learning and Distance Education Resources, Contact North*. <https://www.tonybates.ca/2014/07/29/learning-theories-and-online-learning/>
- Batson, T. (2018). The ePortfolio idea as guide star for higher education. *AAEEBL ePortfolio Review*, 2(2), 9-11. <https://drive.google.com/file/d/0B5EyRIW5aG82dGtQTjJEcVk2R21JazZuRjFyb3BucVBMbUFZ/view>
- Batson, T. (2015a, October 15). The significance of ePortfolio in education. *Batson Blog*. <https://drive.google.com/file/d/1OTOGXcMZwL7J1IICUm9NF-X5xnCFrYsf/view>
- Batson, T. (2015b, February 2). Study shows steady growth in ePortfolio use: What does that mean? *Batson Blog*. <https://drive.google.com/file/d/1ZVXXO2bmCoHXcM1ZYV20ejxiOw8kjJdC/view>
- Berners-Lee, T. (2009, March). The next web [Video]. TED Conferences. [https://www.ted.com/talks/tim\\_berners\\_lee\\_on\\_the\\_next\\_web/transcript?language=en](https://www.ted.com/talks/tim_berners_lee_on_the_next_web/transcript?language=en)
- Bloom, B. S., Englehart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain*. Longman.
- Bransford, J., Derry, S., Berliner, D., Hammerness, K., & Beckett, K. L. (2005). Theories of learning and their role in teaching. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp. 40-87). Jossey-Bass.
- Branson R. K., Rayner G. T., Cox J. L., Furman J. P., King F. J., & Hannum W. J. (1975). *Interservice procedures for instructional systems development* (TRADOC Phamplet 350-30, 5 Volumes). U. S. Army Training and Doctrine Command.
- Bruner, J. S. (1966). *Toward a theory of instruction*. Harvard University Press.
- Bruner, J. (1986). *Actual minds, possible worlds*. Harvard University Press.
- Cambridge, D. (2010). *ePortfolios for lifelong learning and assessment*. Jossey-Bass.
- Cambridge, D., Cambridge, B., & Yancey, K. (Eds.). (2009). *Electronic portfolios 2.0: Emergent research on implementation and impact*. Stylus.
- Canadian Language Benchmarks. (2012). (CLB). *Canadian language benchmarks: English as a second language for adults*. Center for Canadian Language Benchmarks. <https://www.canada.ca/content/dam/ircc/migration/ircc/english/pdf/pub/language-benchmarks.pdf>
- Chen, H. L., & Patel, S. J. (2017). Portfolio to professional: Supporting graduate student reflection via digital, evidence-based storytelling. *AAEEBL ePortfolio Review*, 1(2), 7-14. [https://drive.google.com/file/d/12onoGBiKIKXzfEcKcyW\\_vYTsO4hS0v2Y/view](https://drive.google.com/file/d/12onoGBiKIKXzfEcKcyW_vYTsO4hS0v2Y/view)
- Chen, H. L., & Penny Light, T. (2010). *Electronic portfolios and student success: Effectiveness, affordability, and efficiency*. American Association of Colleges and Universities. <https://www.aacu.org/publications-research/publications/electronic-portfolios-and-student-success-effectiveness>
- Christensen, T. K. (2008). The role of theory in instructional design: Some views of an ID practitioner. *Performance Improvement*, 47(4), 25-32. <http://dx.doi.org/10.1002/pfi.199>
- Cicchino, A., Haskins, M., Gresham, M., Kelly, K., Slade, C., & Zurhellen, S. (2021). Digital ethics in ePortfolios: Developing principles, strategies, and scenarios. *International Journal of ePortfolio*, 11(1), 67-82. <http://www.theijep.com/pdf/IJEP361.pdf>
- Coley, T. F. (2012). *Teaching with digital media in writing studies: An exploration of ethical responsibilities*. Peter Lang.
- Conrad, D., & Openo, J. (2018). *Assessment strategies for online learning: Engagement and authenticity*. Athabasca University Press. <https://doi:10.15215/aupress/9781771992329.01>
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. Sage.
- Eynon, B., & Gambino, L. M. (2017). *High-impact ePortfolio practice: A catalyst for student, faculty, and institutional learning*. Stylus.
- Eynon, B., & Gambino, L. M. (2016). Professional development for high-impact ePortfolio practice. *Peer*

- Review, 18(3), 4-8.  
<http://www.aacu.org/peerreview/2016/summer/Eynon>
- Eynon, B., Gambino, L. M., & Török, J. (2014). What difference can ePortfolio make? A field report from the connect to learning project. *International Journal of ePortfolio*, 4(1), 95-114.  
<https://www.theijep.com/pdf/IJEP127.pdf>
- Fals Borda, O. (1997). Participatory action research in Colombia: Some personal feelings. In R. McTaggart (Ed.), *Participatory action research: International contexts and consequences* (pp. 107-120). State University of New York Press.
- Farrell, O. (2019, November 13). *National survey of ePortfolio practice*. ePortfolio Ireland.  
<https://eportfoliofireland.wordpress.com/2019/11/13/national-survey-of-eportfolio-practice/>
- Feldstein, M., & Hill, P. (2016). Personalized learning: What it really is and why it really matters. *EDUCAUSE Review*, 51(2), 25-35.  
<https://er.educause.edu/-/media/files/articles/2016/3/erm1622.pdf>
- Foster, D. (1997). Community and identity in the electronic village. In D. Porter (Ed.), *Internet culture* (pp. 23-37). Routledge.
- Gauvain, M. (2001). *The social context of cognitive development*. Guilford Press.
- Harasim, L. (2017). *Learning theory and online technologies*. Routledge.
- Hatano, G., & Ignagaki, K. (1991). Sharing cognition through collective comprehension activity. In L. B. Resnick, J. M. Levine, & S. D. Teasley (Eds.), *Perspectives on socially shared cognition*. American Psychological Association.
- Hine, C. (2016). *Ethnography for the Internet: Embedded, embodied and everyday*. Bloomsbury.
- Homes, J. (2015). *Nonsense: The power of not knowing*. Broadway Books.
- Hood, C. L. (2017). ePortfolios spark a campus-side culture of reflection: Trickle-up. *AAEEBL ePortfolio Review*, 1(2), 26-30.  
[https://drive.google.com/file/d/12onoGBiKIKXzfEcKcyW\\_vYTso4hS0v2Y/view](https://drive.google.com/file/d/12onoGBiKIKXzfEcKcyW_vYTso4hS0v2Y/view)
- Hoven, D. (2020). Lifelong and life-wide learning: The transformative role of e-portfolios in online graduate education. In S. Brigham, R. McGray, & K. Jubas (Eds.), *Adult education and lifelong learning in Canada: Critical legacy* (pp. 210-221). Thompson.
- Hoven, D. (2014). ePortfolios in post-secondary education: An alternate approach to assessment. *UAE Journal of Educational Technology and eLearning*, December(5), 11-19.  
<https://portfolio.elab.athabasca.ca/user/debra-hoven/debra-s-academic-e-portfolio>
- Hoven, D. (2008, September 9-11). *Resolving conflict in distance education situations: Changing roles to break down barriers* [Paper presentation]. ALT-C Conference, Leeds, United Kingdom.  
<https://www.slideshare.net/debrah/alt-c-pres08hoven>
- Hoven, D., & Palalas, A. (2016). Ecological constructivism as a new learning theory for MALL: An open system of beliefs, observations and informed explanations. In A. Palalas & M. Ally (Eds.), *The international handbook of mobile-assisted language learning* (pp. 113-137). China Central Radio & TV University Press Co., Ltd.  
[http://www.academia.edu/27892480/The\\_International\\_Handbook\\_of\\_Mobile-Assisted\\_Language\\_Learning](http://www.academia.edu/27892480/The_International_Handbook_of_Mobile-Assisted_Language_Learning)
- Huitt, W. G., & Cain, S. (2005). An overview of the conative domain. In *Educational psychology interactive*. Valdosta State University.
- Krathwohl, D. R., Bloom, B. S., & Masia, B. B. (1964). *Taxonomy of educational objectives: The classification of educational goals, Handbook II: Affective domain*. Longman Group.
- Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. American Association of Colleges and Universities.  
<http://provost.tufts.edu/celt/files/High-Impact-Ed-Practices1.pdf>
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.
- Loftus, E. F. (1991). Made in memory: Distortions in recollection after misleading information. *Psychology of Learning and Motivation*, 27, 187-215.  
[https://doi.org/10.1016/S0079-7421\(08\)60124-3](https://doi.org/10.1016/S0079-7421(08)60124-3)
- Lorenzo, G., & Ittelson, J. (2005). *An overview of e-portfolios* (ELI Paper 1: 2005). EDUCAUSE.  
<https://library.educause.edu/-/media/files/library/2005/1/eli3001-pdf.pdf>
- Marzano, R. J., & Kendall, J. S. (2007). *The new taxonomy of educational objectives* (2nd ed.). Corwin Press.
- Mason, B. (2019, November 12). Why scientists need to be better at data visualization. *Knowable Magazine*.  
<https://knowablemagazine.org/article/mind/2019/science-data-visualization>
- Mayer, R. (2009). *Multimedia learning*. Cambridge University Press.
- McNair, T. B., Bensimon, E. M., & Malcom-Piqueux, L. (2020) *From equity talk to equity walk: A guide for campus-based leadership and practice*. Jossey-Bass.
- Moore, M. G. (1989). Editorial: Three types of interaction. *American Journal of Distance Education*, 3(2), 1-7.  
<https://doi.org/10.1080/08923648909526659>

- Ormrod, J. E. (2009). *Essentials of educational psychology*. Pearson.
- Palalas, A. (2015). The ecological perspective on the “anytime anyplace” of mobile-assisted language learning. In E. Gajek (Ed.), *Technologie mobilne w kształceniu językowym* (pp. 29-48). Texter.
- Pavlov, I. P. (1927). *Conditioned reflexes: An investigation of the physiological activity of the cerebral cortex*. Oxford University Press.
- Pelliccione, L., & Dixon, K. (2008). ePortfolios: Beyond assessment to empowerment in the learning landscape. *Proceedings of the ascilite 2008 Melbourne, Australia*, 750-760. <http://www.ascilite.org/conferences/melbourne08/pdocs/pelliccione.pdf>
- Penny Light, T., Chen, H. L., & Ittelson, J. C. (2012). *Documenting learning with ePortfolios: A guide for college instructors*. Jossey Bass.
- Piaget, J. (1970). *Genetic epistemology*. Columbia University Press.
- Ragan, L. C. (1999). Good teaching is good teaching: An emerging set of guiding principles and practices for the design and development of distance education. *Cause/Effect Journal*, 22(1). <https://www.educause.edu/ir/library/html/cem/cem99/cem9915.html>
- Ravet, S. (2005). *ePortfolio for a learning society* [Paper presentation]. E Learning Conference, Brussels. [https://www.academia.edu/1073713/ePortfolio\\_for\\_a\\_learning\\_society](https://www.academia.edu/1073713/ePortfolio_for_a_learning_society)
- Renard, L. (2005). Teaching the DIG generation. *Educational Leadership*, 62(7), 44-47.
- Renes, S. L., & Strange, A. T. (2011). Using technology to enhance higher education. *Innovative Higher Education*, 36, 203-213. <https://doi.org/10.1007/s10755-010-9167-3>
- Rhodes, T. (2018). Lift every voice: ePortfolios for creating and integrating. *International Journal of ePortfolio*, 8(2), 87-89. <https://www.theijep.com/pdf/IJEP317.pdf>
- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. Oxford University Press.
- Rose, E. (2013). *On reflection: An essay on technology, education, and the status of thought in the twenty-first century*. Canadian Scholars' Press.
- Schön, D. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.
- Schunk, D. H. (2012). *Learning theories: An educational perspective* (6th ed.). Pearson.
- Schunk, D. H. (1981). Modeling and attributional effects on children's achievement: A self-efficacy analysis. *Journal of Educational Psychology*, 8, 76-86. <http://dx.doi.org/10.1037/0022-0663.73.1.93>
- Schwandt, T. A. (1994). Constructivist, interpretivist approaches to human inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 118-136). Sage.
- Shepherd, C. E., & Bolliger, D. U. (2011). The effects of electronic portfolio tools on online students' perceived support and cognitive load. *Internet and Higher Education*, 14(3), 142-149. <https://doi.org/10.1016/j.iheduc.2011.01.002>
- Siemens, G. (2006). *Knowing knowledge*. Author. <https://archive.org/details/KnowingKnowledge>
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3-9. [https://www.itdl.org/Journal/Jan\\_05/article01.htm](https://www.itdl.org/Journal/Jan_05/article01.htm)
- Skinner, B. F. (1953). *Science and human behavior*. Macmillan.
- Smith, K., & Tillema, H. (2003). Clarifying different types of portfolio use. *Assessment and Evaluation in Higher Education*, 28(6), 625-648. <http://dx.doi.org/10.1080/0260293032000130252>
- Stolins, R. (2017). Adding meta-reflections. *AAEEBL ePortfolio Review*, 1(2), 54-57. [https://drive.google.com/file/d/12onoGBiKIKXzfEcKcyW\\_vYTsO4hS0v2Y/view](https://drive.google.com/file/d/12onoGBiKIKXzfEcKcyW_vYTsO4hS0v2Y/view)
- Thorndike, E. L. (1932). *The fundamentals of learning*. Teachers College Bureau of Publications.
- Vygotsky, L. (1978). *Mind in society*. MIT Press.
- Watson, C. E., Kuh, G. D., Rhodes, T., Light, T. P., & Chen, H. L. (2016). Editorial: ePortfolios—The eleventh high-impact practice. *International Journal of ePortfolio*, 6(2), 65-69. <http://theijep.com/pdf/IJEP254.pdf>
- Watson, R. (1981). *Instructional system development* (ED209239). International Congress for Individualized Instruction. <https://eric.ed.gov/?id=ED209239>
- Wiggins, G., & McTighe, J. (1998). *Understanding by design*. Association for Supervision and Curriculum Development.
- Wilkinson, S. (1988). The role of reflexivity in feminist psychology. *Women's Studies International Forum*, 11(1), 493-502. [https://doi.org/10.1016/0277-5395\(88\)90024-6](https://doi.org/10.1016/0277-5395(88)90024-6)
- Yancey, K. B. (Ed) (2019). *ePortfolio as curriculum: Models and practices for developing students' ePortfolio literacy*. Stylus.
- Zimmerman, B. J. (1998). Developing self-fulling cycles of academic regulation: An analysis of exemplary instructional models. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice* (pp. 1-19). Guilford Press.
- Zuba Prokopetz, R. (2012). *ADDIE Process* [PowerPoint slides]. <https://www.slideshare.net/RitaProkopetz/addie-process>

- Zuba Prokopetz, R. (2019a). *Capstone electronic portfolios of master's students: An online ethnography* [Unpublished doctoral dissertation]. Athabasca University.  
<http://hdl.handle.net/10791/300>
- Zuba Prokopetz, R. (2019b, April 25-27). *Electronic portfolio: Enhancing blended learning experiences in a community of language learners* [Conference session]. 4th World Conference for Blended Learning. <https://www.youtube.com/watch?v=CHtNDMU2REs&t=7s>
- Zuba Prokopetz, R. (2021). Electronic portfolios: Research site in internet spaces. *International Journal of ePortfolio*, 11(1), 25-52.  
<http://www.theijep.com/pdf/IJEP354.pdf>
- Zuba Prokopetz, R. (2018). Professional self-development mediated by ePortfolio: Reflections of an ESL practitioner. *TESL Canada Journal*, 35(2), 156-165.  
<https://doi.org/10.18806/tesl.v35i2.1295>
- Zuba Prokopetz, R. (2016). *Pursuing knowledge* [PowerPoint slides].  
<https://www.slideshare.net/RitaProkopetz/pursuing-knowledge>
- Zuba Prokopetz, R. (2020). Student engagement and reflective learning mediated by ePortfolios: Observations of an ESL instructor. *AAEEBL ePortfolio Review*, 4(1), 13-18.  
<https://aaeebl.org/wp-content/uploads/2020/09/AePR-v4n1.pdf>

---

RITA ZUBA PROKOPETZ, EdD, is an educational consultant in Winnipeg, Manitoba—Canada. She completed her first learning ePortfolio as a graduate student at Central Michigan University (2011-2013). She implemented ePortfolio pedagogy in courses she developed for students of English as a second language and college educators. Rita completed her studies on capstone ePortfolio projects of master's students as a doctoral student at Athabasca University (2015-2019). Her research interests include reflection and feedback interaction in the development process of ePortfolios. Rita can be reached via LinkedIn or Twitter (@GandRLanguages).

#### Acknowledgements

I wish to express my gratitude to the editorial team at IJeP for their interest in my work and to the IJeP reviewers for their ongoing assistance with my manuscript.



# A Report from the Field: How ePortfolios Can Improve Student Transition from Secondary to Post-Secondary Education in Alaska

Shamai Thacker  
*University of Alaska Anchorage*

This report explores the development of a bridge between secondary and postsecondary education through professional development and college preparation by examining the current processes that high schools are using to address student success outside of the counselor setting. This research seeks to understand how Alaska schools can use an ePortfolio-supported curriculum to better prepare their college-bound students to improve first year student retention in the university system. This pilot study focused on improving various programs' performance within the University of Alaska Anchorage (UAA) and identifies how an ePortfolio platform as a high impact practice can facilitate student success and assessment in various programs to improve learning experiences for new UAA-bound students.

Student retention has been getting a lot more attention in the university setting and in the high school setting. Views on student retention have shifted dramatically in recent history. While the prevailing perspective in the mid-20<sup>th</sup> century focused on blaming students for their inability to succeed, a shift began in the mid-1970s to better understand the role of the environments in student success (Tinto, 2006). From this environmentally focused perspective, diverse practices have evolved to prepare students for college and career success.

Student performance outside of the national standard that focuses only on reading, writing, and math—such as personal development, professional development, and a foundation for lifelong learning—is a problem that this research project aims to address. With only a third of high school seniors around the United States adequately prepared for college, and “the lowest-achieving students are performing worse than ever” (Camera, 2016), many Alaska high school students are graduating without adequate preparation for college and career. Sixty percent of students transitioning to the University of Alaska after graduating high school were required to take preparatory writing and math courses (ANSEP, 2017). Alaska Native college-bound students who are considered higher risk within the Alaska education systems (Reyhner, 1991) and first-generation students are targeted to improve student retention efforts within the university setting.

## Context

Educators within Alaska have been investigating how to improve learning experiences to better prepare students for the university setting. Much of this is done with the introduction and use of technology tools, but where schools in the contiguous United States have districts that fund technology in the classrooms (Donaldson, 2015), most Alaskan school districts do not have those funds. For that reason, this research focuses on the use of the ePortfolio tool that is free to UAA students, with the hope of having a future partnership

built between UAA and Alaska high schools for access to the tool for college and career preparation.

This research is grounded in student retention improvements in the university setting, focused on college preparation and professional development in secondary school, and how the utilization of the ePortfolio tool may improve the barriers that affect first year student success in the university. A college and career readiness curriculum course within the ePortfolio platform was created to pilot with various departments that work with incoming first year and Alaska Native/American Indian students.

With a focus on how Alaska secondary and post-secondary schools can better prepare their college-bound students to improve first year student retention in the university system, identifying how Alaska schools can use an ePortfolio-supported curriculum to better prepare their college-bound students to improve first year student retention in the university system offers all students the opportunity to become college ready through individual engagement and assessment practices. Using a digital space to engage in meaningful teaching and learning practices that provide a well-defined curricular pathway into the university setting (Hoffman et al., 2007) helps educators target individual student needs and address the individual societal issues that may be holding a student back when they enter the university setting.

## Literature Review

A review of the literature indicates what practices and trends are in effect to address the need to better prepare our college-bound students. More importantly, it shows how a smooth and successful transition for high school students could be achieved through implementation of an ePortfolio program that is managed by teachers and counselors as a preparation method. Various bridge programs have been identified within the research and demonstrate how an ePortfolio-supported curriculum can be implemented to support programs and improve transition practices between secondary and post-secondary school settings.

Programs within other schools have proven success with college preparation measures, and—more importantly—how technology is beginning to change the way that educators can utilize different tools like ePortfolio to measure student academic achievement throughout any grade level. This is important because this type of tool can be taken from the primary to secondary school levels as a transition tool that helps stakeholders like advisors and faculty to measure success and possible barriers through demonstrated work displayed in the ePortfolio that outlines goals and plans to be a successful college student before they get into the university setting. One of the best ways to benefit student learning is to infuse technology into the curriculum (Kuh, 2010).

Examination of the gaps in school counselor roles—university advisors included—and the misconstructions that the title gives to students, parents, and educators shows that there needs to be a call for improvement in the functionality of school counselors and their relevancy (Burnham & Jackson, 2000). There is a discrepancy that speaks volumes to the things that high school students are lacking in their overall guidance in their desires to transition from high school into college. At the heart of better preparing incoming college-bound students are educators, programmatic practices, and ePortfolio practices.

## Educators

Our teachers are the most influential when it comes to student success and developing a program course that focuses on professional development and college prep will allow teachers and counselors to be up to date on university trends that lead to the improvement in the bridge over time (Hoffman et al., 2007). Career education related to professional development and the connection that is built within the classroom promotes student success when college and career preparation earlier than senior year in high school is integrated. A curriculum course that is introduced at an age as early as 13 to practice developing career and growth opportunities helps to bridge between high school and college by requiring better teacher preparation that is ongoing through professional development to stay up to date on the current trends so that these educators can have a larger impact on the students' college and career readiness (Curry et al., 2013).

Berry and Marx (2010) focused on the use of ePortfolio “as a way to measure and capture student progress” (p. 245) in the use of technology in teaching practices—especially as it relates to using internet-based technologies for teaching. A career and college readiness curriculum plan was developed with the use of ePortfolio as a learning management system to deploy learning modules and activities that are then reviewed by the educator and counselors to assess whether the student completing the work has met the expected learning outcomes. Online learning is becoming more prevalent

within universities around the nation and having educators and counselors using a tool that can foster that type of learning environment while providing data that educators can use to determine the feasibility of the platform as it relates to the student learning outcomes is something that can be used to investigate the various methods available to help in the students transition from secondary to post-secondary school settings.

High-impact practices help students achieve expected learning outcomes and “at the same time, engag[e] in educationally purposeful activities [that] helps level the playing field, especially for students...who have been historically underserved” (Kuh, 2008, p. 32). Declared the eleventh high-impact practice by the American Association of Colleges and Universities (AAC&U), ePortfolios help students make connections between their educational experiences and goals, and with the career and college readiness curriculum, the learning outcomes are focused on educationally purposeful activities built within the ePortfolio that lead to deep learning where the students are creating “an authentic representation of learning, a record that could, in the future, be viewed similarly to a traditional transcript or resume” (Watson et al., 2016, p. 67).

As part of the purposeful activities that can be developed, the ePortfolio platform allows programs to infuse culture and foster advocacy for empowerment that helps educators and counselors provide mentoring focused on professional development and college preparation (Grothaus et al., 2012) simultaneously. The power of culture and defining strengths as they relate to cultural competence and counseling interventions bring forth cultural identity development that is a powerful element of ePortfolio creation for college and career readiness when considering storytelling and how stories shape individual goals.

College preparedness is more than Math and English, and “students' postsecondary aspirations of college preparatory courses-taking were positively associated with college readiness” (Royster et al., 2015, p. 220) and students are expected to be college-ready by the eighth grade. As a college preparation practice, ePortfolio-supported curriculum helps students capture college aspirations and preparatory activities that demonstrate understanding and application of deep learning through a reflective process.

## ePortfolio

Using ePortfolio as a learning tool, educators can use the platform to create “a culture of lifelong learning among users” (Acker & Halasek, 2008, pp. 10-11), which indicates that this technology may be the initial link needed to lead to student success. With the use of ePortfolio, students showcase their digital identity and skills, as well as artifacts that demonstrate individual student learning outcomes in one place (Alanson & Robles, 2016).



### ***Educators***

By using the ePortfolio as a learning environment, educators provide students a place to express themselves and experience creativity in activity and development that is determined by the educator. Students have shared “that building an ePortfolio helped [them] to make connections between ideas and apply theories or concepts to practical problems or in new situations” (Eynon et al., 2014, p. 103). This affords educators and counselors the opportunity to evaluate the overall success and future of each student, as the ePortfolio “provides evidence of authentic student benefit” (Alanson & Robles, 2016, p. 393).

### ***Counselors***

School counselors have various advising techniques that they use when working with students. When considering high-impact practices, ePortfolio, and deeper learning, it is important to examine flipped advising. The “flipped advising process has students complete assigned exercises prior to the advising session” (Steele, 2016, para. 3) and a career and college readiness ePortfolio-supported curriculum provides the tool that serves as a repository for program assessment through the tracking of student learning outcomes as identified through the students’ performance in their ePortfolio.

### ***Programs***

By providing students with new skills, the Navajo and Hopi tribes have successfully bridged the gap between high school and college by improving their education services through programs that were offered. These programs included:

a drop-out prevention program, a career and personal development program, and a computer literacy program; training for 25 high school teachers in the areas of high school retention, teaching strategies, and cultural sensitivity issues in working with Native American students (Gilbert, 1998, p. 3).

By providing the students with new skills that they needed, the programs improved their overall student success. The Alaska Native cultures and communities face disparities in secondary and post-secondary education. There are resources that the Alaska school systems and distant education need that would improve the overall success of high school students coming from the village setting into a university setting.

Current processes within high schools “may not effectively ensure equity in academic access for these students” (Callahan et al., 2010, p. 108); a glaring deficiency in the ways that high schools adapt change for their non-traditional students. When examining

cultural relevance and the importance of providing more resources to those community members that are underserved by the education they deserve based on their culture and their location, the ePortfolio-supported curriculum, and results following the deployment of it, are relevant for all schools facing these types of challenges in their community and state.

The rates at which students are prepared for college based on the ACT or SAT are still regarded when considering college preparation. Seven community colleges and public universities participated in a bridge program that targeted a variety of participants based on sex, grade, ESL, and income standing (Kallison & Stader, 2012) and the result of the program indicated that “college ready” is more than just test scores. Bridge programs can improve standards through the development of relationships that are built through intervention processes. These interventions include program reflection practices that aid in seeing the changes that need to be made and identify how that can be done with other educators through self-assessment to meet student academic needs (Smith et al., 2016), all of which can be built within the ePortfolio-supported curriculum.

Some academic institutions have implemented programs that “serve as a link between high school and college, and are situated to prepare students for employment” (Stipanovic et al., 2017, p. 209), and these programs have their own tools that are being used to address academic challenges. Connecting the ePortfolio tool with career pathways through college and into the world of employment will bridge the concepts learned in high school to the values expected in college. This tool and curriculum provide assessment of student learning and evaluation of program by highlighting the potential challenges that students may face when planning their career and college paths. Implementation would help the teacher/advisor work with each student to discuss how to improve and understand their goals, as well as understand the importance of self-reflection and assessment.

The primary research was used to inform the design of the study and conducting stakeholder interviews for informed decision making. The targeted stakeholders were:

- Alaska Middle College School (AMCS)
- First Year Advising (FYA)
- TRIO Upward Bound (UB)
- Native Student Services (NSS)

This pilot study aimed to discover how the ePortfolio-supported curriculum could be used to improve various programs performance within the University of Alaska Anchorage (UAA) using their ePortfolio tool.

## Pilot Study

### Curriculum Plan

A Career and College Readiness Course Development Plan (Appendix A) was drafted to outline the curriculum with desired results, evidence, and a learning plan targeted to increase students' knowledge of educational and vocational career opportunities after high school. A logic model (Appendix B) was developed in conjunction with the curriculum plan to show how the input and output activities were aligned to involve each input participant with the output activities. The alignment within the logic model shows how the evaluative criteria for this logic model is demonstrated by educators, administrators, and students working cohesively to target outcomes that foster a strong course development that represents clear, structured expectations for behavior and academics, a supportive learning environment, and both a positive and accountable learning process. The logic model narrative explores the following:

- Students having clear and accountable expectations for behavior and performance that is regularly supported, monitored, and highlighted.
- Schools frequently reviewing and improving upon adopted best practices for assessment and data analysis; provides school administrators and leadership with targeted, frequent, and accountable professional development.
- Schools reviewing and developing strategies to close achievement gaps within specific subgroups based on the data; schools measuring growth in specific students and subgroups across time to determine success and develop action plans for further growth.
- Educators given significant time and individual support to improve their practice, analyze data, and make changes in their instruction, positively impacting achievement.
- Excellent teaching, informed by student achievement, and given regular, data-driven feedback.
- Students demonstrating proficiency on college and career ready assessments and demonstrating career and college achievement.

The curriculum plan was developed around the use of an ePortfolio tool for all planned course elements. The ePortfolio is used for students to demonstrate their gaps in understanding their transition from secondary to post-secondary school settings and what exactly that means for them based on outlined goals and barriers. Students identify any barriers as they complete the ePortfolio. As

it is completed, the teacher/advisor will evaluate their ePortfolio, help them navigate their barriers, and create an action plan to address the problem.

An ePortfolio template (Appendix C) was developed with targets for each student—secondary or post-secondary—focused on career preparedness, college readiness, and self-identification as it relates to job and college aspirations. The template outlines the following topics for students to complete:

- Goals
- Assessment
- Career exploration
- College exploration
- Admissions
- Financial aid
- Advising and registration
- Transitioning to college
- Transitioning to career

These topics—from the curriculum plan—introduce participants to the framework of college preparedness through the guidance of the ePortfolio by the teacher/advisor. By offering instruction that is more accessible, educators can lead students to feel empowered and thus exhibit ambition with the completion of each learning module to demonstrate that they can be successful learners not just in high school, but in their endeavors to transition into college.

The participating educators will have the opportunity to meet the unique needs of individuals to target the learning goals for any demographic of students. In this way, educators are given the opportunity to develop diverse ePortfolio models that allow teachers to engage with the students in ways that relate to best practice in initiating change and improvements (Nguyen & Ikeda, 2015) to the underlying factors of student success in high school and how that translates into the university setting by better preparing their students for college transition.

### Program Engagement

The curriculum plan was created as a guide until interviews with stakeholders were conducted. Working with stakeholders individually fostered brainstorming an ePortfolio that focused on the curriculum components that each stakeholder identified as their need, which demonstrates the various ways that ePortfolio can be used as a model for career and college readiness and directly connects how ePortfolio can be used to improve student retention efforts based on individual program needs. What follows is a description of the programs and the outcome of the interviews with the stakeholders.

### ***Alaska Middle College School (AMCS)***

In partnership with the school district, UAA collaboration affords high school students the opportunity to take university classes at no cost. According to the UAA (2018b), AMCS students can accelerate their high school requirements by taking qualifying classes that convert to meeting high school graduation requirements. Students “taking regular university courses [are] building a permanent academic record at the university level” (UAA, 2018b, p. 1).

AMCS students work with an AMCS advisor at UAA to learn the university processes, including career and college exploration, degree tracking, registering for classes, and scholarships. AMCS created an ePortfolio template and reviewed the drafted Career and College Readiness Course Development Plan to determine areas of the curriculum that might benefit their program at this time. College planning and career exploration elements were integrated into the program’s ePortfolio template for students to consider while developing their career and college readiness plan.

AMCS continues to communicate interest in revamping their ePortfolio template for future AMCS cohorts as they navigate the initial implementation of two sections. Currently, the program is evaluating the best course of action to engage students in the ePortfolio space and identify the time constraints for both students and advisors using the ePortfolio as an advising tool.

### ***First Year Advising (FYA)***

In 2018, UAA announced the creation of the first-year advisor team to advance college student success efforts through a new advising framework that focuses on adjustment advising and academic advising (Hamlin, 2018). These advising measures “make sure [first-year university] students understand how the UAA system works and what essential ‘to-do’s’ they need to check off their list, things like knowing how to access online technologies, and getting their parking pass and WolfCard” (Hamlin, 2018, para. 17) and “bring[s] first-year students up to speed on foundational courses like writing, math and communication” (para. 19).

Discussion with an employee at FYA indicated that the entire curriculum would be unmanageable due to the amount of work within some of the pages, but further discussion led to the identification of elements that would work for purposes of advising first-year college students—such as the Goals and College Exploration sections. Discussion included what the first-year college student experience is currently like and identifying how that can be translated into the ePortfolio to support student success efforts and allow the advisor to see student progress throughout their first year.

### ***TRIO Upward Bound***

UAA’s TRIO Upward Bound (UB) program,

Prepares [high school] students to successfully complete high school and enroll in postsecondary education by providing academic advising, career exploration, tutoring, college planning, college tours, cultural enrichment experiences, leadership opportunities and more. . . . Graduating seniors who intend to enroll in college immediately after high school will have the opportunity to complete a summer bridge program meant to facilitate the transition to college. (UAA, 2021, p. 1)

Like the AMCS program, the UB program could successfully implement the ePortfolio-supported curriculum to help facilitate the transition to college, which is what it has been created for. This would connect Anchorage’s Bartlett High School and West High School student participants with materials to enhance the bridge process from secondary to post-secondary school.

Initial interviews indicated that the curriculum is not feasible for the UB program, but the interview led to deeper discussions about the ePortfolio tool and how it might be deployed within their program for evaluation purposes. The program has since adopted the ePortfolio tool as a key element of their programming to demonstrate student learning outcomes that are being met within their program.

### ***Native Student Services’ Native Early Transition (NET) Program***

UAA’s Native Early Transition (NET) program helps prepare college-bound students for the university setting by introducing the various technologies around the UAA campus (including ePortfolio), exploration of the financial aid and scholarship processes, campus tours, and verification of class schedules to ensure that students are enrolled in courses that pertain to their degree requirements (UAA, 2018a). Working with the Director of Native Student Services (NSS), the ePortfolio-supported curriculum was adopted with modifications to create one location for this group of college students to complete their work as they navigate through the program with support from the NSS staff. Additionally, the ePortfolio affords the staff and advisor to continue to work with the students based on their ePortfolio development as they navigate the university system throughout their first year.

The result was a program-level ePortfolio that each NET student would develop over their two-year period in the program. It included career and college preparation, a detailed reflection process for each week for their University Studies course that was their initial steppingstone into the university setting, and GER sections for students to build

out the courses that they take each semester. Ultimately, because of the COVID-19 pandemic and the disruption it caused many students and courses during that first year, technology barriers impacted the use of the ePortfolio tool.

The Director has since documented the impact and needs of first-year Alaska Native students and is planning to update the curriculum and ePortfolio template to reintroduce the tool in the program for future cohorts.

### **Recommendations for Practice**

Efforts to engage stakeholders and have the ePortfolio launched in program areas are continuing, as this project is a continually evolving practice. As stakeholders participate in conversation and development of the ePortfolio-supported curriculum, the ePortfolio will be a curriculum tool that meets each stakeholders' needs.

Future engagement with different departments around the university will continue to grow this project effort not just within the UAA system but within Alaska communities. This project affords deeper conversation between our secondary and post-secondary school administrators who want to see our students succeed. However, before the school districts or others can be brought into the conversation, there needs to be a demonstration that the curriculum is successful.

### **Data Sources**

To see how this project might grow into large-scale state-wide implementation, there will need to be data-collection efforts for future users. These data efforts would best be done through student and stakeholder experience surveys and evaluation of each individual ePortfolio. Surveys could be launched as pre-, mid-, and post-evaluations of the experience, or they could be launched after the completion of each module within each participant's ePortfolio, wherein links to the module-related surveys could be embedded in the template instructions. The largest piece of evidence for teachers or advisors to gain insight to the possible success of ePortfolio practices to support student success is the result of what the students build in their ePortfolio. The engagement with the ePortfolio as a powerful learning environment, and a place for students to explore new technology and evaluate their work over time (Acker & Halasek, 2008), indicates that students engaging in self-assessment and intentional learning is a positive analysis of ePortfolio practices.

### **Evaluation**

Evaluation would take place in a controlled setting—the created ePortfolios. The evaluators would be the students and the teachers/advisors. In this manner, the students are observing their own self-

assessment through the creation of their ePortfolio, and the teachers/advisors are observing learning outcomes and utilizing a rubric to evaluate the measures that are being assessed, how the students are meeting those measures within the tool, and then identifying the gap between the two to improve the practice.

The teachers/advisors should review each student ePortfolio to assess whether the tool impacted students meeting or exceeding anticipated learning outcomes and benchmarks. The teacher/advisor and student experience of the ePortfolio tool in each program setting will be used to determine the feasibility of adopting the platform to improve academic success in the secondary and post-secondary school settings. The assessment of each ePortfolio, in conjunction with a survey component, will determine how the use of the ePortfolio-supported curriculum can improve student transitions into the university setting.

As part of the evaluation of each student ePortfolio, teachers/advisors should consider the American Association of Colleges and Universities' (AAC&U) Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics (2009). The VALUE initiative redefines assessment through a system that evaluates student performance through rubrics that “articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment” (AAC&U, 2022, para. 2), which affords teachers/advisors the opportunity to evaluate demonstrated student performance that is connected to the learning outcomes identified in the rubric. The benefit of using the VALUE rubrics is that each rubric was created to assess student strengths and weaknesses in learning through a wider range of outcomes that educators can choose from. Each rubric can be adapted and used in the best way that fits the course outcomes, which makes the VALUE rubrics the most useful evaluation tool to assess student achievement and growth.

### **Resources**

With the adoption of a technology-based curriculum, a breakdown and explanation of the resources needed to execute a successful ePortfolio-supported curriculum follows.

#### **Computers**

Schools that participate in this research should have computers available to all students that will be developing ePortfolios. All computers will need to be up to date with Chrome or Firefox browsers and operating systems, and stable internet connection. If students are not able to go to campus for computer uses, there should be an alternative available to ensure equitable access to the learning environment.

### ***ePortfolio Software***

UAA is contracted with Digication for their ePortfolio platform. Communication with Digication leadership will be necessary to determine if there will be additional costs to make the platform available to the participating schools outside of UAA when expanding from the university to the various school district communities, including rural areas, which may produce a need for funding.

### ***Limitations***

The limitations vary based on participants. Alaska Native students from a village community may present limitations “such as . . . lack of English language proficiency” (Callahan et al., 2010, p. 89) and lack of technology exposure, which increases the difficulty in understanding the expectations of ePortfolio development. Continued use of the program may improve comprehension and proficiency through the use and perception of the ePortfolio over time. Addressing such limitations through “further research [that] should consider expanding the scope of impact within additional courses to assess the reliability of finding beyond a small sampling of the student population” (Alanson & Robles, 2016, p. 395) will determine if there is benefit to the research and what those benefits are, and how the ePortfolio platform is a supporting structure for college transition.

### ***Conclusion***

We are a society that wants to see the next generations succeed and addressing the deficiencies within the secondary and post-secondary schools through college and career readiness will aid in that success. Student retention data would likely see improvement, and that is something that benefits not only the university, but the community overall because it is through the university setting that we prepare students for the workforce they are passionate about. There needs to be new and innovative college readiness standards executed to help bridge the gap between standardized testing and college expectations, and an ePortfolio-supported curriculum is the first step in that direction.

### ***References***

Acker, S., & Halasek, K. (2008). Preparing high school students for college-level writing: Using ePortfolio to support a successful transition. *Journal of General Education*, 57(1), 1-14. <https://dx.doi.org/10.2307/27798087>

Alanson, E. R., & Robles, R. A. (2016). Using electronic portfolios to explore essential student learning outcomes in a professional development

course. *Asia-Pacific Journal of Cooperative Education*, 17(4), 387-397.

Alaska Native Knowledge Network. (1998). *Alaska standards for culturally-responsive schools*. Author. <http://ankn.uaf.edu/Publications/culturalstandards.pdf>

Association of American Colleges and Universities (AAC&U). (2009). *Valid Assessment of Learning in Undergraduate Education (VALUE)*. Author. <https://www.aacu.org/initiatives/value>

Association of American Colleges and Universities (AAC&U). (2022). *Initiative: Valid Assessment of Learning in Undergraduate Education (VALUE)*. Author. <https://www.aacu.org/initiatives/value>

Berry, J. E., & Marx, G. (2010). Adapting to the pedagogy of technology in educational administration. *Scholar-Practitioner Quarterly*, 4(3), 245-255.

Burnham, J. J., & Jackson, C. M. (2000). School counselor roles: Discrepancies between actual practice and existing models. *Professional School Counseling*, 4(1), 41-49.

Callahan, R., Wilkinson, L., & Muller, C. (2010). Academic achievement and course taking among language minority youth in U.S. schools: Effects of ESL placement. *Educational Evaluation and Policy Analysis*, 32(1), 84-117. <https://doi.org/10.3102/0162373709359805>

Camera, L. (2016, April 27). High school seniors aren't college-ready. *US News*. <https://www.usnews.com/news/articles/2016-04-27/high-school-seniors-arent-college-ready-naep-data-show>

ANSEP. (2017, October 3). *College readiness*. <https://www.ansep.net/college-readiness>

Curry, J. R., Belser, C. T., & Binns, I. C. (2013). Integrating postsecondary college and career options in the middle level curriculum. *Middle School Journal*, 44(3), 26-32. <https://doi.org/10.1080/00940771.2013.11461852>

Donaldson, S. (2015, February 27). Teachers of the future: Using new skills to prepare students. *Cognia*. <https://source.cognia.org/issue-article/teachers-future-using-new-skills-prepare-students/>

Eynon, B., Gambino, L. M., & Török, J. (2014). What difference can ePortfolio make? A field report from the connect to learning project. *International Journal of ePortfolio*, 4(1), 95-114. <https://www.theijep.com/pdf/IJEP127.pdf>

Gilbert, W. S. (1998, April 20-23). *Bridging the gap between high school and college: A successful program that promotes academic success for Hopi and Navajo students* [Paper presentation]. Retention in Education for Today's American Indian Nations, Tucson, AZ, United States. <http://files.eric.ed.gov/fulltext/ED398039.pdf>

Grothaus, T., McAuliffe, G., & Craigen, L. (2012). Infusing cultural competence and advocacy into strength-based counseling. *Journal of Humanistic*

- Counseling*, 51(1), 51-65.  
<https://doi.org/10.1002/j.2161-1939.2012.00005.x>
- Hamlin, J. (2018, October 23). New team of first-year advisors lays groundwork for student success. *University of Alaska Anchorage*.  
<https://www.uaa.alaska.edu/news/archive/2018/10/new-team-first-year-advisors-lays-groundwork-student-success/>
- Hoffman, N., Vargas, J., Venezia, A., & Miller, M. S. (2007). *Minding the gap: Why integrating high school with college makes sense and how to do it*. Harvard Education Press.
- ISTE. (2022). *ISTE standards: Students*.  
<https://www.iste.org/standards/for-students>
- Kallison, J. M., Jr., & Stader, D. L. (2012). Effectiveness of summer bridge programs in enhancing college readiness. *Community College Journal of Research and Practice*, 36(5), 340-357.  
<https://doi.org/10.1080/10668920802708595>
- Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. American Association of Colleges and Universities.  
<https://www.aacu.org/publication/high-impact-educational-practices-what-they-are-who-has-access-to-them-and-why-they-matter>
- Kuh, G. D. (2010). *Student success in college: Creating conditions that matter*. Jossey-Bass.
- Nguyen, L. T., & Ikeda, M. (2015). The effects of ePortfolio-based learning model on student self-regulated learning. *Active Learning in Higher Education*, 16(3), 197-209.  
<https://doi.org/10.1177/1469787415589532>
- Pimentel, S. (2013). *College and career readiness standards for adult education*. MPR Associates.  
<https://lincs.ed.gov/publications/pdf/CCRStandardsAdultEd.pdf>
- Reyhner, J. (1991). *Plans for dropout prevention and special school support services for American Indian and Alaska Native students* (ED343762). Indian Nations at Risk Task Force.  
<https://files.eric.ed.gov/fulltext/ED343762.pdf>
- Royster, P., Gross, J., & Hochbein, C. (2015). Timing is everything-getting students back on track to college readiness in high school. *High School Journal*, 98(3), 208-225. <http://dx.doi.org/10.1353/hsj.2015.0005>
- Smith, K. G., Dombek, J. L., Foorman, B. R., Hook, K. S., Lee, L., Cote, A., Sanabria, I., & Stafford, T. (2016). *Self-study guide for implementing high school academic interventions*. Institute of Education Sciences.  
[https://ies.ed.gov/ncee/edlabs/regions/southeast/pdf/REL\\_2016218.pdf](https://ies.ed.gov/ncee/edlabs/regions/southeast/pdf/REL_2016218.pdf)
- Steele, G. E. (2016). *Creating a flipped advising approach*. NACADA Clearinghouse of Academic Advising Resources.  
<https://www.nacada.ksu.edu/Resources/Clearinghouse/View-Articles/Creating-a-Flipped-Advising-Approach.aspx>
- Stipanovic, N., Stringfield, S., & Witherell, E. (2017). The influence of a career pathways model and career counseling on students' career and academic self-efficacy. *Peabody Journal of Education*, 92(2), 209-221. <https://doi.org/10.1080/0161956X.2017.1302217>
- Tinto, V. (2006). Research and practice of student retention: What next? *Journal of College Student Retention: Research, Theory and Practice*, 8(1), 1-19.  
<https://doi.org/10.2190/c0c4-ef9-eg7w-pwp4>
- University of Alaska Anchorage (UAA). (2018a). *2018 native early transition program (NET)*. Author.  
<https://www.uaa.alaska.edu/news/archive/2018/05/documents/2018-Native-Early-Transition-NET-flier.pdf>
- University of Alaska Anchorage (UAA). (2018b). *Middle College FAQs*. Author.  
<https://www.uaa.alaska.edu/about/high-school-students/documents/UAA-ASD-Alaska-Middle-College-School-FAQs.pdf>
- University of Alaska Anchorage (UAA). (2021). *Upward bound*.  
<https://www.uaa.alaska.edu/students/trio-programs/upward-bound/>
- Watson, C. E., Kuh, G. D., Rhodes, T., Light, T. P., & Chen, H. L. (2016). Editorial: ePortfolios—The eleventh high impact practice. *International Journal of ePortfolio*, 6(2), 65-69.  
<http://www.theijep.com/pdf/IJEP254.pdf>
- Wiggins, J., & McTighe, G. (2011). *The understanding by design guide to creating high-quality units*. ASCD.

---

SHAMAI THACKER is the ePortfolio Strategist at the University of Alaska Anchorage. She received her BS in Technology and MEd in Teaching and Learning with a focus on Educational Leadership from the University of Alaska Anchorage. Shamai is of Tsimshian/Inupiaq/Scottish descent and is wrapping up a second undergraduate degree in Alaska Native Language and Studies with the University of Alaska Southeast to supplement her prior education and support her future goals. Shamai has experience teaching ePortfolio pedagogy and practice to faculty and students around campus and her current research interests include using technology tools for career and college preparation, Indigenous education design, and educational trauma.

#### Acknowledgements

*Dena'inaq elnen'aq' gheshtnu ch'q'u yeshdu.*  
 I live and work on the land of the Dena'ina.  
 Translated by J. Isaak and S. Shaginoff-Stuart

I thank the Dena'ina people for their stewardship and the opportunity to research and study on these ancestral lands that I call home.

## Appendix A Career and College Readiness Course Development Plan

### **Course Logistics**

#### **Course Title**

College and Career Readiness: Preparing for the Future

#### **Course Description/Purpose**

With a focus on equipping them with the necessary tools to successfully transition to postsecondary education, this course guides students through the admissions and enrollment process. Students then learn the art of resume and cover letter writing, interviewing practices, negotiating salaries, networking, navigating a career fair, utilizing social media (LinkedIn, Indeed, Craigslist, etc.), and creating a personal brand and digital identity.

#### **Prerequisite Knowledge (or Courses)**

Students should have basic computer competence using a Mac or Windows system, basic skills in word processing and graphics, a general theoretical understanding of how computers work, file transfer, information retrieval, scanning, and web publishing.

#### **Course Structure and Format**

This course will be a semester long, face-to-face course that utilizes digital technologies to complete required course materials organized by weekly topic session. Each topic session will consist of activities, resources, and objectives related to upcoming lessons. Modules will be built within an ePortfolio and students will work on one section at a time as they progress through the assigned content.

#### **Understanding by Design Framework**

Adapted from the “UbD Template 2.0” in “The Understanding by Design Guide to Creating High-Quality Units,” by J. Wiggins and G. McTighe, 2011, ASCD.

Stage 1 Desired Results		
ESTABLISHED STANDARDS	<i>Transfer</i>	
<b>Alaska Standards for Culturally Responsive Schools (AKSCRS)<sup>1</sup></b> <i>Schools</i> B. Culturally-knowledgeable students are able to build on their knowledge and skills of the cultural community as a foundation from which to achieve personal and academic success throughout life. C. Culturally-knowledgeable students are able to actively participate in various cultural environments. D. Culturally-knowledgeable students are able to engage	<i>Students will be able to independently use their learning to...</i> Students will be prepared to succeed in college through developing the knowledge, skills, and behaviors that allow them to graduate on time and join the workforce of their choosing.	
	<i>Meaning</i>	
	<b>ENDURING UNDERSTANDINGS</b> <i>Students will understand...</i> <b>College Readiness</b> <ul style="list-style-type: none"> <li>It is important to set and monitor personal goals. (Q1, Q4)</li> <li>Present decisions have an impact on the future.</li> </ul>	<b>ESSENTIAL QUESTIONS</b> <i>Students will keep considering...</i> Q1. How does technology enhance expression and communication?

<sup>1</sup> From “Alaska Standards for Culturally-Responsive Schools,” by Alaska Native Knowledge Network, 1998 (<http://ankn.uaaf.edu/Publications/culturalstandards.pdf>)

<p>effectively in learning activities that are based on traditional ways of knowing and learning.</p> <p>E. Culturally-knowledgeable students demonstrate an awareness and appreciation of the relationships and processes of interaction of all elements in the world around them.</p>	<p>(Q3, Q7)</p> <ul style="list-style-type: none"> <li>Self-discipline has an impact on the future. (Q3, Q4-5, Q7-8)</li> <li>The structure of different universities. (Q1-4, Q6)</li> <li>Academic programs available and how they lead to career pathways. (Q1-4, Q6)</li> <li>Navigating admission requirements and processes. (Q2, Q6, Q9)</li> <li>High school achievement and involvement affects postsecondary school options. (Q2-3, Q7-8)</li> <li>The various financial resources available to help pay for college. (Q2, Q6, Q9)</li> <li>The costs of attendance and the level of financial need. (Q2-9)</li> <li>The importance of academic and transition advising. (Q7-8)</li> <li>The requirements of GERs and electives. (Q2, Q6, Q9)</li> <li>Communication, critical thinking, and problem solving prepare for obtaining, maintaining, advancing, and changing employment. (Q1-9)</li> <li>View of oneself and abilities and how it determines overall experience of life and college success. (Q1, Q4-5, Q7-9)</li> <li>The college environments have their own unique culture and expectations. (Q2, Q6, Q9)</li> <li>The use of an ePortfolio for showcase opportunities in applications. (Q1-9)</li> </ul> <p><b>Career Readiness</b></p> <ul style="list-style-type: none"> <li>The variety of careers for which college is required. (Q2-5, Q9)</li> <li>The careers and educational options as they relate to personal interest, values, and community need. (Q2-5, Q8)</li> <li>Technology and other resources allow students to research potential career choices. (Q1, Q4)</li> <li>Job and career opportunities that vary within different communities. (Q1, Q4, Q7-9)</li> </ul>	<p>Q2. What does it mean to be college ready?</p> <p>Q3. What impact do decisions have on the future?</p> <p>Q4. Why do we set goals?</p> <p>Q5. Why do we start career planning now?</p> <p>Q6. What is the college environment?</p> <p>Q7. How do I employ effective learning and self-management strategies?</p> <p>Q8. How do I succeed?</p> <p>Q9. Why are digital tools important?</p>
<p><b>ISTE Standards (ISTE)<sup>2</sup></b> <i>Students</i></p> <p>1. <b>Empowered Learner.</b> Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences. Students:</p> <ul style="list-style-type: none"> <li>a. Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</li> <li>c. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</li> </ul> <p>2. <b>Digital Citizen.</b> Students recognize the rights, responsibilities, and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. Students:</p> <ul style="list-style-type: none"> <li>d. Manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.</li> </ul> <p>3. <b>Knowledge Constructor.</b> Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experience for themselves and others. Students:</p> <ul style="list-style-type: none"> <li>c. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.</li> </ul>		

<sup>2</sup> From “*ISTE Standards: Students*,” by ISTE, 2022 (<https://www.iste.org/standards/for-students>).



<p>d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.</p> <p>4. <b>Innovative Designer.</b> Students use a variety of technologies within a design process to identify and solve problems by creating new, useful, or imaginative solutions. Students:</p> <p>a. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.</p> <p>b. Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.</p> <p>6. <b>Creative Communicator.</b> Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats, and digital media appropriate to their goals. Students:</p> <p>c. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations.</p> <p>d. Publish or present content that customizes the message and medium for their intended audiences.</p>	<ul style="list-style-type: none"> <li>▪ The complexities in the job search process and navigating barriers within the process. (Q1, Q4, Q7-9)</li> <li>▪ Unique branding to convey uniqueness. (Q4-5, Q7-9)</li> <li>▪ Resume and cover letter writing. (Q4-5, Q7-9)</li> <li>▪ Attitude of professionalism and interactions with future/potential employers. (Q4-5, Q7-9)</li> <li>▪ Job fairs, career tests, resume revision, and internships at various career centers in the university and state. (Q2, Q6, Q9)</li> <li>▪ Transition from the university setting to the working world. (Q1-9)</li> <li>▪ Jobs and careers reflect both individual and societal needs and community variances. (Q1, Q4-5, Q7-9)</li> <li>▪ The resources available for planning an occupation. (Q2, Q6, Q9)</li> <li>▪ Goals are clear, salient, and mapped/planned. (Q1, Q4)</li> </ul>	
<p><b>College and Career Readiness Standards for Adult Education (CCRS AE)<sup>3</sup></b></p> <p><i>Reading</i></p> <p>7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.</p> <p>C. 1. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.</p> <p>2. Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.</p>	<p style="text-align: center;"><b><i>Acquisition</i></b></p> <p><i>Upon completion of this course, you will...</i></p> <ul style="list-style-type: none"> <li>▪ Develop a comprehensive financial plan including a budget and long-term financial goals. [AKSCRS:Schools:b; ISTE:Student:1a,2d,3cd;CCRS AE:Reading:7c2, 7d1]</li> <li>▪ Demonstrate how academic and technical skills in various jobs are transferable and have commonalities, and how to document them appropriately. [AKSCRS:Schools:be; ISTE:Student:1ac,2d,3cd,4ab,6cd; CCRSAE:Reading:7c1-2,7d1; CCRSAE:Writing:6a; CCRSAE:Languauge:1]</li> <li>▪ Develop personal goals to ensure success in the college and career transition process. [AKSCRS:Schools:bcde; ISTE:Student:1ac,2d,3cd,4ab,6cd; CCRSAE:Reading:7c2,7d1; CCRSAE:Writing:6a; CCRSAE:Languauge:1]</li> <li>▪ Develop a four-year plan to explore and prepare for college and career opportunities. [AKSCRS:Schools:bcde; ISTE:Student:1ac,2d,3cd,4ab,6cd; CCRSAE:Reading:7c1-2,7d1; CCRSAE:Writing:6a; CCRSAE:Languauge:1]</li> <li>▪ Analyze and reflect on the role of lifelong learning development for personal and professional growth in academic and professional settings. [AKSCRS:Schools:bcde;</li> </ul>	

<sup>3</sup> From “College and Career Readiness Standards for Adult Education,” by S. Pimentel, 2013, MPR Associates (<https://lincs.ed.gov/publications/pdf/CCRStandardsAdultEd.pdf>).

<p>D. 1. Integrate information presented in different media formats (e.g., in charts, graphs, photographs, videos, or maps) as well as in words to develop a coherent understanding of a topic or issue.</p> <p><i>Writing</i></p> <p>6. Use technology, including the internet, to produce and publish writing and to interact and collaborate with others.</p> <p>A. With guidance and support, use a variety of digital tools to produce and publish writing, including in collaboration with peers.</p> <p><i>Language</i></p> <p>1. Demonstrate command of the conventions of standard English grammar when writing or speaking.</p>	<p>ISTE:<i>Student</i>:1ac,2d,3cd,4ab,6cd; CCRSAE:<i>Reading</i>:7c1-2,7d1; CCRSAE:<i>Writing</i>:6a; CCRSAE:<i>Languauge</i>:1]</p> <ul style="list-style-type: none"> <li>▪ Reflect on how interpersonal skills impact your career choice and overall success in the workplace. [AKSCRS:<i>Schools</i>:bcde; ISTE:<i>Student</i>:1ac,2d,3cd,4ab,6cd; CCRSAE:<i>Reading</i>:7c1-2,7d1; CCRSAE:<i>Writing</i>:6a; CCRSAE:<i>Languauge</i>:1]</li> <li>▪ Create branding and career artifacts. [AKSCRS:<i>Schools</i>:bcde; ISTE:<i>Student</i>:1ac,2d,3cd,4ab,6cd; CCRSAE:<i>Reading</i>:7c1-2,7d1; CCRSAE:<i>Writing</i>:6a; CCRSAE:<i>Languauge</i>:1]</li> <li>▪ Reflect on the reasons why they are important to achieve success in the workplace. [AKSCRS:<i>Schools</i>:bcde; ISTE:<i>Student</i>:1ac,2d,3cd,4ab,6cd; CCRSAE:<i>Reading</i>:7c1-2,7d1; CCRSAE:<i>Writing</i>:6a; CCRSAE:<i>Languauge</i>:1]</li> <li>▪ Demonstrate technology proficiency and create a digital identity using ePortfolio to showcase developed skills and academic achievement. [AKSCRS:<i>Schools</i>:bcde; ISTE:<i>Student</i>:1ac,2d,3cd,4ab,6cd; CCRSAE:<i>Reading</i>:7c1-2,7d1; CCRSAE:<i>Writing</i>:6a; CCRSAE:<i>Languauge</i>:1]</li> </ul>
---	---

Stage 2 – Evidence		
Map	Evaluative Criteria	Assessment Evidence
<ul style="list-style-type: none"> <li>▪ Goal setting</li> <li>▪ Budget planning</li> <li>▪ Career planning</li> <li>▪ College planning</li> <li>▪ Transition planning</li> <li>▪ Establishing branding</li> <li>▪ Decision making</li> <li>▪ Technology proficiency</li> </ul>	<ul style="list-style-type: none"> <li>▪ Developing college and career readiness skills.</li> <li>▪ Postsecondary education aspirations, goals, and expectations.</li> <li>▪ Postsecondary options and requirements for entry.</li> <li>▪ Financial aid and the application processes.</li> <li>▪ Career aspirations, goals, and expectations.</li> <li>▪ Plans linked to education and career goals.</li> <li>▪ Capacity to integrate and apply academic, technical, and employability knowledge.</li> <li>▪ Specific plans and timelines for transition to postsecondary education and employment.</li> <li>▪ Financial resources in place for transition to postsecondary education and employment.</li> <li>▪ Reflecting on interests and identify possible majors and careers that may be pursued.</li> </ul>	<p>PERFORMANCE TASK(S):</p> <p><i>Students will show that they really understand by evidence of...</i></p> <ul style="list-style-type: none"> <li>▪ Creating a list of goals for academic, career, and personal planning. (F)</li> <li>▪ Creating a budget plan and identifying financial resources. (F)</li> <li>▪ Creating a mock college course schedule. (F)</li> <li>▪ Creating a mock degree plan. (F)</li> <li>▪ Creating a life plan. (S)</li> <li>▪ Creating a resume with a personal brand. (F)</li> <li>▪ Participating in a mock interview. (F)</li> <li>▪ Creating a list of college programs that interest them. (F)</li> <li>▪ Creating a list of career paths that interest them. (F)</li> <li>▪ Identifying how chosen majors and careers relate to personal interests and values. (F)</li> <li>▪ Identifying how chosen majors and careers will help fulfill community need. (F)</li> <li>▪ Creating an ePortfolio. (F,S)</li> </ul>
	<p><b>Other Criteria:</b></p> <ul style="list-style-type: none"> <li>▪ Academic knowledge and skills.</li> <li>▪ Secondary diploma or degree.</li> <li>▪ Technical knowledge and skills.</li> <li>▪ Communication skills.</li> <li>▪ Decision making skills.</li> </ul>	<p><b>Other Evidence:</b></p> <p><i>Students will show they have achieved Stage 1 goals and objectives by...</i></p> <ul style="list-style-type: none"> <li>▪ Completing GPS LifePlan learning modules. (F, S)</li> <li>▪ Creating a calendar of study and work events, including due dates. (F)</li> <li>▪ Creating a list of university options and sharing preferred schools and admission requirements. (F)</li> </ul>

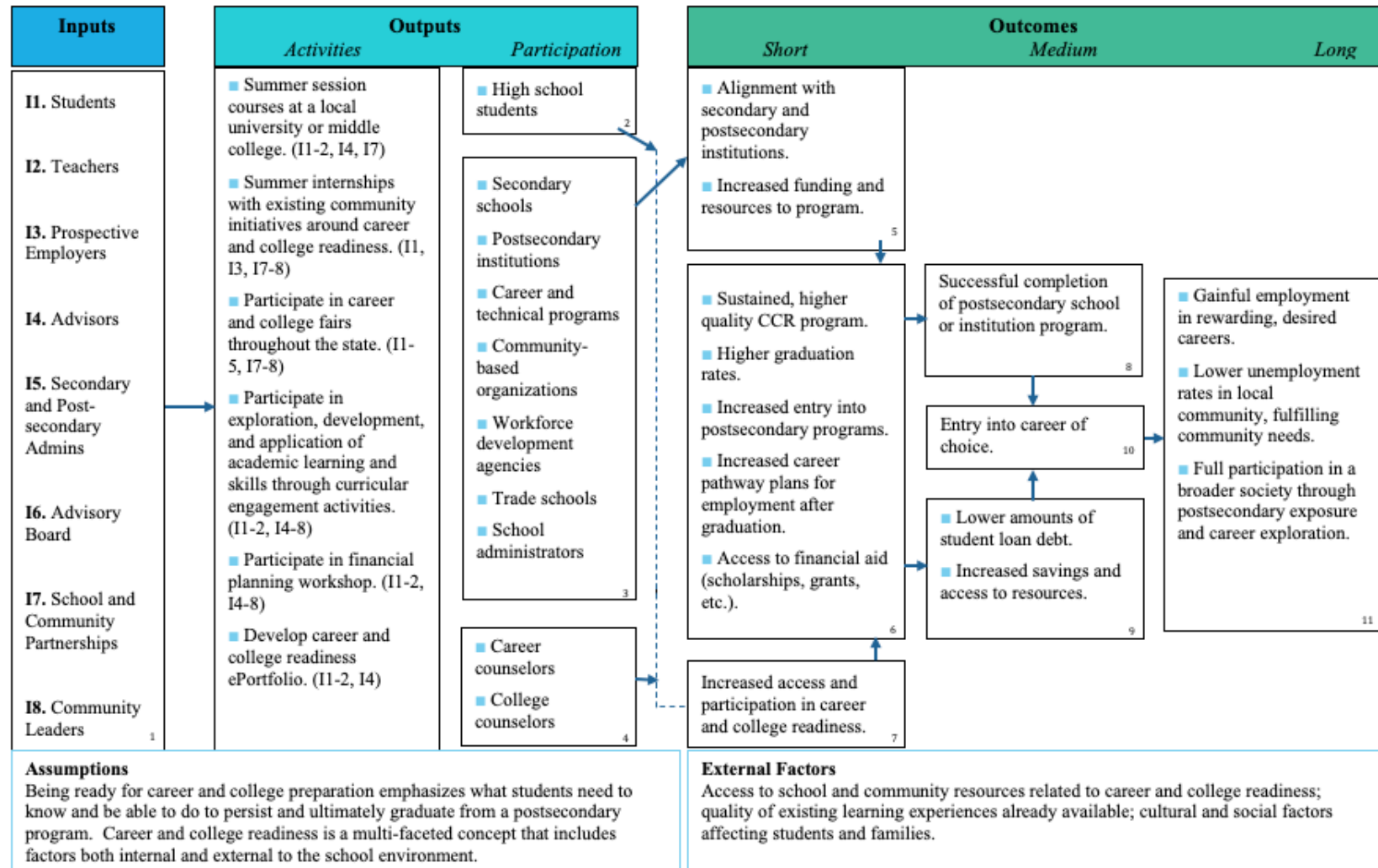
	<ul style="list-style-type: none"> <li>▪ Interpersonal skills.</li> <li>▪ Learning skills for postsecondary and career success.</li> <li>▪ Workplace culture.</li> <li>▪ Culture of postsecondary institutions.</li> <li>▪ How to find and keep a job.</li> <li>▪ Successful completion of four-year plans.</li> <li>▪ Developing a study and work routine.</li> <li>▪ Analyzing personal assessment through reflection.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Creating a list of career options and sharing education requirements. (F)</li> <li>▪ Meeting with postsecondary leaders. (F)</li> <li>▪ Meeting with a successful professional in their identified career choice. (F)</li> <li>▪ Creating a four-year college plan and identifying potential barriers. (F)</li> <li>▪ Graduating from high school. (F)</li> </ul>
--	---	--

Stage 3 – Learning Plan		
Map	Pre-Assessment	
	Progress Monitoring	
	Initial reflection will be done to establish their current expectations and goals with the course.	
<ul style="list-style-type: none"> <li>▪ Goal setting</li> <li>▪ Budget planning</li> <li>▪ Career planning</li> <li>▪ College planning</li> <li>▪ Transition planning</li> <li>▪ Establishing branding</li> <li>▪ Decision making</li> <li>▪ Technology proficiency</li> </ul>	<p>Learning Activities <i>Student success at transfer, meaning, and acquisition depends upon...</i></p> <p><b>Week 1</b></p> <p>An Introduction to ePortfolio</p> <ul style="list-style-type: none"> <li>▪ Starting an ePortfolio</li> </ul> <p>An Introduction to Careers</p> <ul style="list-style-type: none"> <li>▪ Investigating career planning</li> </ul> <p>An Introduction to College Majors</p> <ul style="list-style-type: none"> <li>▪ Developing an education plan that is career-path specific</li> </ul> <p>Goal Setting</p> <ul style="list-style-type: none"> <li>▪ Writing an autobiographical statement to articulate your version of your ideal future</li> </ul> <p>My GPS LifePlan: Personal Plan</p> <ul style="list-style-type: none"> <li>▪ Creating a 10-year plan</li> </ul> <p><b>Week 2</b></p> <p>Exploring an Undergraduate Course Catalog</p> <p>Skills for Career Development</p> <p>Exploring Various Employment Opportunities</p> <p><b>Week 3</b></p> <p>My GPS LifePlan: Education Plan</p> <ul style="list-style-type: none"> <li>▪ Examining the various colleges and postsecondary options available and determining which option is right for you</li> </ul>	<p><b>Monitoring students' progress toward acquisition, meaning, and transfer, during lesson events:</b></p> <p>Each student ePortfolio will be submitted weekly for review of completed assignments.</p> <p>Assessment of student ePortfolios will follow the attached rubric.</p> <p>Feedback will be provided on each completed assignment directly within the ePortfolio.</p> <p>Artifacts will be populated by students into their ePortfolios to support reflective responses.</p> <p>Rubrics will be provided for resume, cover letter, and</p>

	<p><b>Week 4</b></p> <p>My GPS LifePlan: Education Plan</p> <ul style="list-style-type: none"> <li>Researching postsecondary options, including majors and programs that match your career choices</li> </ul> <p><b>Week 5</b></p> <p>My GPS LifePlan: Education Plan</p> <ul style="list-style-type: none"> <li>Developing a college course schedule based on the education plan</li> <li>Preparing for the college application process and demonstrating the importance of making informed decisions through reflection</li> <li>Writing a student education plan listing general education and major course requirements for your identified institution and possible major</li> </ul> <p><b>Week 6</b></p> <p>Selecting a College or University Program of Study</p> <ul style="list-style-type: none"> <li>Researching program admissions requirements</li> <li>Developing a college comparison spreadsheet/outline to effectively summarize and prioritize data related to college choices to aid in choosing which option is best</li> <li>Creating a timeline for applying to colleges of your choice</li> <li>Completing college applications</li> </ul> <p><b>Week 7</b></p> <p>My GPS LifePlan: Finance Plan</p> <ul style="list-style-type: none"> <li>Researching non-federal financial aid opportunities related to each college that you plan to apply to</li> <li>Researching scholarships online and developing a list of scholarships to apply for, along with application deadlines</li> </ul> <p><b>Week 8</b></p> <p>My GPS LifePlan: Finance Plan</p> <ul style="list-style-type: none"> <li>Creating a financial budget plan for tuition, room and board, books, transportation, and food allowances</li> </ul> <p><b>Week 9</b></p> <p>Financial Aid &amp; Scholarships</p> <ul style="list-style-type: none"> <li>Completing scholarship applications</li> </ul> <p>Application Essays</p> <ul style="list-style-type: none"> <li>Writing a college essay using refining practices and writing skills to produce a quality personal essay to submit with your college applications</li> <li>Editing college and scholarship essays</li> </ul> <p><b>Week 10</b></p> <p>My GPS LifePlan: Career Plan</p>	<p>interview practices.</p> <p><b>Potential rough spots and student misunderstandings:</b></p> <ul style="list-style-type: none"> <li>Students with limited technology may face an initial learning curve with the platform.</li> <li>Students may misunderstand assignment directions.</li> <li>Students may not see the value in completing the assignments.</li> <li>Students may be ESL and need more instructions.</li> <li>Students may be first generation college students.</li> </ul> <p><b>Student feedback methods:</b></p> <ul style="list-style-type: none"> <li>Evaluation of individual ePortfolios with feedback responses directly within the ePortfolio as a conversation for students to respond to feedback.</li> <li>Feedback responses directly within each assignment rubric.</li> </ul>
--	--	---

	<ul style="list-style-type: none"> <li>▪ Developing a resume</li> <li>▪ Developing a list of references</li> <li>▪ Writing a sample cover letter that can be adapted for various jobs within your career field of interest</li> <li>▪ Participating in a mock interview experience</li> </ul>	
	<b>Week 11</b> <hr/> My GPS LifePlan: Career Plan <ul style="list-style-type: none"> <li>▪ Creating a brand to align across your resume, cover letter, and references documents</li> <li>▪ Drafting a professional letter that could easily be customized to request a letter of recommendation</li> <li>▪ Searching for specific job postings in your local area and generating a list of jobs that interest you and the requirements for each position</li> </ul>	
	<b>Week 12</b> <hr/> Planning Your Future <ul style="list-style-type: none"> <li>▪ Sharing ideal futures with classmates to help each other stay focused on goals</li> <li>▪ Identifying opportunities for which you are qualified within the institution</li> </ul> Career Paths <ul style="list-style-type: none"> <li>▪ Reassessing your chosen career path and reaffirming or changing your chosen path based on research for postsecondary planning</li> </ul> Selecting a Major <ul style="list-style-type: none"> <li>▪ Determining which major and which postsecondary education institution will best serve you and your goals</li> <li>▪ Exploring the websites of your chosen postsecondary institution and generating a list of campus resources</li> <li>▪ Creating sample course schedules for your respective colleges</li> </ul>	
	<b>Week 13</b> <hr/> My GPS LifePlan: Leadership Plan Awards & Achievements Community & Family Connections	
	<b>Week 14</b> <hr/> ePortfolio Wrap-up <ul style="list-style-type: none"> <li>▪ Finalizing your ePortfolio for career and college success</li> </ul>	
	<b>Week 15</b> <hr/> ePortfolio Final Submission	

Appendix B  
Career and College Readiness: Preparing for the Future  
Logic Model



## Appendix C ePortfolio-Supported Curriculum Template Outline



Items in the columns below represent the pages and subpages of the ePortfolio template created based on the career and college readiness curriculum. Items in bold indicate main pages, with italicized pages indicating content. Content is currently still being developed as discussions with stakeholders occur to guide the creation of learning materials.

### ***About Me***

#### ***Goals***

Annual Plan  
10-Year Plan

#### ***Assessment***

Self-Assessment  
Personality Assessment

#### ***Career Exploration***

Employment Background  
Interest Assessment  
Skills Assessment  
Workplace Values

#### ***College Exploration***

Education Background  
Education Assessment  
Program of Study

#### ***Admissions***

UAA Admission Qualifications  
First Year Student  
Transfer/Readmit

#### ***Admissions Cont.***

Graduate  
International  
Military/Veteran  
Application Essays  
Know Your Audience

### ***Financial Aid***

Paying for College  
Applying for FAFSA  
Finance Plan  
Scholarships

#### ***Advising & Registration***

#### ***Transitioning to College***

Education Plan  
Support Programs  
Books  
Clubs & Student Leadership  
Tutoring  
Success Skills

#### ***Transitioning to Career***

Career Plan  
Resume





## Enhancing Emotional Intelligence Through ePortfolio Self-Initiated Strategies

Sarah Kim  
*Genentech*

Marie Abate, Louis Slimak, and Mary Euler  
*West Virginia University School of Pharmacy*

The study objective was to determine if self-identified initiated strategies to enhance emotional intelligence (EI) through ePortfolio assignments resulted in EI changes from the first to third years in a professional pharmacy program. The Emotional Intelligence Appraisal (EIA) tool was used to measure proficiency in four EI skill areas (self-awareness, self-management, social awareness, relationship management). Each semester for their ePortfolio, students identified three personal improvement strategies to implement in an EI area. Outcome measures were EIA score changes, activity implementation/success, and the association between P3 GPA and EIA scores. Two class years were included ( $N = 136$ ). Most students (52%-60%) improved EIA scores from the P1 to P3 years, with increases significantly related to numbers of activities successfully implemented ( $p = 0.04$ ). For those with perceived successful implementation of all activities in at least one EI skill area, from 73% (relationship management) to 94% (self-awareness) improved their score in that area. With failure to implement any strategies for a specific area, from 73% (social awareness) to 87.5% (relationship management) had a score decrease in that area. No significant correlations were seen with scores and GPA. Self-identified and initiated activities through ePortfolio assignments provide a viable approach for improving students' EI skills.

Electronic portfolios (ePortfolios) have been used extensively in higher education to promote self-learning, including self-regulated learning, with self-assessment and reflection an important part of such learning (Lu, 2021). Using ongoing reflection to provide insight into actions and behaviors and to develop self-assessment skills is felt to improve education and promote lifelong learning (McMillan & Hearn, 2008; Plaza et al., 2007). Self-regulated learning includes the ability to help students manage their thinking, behaviors, and emotions to allow them to better manage learning (Segaran & Hasim, 2021). Delors (2013) discussed the four pillars of education—learning to know, learning to do, learning to live together, and learning to be—that were part of a prior report by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and emphasized the interconnectivity of these pillars. He indicated that the ability to live together, including tolerance and understanding, and the promotion of self-confidence and self-esteem are critical in society, and knowing oneself better is critical to lifelong success. ePortfolios were successfully used in an introductory organizational behavior course for business majors to emphasize those four pillars of education through a team portfolio assignment with reflections (Andrade, 2019). Students' reflections showed that the ePortfolio assignment helped them, among other skills, work together, understand others' needs and increase tolerance, and improve self-awareness. Since many of the attributes improved by an ePortfolio are components of emotional intelligence (EI), ePortfolios could be a useful tool for developing students' EI in a manner that facilitates, and documents self-directed strategies used.

The concept of EI appeared in the literature beginning in the 1990s. The characteristics have been modified over time with the importance of emotions and

one's ability to discern, monitor, and regulate them incorporated into different models. Examples of EI models include the mental ability model that focuses on emotions themselves (e.g., Mayer and Salovey model) and mixed models that encompass both emotions and characteristics such as motivation and relationship skills (e.g., Goleman model; Mayer et al., 2007). Although initially applied to the business field, there has been growing recognition of EI as important for healthcare professionals and in higher education (Goleman, 1998; Joseph et al., 2019; Zhoc et al., 2018). Emotional intelligence might help predict students' academic and/or professional success (Romanelli et al., 2006), although studies have shown inconsistent correlations between EI and academic performance measures such as grade point average (GPA; Chew et al., 2013; Cheshire et al., 2015; Jaeger 2003; Nath et al., 2015; Zhoc et al., 2018).

Overall, only about half of the top U.S. educational institutions were found to offer a course addressing EI in some capacity; institutions that offered EI training programs used a variety of approaches such as lectures, role-playing, discussions, and reflections (Joseph et al., 2019). In pharmacy education, accreditation standards require EI components such as self-awareness and relationship management (e.g., leadership skills, functioning in a team, interacting with patients, caregivers, and health care providers) to be addressed in pharmacy curricula (Accreditation Council for Pharmacy Education [ACPE], 2016). Most EI educational activities involving pharmacy students have focused on leadership development programs, with EI improvement demonstrated after program completion (Hall et al., 2015; Smith et al., 2018). Nelson et al. (2015) recommended incorporating EI-related competencies into pharmacy curricula to build students' self-awareness and professionalism, and Lust and Moore (2006) found students valued EI inclusion in a required

communications course and perceived its practical applications to pharmacy practice.

Since 2009, the West Virginia University (WVU) School of Pharmacy has used an online portfolio for students that includes assignments to help develop self-assessment skills (Kalata & Abate, 2013), with modification over time to primarily focus on several longitudinal program educational outcomes (Scartabello et al., 2018). An EI component was added to the portfolio in 2015 that includes assignments throughout the didactic curriculum designed for student EI self-analysis and self-initiated improvements. However, whether EI can be enhanced through portfolio-based assignments unrelated to specific EI courses or training programs had not been explored. We hypothesized that students would enhance their EI if they implemented personal improvement strategies, which could translate into better self-discipline and academic performance. The objectives of this study were to determine if self-identified and self-initiated strategies to enhance EI as part of an ePortfolio were successfully implemented, and whether or not these strategies were associated with subsequent EI score changes and correlated with student GPA.

## Methods

### Study Sample

The pharmacy curriculum at our institution is a full-time, 4-year professional program that students enter after completing at least two years of prerequisites. The pharmacy students are required to complete an ePortfolio as part of program graduation requirements. Two class cohorts (graduating classes of 2019 and 2020), who each completed the EI curriculum component of the portfolio and took the EIA twice (during their first professional [P1] and third professional [P3] years), were included as study subjects. The study protocol was granted exemption by WVU's Institutional Review Board.

### Portfolio Requirements

For several years, the WVU School of Pharmacy required all students to complete ePortfolio assignments each semester during all four professional years of the curriculum. The CORE® Higher Education Group's CompMS was used for the ePortfolio beginning in 2015 (CORE Higher Education Group, West Warwick, RI). Students attend an hour-long session to describe the ePortfolio goals and assignments for each semester. During this session, step-by-step instructions on how to access CompMS, upload course-related artifacts, and complete the needed assignments were reviewed. The recorded session and instructions were also posted for student review during the semester. The ePortfolio

program director was available to answer any questions and troubleshoot problems. Currently, the ePortfolio assignments each semester consist of (a) student entries of course assignments they feel relate to each of five School longitudinal program outcomes, accompanied by descriptions of how the assignments related to the specified outcomes of interest and reflections on how they can continue to improve; (b) a rubric self-assessment of one of the longitudinal outcomes each semester, in which students rate their level of competency for each criterion and provide justifications for ratings; and (c) an EI component.

The required EI component was added to the ePortfolio based on the EI model described in the book, *Emotional Intelligence 2.0* (Bradberry & Greaves, 2009). During the first P1 year, all new incoming students received a copy of the Bradberry and Greaves book that includes the Emotional Intelligence Appraisal (EIA) online test. The EIA is a self-administered test (28 items, ranked using a frequency response scale from 1 = *never* to 6 = *always done*) to measure the four main skill areas in the EI model: self-awareness, self-management, social awareness, and relationship management. Upon completion, a total EI score and four area composite scores are provided to students along with a personalized score report. Prior to a discussion of EI during an introductory pharmacy course, students were asked to read the chapters on self-awareness and self-management and completed the EIA for the first time. During this course session, self-awareness and self-management skills related to personal and professional growth were discussed, and students developed individual self-management goals and a plan for the P1 year. At the end of their spring (second) semester during a class session, P1 students reviewed their plans and provided examples of progress made toward goals. The remainder of EI assignments in the curriculum were part of the ePortfolio.

During each semester beginning the fall P1 year for the ePortfolio, students were asked to read the relevant *Emotional Intelligence 2.0* book chapters, review their personalized score report, and identify three improvement strategies for an EI area, addressed in the following order: (1) self-awareness (fall P1 year), (2) self-management (spring P1 year), (3) social awareness (fall second professional [P2] year), and (4) relationship management (spring P2 year). Beginning during the spring P1 semester and continuing into the P3 year, students were also asked to list the three improvement strategies entered in the ePortfolio the previous semester and to describe if they implemented the strategy, and—if so—how successful it was, including examples of what they did. If not implemented, they briefly explained why not. At the end of the spring P3 year, students reflected on their prior portfolio entries for all four EI skills and completed the EIA a second time.

All ePortfolio assignments, including those involving EI, are part of the requirements for a specific course in the curriculum each semester. While the ePortfolio content does not receive a letter grade in the respective courses, students must complete and submit all the required ePortfolio assignments to successfully “pass” that component. An instructor completes a checklist at the end of each semester to ensure all needed work was done, and students are required to revise any incomplete ePortfolio submissions until a passing grade is obtained. Students did not receive individualized feedback about the content of their EI submissions beyond ensuring that all required parts (as described previously) were completed. Examples of thoughtful (anonymous) submissions from prior students were posted for student review, as desired.

### Outcome Measures

All students’ EI portfolio entries and EIA scores for the four EI areas were compiled, using randomly assigned numbers as identifiers, as follows: (a) individual scores for each skill area, (b) section scores for the combined personal competence skills (self-awareness, self-management) and social competence skills (social awareness, relationship management), and (c) a total EIA score. Changes in EIA scores, total and for individual components, from the first EIA (P1 year) to the second EIA (P3 year) completion were determined and coded as NC (no score change), POS (score increased), or NEG (score decreased). In addition, we recorded each student’s professional program GPA at the start of the spring semester P3 year.

The three improvement strategies the students identified for each EI area were also reviewed by two of the investigators, including whether the strategy was subsequently implemented and felt to be successful. Students’ entries were coded as A, P, or N for each of the four EI areas, as follows: (a) A = the student stated they implemented all three strategies and indicated that each was largely successful (e.g., “very,” “completely,” “mostly”;

They could indicate further work was still needed on a strategy as long as they clearly stated their planned implementation was successful); (b) P = student stated they implemented one (PI 1) or two (PI 2) strategies with complete or partial/some success, or implemented all three (PI 3) strategies with at least partial/some success (but not all with complete success); and (c) N = student stated either none of the three strategies were implemented, or they implemented only one, two, or all with only minimal or no success. For example, if a student stated they implemented all three of their planned strategies but only one was successful (complete or partially), or they only implemented one strategy with complete or partial success, those entries would be coded as PI 1. If a student stated they implemented a strategy with no indication of success provided, that strategy was considered unsuccessful for coding purposes.

### Data Analysis

All statistical analyses were performed using JMP Pro Version 14.0 (SAS Institute, Inc.). Descriptive statistics included the percentages of score changes overall for the two EI sections (personal competence skills and social competence skills) and for the four EI areas. Implementation and success (e.g., A, P, PI 1, PI 2, PI 3, N) of the three student-identified improvement strategies and the score changes (POS, NC, NEG) for each EI area, score changes (increased or decreased) based upon first test results, and score changes based upon the implementation of improvement strategies, were analyzed using Fisher’s exact or chi-square tests as appropriate. Student *t* tests were used to compare initial mean scores for the EIA sections in students with increases or decreases of at least 5 points from the P1 to P3 years. Pairwise correlations analyzed the association between GPA and the overall EIA test scores, changes in the scores from the first to the second test, and changes between the two EI sections.

Table 1  
*Changes in Emotional Intelligence Appraisal (EIA) Scores<sup>a</sup>*

EIA component	Scores increased	Scores decreased	No change
Total EIA score <sup>b</sup>	78 (57.4%)	55 (40.4%)	3 (2.2%)
Personal competence section <sup>b</sup> (self-awareness and self-management)	82 (60.3%)	51 (37.5%)	3 (2.2%)
Self-awareness	75 (55.1%)	49 (36.0%)	12 (8.8%)
Self-management	71 (52.2%)	50 (36.8%)	15 (11.0%)
Social competence section <sup>b</sup> (social awareness and relationship management)	74 (54.4%)	60 (44.1%)	2 (1.5%)
Social awareness	60 (44.1%)	53 (39.0%)	22 (16.9%)
Relationship management	72 (52.9%)	48 (35.3%)	16 (11.8%)

Note. <sup>a</sup>P3 score minus P1 score.

<sup>b</sup>Chi-square for total and main section comparison (decreased/no change categories combined), *p* = 0.62.

Table 2  
*Examples of Student Portfolio Entries for Each Category of Implementation*

Implementation categorization	Examples of students' entries
N = No implementation	<p>"The first strategy I said I was going to work on was greeting people by name. The second strategy was listening to others not only verbally but by watching them for their visual cues. The third strategy was catching the mood of the room by assessing my situation every time I enter a new environment. I honestly have not worked on any of these. I completely forgot about them."</p> <p>"1. Make sure I have set aside some time in my day to think about solutions to problems and make decisions so that they aren't affected by emotions. I haven't really implemented this strategy, as I haven't found the time to do so. 2. Realize and accept that change is a part of my life. I have tried to think more about this, because I realize that I don't react very well to change, but it has been hard for me to go beyond that. 3. Give myself some time each day to recharge mentally. I don't consciously set aside time to focus on recharging, as I am always thinking of the next thing that I have to get done."</p>
P = Partial implementation	<p>"1. Accept That Change is Just Around the Corner - I think over the past semester I have gotten better at being more flexible. I've worked to be more open to change my "vision" on projects at they develop and in accordance with what my group thinks. 2. Take Control of Your Self-Talk - I have worked to implement this, but sometimes it is still difficult to control. I find myself still slipping in to negative self-talk when under stress, but I am working on it. 3. Sleep On It - I think I have most successfully implemented this strategy. It has helped me make more calm decisions and think about all the options I have."</p> <p>"1. Greet people by name. I think I've improved at this greatly. I greet my classmates by name when they sit at my table. 2. Choose to be empathetic when the need arises. Although I cannot always relate to people's feelings (especially when it involves a decision they made when I don't agree with what they did), I think that I was still able to put myself in others' shoes at various times, especially with my roommate. 3. Choose to not get exasperated with people who choose to behave differently than me. I think I still get exasperated. I'm very bent on believing that my way of thinking and decision making is less flawed . . ."</p>
A = All strategies implemented and successful	<p>"1) Taking control of my self-talk I have implemented this and it was successful. I have learned to take control of my thoughts and to focus on the important things. . . . I try to think good, encouraging thoughts more than negative. 2) Accepting that change is just around the corner. I have implemented this, and it was successful. I have learned to adjust to change better. . . . I am aware of change, so when things happen, I don't get as upset or worked up about it. 3) Focusing my attention on my freedoms rather than my limitations. I have implemented this and it was successful. I try to focus more on the positives than negatives like I stated above. I have a lot to be grateful for, and I should not let the small trials in front of me forget about all the blessings I have."</p> <p>"First, I said I will try to work on my patience rather than jumping to conclusions. I helped to improve on this by trying my best to remain calm while in arguments. . . . I was successful with this because it created less stress in my life and taught me that it is okay to take a step back and think about things before lashing out and blaming everything on the other person. Second, I said I would improve on smiling and laughing more when feeling down. I helped to improve on this when I was stressed out with school this semester. . . . Whenever I was feeling down about school, I would surround myself with my friends and think of the positive things...I also became really close with a group of friends in my pharmacy class. . . . They helped make me smile and laugh more even when it was our hardest weeks of this semester. Therefore I was successful at this because now I feel like I actually have a support system while in pharmacy school. . . . I am a lot more happy and excited to go to class everyday. Lastly, I said I would improve on my quality of sleep. I did improve on this because I started to study at my desk rather than in my bed. I also tried to get in bed by midnight and to avoid coffee at night. . . . I think these strategies helped me sleep better because I would wake up feeling not as exhausted as I used to."</p>

## Results

### EIA Scores

Data from all 69 students in the graduating class of 2019 and 67 students in the class of 2020 (total = 136) with complete EIA and portfolio entry data were

included in this study (seven students total with missing data were excluded). We reviewed a total of 569 entries across the four EI areas; similar mean scores were seen for each area on the P1 year EIA results (range = 74-76 points) and on the P3 EIA results (range = 75-78 points). Compared to the P1 year, most (57.4%) of the P3 EIA total scores improved and about 40% declined (Table 1).

The majority of scores improved for the personal competence (self-awareness and self-management combined) and social competence (social awareness and relationship management combined) subsections, 60% to 54%, respectively. Most students' (52.2% to 55.1%) scores improved for the individual EI areas except for social awareness (44.1% improved). From 35% to 44% of students' scores decreased for individual areas.

### EI Activity Implementation and EIA Scores

Most students indicated they implemented at least one of their self-identified EI improvement activities, with varying degrees of success. Some improvement strategies for the EI areas included, among many diverse ideas, "greet people by name," "focusing on my health more and minimizing stress," "catch the mood of the room," "take control of your self-talk," "create a routine," and "visualize yourself succeeding." Of the 569 student entries, 93 (16.3%) indicated all three activities were successfully implemented (A), 431 (75.7%) indicated one or more activities were at least partially successful (PI 1 - PI 3), and only 45 (7.9%) stated they were not successful in implementing any planned activities (N). Table 2 provides examples of students' descriptions of activities entered into the ePortfolio for the three main implementation categories. The breakdown and analysis of the activities partially implemented and successful (PI 1, PI 2, or PI 3) vs. students' total EIA score changes from the P1 to the P3 years are shown in Table 3. There was a statistically significant difference ( $p = .04$ ) in the proportion of scores that increased, decreased, or stayed the same based upon the number of activities that students indicated were at least in part successfully implemented. More EIA area scores improved as the number of activities successfully implemented increased from one to three. About 41% of students' scores for an EIA area improved with only 1 activity implemented, with 44% of scores worsening, compared to about 56% of students' scores improving with 3 activities implemented with only 27% worsening.

Statistically significant differences were also found in the extent to which improvement activities were implemented for each of the individual EI areas and score changes (Table 4). Partially implemented activities (PI 1-PI 3) were combined for these analyses due to small Ns for some cells. Overall, as the number and extent of successfully implemented activities increased, students' scores in an area were significantly more likely to have improved. For successful implementation of all three activities (A) in an area, approximately 73% to 94% of students improved their EIA score in that area. In contrast, with failure to implement any strategies for an area (N), from 73% to almost 88% of students had a decreased score in that area. Students' scores in an area when activities were partially completed (P) fell between the A and N ranges, with most scores showing improvement. For both the personal competence and social competence subsections, the proportions of students with the largest score changes of at least 5 points (increased or decreased) differed significantly in the extent to which improvement strategies were implemented (Table 5). A total of 77.6% of students with an increase in their personal competence EIA scores by 5 or more points had implementation ratings of A, PI 3, or PI 2, compared to 58.9% of those with a decrease of at least 5 points. The difference was more striking for social competence: 83.5% of students who increased their scores by 5 or more points had implementation ratings of A, PI 3, or PI 2, compared to only 51.6% of those with decreased scores of 5 or more points.

Comparisons were also made to determine if the initial mean EIA score varied in those with large subsequent changes (increases or decreases of at least 5 points) in their second EIA scores (Table 6). The mean EIA scores on the first test, for the total as well as the personal competence and social competence subsections, were found to be significantly lower (about 10 to 11 points) for those whose P3 year EIA increased by at least 5 points, compared to those with a decrease of 5 or more points.

Table 3  
*Partially Implemented Activities and EIA Score Changes*

Number of planned activities implemented and successful <sup>a</sup>	Score changes for combined four EIA areas		
	Scores increased	Scores decreased	No change
PI 1 ( $n = 129$ )	53 (41.1%)	57 (44.2%)	19 (14.7%)
PI 2 ( $n = 224$ )	122 (54.5%)	79 (35.3%)	23 (10.3%)
PI 3 ( $n = 78$ )	44 (56.4%)	21 (26.9%)	13 (16.7%)

Note. Chi-square for comparison across categories,  $p = .04$ .

<sup>a</sup>PI 1 = One planned activity implemented with complete or partial success.

PI 2 = Two planned activities implemented with complete or partial success.

PI 3 = Three planned activities implemented with at least partial success (not not all completely successful).

Table 4  
*EIA Score Changes and Improvement Implementation*

Worked to implement <sup>a</sup>	Self-awareness Change in EIA score <sup>b</sup>			Self-management Change in EIA score <sup>b</sup>			Social awareness Change in EIA score <sup>b</sup>			Relationship management Change in EIA score		
	<i>N (%)</i> <sup>c,d</sup>			<i>N (%)</i> <sup>c,e</sup>			<i>N (%)</i> <sup>c,f</sup>			<i>N (%)</i> <sup>c,g</sup>		
	POS	NC	NEG	POS	NC	NEG	POS	NC	NEG	POS	NC	NEG
A	8 (80)	0	2 (20)	15 (93.8)	1 (6.3)	0	9 (81.8)	1 (9.1)	1 (9.1)	22 (73.3)	3 (10)	5 (16.7)
P	66 (56.9)	11 (9.5)	39 (33.6)	55 (50.9)	12 (11.1)	41 (38)	49 (44.6)	20 (18.2)	41 (37.3)	49 (50.5)	12 (12.4)	36 (37.1)
N	1 (10)	1 (10)	8 (80)	1 (8.3)	2 (16.7)	9 (75)	2 (13.3)	2 (13.3)	11 (73.3)	0	1 (12.5)	7 (87.5)

Note. <sup>a</sup>A = All three strategies successfully implemented; P = 1, 2, or 3 strategies implemented with at least partial success; N = no strategies implemented or successful.

<sup>b</sup>P3 score – P1 score, POS = score increased, NC = no change in score, NEG = score decreased.

<sup>c</sup>Exact test was used to determine significance, defined as  $p < 0.05$ , between strategy status and change in EIA score for each EIA category.

<sup>d</sup> $p = .014$

<sup>e</sup> $p = < .0001$

<sup>f</sup> $p = .0051$

<sup>g</sup> $p = .0012$

Table 5  
*EIA Score Changes (>5 Points) and Improvement Implementation*

EIA score change <sup>a</sup>	Personal competence <sup>b</sup>					Social competence <sup>c</sup>				
	Improvement strategy implementation					Improvement strategy implementation				
	A, PI 3 <i>n (%)</i>	PI 2 <i>n (%)</i>	PI 1 <i>n (%)</i>	<i>n (%)</i>	<i>p</i>	A, PI 3 <i>n (%)</i>	PI 2 <i>n (%)</i>	PI 1 <i>n (%)</i>	<i>n (%)</i>	<i>p</i>
Increased	32 (27.6%)	58 (50.0%)	23 (19.8%)	3 (2.6%)	.009	43 (44.3%)	38 (39.2%)	15 (15.5%)	1 (1%)	< .0001
Decreased	7 (12.5%)	26 (46.4%)	16 (28.6%)	7 (12.5%)		9 (14.1%)	24 (37.5%)	17 (26.6%)	14 (21.9%)	

Note. Chi-square for comparison across categories,  $p = .04$ .

<sup>a</sup>Change of > 5 points (first to second test).

<sup>b</sup>Includes self-awareness and self-management.

<sup>c</sup>Includes social awareness and relationship management.

Table 6  
*EIA Score Changes ( $\geq 5$  Points) and Initial EIA Mean Area Scores*

EIA score change <sup>a</sup>	Personal competence <sup>b,c,e</sup>			Social competence <sup>b,d,e</sup>			Total Score <sup>b,c</sup>		
	<i>n</i>	<i>M</i>	95% CI	<i>n</i>	<i>M</i>	95% CI	<i>N</i>	<i>M</i>	95% CI
Increased	59	69.6	67.8-72.0	49	71.3	68.9-73.6	50	70.8	68.6-73.1
Decreased	28	81.3	78.2-84.3	32	80.9	78.0-83.8	26	80.4	77.3-83.5

Note.

<sup>a</sup>Change of  $\geq 5$  points (first to second test).

<sup>b</sup>Scores on first test.

<sup>c</sup>Includes self-awareness and self-management.

<sup>d</sup>Includes social awareness and relationship management.

<sup>e</sup>*t* test,  $p < .0001$  for comparison of means between increased and decreased EIA score changes.

## GPA and Total EIA Scores

When analyzing the associations for both the P1 and P3 years between GPA and the total EIA scores, total score difference, and subsection score differences, all *r* values were small and not statistically significant ( $p > 0.25$ ) (Table 7). Further analysis examined if there was a correlation between the GPA and total EIA score differences, limited to only those students who had the largest changes in EIA scores: 24 students with a  $\geq 10$ -point improvement (range = 10-27 points) and 12 students with a  $\geq 10$ -point worsening (range = 10-23 points) in their EIA total score. No significant correlation was likewise found ( $r = 0.19$ ,  $p = 0.25$ ).

## Discussion

Educational programs strive to promote lifelong learning skills in their students so they can adapt and function successfully in an ever-changing, diverse world upon graduation. ePortfolios can promote self-assessment, ongoing reflection, and self-regulated learning that includes the ability to manage and control behaviors and emotions (Lu, 2021; Segaran & Hasim, 2021), important skills for lifelong learning and learning to live together with others (McMillan & Hearn, 2008; Plaza et al., 2007). Emotional intelligence includes components such as self-awareness and the ability to manage relationships and socially interact, and ePortfolio assignments have been shown to help promote these skills in students (Andrade, 2019). Portfolios were reported to be used in 82% of the 49 colleges of pharmacy who responded to a survey of strategies they used for student self-assessment (Wheeler et al., 2017). Pharmacy program accreditation standards require EI components, such as self-awareness, personal development, and the ability to function as part of a team and to interact with others, to be addressed in pharmacy curricula. Further, portfolios are specifically mentioned in the standards as an example of documentation tools that can be used by students to demonstrate their self-assessment and reflection on learning needs, plans, and achievements (ACPE, 2016). Therefore, incorporating

ePortfolio use into curricula could be valuable for developing students' EI.

Several tools are available for measuring EI and related social constructs, defined in various ways (Consortium for Research in Emotional Intelligence in Organizations, 2020). There is not a universally accepted instrument to measure EI in the health professions, perhaps due in part to a lack of precision in conceptualizing EI (Pfeiffer, 2001). Bradberry and Greaves's (2009) book with EIA tool was used for EI instruction for our students in part due to its broad popularity.

Most EI studies involving pharmacy students have focused primarily on the development of leadership skills, with an improvement in EI ratings seen in pharmacy students after completing specific leadership programs (Haight et al., 2017; Smith et al., 2018). However, the aim of our study was unique since it focused on the utility of ePortfolio-based self-assessments, rather than courses or programs, to guide non-leadership focused EI improvements in the didactic curriculum.

The current study demonstrated that student self-identified and initiated portfolio activities, selected from among ideas provided in their EI book and personalized EI test result reports, resulted in improved EI scores in many individuals. A greater percentage of students improved their scores in the personal competence EIA subsection compared to social competence. Students received some limited didactic instruction for only the personal competence subsection, which might help explain the higher scores seen for this area. Overall, the total EIA score and the scores for each area improved for over half of the students, except for social awareness (~44% improved). Mean scores across all four areas were similar for the P1 and P3 EIA results, so higher initial scores for social awareness did not appear to explain this difference. However, fewer students stated they successfully implemented activities to improve social awareness compared to the other three areas (15 "N" ratings for social awareness vs. 8 to 12 "N" ratings for the others; Table 4), which might explain at least some of the lesser improvements seen (see below).

Table 7  
*GPA Correlations with EIA Scores<sup>a</sup>*

Variable	<i>r</i>	<i>p</i>
Total score - P1 year	-0.04	.68
Total score - P3 year	0.06	.46
Total score difference	0.09	.32
Personal competence difference	0.02	.86
Social competence difference	0.1	.27

*Note.* <sup>a</sup>Pairwise correlation analysis

An important finding from this study was that successful implementation of ePortfolio based activities designed to improve specific EI skills was associated with enhancement in those areas. Students were required to self-assess their needs and reflect on the success of initiated activities, which are valuable components of ePortfolio use. Students who felt they were able to adopt all their identified strategies were significantly more likely to show EI score improvement compared to students who reported partial or no successful activity implementation. The difference was particularly striking for students who stated they were successful in implementing all three improvement activities (73% to 94% with score improvement in the four areas) compared to those who indicated no successful implementation of any activities (0% to 13% with score improvements). Larger score changes of at least 5 points higher or lower in the EIA results were also found to differ significantly based upon the extent to which improvement strategies were stated to be implemented. More improvement strategies were successfully implemented when there were score increases of 5 or more points compared to score decreases of 5 or more points. Assuming that most students were honest about strategy implementation, greater effort would be anticipated to result in greater changes.

About three-quarters of students' EI activity entries fell into the partial implementation and improvement category, with perceived success in some activities but not others. As students reported greater numbers of targeted EI activities to be successful, the proportion with score increases were significantly greater and the proportion with score decreases in an EI area were lower. In general, the differences among the number of activities felt to be successfully implemented and score changes are consistent with the conclusion that EI skills can be developed; this study found that self-initiated activities through ePortfolio assignments can help accomplish this.

It is unclear why 27% to 35% of students who felt they implemented with at least partial success two or three improvement strategies in an area had decreased scores in those areas. Since the success of many of the activities identified (e.g., getting more sleep, counting

to 10 before responding, thinking before speaking, creating daily agendas) cannot be objectively assessed by evaluators, there needs to be some reliance on student responses. It is possible, though, that students with score decreases might have claimed to make changes they never did or described ongoing, but not necessarily successful, activities rather than those newly implemented. Students might have also perceived that a strategy was successful, such as improving interactions with peers, but that perception might have been inaccurate. Further, even if a student successfully implemented strategies for improvement, the activities selected might have been those "easier" for them to change and not necessarily the activities that would most benefit their EI. It should also be noted that some responses were vague or not sufficiently detailed to enable accurate classification of the portfolio entry as being implemented or successful. Since these activities were coded as unsuccessful, it is possible that they might have resulted in some success, which could affect the overall score change analyses.

Interestingly, students with lower mean EIA initial scores showed considerably greater improvements in subsequent scores compared to those with higher initial scores. Students who rated their skills higher on the first EIA might have overestimated their abilities, and after completing the EI readings and exercises, provided more realistic and lower self-assessments the next time. Dune et al. (2018) evaluated the use of ePortfolios to develop students' reflexivity (i.e., the ability to self-assess and reflect) in a first-year multidisciplinary health sciences communications course and found 38% of students showed decreased post-survey scores. Similar to our findings, students who scored lower on their pre-portfolio survey items had significantly higher post-portfolio scores. They speculated that decreased reflexivity scores could still be a sign of skill improvement, with students able to recognize deficiencies to a greater extent post-portfolio use. This is also consistent with observations by the investigators for another ePortfolio assignment in which students rated their skill level for specific longitudinal outcomes (e.g., communication, teamwork, evidence-based practice) twice during the pharmacy program—initially and at the end of the P3 year. When asked to



explain their ratings, at least half of the students who rated their second self-assessment at the same or lower level of proficiency stated they overrated their skills on the first self-assessment. The opposite—students indicating they underrated their first self-assessments—was not observed.

A positive association between EI and academic performance (e.g., GPA, project grades) has been reported, suggesting that EI might be a useful predictor for academic and/or professional success (Chew et al., 2013; Haight et al., 2017; Jaeger, 2003; Romanelli et al., 2006), although not all investigators have found significant relationships (Cheshire et al., 2015; Nath et al., 2015). In this study, the correlations between GPA and EIA scores were very small and not statistically significant. Reasons for discrepancies in GPA and EI correlation findings are unknown but differing student populations and varying instruments used to measure EI among studies could be contributing factors.

Some limitations of this study should be noted. The sample included only two cohorts of students from the WVU School of Pharmacy, so further studies should include larger numbers of students and those from other academic disciplines. Whether use of the EIA was optimal as a measure of EI in the health professions is not known but was appropriate to consider as a widely used EI instrument. It was difficult at times to accurately determine the actual implementation and success of student selected EI improvement activities based upon the ePortfolio statements, although two investigators reviewed entries to help minimize discrepancies. The EI portfolio assignments were subjective in nature and dependent on student identified reporting. Given that the EI activities were self-reported, whether students implemented the activities they claimed to perform or whether students responded to the EIA questions on both tests in a manner that accurately reflected their true opinions cannot be determined. However, since there were no penalties associated with failure to implement self-identified activities, there was little reason for students to respond dishonestly. Finally, the success of the activities implemented was based on subjective student perception and might not have been completely accurate in reality.

Future research can compare changes in EI that result from ePortfolio self-identified and self-initiated activities to those resulting from formal coursework, beyond leadership development programs. Whether greater faculty involvement in reviewing student portfolio entries at different time points in a program might result in greater EI changes would be useful to examine. The validity and reliability of various EI measuring tools should also be explored in different professional programs. Finally, whether student achievement in certain components of curricula (e.g., specific didactic courses in a major, elective courses,

experiential rotations) is more closely correlated with EI skills than broad measures of academic performance (e.g., overall GPA) should be studied.

## Conclusion

This study demonstrated that EI skills could be enhanced using ePortfolio assignments in which students self-identify and self-initiate improvement strategies, with limited direct faculty involvement. Since programs within and outside of the health professions are including EI components such as self-awareness and social/relationship management in curricula, our findings can provide schools with a potential ePortfolio option for developing or enhancing these skills in graduates.

## References

- Accreditation Council for Pharmacy Education (ACPE). (2016). *Accreditation standards and key elements for the professional program in pharmacy leading to the Doctor of Pharmacy degree*. <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf>
- Andrade, M. S. (2019). ePortfolios and Online Learning: Applying Concepts of Organizational Behavior. *International Journal of E-Learning & Distance Education*, 34(1), 1-20. <http://www.ijede.ca/index.php/jde/article/view/1096>
- Bradberry, T., & Greaves, J. (2009). *Emotional intelligence 2.0*. TalentSmart.
- Cheshire, M. H., Strickland, H. P., & Carter, M. R. (2015). Comparing traditional measures of academic success with EI scores in nursing students. *Asia-Pacific Journal of Oncology Nursing*, 2(2), 99-106. <https://doi.org/10.4103/2347-5625.154090>
- Chew, B. H., Zain, A. M., & Hassan, F. (2013). Emotional intelligence and academic performance in first and final year medical students: a cross-sectional study. *BMC Medical Education*, 13(1), Article 44. <https://doi.org/10.1186/1472-6920-13-44>
- Consortium for Research in Emotional Intelligence in Organizations. (2020). *Emotional intelligence measures*. <http://www.eiconsortium.org/measures/measures.html>
- Delors, J. (2013). The treasure within: Learning to know, learning to do, learning to live together and learning to be. What is the value of that treasure 15 years after its publication? *International Review of Education*, 59(3), 319-330. <https://doi.org/10.1007/s11159-013-9350-8>
- Dune, T., Crnek-Georgeson, K., Bidewell, J., Firdaus, R., John, J. R., & Arora, A. (2018). Undergraduate health science students' development of reflective

- practice on communication skills via e-Portfolios. *Journal of University Teaching and Learning Practice*, 15(3), 1-18. <https://ro.uow.edu.au/jutlp/vol15/iss3/5>
- Goleman, D. (1998). *Working with emotional intelligence*. Bantam Books.
- Haight, R. C., Kolar, C., Nelson, M. H., Fierke, K. K., Sucher, B. J., & Janke, K. K. (2017). Assessing emotionally intelligent leadership in pharmacy students. *American Journal of Pharmaceutical Education*, 81(2), 29. <https://doi.org/10.5688/ajpe81229>
- Hall, C. M., Enright, S. M., White, S. J., & Allen, S. J. (2015). A quantitative study of the emotional intelligence of participants in the ASHP Foundation's Pharmacy Leadership Academy. *American Journal of Health-System Pharmacy*, 72(21), 1890-1895. <https://doi.org/10.2146/ajhp140812>
- Jaeger, A. J. (2003). Job competencies and the curriculum: An inquiry into emotional intelligence in graduate professional education. *Research in Higher Education*, 44(6), 615-639. <https://doi.org/10.1023/A:1026119724265>
- Joseph, D. L., Zemen, B., McCord, M. A., & Fado, S. (2019). Emotional intelligence training and higher education. *New Directions for Teaching and Learning*, 160(Winter), 51-61. <https://doi.org/10.1002/tl.20364>
- Kalata, L. R., & Abate, M. A. (2013). A mentor-based portfolio program to evaluate pharmacy students' self-assessment skills. *American Journal of Pharmaceutical Education*, 77(4), Article 81. <https://doi.org/10.5688/ajpe77481>
- Lu, H. (2021). Electronic portfolios in higher education: A review of the literature. *European Journal of Education and Pedagogy*, 2(3), 96-101. <https://doi.org/10.24018/ejedu.2021.2.3.119>
- Lust, E., & Moore, F. C. (2006). Emotional intelligence instruction in a pharmacy communications course. *American Journal of Pharmaceutical Education*, 70(1), Article 06. <https://doi.org/10.5688/aj700106>
- Mayer, J. D., Salovey, P., & Caruso, D. (2007). Models of emotional intelligence. In P. Salovey, M. A. Brackett, & J. D. Mayer (Eds.), *Emotional intelligence: Key readings on the Mayer and Salovey Model*. Dude.
- McMillan, J. H., & Hearn, J. (2008). Student self-assessment: The key to stronger student motivation and higher achievement. *Educational Horizons*, 87(1), 40-50.
- Nath, S., Ghosh, S., & Das, S. (2015). Relation between intelligence, emotional intelligence, and academic performance among medical interns. *Open Journal of Psychiatry & Allied Sciences*, 6(2), 96-100. <https://doi.org/10.5958/2394-2061.2015.00004.x>
- Nelson, M. H., Fierke, K. K., Sucher, B. J., & Janke, K. K. (2015). Including emotional intelligence in pharmacy curricula to help achieve CAPE outcomes. *American Journal of Pharmaceutical Education*, 79(4), Article 48. <https://doi.org/10.5688/ajpe79448>
- Pfeiffer, S. (2001). Emotional intelligence: Popular but elusive construct. *Roeper Review*, 23(3), 138-142. <https://doi.org/10.1080/02783190109554085>
- Plaza, C. M., Draugalis, J. R., Slack, M. K., Skrepnek, G. H., & Sauer, K. A. (2007). Use of reflective portfolios in health sciences education. *American Journal of Pharmaceutical Education*, 71(2), Article 34. <https://doi.org/10.5688/aj710234>
- Romanelli, F., Cain, J., & Smith, K. M. (2006). Emotional intelligence as a predictor of academic and/or professional success. *American Journal of Pharmaceutical Education*, 70(3), Article 69. <https://doi.org/10.5688/aj700369>
- Scartabello, T., Abate, M., & Slimak, L. (2018). Impact of a portfolio program on self-assessment skills involving general longitudinal outcomes. *International Journal of ePortfolio*, 8(2), 103-114. [http://www.theijep.com/pdf/IJEP\\_8\\_2.pdf](http://www.theijep.com/pdf/IJEP_8_2.pdf)
- Segaran, M. K., & Hasim, Z. (2021). Self-regulated learning through ePortfolio: A meta-analysis. *Malaysian Journal of Learning and Instruction*, 18(1), 131-156. <https://doi.org/10.32890/mjli2021.18.1.6>
- Smith, M. J., Wilson, J., George, D. L., Laster, K., Filippo, C., & Spies, A. (2018). Emotional intelligence scores among three cohorts of pharmacy students before and after completing the University of Oklahoma College of Pharmacy's leadership degree option program. *Currents in Pharmacy Teaching & Learning*, 10(7), 911-917. <https://doi.org/10.1016/j.cptl.2018.04.001>
- Wheeler, J. S., McDonough, S. L. K., & Hagemann, T. M. (2017). Assessing self-assessment practices: A survey of U.S. colleges and schools of pharmacy. *Currents in Pharmacy Teaching & Learning*, 9(6), 966-971. <https://doi.org/10.1016/j.cptl.2017.07.008>
- Zhoc, K. C. H., Chung, T. S. H., & King, B. B. (2018). Emotional intelligence (EI) and self-directed learning: Examining their relation and contribution to better student learning outcomes in higher education. *British Educational Research Journal*, 44(6), 982-1004. <https://doi.org/10.1002/berj.3472>

---

SARAH KIM, at the time of writing, was a resident in the West Virginia University-Mylan Pharmaceuticals, Inc., joint specialty drug information residency program. Her responsibilities consisted of assisting in the operation of the academic drug information center, working with senior students in responding to information inquiries,

and assisting with didactic and lab instruction. After completing her experience in the pharmaceutical industry, she currently has a position as Lead Clinical Scientist at Genentech in South San Francisco, CA.

MARIE ABATE is Professor of Clinical Pharmacy and Assistant Dean for Assessment and Strategic Planning at West Virginia University School of Pharmacy. She chairs the school's Educational Outcomes Assessment Committee that is responsible for developing an outcomes assessment plan and collecting and evaluating assessment data. She also manages the portfolio program in the four-year professional Doctor of Pharmacy degree program, teaches the evidence-based practice course, and precepts senior students during drug information rotations. Her research and publications currently focus on evaluating the success of educational methods, including portfolios, and analyzing drug-related deaths in West Virginia through a forensics database.

LOUIS SLIMAK is the Associate Provost for Curriculum and Assessment for West Virginia University coordinating the processes and faculty

development around new academic program proposals, annual and five-year program review, assessment of learning, and academic instructional efficiency. He also serves as the institution's accreditation liaison officer with the Higher Learning Commission. His faculty appointment is in the Department of Multidisciplinary Studies in the Eberly College of Arts and Sciences.

MARY EULER is a professor and the Associate Dean for Admissions and Student Affairs at the West Virginia University School of Pharmacy. Her teaching and research interests include leader development, emotional intelligence, and history of pharmacy. Dr. Euler is a certified facilitator for GIANT Worldwide leadership development programs. She is a co-advisor to WVU's APhA-ASP chapter and through her administrative position she provides support for professional and graduate students at the School of Pharmacy.

#### Acknowledgements

The authors report no financial disclosures or conflicts of interest directly relevant to the content of this paper.



## School Administrators' Perceptions of Electronic Portfolios and the Hiring of K-12 Teachers

Alice S. Cahill, Rebecca M. Nelson, Jane Strawhecker, and Phu Vu  
*University of Nebraska Kearney*

The unprecedented pace of technological advances in online interactions and digital identity have created challenges for educators and the communities they serve. Electronic portfolios (ePortfolios) have become a substantive tool that facilitates transference and access to the pertinent achievements highlighting competency, allowing administrators to weigh those strengths against the positions they are trying to fill—yet ePortfolios have limitations maximizing access to digital footprints. The purpose of the study, using mixed-methods, was to determine the views of school administrators involved in the use of ePortfolios during the hiring process of K-12 preservice teachers. Participants' survey responses were used to investigate four research questions regarding pros/cons, school administrators' needs, delivery method, and improvements of ePortfolios for increased use. One important outcome showed 59% of the participants had used ePortfolios in the past two years, and they would be more willing to use ePortfolios if there was a standard format for candidates to follow. Researchers found ePortfolios were a viable asset for the hiring officials in this study; however, new challenges are evident and must be addressed.

Creating an electronic portfolio (ePortfolio) in teacher preparation programs has become a common practice at the university level due to the increase in use of technology (Parkes et al., 2013; Strudler & Wetzel, 2005). An ePortfolio is an electronic compilation of artifacts of learning that show that a candidate has met their educational proficiencies, is qualified for employment (Watty & McKay, 2015), and reflects a student's professional practice. It is a showcase for individuality serving as a catalyst for self-reflection and a vehicle for making an impactful first impression. ePortfolios emphasize "assessment, appraisal, accreditation, graduate employability, application, and evidence of professional competency" (Downer & Slade, 2019, p. 529), but also exhibit the strengths of the candidate. In higher education, ePortfolios are used to develop understanding and create learners who self-reflect and significantly engage in their own learning.

As technology has expanded and become a universal function in the field of education, the ePortfolio has enhanced the learning tool into a product to showcase current competencies and potential demonstrations of professional growth (Chatham-Carpenter et al., 2010). There are three main types of educational ePortfolios that are based on the original tenets of traditional portfolios (O'Keeffe & Donnely, 2013; Wuetherick & Dickinson, 2015). The learning portfolio is focused on student learning. The evaluation portfolio is focused on assessing and evaluating preservice teachers' competencies, and the showcase portfolio is focused on employment and individualized preparation for a position (Ciesielkiewicz, 2019; Ritzhaupt et al., 2008).

The impact that ePortfolios have on hiring and the perceptions of school administrators are underdeveloped in the literature. Creating and replicating a survey to study this can magnify the challenges of the platform and frame

or shape higher education faculty's understanding of what is needed and how to focus on ePortfolio data through course work. The data from this study also reinforce other literature that researched technology and older adults (Mariano et al., 2021; Mitzner et al., 2019), which shows that the more exposure they have to technology, the more they are willing to use it. The research reinforces the understanding that technology has become an integral part of society. The age of the user or decision-maker has no bearing on the impact that the digital footprint can make, if presented in an accessible and thorough manner.

### Literature Review

A review of the literature shows much of the research on ePortfolios was done in the late 1990s and early 2000s. In the last three to four years, there has been a re-introduction by researchers exploring the changes to ePortfolios because of the increase of requirements from the Council for the Accreditation of Educator Preparation (CAEP) for aggregated data, the ability to use management systems (TaskStream and others), and the changes in technology (Anderson, 2019; Karpf, 2012, 2019; Ruch, 2020). While the stakeholders (e.g., universities, students, and K-12 districts looking to hire) stay the same, the needs have changed.

Universities are following liability mandates, increasing the pressure for supporting the credentials of the achievement of standards (Henard & Roseveare, 2012). The accrediting agencies require organized data and access to a students' work. They want to see evidence of mastery. In addition, electronic data also provides confirmation that the bodies of higher education have met national accreditation standards, state certification requirements, program goals, or institutional objectives (Holba et al., 2019; Meyer & Latham, 2008).

### Use of ePortfolios in Higher Education

The creation of ePortfolios should not be a one-and-done culminating project; they should be a living, breathing document (Anderson, 2019). While they are created within a framework for establishing learning, faculty guidance is critical as the preservice teacher develops it. An ePortfolio is an active learner practice, with the preservice teacher taking responsibility in their learning, reflection, and process of learning (Watson et al., 2016).

When looking at ePortfolios, students are the key stakeholders in this process. They are writing for an audience with a broad spectrum of needs. Their work is what is being evaluated by the university (who sets clear guidelines), but, as Ndoye et al. (2012) pointed out, school districts looking to hire teachers often provide vague expectations, leaving students to guess what might be needed. Preservice teachers want to showcase their creativity and illustrate their strengths and progress toward improvement, illuminating their potential as great educators. The stakeholders at the universities are looking for CAEP data and possible program improvements. Administrators who are looking for fit, engagement, and behavior management (Fiedler et al., 2009) have less interest in the disparity between the diverging uses and applications of this resource. Some of the stakeholders have no say in what products are included in the ePortfolio to showcase a preservice teacher's abilities. Implementation of an ePortfolio system also requires sufficient access to technology, an adequate campus technology infrastructure, and continual user support (Downer & Slade, 2019; Mayowski, 2014).

### Benefits of ePortfolios

Suggestions to improve the process have dominated the latest research. Preservice teachers should have direct instruction on what is included in an ePortfolio as well as the broader benefits, self-reflection (Slepcevic-Zach & Stock, 2019; Torre, 2019), and choice of which technology to use. The development of student-owned platforms, more flexibility (Daim et al., 2016) and team-teaching are also key components of choice. Preservice teachers' awareness of technology improvements and other practices that administrators might be looking for within the ePortfolio (Gulzar & Barrett, 2019) should also be included. When preservice teachers participate in courses where they learn the importance of ePortfolios, they are more likely to produce higher quality portfolios. Additionally, they can better explain what they know, how they know it, and how they will utilize it in their own classrooms; in turn, this increases their self-efficacy when it comes to the higher process and teaching experience (Ring et al., 2017).

Previous research studies identify time constraints as one of the major complaints about the use of ePortfolio as a recruiting tool (Theel & Tallerico, 2004; Ward & Moser, 2008), as well as the ways that ePortfolios were delivered previously on disks and thumb drives (Britten et al., 2003). While in the early part of the century, the ePortfolio became more accessible for students to market their skills in a professional manner (Strawhecker et al., 2007), technology has changed (availability of the internet and websites such as Wix, FolioSpaces, and even Google), and ePortfolios have become much more personal and can include the teaching pieces administrators desire (Ring et al., 2017). Now, with the increase of web-based sites, ePortfolios permit transparent assessment practices, making it easier to show stakeholders that student learning is happening. ePortfolios "[organize] student evidence, assessment practices, and assessment reports, thereby allowing faculty and administrators to more easily 'close the loop' between teaching, assessment, and outcomes" (Strawhecker et al., 2007).

Few current studies have focused on what administrators want (Douglas et al., 2019; Eynon & Gambino, 2017; Posey et al., 2015), and those that do only mention the subject. There are currently no large-scale studies on preference from administrators. Adoniou and Gallagher (2017) noted that ePortfolios serve as a way for administrators to focus on the product that preservice teachers provide, rather than focusing on how they present the information. They are often used to weed-out the preservice candidates who should not be in the field. Strawhecker et al. (2007) noted administrators found the ePortfolios can provide information that is not necessarily applicable to the classroom. Leivens (2014), however, looked at it in a different light. In this era of difficulty hiring teachers for the right position, and increasing numbers of teachers leaving the field, ePortfolios can lead to better job matches, so mismatched and unfilled positions in a district are minimized. Administrators may find viewing ePortfolios for the final candidates for a position might make it more manageable (Gaudin & Chaliès, 2015; Parker et al., 2012; Wray, 2007). Overall, administrators and preservice teachers benefit from using ePortfolios to personalize the benefits of a position to the candidate (Ciesielkiewicz et al., 2020). Schiele et al. (2017) noted that using ePortfolios serves as a document that can stimulate the success of a preservice teacher.

The impact that ePortfolios have on hiring decisions is underdeveloped in the literature. Replicating a survey to study the use of ePortfolios for higher purposes can help better understand the challenges of the platform and frame or shape higher education faculty's knowledge of what is needed and how to focus ePortfolio data through course work. The

current study is a replication of a study conducted by one of the co-authors (Strawhecker et al., 2007). The previous study found that school administrators' past use of ePortfolios and years of experience as hiring officials were found to be statistically significant predictors of future ePortfolio use. The participant data pool for both studies were from the same Midwestern state, and both studies utilized the same survey tool.

### Research Method

The primary purpose of this study was to investigate school administrators' perceptions of using an ePortfolio in hiring teachers. More specifically, we aimed to answer the following research questions:

1. What are the pros and cons of using portfolios in the hiring process?
2. What would school administrators desire in an electronic employment portfolio?
3. What delivery method would be preferred, due to changes in technology?
4. What factors predict school administrators' likelihood of using electronic portfolios, and what potential improvements to electronic portfolios would increase school administrators' use of them in the hiring process?

### Research Instrument

The research instrument is a similar survey designed in a previous study by Strawhecker et al. (2007), but with the change of completing it in the online format. According to Strawhecker and colleagues, there were 19 questions asked in the 2007 study. For our study, the survey was condensed to 15 questions that gathered the same types of information. The survey consists of two main parts. The first part includes collecting demographic information: participant's gender, age, working experience, and working context. This differed slightly from the original survey used in 2007 in that participants' gender was included. The second part includes statements where participants select the answers that are most relevant to them or write in an option. An example survey item is: Which of the following would increase the likelihood of using electronic portfolios to evaluate candidates in the future? (a) A standard format for candidates to follow, (b) Training on the technology needed to assess portfolios, (c) A standard procedure or

rubric for assessing electronic portfolios, or (d) Other (Please specify). The general theme of the survey was school administrators' perceptions of ePortfolios and the hiring of K-12 teachers. We wanted to discover whether school administrators use ePortfolios in the hiring process, and whether this has changed from the previous study. We also were seeking to find out whether there was change in the most desired ePortfolio artifacts based on the perceptions of school administrators.

We accessed the list of school administrators' emails in a non-Common Core Midwestern state and sent out the research invitation via that email list. The survey was administered over a 2-month period, first with the initial request and then with a follow-up message. The goal was to achieve a minimum of 50 responses in two months so that the next phase of data analysis and reporting could be entered. We were unable to identify the exact number of school administrators in the state due to state data errors, but a minimum of 50 school administrators was determined to be a solid participating number, given the fact that each school building had only one school administrator according to state records (Department of Education for state X).

### Participants

The survey was administered online over a period of two months and yielded 70 responses, two of which were incomplete, so they were removed from the response pool. The total eligible number of responses included in this research was reduced to 68. The resulting participants' demographics are reported in the table below.

### Data Analysis

As a mixed-method study, research question 1 was investigated using the qualitative data and research questions 2-4 were investigated using the quantitative data. For data analysis, the qualitative data were analyzed via the content analytic technique. The quantitative data were analyzed through the multiple linear regression to model the relationship between five explanatory variables and a response variable by fitting a linear equation to observed data. Specifically, the five independent predictors variables included: age, years of experience, school population size, self-assessed technology competencies, and gender. The dependent variable was portfolio type, which ranged from none, paper, electronic portfolio, and both paper and electronic portfolio.

Table 1  
*Demographics*

Female participants	Male participants	Participant age	Years as hiring official	No. of students served
<i>n</i>	<i>n</i>	<i>M</i>	<i>M</i>	<i>M</i>
13	55	46.3	10.1	345.78

Content analysis allowed a systematic coding of collected data by organizing the information into recognizable categories to discover patterns unnoticeable by merely reviewing the transcripts (Neuendorf & Kumar, 2015; Ritchie et al., 1994). The process of data coding was divided into two stages. The first step was the preliminary coding in which we identified emerging ideas among the conversations by reviewing the participants' responses, selected keywords most frequently mentioned by participants and created relationship diagrams. The second step was focused coding where we eliminated and combined the coding categories identified in the first step to reach the results (Charmaz, 2006).

## Findings

### Qualitative

For research question 1, "What are the pros and cons of using portfolios in the hiring process?", we asked participants to provide pros and cons for using ePortfolios during the hiring process. This was done because we wanted to discover if age or gender played a role in perceptions of school administrators about ePortfolios. The data were originally organized by age range to determine if there were any similar themes based on age, and presumably experience as a hiring administrator. Table 2 shows the most common pros and cons for each age group. With only one participant in the 20-29 age range, the data cannot be extrapolated to other hiring administrators of a similar age. The groups that yielded most data are the 30-39, 40-49, and 50-59 age ranges.

The pros of the 30-39 group focused on ePortfolios providing more candidate information in a better organized format, while the cons expressed concerns that ePortfolios might not be a true representation of the candidate by including only the best examples of the candidate's work. The largest of the participant age ranges was for the 40-49 age range. The pros focused on the use of ePortfolios to showcase talents of non-core subject area teachers, such as art, PE, and music. They also identified ePortfolios as being easily accessed, less cumbersome, and a quick way to compare candidates. The cons for the 40-49 age range focus on the extra time and overwhelming amount of material that is often provided in ePortfolios. These hiring administrators found ePortfolios can mask a candidate's true abilities, including comments such as "Good writing can mask deficiencies; bad writing can mask exceptional educators" and "All candidates should be able to put together a quality portfolio; a bad one is telling."

While ePortfolios provide quick information and can highlight talents for non-core subject area teachers, the 40-49 age range group tends to focus more on interpersonal experiences such as talking to references and watching the candidate teach.

The 50-59 age range was the next largest participant group. Like the 40-49 age range, this group's pros included things such as ease of access, a great way to pre-screen and compare candidates, and giving a better picture of the candidate prior to the initial interview. The cons for this group included concerns such as unfairness in ePortfolio training between higher education institutions, accessibility issues for hiring administrators, and candidates failing to update the information provided to the school and/or position for which they are applying. For some administrators in this age range, ePortfolios are often considered an unreliable and detrimental resource that deprives the candidate of an edge. For the final age range group of 60-69-year-olds, there were only three participants. They, too, focused on ePortfolios allowing for ease of use and accessibility, while furthering the assertion that ePortfolios provide valuable information for screening and initial interviews. The cons from the 60-69 age range group can be summed up in one comment: "[ePortfolios do not] give insight to the heart of the candidate."

We wanted to see if the qualitative information from the pros and cons question yielded results along gender lines (Table 3). Because there were fewer female participants ( $n = 13$ ) than male ( $n = 55$ ), the findings for male participants are more easily extrapolated than those for the female participants. Ease of sharing the information and being provided a quick glance of candidates' experiences are the two most common pros for the female participants, while the males gave pros such as showcasing talents, less cumbersome, provides evidence of candidates' organization, and give insights into technology mastery. The cons for the females include a concern that ePortfolios take more time to look through versus typical application materials, and the that "Good writing can mask deficiencies; bad writing can mask exceptional educators." Male participants also expressed a concern that ePortfolios take extra time with an overwhelming number of materials to look through. They also felt that great portfolios can mask poor writing skills, but they differed from females in their belief that there are sometimes accessibility issues (e.g., broken website links or formatting issues from one platform to another), higher education institutions not providing similar trainings, and interpersonal experiences providing more beneficial information than ePortfolios.



Table 2  
*Comparison of Pros and Cons by Age Range (n = 68)*

Age range	Pros	Cons
20-29 (n = 1)	<ul style="list-style-type: none"> <li>• Readability</li> <li>• Grammar</li> </ul>	<ul style="list-style-type: none"> <li>• Extra time</li> <li>• Lack of effort by some applicants</li> </ul>
30-39 (n = 14)	<ul style="list-style-type: none"> <li>• More examples of candidate work</li> <li>• Better organization</li> <li>• More wealth of knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• More fluff</li> <li>• Loss of a standard for info</li> <li>• May not be true representation</li> <li>• Only shows best of the candidate (phone calls to references yield more info)</li> <li>• If candidate has to pay college to send portfolio for each application</li> </ul>
40-49 (n = 28)	<ul style="list-style-type: none"> <li>• Showcase talent/abilities (especially for non-core)</li> <li>• Highlights organization, work ethic, experience</li> <li>• Less cumbersome</li> <li>• Easily accessed and saved</li> <li>• Show the candidate's work and implementation in district</li> <li>• Helps to compare candidates</li> <li>• Quick glance of evidence</li> </ul>	<ul style="list-style-type: none"> <li>• Never looked at one; do not plan to look at one</li> <li>• Overwhelming amount of material</li> <li>• Takes extra time</li> <li>• Seeing a person teach is the game changer</li> <li>• Good writing can mask deficiencies; bad writing can mask exceptional educators</li> <li>• All candidates should be able to put together a quality portfolio; a bad one is telling</li> <li>• Experiences and calling references provide better info</li> </ul>
50-59 (n = 22)	<ul style="list-style-type: none"> <li>• Goes beyond resume</li> <li>• Easy to access</li> <li>• Good as a screener</li> <li>• More info for F2F interview</li> <li>• Less paper</li> <li>• Insight to tech mastery</li> <li>• More info to review prior to interview</li> <li>• More evidence of experience and quality of work</li> <li>• Consolidation of paperwork</li> <li>• Including lesson plans, student work, and teacher skill set</li> <li>• Better picture of candidate</li> </ul>	<ul style="list-style-type: none"> <li>• Accessibility issues</li> <li>• Not updating based on school/position they are applying for</li> <li>• Never examined portfolios</li> <li>• Great portfolio but not great writing skills</li> <li>• Different institutions provide differing ePortfolio training (unfair to compare)</li> <li>• Take extra time</li> <li>• Portfolios have never given an edge; sometimes a detriment</li> <li>• Unreliable</li> </ul>
60-69 (n = 3)	<ul style="list-style-type: none"> <li>• Ease of use</li> <li>• Ease of access</li> <li>• Provides relevant info</li> <li>• Use for initial screening</li> <li>• Provides info on candidates' background and experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Too many forms (no time to look at ePortfolios?)</li> <li>• Does not give insight to heart of candidate</li> </ul>

Table 3  
*Comparison of Pros and Cons by Gender (n = 68)*

Gender	Pros	Cons
Female (n = 13)	<ul style="list-style-type: none"> <li>• Ease of sharing info</li> <li>• More info of candidate's experiences</li> <li>• Quick glance of evidence of hands-on experience</li> </ul>	<ul style="list-style-type: none"> <li>• Never examined portfolios</li> <li>• Takes extra time</li> <li>• Good writing can mask deficiencies; bad writing can mask exceptional educators</li> </ul>
Male (n = 55)	<ul style="list-style-type: none"> <li>• Readability</li> <li>• Grammar</li> <li>• More examples of candidate work</li> <li>• Showcase talent/abilities (especially for non-core)</li> <li>• Goes beyond resume</li> <li>• Comes down to quality, background, and experiences</li> <li>• Highlights organization, work ethic, experience</li> <li>• Less cumbersome</li> <li>• Easily accessed and saved</li> <li>• Ease of locating and printing</li> <li>• Organization of candidates</li> <li>• Clear pictures of candidates' organization skills</li> <li>• Ease of access</li> <li>• Screening/Comparing candidates</li> <li>• More evidence of experience and quality of work</li> <li>• Give insight into tech mastery</li> <li>• Consolidation of applicant materials</li> </ul>	<ul style="list-style-type: none"> <li>• Extra time, Lack of effort by some applicants</li> <li>• Accessibility issues</li> <li>• Not updating based on school/position they are applying for</li> <li>• Never looked at one; do not plan to look at one</li> <li>• Overwhelming amount of material</li> <li>• Seeing a person teach is the game changer</li> <li>• All candidates should be able to put together a quality portfolio; a bad one is telling</li> <li>• Experiences &amp; talks with references are better info</li> <li>• Accessibility issues</li> <li>• Not updating based on school/position they are applying for</li> <li>• Never examined portfolios</li> <li>• Great portfolio but not great writing skills</li> <li>• Different institutions provide differing ePortfolio training (unfair to compare)</li> <li>• Take extra time</li> <li>• Portfolios have never given an edge; sometimes a detriment</li> <li>• Unreliable</li> <li>• Does not give insight to heart of candidate</li> </ul>

### Quantitative

For research question 2, "What would school administrators desire in an electronic employment portfolio?", participants were presented with a list of 14 artifacts to discover which artifacts school administrators desired in ePortfolios used for hiring teachers. There was no limit to the number of artifacts a participant could select. An optional write-in question was also provided to give participants an opportunity to recommend additional artifact choices. Three of the participants made unique recommendations for additional ePortfolio contents. Table 4 displays the artifacts that were selected in rank order by percentage, including the participants' write-in recommendations.

For research question 3, "What delivery method would be preferred, due to changes in technology?", survey question 3 asked participants to rank order (1-4) the school administrators' preference for how the ePortfolio was delivered. After more than a decade from the earlier study (Strawhecker et. al., 2007) and changes in technology, we wanted to discover what delivery methods school administrators preferred in ePortfolios during the hiring process. Utilizing the current data, we reviewed the initial publication for a comparison. School administrators far preferred a website address in both 2007 and 2021, with noticeable changes being from 51.4% to 94.1%. When considering the use of Compact Disks (CD) to access ePortfolios on a computer, the percentage dropped from 22.9% to 1.5

Table 4  
*School Administrators' Desired ePortfolio Artifacts by Percentage (n = 68)*

Desired portfolio artifact	Percentage of participants choose this response
Candidate's resume	95.6%
References	89.7%
Letters of Recommendation	86.8%
College transcript	85.3%
Candidate's previous work experience	75.0%
Candidate's teaching philosophy statement	70.6%
Student teacher evaluations	66.2%
Evidence of reflection on teaching experiences	61.8%
Video clip of candidate interacting with students in a classroom setting	50.0%
Sample lesson plans	42.6%
Sample tests / other assessment instruments	26.5%
Artifacts to document experience with ethnic and cultural diversity	22.0%
Examples of candidate's work in college methods classes	20.6%
Artifacts that document community service-learning activities	16.2%
Other open-response recommendations provided by participants:	
Experience outside of school, such as extracurricular activities	1.5%
Special hobbies and interests	1.5%
Short videoclip of the candidate answering basic interview questions	1.5%

%. The change can be attributed to many things, from outdated technology to the fact that many computers/laptops no longer have a drive for CDs. The percentage also dropped for using Digital Video Disks (DVD) to play on a computer or television from 25.7% to 1.5%. Similarly, this may be contributed to it being outdated, as fewer people have access to this type of technology. Finally, for the category of "other," the percentage of participants selecting this delivery method increased from 0.0% to 2.9%. Comments included, "I don't think anything will increase my likelihood to them to use more than I do"; "I would prefer none - (instead) work on real-life experiences relationships, behavior management, and working with families"; and, "I feel like these are a lot of work and don't show much of teaching."

To answer the first part of research question 4, "What factors predict school administrators' likelihood of using ePortfolios and what potential improvements to ePortfolios would increase school administrators' use of them in the hiring process?", the data were run through a multiple regression summary analysis in SPSS for five predictors (independent variables) of ePortfolio usage in school administrators' hiring decisions ( $n = 68$ ). The predictors included age, years of experience, school population size, self-assessed technology competencies, and gender. The dependent variable was portfolio type, which was coded from 0-3. A score of 0 indicated none, 1 indicated paper, 2

indicated electronic portfolio, and 3 was both paper and electronic portfolio. Table 6 provides a summary of the analysis results.

The overall regression model was significant,  $F(5, 62) = 2.703$ ,  $p = .028$ ,  $R = .423$ ,  $R^2 = .179$ . As shown in Table 6, age, years of experience, school population size, and technology skill level all had a significance level greater than 0.1, to conclude that these independent variables were not good predictors for our dependent variable, ePortfolio usage by hiring officials. Gender showed statistical significance to predict the likelihood of using electronic portfolios ( $B = .316$ ,  $t = 2.576$ ,  $p = .012$ ). Results for this study indicate that male school administrators were more likely to use electronic portfolio than their female counterparts.

For the second part of research question 4, descriptive analysis was conducted with the results depicted in Table 7. Descriptive analysis was chosen, as it is considered the gold standard (Heymann et al., 2014) among researchers looking at descriptive analysis. Data indicates that the factor of "a standard format for candidates to follow" is the one that likely increases the chances of using ePortfolios by the school administrators. The finding correlates with the qualitative data presented earlier, which found ePortfolios that were easily accessible, straightforward in example, and a quick way to assess the candidates were the ones that school administrators preferred. No other category scored higher than 20% leaving a clear and concise answer.

Table 5  
*School Administrators' Preference in ePortfolio Delivery Method*

Preferred delivery method	Percentage of participants choosing this delivery method
Website address to view in a computer browser	94.1%
CD to play on my personal computer	1.5%
DVD to play on my computer or television	1.5%
Other (write in response)	2.9%

Table 6  
*Multiple Regression Summary Analysis (N = 68) for Five Predictors (Independent Variables) of ePortfolio use in School Administrators' Hiring Decisions*

Independent variable (Predictor)	Standardized weight (Beta)	t
Gender	.316	2.576*
Years of experience	.223	1.409
Self-reported technology skill level	.103	0.816
School population	.024	0.197
Age	-.002	-0.011

Note.  $R^2 = .179$ , multiple correlation = .423,  $F(5, 62) = 2.703$ ,  $p < .05$ .

Table 7  
*School Administrators' Responses to Options for Increasing ePortfolio use in the Hiring of Teachers*

Option for increasing electronic portfolio use	Percentage of participants choosing this option
A standard format for candidates to follow	64.0%
Training on the technology needed to assess portfolios	4.7%
A standard procedure or rubric for assessing electronic portfolios	19.8%
Other (Please specify)	11.6%

## Discussion

For the current study, we chose to focus on the school administrators' perceptions of all three types of ePortfolios (i.e., learning, evaluation, and showcase) as a whole, as hiring officials look at these components as one product. To address research question 1, the participants were asked to identify the pros and cons of using ePortfolios in making hiring decisions, and this is where the findings between the two studies can be compared. In the study conducted by Strawhecker et al. (2007), the pros for using ePortfolios in the hiring process were that they are easier to manage and lead to better job matches. On the other hand, in our study, the pros focused on ePortfolios allowing for the opportunity to see more examples of candidate work, including the candidates' organizational skills. Moreover, the ePortfolio provides school administrators with a quick overview of candidates to make comparisons. The cons from the previous study were the obstacles for school administrators in viewing the ePortfolios, which included the different formats as well as a concern for a lack of time to navigate and view the ePortfolio artifacts.

Similarly, the current study also yielded con responses that focused on a time restraint, the lack of reliability, loss of standard information, and accessibility issues.

The question about reliability issues mentioned by some participants is unique to this study. Because the survey did not request any follow-up information, we are left to speculate what the participants who stated lack of reliability as a con meant. With any portfolio submission, a candidate provides specific materials that highlight their strengths and indicate why they would be the best candidate for the job, which is typical of application materials that are gathered in the hopes of the candidate putting their best foot forward to impress the hiring administrator with their successful past. Reliability may come into play with the creation of the ePortfolio itself. One would hope the materials are truly a product of the applicant's work and that they are not including lessons and materials that others have created; however, if a candidate is using the ePortfolio itself to promote a strength in technology, there is a chance someone else might have created the ePortfolio for them, thereby further bringing reliability into question.

The theme of a time constraint for using ePortfolios in the hiring process as a con is consistent with previous studies (e.g., Theel & Talerico, 2004; Ward & Moser, 2008). School administrators' concern that ePortfolios take more time to review than other application materials is one of the consistent reasons why they are not more generally accepted. Given the advancements in technology from 2004 to 2020, ePortfolios are still more onerous than hiring administrators have time for, which indicates teacher candidates should not spend time creating detailed, content-heavy ePortfolios because hiring administrators may not have time to appreciate all the extra work that went into them.

A theme from this study that is inconsistent with previous studies is the usage of the ePortfolio in the hiring process. In previous studies, school administrators indicated they used ePortfolios in the final stage of hiring to ensure that they have selected the best candidate (e.g., Adoniou & Gallagher, 2017; Ring et al., 2017). In this study, hiring administrators indicated they used ePortfolios in the initial stages of the interview process for an overview of the candidates and to narrow down the applicant list. Changes in this usage seem to identify a shift in hiring needs, as current administrators presumably take a cursory glance at ePortfolios to decrease the number of applicants from which to choose to bring for an interview, while five years ago, administrators were spending more time looking at just a few ePortfolios to make their final decision. This shift is likely to be an indicator for teacher education students—and the instructors who are helping them—that ePortfolios should contain a very quick overview of their best practices, theories, and goals as a future educator. Spending time preparing an ePortfolio that overwhelms the hiring administrator with in-depth analyses of created resources and lessons may not be appreciated during a cursory glance at the start of the interviewing process.

When examining research question 2, there is a void in large-scale research to describe what items administrators want in ePortfolios when making hiring decisions (e.g., Douglas et al., 2019; Eynon & Gambino, 2017; Posey et al., 2015). Despite advancements in technology over the past decade, no distinct change was detected for the types of desired artifacts in showcase portfolios (Ciesielkiewicz, 2019; Ritzhaupt et al., 2008). When comparing our ePortfolio study with a previous study (Strawhecker et al., 2007), we noted that the administrators' desired artifacts in portfolios—including the top four rankings as well as the bottom five artifacts—were in identical order. Interestingly, the top four artifacts may be viewed as more “traditional” in that other employers may request similar items, such as resumes and college transcripts, to screen applicants. We can conclude that the list of choices reflects what school administrators desire,

leaving little choice for prospective hires to showcase their abilities in an ePortfolio (Fiedler et al., 2009). Over the last 14 years, there were several educational changes in technology, standards, expectations, and assessments, yet school administrators still value the same collection of items for inclusion in ePortfolios during the hiring process.

The current study revealed there has been a change in school administrators' preferences for electronic portfolios, which addresses research question 3. Specifically, they dominantly preferred websites as a format for electronic portfolios which was a different finding from what previous studies found (Ritzhaupt et al., 2008; Strawhecker et al., 2007). Strawhecker et al. (2007) found that school administrators' preferences for electronic portfolios were quite diverse, including websites, CD/DVD, etc. While this change shows a noticeable difference between our study and previous ones, it reflected the technology trend in which CDs and/or DVDs were less popular and was consistent with current literature about how electronic portfolios were built in the last decade (Douglas et al., 2019).

Strawhecker et al. (2007) revealed that the previous use of portfolios, whether paper or electronic, as the predictive factor to determine the likelihood of ePortfolio usage in school administrators' hiring decisions. The results of the current study indicated that gender was the only factor to predict the likelihood of using ePortfolios in hiring decisions by the school administrators, despite the low number of female participants to address research question 4. The literature shows no other studies that compare and analyze predictive factors for electronic portfolio usage in making hiring decisions. However, in the study by Strawhecker et al. (2007), participant gender was not included as a survey question, which may explain the discrepancy.

## Limitations

As with other research studies, this study has limitations. Despite sending the online survey to all public school administrators in one Midwestern state, the timing was such that educators were amid a global pandemic and may not have prioritized completion of the added responsibility. Additionally, one metropolitan, large school district contacted us to deny participation in the study. The reason for this was to limit outside distractions during remote teaching. The research questions for this study aligned with a previous survey project by one of the authors and only represented one data point. Combining a survey with another method helps to triangulate the data (Jentoft & Olsen, 2017).

A limitation was there was a lack of reliability that is unique to this study. The survey did not request any follow-up information, forcing us to speculate what the participants meant when an answer was unclear.

Allowing for follow-up questions would require this study to include interviews, which would be next to impossible given the  $n$  and the time constraints of that process. However, it would lead to interesting implications that otherwise would not be understood.

### Implications and Future Use

The implications of this replication study are unique, as it has uncovered and addressed some of the underdeveloped areas of the ePortfolio, especially the influence that ePortfolios have on the thoughts and perceptions of school administrators, and the effect that ePortfolios can have on hiring. School administrators are interested in an online resource that has a standard format focusing on everything from the typical resume to a web-linked video clips of candidates teaching. Samples of work and other artifacts from learning, while important to universities, are less important to school administrators and other hiring professionals. As CAEP has become a larger part of higher education for teacher education programs, and changes are needed due to their requirements (Anderson, 2019; Ruch, 2020), app technology has been critical for data collection. For this study, it is particularly important, as university faculty need to know what school administrators and other officials are looking for when hiring teachers, offering a broader scope of expectations and trackable evidence of professional growth and actionable learning. With changes in technology, Karpf (2012, 2019) explained that, while it has been shifting quickly to meet the needs of consumers, there is a slow-down in internet changes and more of a focus on the applications of what can be utilized by it, including individual websites. Universities need to create ePortfolios with preservice teachers based on what administrators are looking for in order to make them useful to the preservice teachers and to administrators.

### References

- Adoniou, M., & Gallagher, M. (2017). Professional standards for teachers—What are they good for? *Oxford Review of Education*, 43(1), 109-126. <https://doi.org/10.1080/03054985.2016.1243522>
- Anderson, V. A. (2019). *The impact of common core state standards on a college of education educator preparation program* (Publication No. 13904246) [Doctoral dissertation, Oral Roberts University]. ProQuest Dissertations and Theses Global.
- Britten, J., Mullen, L., & Stuve, M. (2003). Program reflections on the role of longitudinal digital portfolios in the development of technology competence. *Teacher Educator*, 39(2), 79-94. <http://dx.doi.org/10.1080/08878730309555332>
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. SAGE.
- Chatham-Carpenter, A., Seawel, L., & Raschig, J. (2010). Avoiding the pitfalls: Current practices and recommendations for ePortfolios in higher education. *Journal of Educational Technology Systems*, 38(4), 437-456. <https://doi.org/10.2190/ET.38.4.e>
- Ciesielkiewicz, M. (2019). Education for employability: The ePortfolio from school principals' perspective. *On the Horizon*, 27(1), 46-56. <https://doi.org/10.1108/OTH-01-2019-0001>
- Ciesielkiewicz, M., Bonilla, C., & Olave López de Ayala, C. (2020). Putting ePortfolios into practice: Willingness of school principals to use the ePortfolio as a hiring tool in Poland and Spain. *International Journal of Interactive Mobile Technologies*, 14(14), 109-120. <https://doi.org/10.3991/ijim.v14i14.15075>
- Daim, T., Boss, V., Thomas, J., Kessler, L., Finn, D., & Krueger, J. (2016). Evaluating technologies for education: Case of ePortfolio. *Technology, Innovation and Education*, 2(1), 1-17. <https://doi.org/10.1186/s40660-016-0010-8>
- Douglas, M. E., Peecksen, S., Rogers, J., & Simmons, M. (2019). College students' motivation and confidence for ePortfolio use. *International Journal of ePortfolio*, 9(1) 1-16. <http://www.theijep.com/pdf/IJEP316.pdf>
- Downer, T., & Slade, C. (2019). Starting early: Using ePortfolios to prepare first year midwifery students for professional practice. In K. Trimmer, T. Newman, & F. Padró (Eds.), *Ensuring quality in professional education* (Vol. 1). Palgrave Macmillan.
- Eynon, B., & Gambino, L. M. (2017). *High-impact ePortfolio practice: A catalyst for student, faculty, and institutional learning*. Stylus.
- Fiedler, R. L., Mullen, L., & Finnegan, M. (2009). Portfolios in contexts A comparative study in two preservice teacher education programs. *Journal of Research on Technology in Education*, 42(2), 99-122. <https://doi.org/10.1080/15391523.2009.10782543>
- Gaudin, C., & Chaliès, S. (2015). Video viewing in teacher education and professional development: A literature review. *Educational Research Review*, 16, 41-67. <http://dx.doi.org/10.1016/j.edurev.2015.06.001>
- Gulzar, N., & Barrett, H. C. (2019). Implementing ePortfolios in teacher education: Research, issues and strategies. In S. Walsh & S. Mann (Eds.), *The Routledge handbook of English language teacher education*. Routledge Press.
- Heymann, H., King, E. S., & Hopfer, H. (2014). *Classical descriptive analysis*. In P. Varela & G. Ares (Eds.), *Novel techniques in sensory characterization and consumer profiling* (pp. 9-40). CRC Press.

- Henard, F., & Roseveare, D. (2012). *Fostering quality teaching in higher education: Policies and practices*. Institute Management in Higher Education. <https://www.oecd.org/education/imhe/QT%20policies%20and%20practices.pdf>
- Holba, A. M., Bahr, P. T., Birx, D. L., & Fischler, M. J. (2019). Integral learning and working: Becoming a learning organization. *New Directions for Higher Education*, 185, 85-99. <https://doi.org/10.1002/he.20314>
- Jentoft, N., & Olson, T. S. (2017). Against the flow in data collection: How data triangulation combined with a “slow” interview technique enriched data. *Qualitative Social Work*, 18, 179-193. <https://doi.org/10.1177/1473325017712581>
- Karpf, D. (2012). Social science research methods in internet time. *Information, Communication & Society*, 15, 636-661. <https://doi.org/10.1080/1369118X.2012.665468>
- Karpf, D. (2019). Something I no longer believe: Is internet time slowing down? *Social Media + Society*, 1, 1-4. <https://doi.org/10.1177/2056305119849492>
- Lievens, R. (2014). A proposal: Mitigating effects of the economic crisis with career ePortfolios. *International Journal of ePortfolio*, 4(2), 157-168. <https://www.theijep.com/pdf/IJEP139.pdf>
- Mariano, J., Marques, S., Ramos, M. R., Gerardo, F., Lage da Cunha, C., Girenko, A., Alexandersson, J., Stree, B., Lamanna, M., Lorenzatto, M., Pierrel Mikkelsen, L., Bundgård-Jørgensen, U., Rêgo, S., & de Vries, H. (2021). Too old for technology? Stereotype threat and technology use by older adults. *Behaviour & Information Technology*, 40(1), 821-836. <https://doi.org/10.1080/0144929X.2021.1882577>
- Mayowski, C. (2014). *ePortfolios for accreditation? Prevalence, institutional characteristics, and perceptions at United States regionally accredited institutions* [Unpublished doctoral dissertation]. University of Pittsburgh.
- Meyer, B., & Latham, N. (2008). Implementing electronic portfolios: Benefits, challenges, and suggestions. *EDUCAUSE Quarterly*, 31(1), 34-41.
- Mitzner, T. L., Savla J., Boot, W. R., Sharit, J., Charness, N., Czaja, S. J., & Rogers, W. A. (2019). Technology adoption by older adults: Findings from the PRISM trial. *Gerontologist*, 59(1), 34-44. <https://doi.org/10.1093/geront/gny113>
- Ndoye, A., Ritzhaupt, A., & Parker, M. (2012). Use of ePortfolios in K-12 teacher hiring in North Carolina: Perspectives of school principals. *International Journal of Education Policy and Leadership*, 7(4). <https://doi.org/10.22230/ijep.2012v7n4a336>
- Neuendorf, K. A., & Kumar, A. (2015). Content analysis. In G. Mazzoleni (Ed.), *The international encyclopedia of political communication* (pp. 1-10). <https://doi.org/10.1002/9781118541555.wbiepc065>
- O’Keeffe, M., & Donnelly, R. (2013). Exploration of ePortfolios for adding value and deepening student learning in contemporary higher education. *International Journal of ePortfolio*, 3(1), 1-11. <https://www.theijep.com/pdf/IJEP92.pdf>
- Parker, M., Ndoye, A., & Ritzhaupt, A. D. (2012). Qualitative analysis of student perceptions of ePortfolios in a teacher education program. *Journal of Digital Learning in Teacher Education*, 28(3), 99-107. <http://dx.doi.org/10.1080/21532974.2012.10784687>
- Parkes, K. A., Dredger, K. S., & Hicks, D. (2013). ePortfolio as a measure of reflective practice. *International Journal of ePortfolio*, 3(2), 99-115. <https://www.theijep.com/pdf/IJEP110.pdf>
- Posey, L., Plack, M. M., & Snyder, R. (2015). Developing a pathway for an institution wide ePortfolio program. *International Journal of ePortfolio*, 5(1), 75-92. <http://www.theijep.com/pdf/IJEP167.pdf>
- Ring, G. L., Waugaman, C., & Brackett, B. (2017). The value of career ePortfolios on job applicant performance: Using data to determine effectiveness. *International Journal of ePortfolio*, 7(2), 225-236. <https://www.theijep.com/pdf/IJEP259.pdf>
- Ritchie, J., Spencer, L., Bryman, A., & Burgess, R. G. (1994). Qualitative data analysis for applied policy research. In A. Bryman & B. Burgess (Eds.), *Analyzing qualitative data* (1st ed., pp. 194-215). [http://dx.doi.org/10.4324/9780203413081\\_chapter\\_9](http://dx.doi.org/10.4324/9780203413081_chapter_9)
- Ritzhaupt, A., Singh, O., Seyferth, T., & Dedrick, R. (2008). Development of the electronic portfolio student prospective instrument: An ePortfolio integration initiative. *Journal of Computing in Higher Education*, 19(2), 47-71. <https://doi.org/10.1007/BF03033426>
- Ruch, C. (2020). Turning around colleges of education: Lessons from two case studies. *International Journal of Teacher Education and Professional Development*, 3(2), 79-91. <https://doi.org/10.4018/IJTEPD.2020070106>
- Schiele, K., Matzen, Richard N., Jr., & Bridgewater, M. (2017). Using ePortfolios to demonstrate high-impact educational practices and promote student employment success. *Journal of Higher Education Theory and Practice*, 17(1), 102-109.
- Slepcevic-Zach, P., & Stock, M. (2018). ePortfolio as a tool for reflection and self-reflection. *Reflective Practice*, 19(3), 291-307. <https://doi.org/10.1080/14623943.2018.1437399>
- Strawhecker, J., Messersmith, K., & Balcom, A. (2007). The role of electronic portfolios in the hiring of K-12 teachers. *Journal of Computing in Teacher Education*, 24(2), 65-71.

- Strudler, N., & Wetzel, K. (2005). The diffusion of electronic portfolios in teacher education: Issues of initiation and implementation. *Journal of Research on Technology in Education*, 37(4), 411-433. <https://doi.org/10.1080/15391523.2005.10782446>
- Theel, R. K., & Tallerico, M. (2004). Using portfolios for teacher hiring insights from school principals. *Action in Teacher Education*, 26(1), 26-33. <http://dx.doi.org/10.1080/01626620.2004.10463310>
- Torre, E. M. (2019). Training university teachers on the use of the ePortfolio in teaching and assessment. *International Journal of ePortfolio*, 9(2), 97-110. <https://www.theijep.com/pdf/IJEP335.pdf>
- Ward, C., & Moser, C. (2008). ePortfolios as a hiring tool: Do employers really care? *EDUCAUSE Quarterly*, 31(4), 13-14. <https://er.educause.edu/-/media/files/article-downloads/eqm0842.pdf>
- Wray, S. (2007). Supporting teacher candidates during the electronic portfolio development process. *E-Learning and Digital Media*, 4(4), 454-463. <https://doi.org/10.2304/elea.2007.4.4.454>
- Watson, C. E., Kuh, G. D., Rhodes, T., Penny Light, T., & Chen, H. (2016). Editorial: ePortfolios—The eleventh high impact practice. *International Journal of ePortfolio*, 6(2), 65-69. <http://www.theijep.com/pdf/IJEP254.pdf>
- Watty, K., & McKay, J. (2015). Pedagogy and ePortfolios: Purpose aligned to design (or the why and how). *International Journal of Pedagogies & Learning*, 10(3), 194-207. <https://dx.doi.org/10.1080/22040552.2015.1135498>
- Wuetherick, B., & Dickinson, J. (2015). Why ePortfolios? Student perceptions of ePortfolio use in continuing education learning environments. *International Journal of ePortfolio*, 5(1), 39-53. <http://theijep.com/pdf/IJEP135.pdf>

---

ALICE CAHILL, EdD, is an Assistant Professor of Special Education at the University of Nebraska-Kearney. Her research interests include self-efficacy, pre-service teachers, and behavioral interventions. Dr. Cahill earned her doctoral degree from Illinois State University in Normal, IL.

REBECCA NELSON, PhD, is an Assistant Professor of Teacher Education at the University of Nebraska-Kearney, where she teaches online in the graduate Transitional Certification Program, and in the undergraduate teacher education program. Her research is focused on English language arts, sociolinguistics and dialect variance, and the recruitment and retention of BIPOC teachers.

JANE STRAWHECKER, PhD, is a Professor of Teacher Education at the University of Nebraska-Kearney. Her research interests include mathematics education for preschool through elementary grades students and teacher preparation. She earned her PhD from the University of Nebraska-Lincoln.

PHU VU, PhD, is an Associate Professor in the Teacher Education Department at the University of Nebraska-Kearney. He is interested in supporting teacher development at all levels. His research interests include technology-enhanced learning and teaching, game-based learning, gifted education, and ESL.



## “A Sort of Roadmap to Success...”: A Model for Piloting ePortfolios and Lessons Learned From a Rehabilitation Sciences Curriculum

Jennifer Wescott and Orit Schwartz  
*University of Illinois at Chicago*

In this paper, we present the development, implementation, and lessons learned during the 2-year pilot integration of an ePortfolio across a rehabilitation sciences (RS) curriculum within a publicly funded state university. We consider the educational environment and discuss decision points during various stages of the project. Four key aspects of project development and implementation are highlighted, including a contextual analysis of goals, partnerships, curricular positioning, and foundational tools. Contextual analysis of goals includes the process of creating a project vision that aligns with the student population served, programmatic goals, and the guiding frameworks inherent to ePortfolios as a high impact practice. An exploration of partnerships describes the role of diverse stakeholders, within and outside the program, and their contribution to ongoing project development and success. Curricular positioning considers which courses are utilized for the introduction, conclusion, and touch points of the project, and how success is measured in each. A discussion of foundational tools identifies the student-facing resources required to facilitate a clear, relevant, and sustainable ePortfolio across the curriculum. When possible, we highlight student voices, including reflections on motivation, adaptive skill building, and engagement with the ePortfolio process. Ongoing challenges, preliminary outcomes, and next steps are also outlined.

In this paper, we detail the development, implementation, and lessons learned throughout the integration of an ePortfolio across a rehabilitation sciences (RS) curriculum within a publicly funded state university. Decision points and rationale based on evaluation of the educational environment are presented during various stages of the project's growth regarding (1) contextual analysis of goals, (2) partnerships, (3) curricular positioning, and (4) foundational tools. Plans for ongoing development based on pilot outcomes are discussed.

### Background and Context

#### Students

The majority of students in the RS program indicate that they are interested in pursuing a career in the allied health professions. Upon entering the program, students most frequently name physical therapy (PT) and occupational therapy (OT) as their desired career path, often having heard about these professions from friends and relatives or through experiences of caring for family members with disabilities. While some graduates from the RS program indeed apply to graduate OT and PT programs, many do not. According to alumni surveys, RS graduates have pursued professional paths in a variety of health and human services related areas, such as nursing, case management, and community health—professional areas they often first encountered as part of their undergraduate studies. While this outcome may appear to be common sense and expected, it suggests a need and an opportunity that was not fully addressed in the RS program structure and course curricula—namely, how to facilitate effective and meaningful exploration of future goals and options for our students. RS is a preprofessional

program with a large population of first-generation college students (FGCS), who often enter with little knowledge of the “unwritten rules” required to navigate higher education, insufficient skills for professional exploration, and consequently, limited self-efficacy to connect their experiences with future career paths.

Having increased by a factor of 2.5 in the past decade, FGCS comprise 27% of the undergraduate student population at the University of Illinois at Chicago (University of Illinois System, n.d.). As a result, the development and implementation of learning opportunities that embed equitable strategies and prioritize understanding the experiences of FGCS has never been more critical. Research reflects the unique strengths of this group of students (Demetriou et al., 2017) while also pointing to additional, and often invisible, layers of psychosocial risk which may impact the ability of FGCS successfully transition to college (Jenkins et al., 2013). The COVID-19 pandemic has magnified these stressors (Soria et al., 2020), resulting in an even more urgent demand for institutions of higher education to provide enabling and equitable environments that consider the social, emotional, and physical impact of their educational practices on an increasingly diverse student population.

#### ePortfolio

The use of ePortfolios is a widely accepted high impact practice (HIP), shown to increase both the engagement and success of diverse learners (Kuh, 2017). ePortfolios have been shown to improve the experience of transition to college for FGCS, providing a platform to construct one's personal narrative, increase self-awareness of skills, and build self-efficacy

while also reflecting on connections among motivation, sense of belonging, and academic life (Conefrey, 2018). The challenge for our program is not only to introduce our students to new areas of professional knowledge and practice but also—and even more importantly—to enable each one of them to identify their interests and options from a perspective of confidence and a sense of opportunity. Incorporating the ePortfolio across the curriculum emerged as a promising, even if challenging, approach we decided to pursue.

RS program goals position it well to respond to this challenge. From its origins, the RS major was envisioned as offering more than a set of prerequisite courses required for admissions to specific professional rehabilitation programs such as OT or PT. The program's core requirements are interdisciplinary and reflect a holistic approach to health, positing well-being as encompassing physical, social, economic, cultural, and spiritual dimensions. Across the core RS curriculum and beyond, students are required to engage in critical analysis and reflective thinking about key issues encountered in health and human services today. Critical examination of the assumptions and knowledge underlying professional practice goes hand in hand with reflective interpretation and re-interpretation of personal experiences and interactions. It is fair to say that reflection, individual growth, and re-envisioning of one's personal and professional future are embedded in RS courses.

## Framework

As ePortfolios are becoming increasingly common in undergraduate programs, so does the understanding that the benefits of the ePortfolio extend beyond simply serving as a reservoir to collect students' best academic work, or an effective assessment strategy (Nguyen, 2013; Woodward, 2000; Yancey, 2019). Currently, the ePortfolio is seen as a vehicle for students to develop their identities as learners, create meaningful connections to future professional plans, and ultimately showcase "who they are" to the professional world (Cordie et al., 2019, p. 17). Within this framework, the ePortfolio is not a set of completed products, but a dynamic and transformative process, at the center of which stands the student's individual story. Through the ePortfolio, students can attain a deeper understanding of their capacities as they integrate their academic work with their personal background and history, as well as their current aspirations and ideas about the future. The ePortfolio, therefore, is a natural site for the student to construct an individualized narrative that tells their unique story (Graves & Epstein, 2011; Mueller & Bair, 2018).

To conceptualize the ePortfolio as storytelling, authors have drawn on theories of narrative construction and meaning making (Graves & Epstein, 2011; Lindsay & Schwind, 2016). Examples of this

approach exist even before the onset of the electronic version of the portfolio. Woodward (2000) suggested that key elements of the narrative genre—temporality, collaboration, voice, performance, and reflection—underlie the student portfolio as it leads to "organizing experience, interpreting events and creating meaning while maintaining a sense of continuity" (p. 340). This view underscores that the ePortfolio can be more than the sum of its parts. Through the intersection of these narrative elements, the students create an individual story with its own unique chronologies, key influences, formative learning experiences, and pivotal points. More recently, the ePortfolio has come to the fore, and in the post-COVID era, understanding its potential to tell students' unique stories effectively is more relevant than ever before.

Advocates of the ePortfolio have argued that it empowers students to configure a narrative or story that imbues meaning into life events and experiences while also establishing narrative continuity with a desired future (Nguyen, 2013). The issue, however, is not only identifying the potential of ePortfolios, but also understanding the mechanisms, or the programmatic, curricular, and pedagogical frameworks that can facilitate successful enactment of storytelling within students' ePortfolio. Mueller and Bair (2018) underscored this point in their critique of ePortfolio implementation that assumes students can "think metacognitively to self direct" (p. 5). On the contrary, they argued, developing a transformative ePortfolio program is "an arduous process for both instructors and students," and it requires substantial planning and resources—dedication to implement well (p. 6).

## Evidence-Based ePortfolio Features

We identified several key features of successful ePortfolio programs and critically considered how to adapt and apply these evidence-based strategies as we implement the ePortfolio in the RS program. These features include:

- Direct instruction in reflective practices
- Key curricular touchpoints for ongoing ePortfolio development over time
- Embedded collaborative processes for student sharing and feedback

A shortcoming characteristic of some ePortfolio projects is insufficient attention to direct instruction in reflective practices (Mueller & Bair, 2018). Thinking about one's learning process and outcomes should not be taken for granted but rather incorporated into the curriculum as a skill to learn and practice. Furthermore, reflection is the process by which the various artifacts a

student includes in an ePortfolio become part of a unified and personalized storyline that connects discrete experiences to create a personal sense of direction and future aspirations (Cordie et al., 2019).

In our program, faculty have recognized the need to teach and scaffold students' ability to reflectively synthesize learning and experiences; in fact, the ePortfolio project was conceived as a potential response to this need. Thus far, the emphasis has been on developing content-neutral guidelines and tools that can facilitate reflective thinking and evaluation of relevance and significance with regards to diverse experiences in college and beyond. Students are required to use a structured reflection guide as part of assignments in all the key ePortfolio courses. Furthermore, the ePortfolio process can be enhanced by integrating complementary HIPs (Conefrey, 2017) such as the first-year seminar we use as the starting point for ePortfolio development. In this course, time is taken to explain and illustrate the guided reflection process. However, based on our aggregated experience and student feedback (reviewed later), we recognize, as have other programs (e.g., Wenk, 2019), the need to expand and augment direct instruction and practice opportunities both in content-neutral context and in relation to the specific contents of various key courses.

Another programmatic feature associated with successful integration of ePortfolio practice is the institution of key points in the curriculum when students are required to work on the construction of their ePortfolios. At these key points, students should focus on creating new artifacts for the ePortfolio and on receiving feedback for and editing what is already there (Cordie et al., 2019). After establishing the ePortfolio beginning and end points, the first-year seminar and a senior synthesis seminar, two more core courses in the RS program were identified as touchpoints for the ePortfolio. It was important not to require course instructors to alter their course plans significantly, especially since they were already working under strenuous and stressful demands to adjust their courses during the pandemic. Rather, the faculty collaboratively decided to designate an existing assignment in each key course to be a *signature assignment*, which would be incorporated as an ePortfolio artifact. Instructors were requested to make the ePortfolio tools and resources available to students in the course and to include a reflection component in the signature assignment rubric.

Another reason for this incremental approach is that during the pilot implementation, students are at various stages along the ePortfolio development path. At this time, key ePortfolio courses may have some students who have already started their ePortfolio and others who have not. While all students complete

signature assignments in these key courses, for now, the requirement to integrate these as artifacts into the ePortfolio occurs only in the senior synthesis seminar, where the completed ePortfolio is the final product of the course. Introducing ePortfolio components into existing core classes gradually also allows the various stakeholders to reflect and receive feedback before instituting major changes in the program's core courses. Ultimately, however, all students in the program will begin constructing their ePortfolios in their first year of the program and will have structured opportunities to work on it (adding, editing, designing) as part of touchpoint courses and senior synthesis.

ePortfolio research suggests that the ePortfolio narrative emerges through ongoing selection, reflection, and interaction. Students construct and tell their stories not only by gathering and arranging written work, multimedia samples, images, and other artifacts but also—and just as crucially—through sharing and discussing their ePortfolio while working on it (Cordie et al., 2019; James et al., 2019). As a shared platform, the ePortfolio provides a unique opportunity for reflective iteration through interaction with other students' stories and responses. Maybe the most telling example for how reflection and interaction work in ePortfolios is that students include not only successes but also barriers they faced and even failures they experienced, since these become powerful narrative points in the story they create for their audience (Nguyen, 2013). Furthermore, if students only receive feedback in response to private viewing by instructors, they miss out on real opportunities to practice presenting the story they construct, listening and responding to feedback, and adapting their delivery to various audiences.

Presently, the RS ePortfolio program provides limited opportunities for interaction and structured peer feedback. Students with completed ePortfolios have begun mentoring other students either in their capacity as undergraduate course assistants or as tutors in an academic resources center outside the department. However, we realize that more peer discussion, sharing, and mutual feedback are needed to implement the ePortfolio successfully as an enabling practice of personal and professional growth. We also understand that to accomplish this goal there needs to be a "substantive shift" (Mueller & Bair, 2018, p. 9) in how we think about courses and assignments. For the ePortfolio to be a tool for curricular integration and personal growth, students need opportunities to focus on what they learn across courses and in the context of their life experiences and aspirations. The ePortfolio is a framework for learning as interpretation, where students not only receive but also actively create and assess their education (Nguyen, 2013). Our next steps will aim at realizing this potential.

Figure 1  
*Timeline and Steps for ePortfolio Pilot*

Term	Fall 2020	Spring 2021	Fall 2021			
Course	AHS 101 Rehabilitation Sciences Student Success Seminar	AHS 393 Synthesis in Health/ Rehabilitation Sciences	AHS 101 Rehabilitation Sciences Student Success Seminar	AHS 325 Approaches to Rehabilitation Case Management	AHS 365 Measurement & Assessment in Rehabilitation	AHS 393 Synthesis in Health/Rehabilitation Sciences
ePortfolio Growth						
Features	Introduce ePortfolio with 2 assignments: <ul style="list-style-type: none"><li>Beginning of semester: Create a student bio</li><li>End of semester - Complete 1 reflection assignment related to one learning experience using structured reflection guide</li><li>Piloting of structured reflection guide</li></ul>	Pilot of full ePortfolio version: <ul style="list-style-type: none"><li>4 students completed over one semester as a synthesis of their experiences</li></ul> The ePortfolio includes at least: <ul style="list-style-type: none"><li>Homepage</li><li>3 academic assignments</li><li>Reflection on creating the project</li></ul>	New format for course with expanded focus on student success and skill building: <ul style="list-style-type: none"><li>Incorporated goal setting, interest and strength exploration, career development, applied on-campus engagement opportunities, and practice of reflection skills</li></ul> 3 in-class ePortfolio workshops: <ul style="list-style-type: none"><li>roll out of new resources: reflection guidelines, video tutorials, student examples, and in-class time devoted to beginning each section</li></ul>	Integrated signature assignments into core courses in Rehabilitation Sciences major: <ul style="list-style-type: none"><li>One of the courses included Discussion Board assignment to share and discuss individual topic selections for projects</li></ul> Incorporated resources into Blackboard for each course: <ul style="list-style-type: none"><li>Step by step instructions and demos for website creation</li><li>Guide with vocabulary prompts for structured reflection</li></ul>	ePortfolio becomes one of 3 project options: <ul style="list-style-type: none"><li>Additional resources available -- recorded demos and student mentors</li></ul>	
ePortfolio Development & Lessons Learned	<ul style="list-style-type: none"><li>Identified need for more formalized, in-depth direct instruction and follow up on reflective thinking</li><li>To ensure continuity of project, ePortfolio must to be built into the structure of other courses for credit</li><li>Resources should be responsive to specific challenges experiences in various stages of the development of the ePortfolio</li></ul>	Students found it difficult to recall meaningful learning experiences in detail from semesters ago <ul style="list-style-type: none"><li>Need for in the moment opportunity to capture these experiences;</li></ul> Students requested additional resources to assist with navigating technology & use of web builder <ul style="list-style-type: none"><li>Experienced students/student mentors developed course-specific resources</li></ul>	Need for expanded opportunities for students to interact and share their work with peers	Need more structured opportunities for students to share work <ul style="list-style-type: none"><li>Expand discussion board sharing from single event to ongoing practice</li><li>Implement structured opportunities for oral sharing and feedback; possible in small groups.</li></ul> Students may need help with technology <ul style="list-style-type: none"><li>Consider ePortfolio webinar available to all students and live 1x semester</li></ul>	Future plans: <ul style="list-style-type: none"><li>Update resources for website and reflection based on feedback in student surveys</li><li>Integrate structured opportunities to share ePortfolio process alongside signature assignments</li><li>Develop guidelines for including experiences outside of major and/or university</li><li>Consider avenues for students to share their final products</li></ul>	

## **RS ePortfolio Project Vision**

To develop an ePortfolio practice, we sought to deeply understand the students we serve and the core goals of the RS program. Our purpose was to identify the characteristics and synergistic frameworks of ePortfolio practice that align with the needs and opportunities we saw in our program and create an overarching vision for the project. Key to this overarching vision are the specific needs of our student body, our programmatic goals and equity focus, what we learned about the ePortfolio as a storytelling framework, and the need to adapt features of ePortfolio implementation that have been proven effective into the context of our program. The resulting vision for the RS ePortfolio Project is to provide an evidence-based platform for diverse learners to create, revise, and construct effective personal narratives, and foster self-efficacy in sharing their stories around key themes, including: (a) their path and development toward academic and professional goals; (b) the outcomes of structured reflection on impactful assignments, critical life events, and skills gained during their time in the RS program; and (c) integration of learning across academic and practice-based experiences.

Creating a vision that is grounded in an analysis of how this project would contribute to our students' academic, personal, and professional success in the RS program and beyond has been an essential first step. As project development continues, we will revisit this vision of the ePortfolio to ask whether it aligns with our student population, program requirements, and curricular goals.

## **Development and Implementation**

### **Timeline: Incorporation of the ePortfolio From 2020-2021—Characteristics**

The process of incorporating an ePortfolio practice into the RS curriculum developed over the course of two academic years and is outlined in Figure 1. The project began in Fall 2020 with the integration of an introductory module at the beginning and end of a single course in which students completed a simple profile page and a reflection on one learning experience from their semester. Since then, the ePortfolio project has grown to include touchpoints in four courses, two signature assignments, and a final ePortfolio product containing five pages. This final ePortfolio includes a structured reflection on learning experiences both inside and outside the classroom, as well as student insights on how the process of ePortfolio development impacted them. Important support for the growth of the project came through partnership with students, who helped develop tailored resources such as step-by-step video tutorials to demystify web builder skills and provided

mentorship through sharing their own work samples and experiences during in-class workshops. This collaboration with students not only eased the ePortfolio-related workload for instructors but also reduced students' hesitations and anxiety about the new requirement. Students felt less intimidated by the process because of working with each other and being mentored by other students. Throughout the development process, feedback received from students informed ongoing problem-solving, and was instrumental in maintaining the relevance, relatability, and overall improvement of the ePortfolio process.

## **Partnerships**

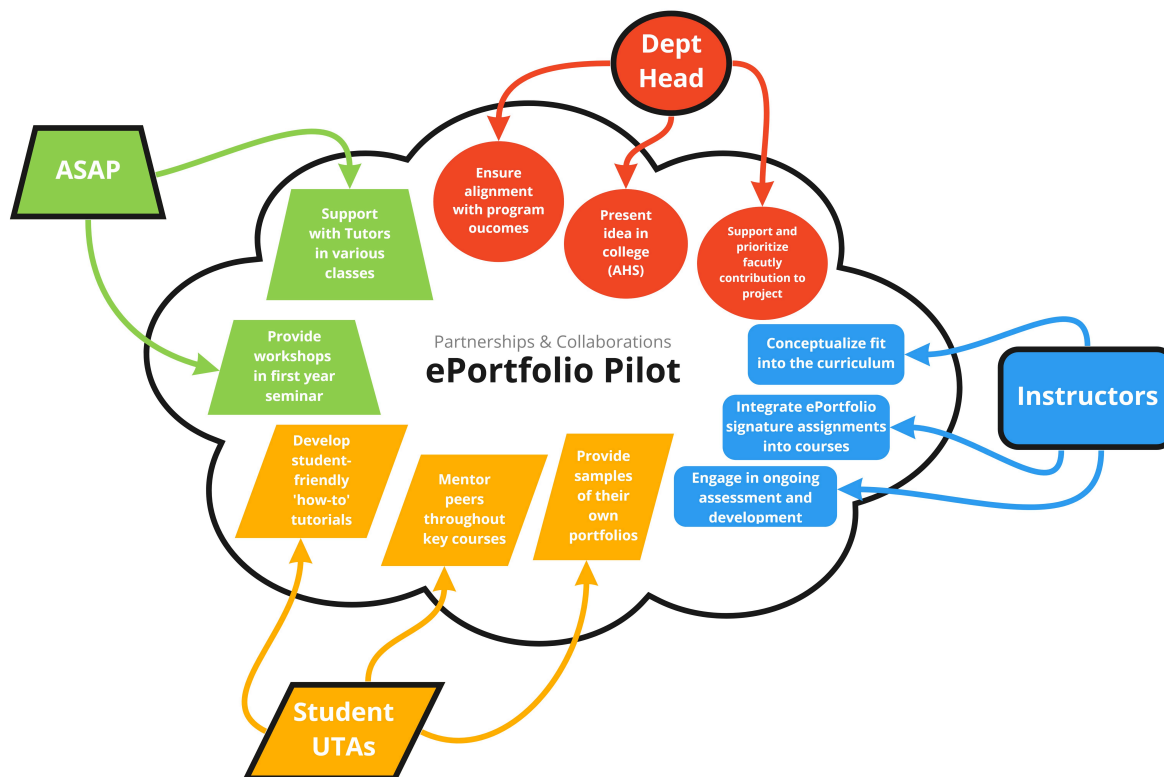
To be successful, this project required (and will continue to require) the support of a broad group of stakeholders (Figure 2). The program director and core faculty endorsed the ePortfolio idea early on, but the degree and nature of necessary faculty commitment became clear over time. As suggested by Mueller and Bair (2018), implementation of ePortfolio throughout the curriculum is not an add-on but rather a shift in how teaching and learning are conceptualized and implemented. The faculty teaching the courses with signature ePortfolio assignments used regular weekly program meetings to plan, problem solve, and define ways forward through the different phases of implementation. These ongoing collaboration opportunities were key as faculty began to embed ePortfolio into their course plans, identified needed resources, and could openly discuss any hesitations they had about needed computer skills.

Student engagement at every stage has been integral to the development of targeted resources, establishment of student-facing samples, and access to peer mentors to discuss the process. Multiple undergraduate teaching assistants (UTAs) have supported resource creation and acted as peer models throughout. At the same time as the collaborative structure to support implementation of the ePortfolio has taken shape within the program, we reached out to stakeholders outside the department. The Academic Support and Achievement Program, a tutoring and student resource center on campus, has partnered with our project to offer one-on-one tutoring to those who would like additional support during the development of their ePortfolio. Tutors who have experience with creating their own ePortfolio and knowledge of the project will be provided by this campus center.

## **Curricular Positioning**

Four courses have been strategically chosen as touchpoints for ongoing student development of ePortfolios. Combining complementary HIPS, such as

Figure 2  
Partnerships and Collaborations for ePortfolio Pilot



ePortfolio practice and first-year seminars, has been shown to enhance their effectiveness (Conefrey, 2017). Accordingly, the first-year seminar course was selected to introduce the ePortfolio project in our program, as its content is complementary, including opportunities for students to practice skills such as goal setting, exploration of strengths and interests, career discovery, and critical reflection. In this course, ePortfolio assessment and feedback combine points earned for steps in the design process (e.g., creating a home page and tabs), grades received for course assignments that are incorporated into the ePortfolio (e.g., goal setting and student elevator pitch assignments), and peer feedback during in-class ePortfolio workshops.

Of the four courses selected, two were chosen to contribute “signature assignments” to students’ ePortfolios. These assignments were already part of the core courses offered by the program, and faculty collaborated to adjust requirements so that the structured reflection components for the ePortfolio were embedded into the assignment requirements and the grade for their course. In these courses, strategies for providing ePortfolio feedback are yet to be fully implemented. Currently, students receive a grade for completing the

signature assignments, which includes feedback on their structured reflection. Faculty also brainstormed ways for students to share their ideas and reflections. One course strategy to implement this evidence-based component and bolster student success was to use a discussion board, where students shared ePortfolio work in-progress and commented on each other’s ideas.

Students formally conclude their ePortfolio project in a synthesis course designed for upperclassmen. With a greater amount of on and off campus academic and professional experiences, students in this course reach a final point to add, edit, and mold their personal and professional identities as presented in the ePortfolio. Most of this course consists of several workshops, during which students share work, complete self-assessment, and provide feedback to each other. During this time, students may take extra care considering who the audience for their work may be as they near graduation—including potential employers, graduate program review committees, or volunteer organizations.

While there are four designated checkpoints and two courses that offer in-class workshop time for students beginning and concluding the development of ePortfolios, it is important to note that the RS curriculum

is not set in a mandated order. This means that ePortfolio contributions during each of these courses are completed in the unique order that each student takes them, including alternative points of entry into the major for transfer and nontraditional students. To address this structural challenge, we provide uniform ePortfolio guidelines in each of the four touchpoint classes. While not a perfect solution, these guidelines build awareness of the project and allow students to comfortably complete expectations regardless of the order in which they take courses in the RS major.

### Foundational Tools

As noted previously, best ePortfolio practice dictates that students are most successful with ePortfolios when provided with clear, ongoing instruction related to the “how” and “why” of this process. To this end, a project guidelines document was created which gives an overview of what the ePortfolio is (and is not), a timeline for the courses in which students will work on their ePortfolio, and an introduction to the resources available along the way. The introductory page of the project guidelines document has been included in the Appendix. Embedded in this document is also a structured reflection guide that provides prompts and sample vocabulary to bolster student’s reflective writing process. All the contributions that students add to their ePortfolios, including the signature assignments selected from two key courses, are presented in a consistent format. Students organize their writing into a three-part rubric structure that encompasses the reflective component of the ePortfolio. Particular emphasis was placed on using this guide for reflective writing since the scaffolding of reflection skills has been identified as essential to successful student engagement with ePortfolios (Landis et al., 2015). The guidelines document serves as a stand-alone ePortfolio roadmap; it clearly defines the full expectation and allows students to anticipate the various ePortfolio touchpoints built into the curriculum.

In addition to the uniform guidelines presented across courses, students have access to peer student samples and can use these as models for the selection of assignments or events to include in their ePortfolio, and for completing the three-part reflective writing piece about them. Additionally, students have access to a template website with populated instructions in various sections of the ePortfolio. Student assistants used this mock site to record step-by-step tutorials (approximately two minutes each) on navigating the web builder and various topics related to creating a personal webpage.

Lastly, we initiated in-class workshops, which provide students with dedicated time to begin ePortfolio

assignments and discuss their ideas and process with peers. Because most students are not familiar with ePortfolios, we found that it is important to provide sufficient time to problem-solve, access peer UTAs who have already completed an ePortfolio, and be available for any questions that arose.

### Preliminary Assessment and Ongoing Feedback From Students

Throughout the pilot stages of development and implementation, it has been critical to continually request feedback related to student-facing processes and the experiences of creating the ePortfolio as it is currently structured. To this end, 40 out of 54 enrolled students (74% response rate) from two courses (first-year seminar and senior synthesis seminar) completed a survey to assess the level of use and perceived helpfulness of foundational tools provided to support the development of student ePortfolios. The most used tools, as reported by students, include peer student ePortfolio samples ( $n = 36$ ), step-by-step video tutorials ( $n = 29$ ), and template ePortfolio site ( $n = 28$ ; see Figure 3). All five tools assessed were rated as either “helpful” or “very helpful” by 80% or greater of total responses (see Figure 4). The tool with the highest use rating, peer student ePortfolio examples, was also rated as “very helpful” by the largest percentage of students (75%). Interestingly, 10% of students rated in-class sessions with peer feedback as “not helpful,” pointing to an opportunity for further investigation and adaptation of this foundational tool in future semesters.

Students were also asked to describe their experience in their own words in response to four questions. We asked how the ePortfolio changed their view of their experiences, how it influenced their thoughts about and plans for the future, and what challenges they encountered as they were working on their ePortfolios (adapted from Nguyen, 2013). Responses indicate strong endorsement of the project by the first group of students to complete it. A significant majority stated that working on their ePortfolio increased their confidence and pride in their accomplishments (e.g., “I realize I have promising skills that can lead me to reaching my goals.”). Many also indicated that the ePortfolio made them feel optimistic about the future, an outcome we especially value in the context of current difficulties experienced by many undergraduate students (e.g., “made me more hopeful about my future and the things I can do”). At the same time, students also commented that the ePortfolio helped them clarify priorities and develop action plans, such as pursuing more campus activities or seeking volunteer and internship opportunities in their fields of interest (e.g., “I planned out my next semester so that I have enough organized space to

Figure 3  
*Student Report of ePortfolio Tool Use*

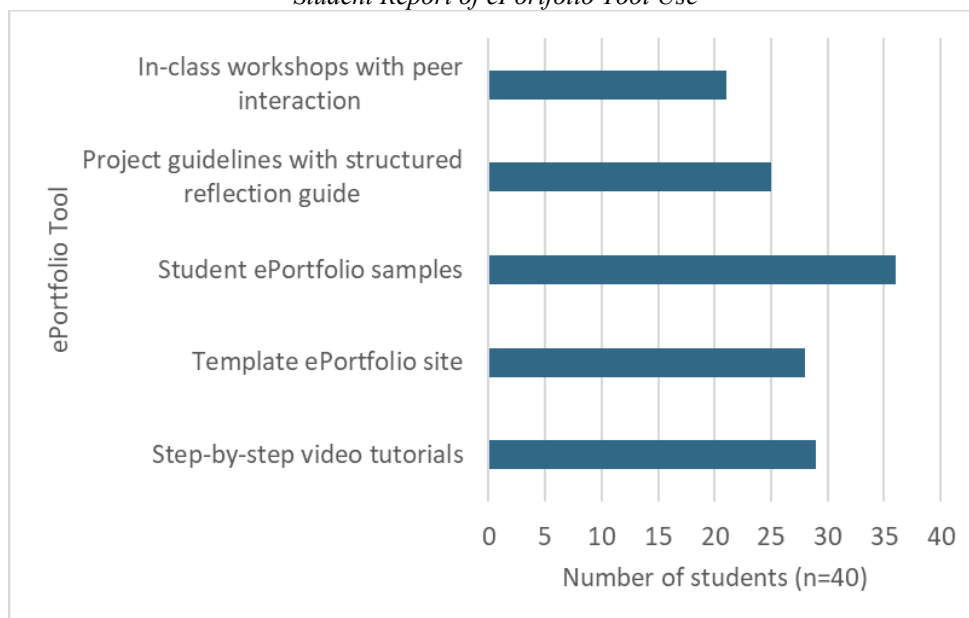
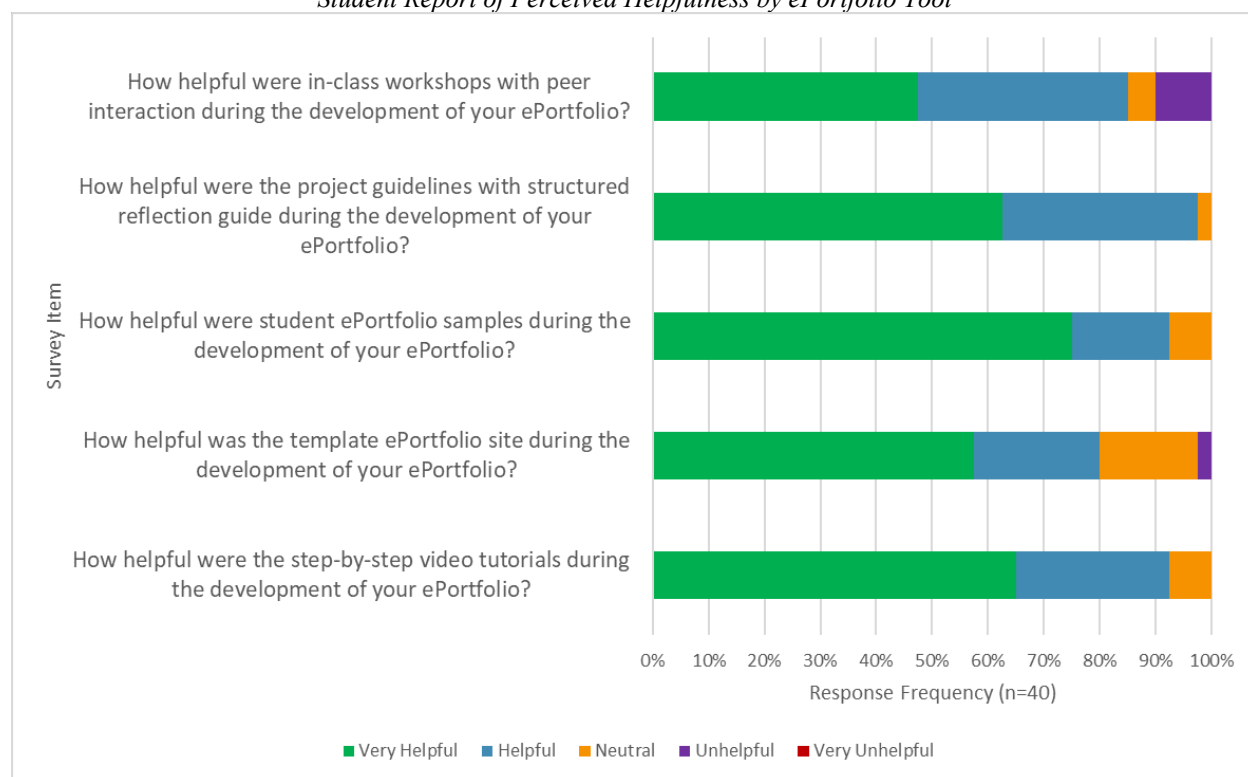


Figure 4  
*Student Report of Perceived Helpfulness by ePortfolio Tool*





create experiences for myself and get volunteer hours and stay involved within the UIC and Rehab Sciences community”). Finally, students commented that working on the ePortfolio was an opportunity to develop and augment skills such as being organized, professional communication, and web design.

Students also reported two types of challenges. Seventeen, or about half of the students responding to the survey, indicated that they were anxious about developing a website. Although most of them acknowledged the usefulness of the resources provided (e.g., instructional videos and demos), it appears that a more structured approach to learning and implementing relevant web builder skills, including how to create visually pleasing pages, needs to be included in the future as an integral part of in-class instruction. Another concern was expressed by 23 students, or slightly more than half of those who responded to the survey. These students indicated that they felt overwhelmed by the content requirements. For some, the issue was how to select among their multiple experiences (e.g., “I have many experiences but some of them just don’t feel right to add on.”), while others felt that they were short on ideas (e.g., “especially if we didn’t have much experience”). The significance of providing guidance for the selection of artifacts to be included in the ePortfolio has been recently underscored by Yancey (2019), who suggested a distinction between curation of ePortfolio artifacts based on neutral organizing principles, such as the order in which courses were taken, and an intentional process where criteria and categories for gathering, organizing, and selecting artifacts are subjectively identified and prioritized. No doubt, more thought should be given to how we can offer more guidance for students. A promising direction is incorporating structured opportunities for sharing and peer review.

### Conclusions and Next Steps

The 2-year path to development and implementation of an ePortfolio project has yielded many insights about the students we serve, the guiding tenets of our RS program, and the role of ePortfolio practice in inspiring integrative and transformative experiences for our students. Moreover, we believe that the lessons we learned, and the next steps we plan to implement, can resonate with faculty interested in developing ePortfolio practices and contribute to the discourse on effective ePortfolio programs.

The first of these insights is the need for continual iteration driven by the voices of our students. In students’ ePortfolio practice there truly is no “finished” product; and so is the case on the programmatic level. Rather than aiming for an ideally structured ePortfolio project within the curriculum, we endorse the demand

for ongoing reflection, inquiry, and amendments implemented by instructors as the context and needs of the program and our students shift over time. Based on our students’ feedback, we plan to expand instructional time and focus in two areas:

- Expand resources, allocate additional time, and provide more structured instructional support for the construction of the ePortfolio. This can include:
  - Instruction in basic web-builder skills to level the tech-expertise field and reduce students’ anxiety about technology use.
  - Resources for all levels of computer skills, including step by step live video tutorials on website constructions based on specific ePortfolio requirements, and access to sample site created by students.
  - Dedicated in-class time for reviewing demos and discussing characteristics of website structure and aesthetic features, such as clarity, professionalism, organization, and content.
- Address student-reported difficulties with selecting artifacts to include in the ePortfolio.
  - Development an instructional component that facilitates thoughtful and reasoned selection of which experiences to include and how they would relate to each other in the ePortfolio (e.g., experimenting with different ways to categorize experiences, as suggested by Yancey, 2019).

Secondly, much thought and high priority must be given to the practical pedagogical features and assessment practices that can make the ePortfolio an instrument of transformative learning. Instructors are used to assessing student work on their own, and indeed the traditional way may be more expedient. However, the ePortfolio process challenges students to gain skills in assessing their own learning through making meaningful connections among their coursework, broader learning experiences, and personal and professional goals. Transferring agency to students over their own learning requires planning and coordination among faculty and across courses over an extended timeline. Currently this is a work in progress for our program, but based on our experience and students’ feedback, we believe the following to be useful:

- Increase structured opportunities for students to share, edit, and collaboratively discuss their ongoing work with expanded in-class time throughout the curricular integration of the ePortfolio, and especially during development touchpoints.

- Provide process-oriented instruction and scaffold critical reflection in the context of specific key ePortfolio assignments.
- Implement a semester long (or more) workshop series that is dedicated entirely to collaborative review by students. (In our program, this occurs in the synthesis course, the final step in ePortfolio development for RS students.)
- Incorporate a culminating event for students to share their ePortfolio with peers before they graduate from the program.

We believe that providing students with an opportunity to formally share their final product ePortfolio adds two critical facets to the ePortfolio project: graduating students are given a platform to display their integrative work and share pivotal reflections about their time as RS majors, while students newer to the program are able to observe models for meaningful construction of personal stories and identities, and deepen their understanding of and motivation for participating in the project.

In conclusion, it is important to note that even amid ongoing iteration of ePortfolio structure and conceptualization of how we measure transformative learning, students have found participating in the ePortfolio process motivating and even inspiring. They reported a desire to increase their engagement, excitement about building a roadmap for their future and saw in the ePortfolio a means of better recognizing and communicating their accomplishments. As one student reflected, “one day someone is going to read this”—ours is an ongoing commitment to provide a space for students to confidently build and tell their stories.

## References

- Conefrey, T. (2017). LEADing the way with ePortfolios in a first-generation learning community. *International Journal of ePortfolio*, 7(2), 161-173. <https://www.theijep.com/pdf/IJEP258.pdf>
- Conefrey, T. (2018). Building bridges with ePortfolios for first-generation college students. *AAEEBL ePortfolio Review*, 2(3), 9-19. <https://aaeebl.org/wp-content/uploads/2018/11/aepr-v2n3.pdf>
- Cordie, L., Sailors, J., Barlow, B., & Kush, J. S. (2019). Constructing a professional identity: Connecting college and career through ePortfolios. *International Journal of ePortfolio*, 9(1), 17-27. <http://www.theijep.com/pdf/IJEP319.pdf>
- Demetriou, C., Meece, J., Eaker-Rich, D., & Powell, C. (2017). The activities, roles, and relationships of successful first-generation college students. *Journal of College Student Development*, 58(1), 19-36. <http://dx.doi.org/10.1353/csd.2017.0001>
- Graves, N., & Epstein, M. (2011). Eportfolio: A tool for constructing a narrative professional identity. *Business Communication Quarterly*, 74(3), 342-346. <http://dx.doi.org/10.1177/1080569911414555>
- James, K. S., Scida, E. E., & Firdyiwiek, Y. (2019). ePortfolio in a world language learning curriculum. In K. B. Yancey (Ed.), *ePortfolio as curriculum: Models and practices for developing students' ePortfolio literacy* (pp. 47-69). Stylus.
- Jenkins, S. R., Belanger, A., Connally, M. L., Boals, A., & Durón, K. M. (2013). First-generation undergraduate students' social support, depression, and life satisfaction. *Journal of College Counseling*, 16(2), 129-142. <https://doi.org/10.1002/j.2161-1882.2013.00032.x>
- Kuh, G. D. (2017). Foreword: And now there are 11. In B. Eynon & L. M. Gambino (Eds.), *High-impact ePortfolio practice: A catalyst for student, faculty, and institutional learning* (pp. vii-xi). Stylus.
- Landis, C. M., Scott, S. B., & Kahn, S. (2015). Examining the role of reflection in ePortfolios: A Case study. *International Journal of ePortfolio*, 5(2), 107-121. <https://www.theijep.com/pdf/IJEP168.pdf>
- Lindsay, G. M., & Schwind, J. K. (2016). Narrative inquiry: Experience matters. *Canadian Journal of Nursing Research*, 48(1), 14-20. <http://dx.doi.org/10.1177/0844562116652230>
- Mueller, R. A., & Bair, H. (2018). Deconstructing the notion of ePortfolio as a “high impact practice”: A self-study and comparative analysis. *Canadian Journal for the Scholarship of Teaching and Learning*, 9(3), Article 6. <http://dx.doi.org/10.5206/cjsotl-rcacea.2018.3.6>
- Nguyen, C. F. (2013). The ePortfolio as a living portal: A medium for student learning, identity, and assessment. *International Journal of ePortfolio*, 3(2), 135-148. <https://www.theijep.com/pdf/IJEP116.pdf>
- Soria, K. M., Horgos, B., Chirikov, I., & Jones-White, D. (2020). *First-generation students' experiences during the COVID-19 pandemic*. UC Berkeley, Center for Studies in Higher Education.
- University of Illinois System. (n.d.). *Enrollment: Key metrics*. Retrieved December 5, 2021, from <https://www.uillinois.edu/data/enrollment>
- Wenk, L. (2019). Hampshire College ePortfolios. In K. B. Yancey (Ed.), *ePortfolio as curriculum: Models and practices for developing students' ePortfolio literacy* (pp. 71-87). Stylus.
- Woodward, H. (2000). Portfolios: Narratives for learning. *Journal of In-Service Education*, 26(2), 329-349.
- Yancey, K. B. (2019). Creating an ePortfolio studio experience. In K. B. Yancey (Ed.), *ePortfolio as curriculum: Models and practices for developing students' ePortfolio literacy* (pp. 135-147). Stylus.

Dr. JENNIFER WESCOTT is a Clinical Assistant Professor in the Rehabilitation Sciences Program at the University of Illinois at Chicago, teaching coursework related to interprofessionalism in healthcare, clinical research, and adaptive skill-building for college transition. Jennifer's work at UIC is guided by her passion for student success and wellbeing, with a focus on instructional and community-level approaches that facilitate engagement, equity, and the co-creation of meaningful, integrative learning experiences. Dr. Wescott is a pediatric occupational therapist with experience developing and evaluating community-based programming as well as in clinical practice within the home, school, and clinic settings.

ORIT SCHWARTZ teaches several core courses in the Rehabilitation Sciences Program. As an

occupational therapist and adult learning specialist, Orit's clinical work focused on services to adults, children, and families in Chicago's underserved communities. Since joining the RS faculty at the University of Illinois at Chicago, Orit has incorporated her interest in participatory approaches to education and clinical work and her commitment to educational equity and healthcare justice into the teaching and mentoring of students at UIC.

#### Acknowledgements

We thank Dr. Michelle Bulanda, the Rehabilitation Sciences Program Director, for her unwavering support and encouragement throughout the development of this project.

## Appendix

## ePortfolio Project Guidelines Introductory Page

**RS Student ePortfolio Project (RS-SteP)****What is an ePortfolio?**

It's an individually curated website that collects students' work paired with reflections. It includes evidence of your learning, achievements, and progression toward goals. This includes BOTH academic experiences within the classroom (presentations, papers, assignments) as well as learning opportunities outside the classroom (volunteer work, events, clubs, organizations, research, internships).

**Why create an ePortfolio?**

Build personal, academic, and professional identity while reflecting on your capabilities and growth.

Connect and make sense of learning experiences across courses and over time.

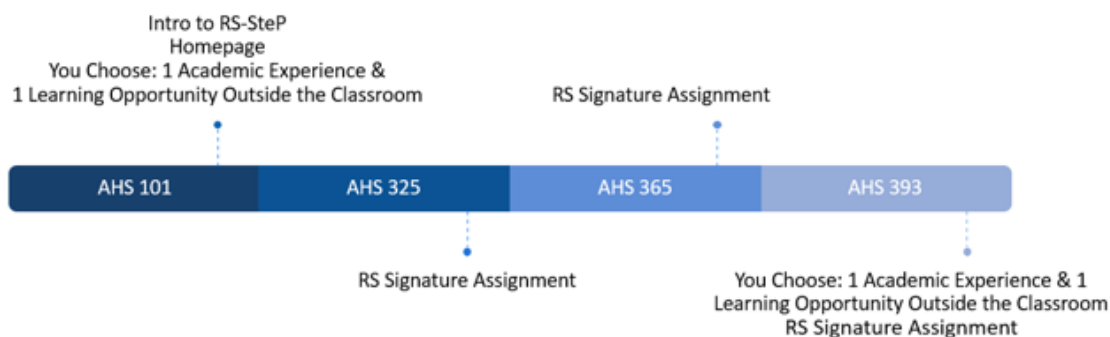
Increase self-awareness of what is already known and what still needs to be learned.

Engage in proactive planning for academic and career paths.

Communicate skills to graduate programs, employers, and volunteer opportunities.

**What will the process of ePortfolio development be across my courses in RS?**

There are 4 touchpoints throughout the RS curriculum where you'll earn points for developing and updating your ePortfolio (AHS 101, AHS 325, AHS 365, AHS 393). In some courses you'll choose the additions to your ePortfolio, and in others, you'll complete Signature Assignments defined within the course. That said, we hope you'll add to your site whenever you complete a particularly thought-provoking assignment or attend an event on campus that inspires you.

**What does a completed ePortfolio look like?**

One of the most exciting parts about ePortfolio development is that it's a living document – you can always add, amend, update, and improve on your site as you continue to grow. That said, we've included a few examples of upperclass students' products in progress within the Resources section of this document.

**Are there resources to help along the way? What if I've never created a website before?**

You'll have templates, student workshops, structured reflection guides, and how-to videos to make the process clear and feasible. Student leaders and faculty will be available to guide you and provide feedback every step of the way.

**What if I've already completed AHS 101 or one of the above courses and did not develop my ePortfolio yet?**

This document serves as a roadmap for you to develop your ePortfolio – even if you've already taken one or more of the courses listed above. We hope you'll take the opportunity to utilize this important tool no matter what stage you're at in your RS career. Contact [jwesco2@uic.edu](mailto:jwesco2@uic.edu) if you'd like to be connected to a student mentor, meet with faculty who can support you in getting started, or explore earning credit for developing your ePortfolio.



