Designing and Implementing an ePortfolio as a Capstone Project:
A Constructivist Approach

Seon Chun-Burbank
*Vanguard University of
Southern California*

Kaila Payne
*Hutto Independent
School District*

Cynthia Bartlett
*Vanguard University of
Southern California*

Sharing the journey of developing an ePortfolio assignment, this article focuses on the design process, implementation, and benefits of the ePortfolio as a capstone project for a bachelor's degree program using a constructivist approach. Integrating constructivist educational practices (e.g., student-centered learning, autonomy, self-regulation, mental relationships, and reflection) in the ePortfolio project design deepens student learning, offers a useful means for assessment of student learning through the degree program, and provides students with validation of their learning and development as professionals. Explaining the process of the implementation of the project in the capstone course, this article shows how students can co-construct knowledge in the context of a sociomoral atmosphere. The ePortfolio project serves as an instrument for student assessment and deepening of learning, and beyond graduation, it serves as a valuable tool for professional advancement.

No one would object to the statement that society has been changed significantly by the development of technology. Most would agree that the effect of technology on society has been more impactful now than at any other time in human history, and its influence will only continue exponentially into the future. Moreover, the recent COVID-19 pandemic has forced society to adopt even more technology into daily life. As with other sectors of society, the field of education is heavily influenced by the advancement of technology. One example of effective technology use in education is that of ePortfolios.

An ePortfolio is a creative and personalized digital collection of artifacts, such as documents, presentations, videos, data analysis, pictures, paintings, images, etc., that provide evidence to demonstrate students' learning and development over time. Dahlstrom et al. (2013) found that more than 50% of the colleges and universities in the United States offer some form of ePortfolio experience, and its use among institutions of higher education is expected to increase considering the advance of technology and the proliferation of online programs. Especially in higher education, ePortfolios are used to assess the quality of a degree program or competencies of a student. In addition to being utilized as an assessment tool, ePortfolio usage has demonstrated a positive correlation with student success, student learning, and stimulating institutional change in higher education settings (Eynon et al., 2014). Further, students who develop an ePortfolio exhibit increased levels of metacognition relative to connections to personal or career goals and learning (Bowman et al., 2016).

The Early Childhood Education (ECE) bachelor's degree program at Vanguard University of Southern California (VU) is an asynchronous, fully online program that launched in 2012. In 2015, drawing upon former experiences at another institution, Program Chair Chun-

Burbank, one of the article's co-authors, sought to develop a capstone project that would (a) be fun, meaningful, and practical for students; that would be aligned with the program's Student Learning Outcomes (SLOs), as well as national standards for early childhood professionals, to demonstrate their competence and achievement; (b) deepen students' learning through reflection on what they have studied through co-construction of knowledge with other students and the instructor; (c) provide tangible evidence of the knowledge, skills, attitudes, and dispositions of the students as early childhood professionals that they acquire through the degree program; (d) assist students in career advancement upon graduation; and (e) increase student retention. For a fully online program, creating an ePortfolio for the capstone project was a suitable choice to help achieve these goals.

In constructing the capstone project, artifacts and required materials are detailed for students as a guideline to help them create their ePortfolio. VU's ePortfolio comprises (a) six student-selected artifacts, one for each SLO; (b) reflective narratives connecting the artifacts to the SLO for which it was selected; (c) reflections on the students' understanding of each SLO and their ability to apply it in practice; (d) professional goals, one for each SLO; (e) a resume; (f) their philosophy of education; and (g) creative additions to personalize and further demonstrate students' learning, competence, and achievement. This article shares how the ePortfolio was designed and implemented as a capstone project for a fully online, asynchronous bachelor's degree program in ECE while applying principles and practices of constructivist learning theory. This study was approved by the Institutional Review Board of VU. Student course evaluations from ECED 499 Capstone course and reflections by the instructor are used to describe students' behaviors shown during the development of their ePortfolios. The

authors of this article, represent the Program Chair Chun-Burbank, who decided to implement the ePortfolio as a capstone project and revised/designed the program curriculum; the instructor of the capstone course, Bartlett, whose reflections were used for this study; and a former student in the capstone course, Payne, whose reflections were used for this study.

Constructivist Education

Constructivist educational practices are rooted in key ideas of constructivism based on the work of Jean Piaget (1936; cognitive constructivism) and Lev Vygotsky (1978; social constructivism). Constructivism is a theory suggesting that learners construct their own knowledge through interaction with people or objects, and it describes both what knowing is and how one comes to know. Based on work in psychology, philosophy, and anthropology, constructivism describes knowledge as temporary, developmental, nonobjective, internally constructed, and socially and culturally mediated. Learning, from this perspective, is viewed as a self-regulatory process through assimilation and accommodation as well as the zone of proximal development progression. Learners build knowledge through a continuous dynamic process of taking information and constructing new ideas and connections. In the process, learners actively transform that information from the world around them into something that is unique and personally meaningful rather than passively taking it in. Learners use their prior understanding as the basis for building new meaning and skills. This knowledge-constructing process is facilitated by teachers who scaffold learning experiences to provide appropriate challenges that promote continuous learning and development (Tryphon & Vonèche, 1996).

With the foundation of constructivism, constructivist educators believe that education should be learner-centered. This means that learning experiences should encourage self-regulation and autonomy. The role of the instructor is to facilitate interactions with the physical and human environment by providing opportunities for learners to work together. Constructivism facilitates the development of mental relationships and reflection so that learners make sense of information for themselves and construct their own knowledge while fostering critical thinking skills in the context of a sociomoral atmosphere in which students feel respected and safe to try new things and learn from their errors (Bhutoo & Chhapra, 2013; DeVries & Zan, 2012). With the goal of helping students deepen their learning and to demonstrate achievement of the program's SLOs, a constructivist approach was foundational to the program's design and implementation of the ePortfolio at VU.

Vanguard University Early Childhood Education Program's Journey

Adopting a constructivist approach, the ePortfolio project was designed as a learner-centered experience. Students create their ePortfolios in an introductory Cornerstone course at the beginning of the program and continue to develop the project until completing it in the concluding Capstone course. Being a fully online degree program, the ePortfolio is the best, most pragmatic format for creating a professional portfolio. Having the same instructor for both the Cornerstone and Capstone courses provides continuity and support across time for authentic learning which requires revision and reflection by the student (Cordie et al., 2019).

The development of the ePortfolio capstone project began with a backward planning approach, designing instruction that looked at the learning objectives first and then planned assignments and assessments around what the students are expected to learn and achieve. Thus, the first step was to align the assignments and the course learning outcomes with the program's SLOs. This makes each learning experience uniquely designed to help students achieve the intended learning outcomes.

The next step was to choose an ePortfolio platform. Many platforms may be integrated with the learning management system that the ECE program uses. Considerations for adopting a platform were (a) to have simple and easy-to-use software that students could access, edit, and share outside of the VU learning community; (b) to enable the ePortfolio to be a living document so that students may continue to develop their ePortfolios throughout the degree program; and (c) to be accessible to students even after graduation, enabling the ePortfolio to be a useful tool to document students' continued growth and development as lifelong learners and professionals. After researching options for an ePortfolio platform that met the design needs of the program, Google Sites was chosen.

Next, the ePortfolio project was divided into smaller steps, developing specific assignments for each step of the process to assist the students in the construction of a professional ePortfolio. Each assignment in the ePortfolio project was created with a constructivist educational philosophy in mind. These assignments serve as an opportunity for unique reflection by each student on their skills, knowledge, and dispositions as an early childhood professional.

Principles of Constructivism in the ePortfolio Project

Student-Centered Learning, Autonomy, and Self-Regulation

O'Keeffe and Donnelly (2013) pointed out the passive learning roles of students as mere consumers of

knowledge (Neary & Winn, 2009) and proposed an idea by Biggs and Tang (2011) to integrate active learning and appropriate assessment into the curriculum, which student-created ePortfolios provide. Creating ePortfolios also empowers students to become the owners of their learning, aligns the assessment methodology to their learning, and enhances their future employability.

Students begin the process of developing their ePortfolios by setting up their own Google Site. To support students, the instructor, Bartlett, created (a) step-by-step videos providing detailed guidance for students needing help creating their Google Site and (b) an ePortfolio template, which is a framework for the ePortfolio that is organized around the program's SLOs. Within the template framework, students are given the autonomy to creatively personalize their ePortfolios to reflect who they are as early childhood education professionals, highlighting their own unique strengths and abilities. As students build their ePortfolio, they are supported by guided video instructions, individualized feedback from the instructor, and peer review opportunities.

Goal setting is also one of the components of successful self-regulation in a constructivist approach to education. Cheung (2004) described how goal setting can be a motivational tool that improves students' self-regulation learning processes, which in turn improves their academic performance. Research demonstrates that learners who practice goal setting are learning-oriented students and show higher levels of achievement than those who do not practice goal setting (Cheung). As students begin building their ePortfolios, they create goals for themselves in relation to each of the SLOs. The model used for writing goals is the "SMART" model: specific, measurable, attainable, relevant, and time bound. In a study by O'Neill (2000), educators described the value of writing SMART goals because it helped them to identify areas of growth and reflect on their current instructional practices. These SMART goals then become part of a Professional Growth Plan which they include in the ePortfolio and utilize as a tool to encourage continued professional learning and growth beyond the completion of the program. Payne reflected on this goal-setting process as follows:

> Learning how to write SMART goals was a challenge for me at first because I had not thought about all the components of writing an effective goal and how those components contributed to my successfully meeting those goals. Also, I never really thought about what I was going to do after my program to continue to grow as a professional. I was grateful for the opportunity to create these goals and would often revisit them the year after I graduated to see if I was living up to the goals I had set for myself.

Mental Relationships, Reflection, and Critical Thinking

Piaget (1936) stated that "Intelligence is the construction of mental relationships" (p. 418). In other words, one's intelligence organizes experiences to create specific knowledge content by constructing mental relationships. He identified the process of constructing mental relationships as regulation through the adaptation process. When learners encounter a new situation, the first thing they do is critically examine and reflect on their own prior experience and knowledge. Without such internalized reflection, mental relationships would not be constructed; thus, no increase in intelligence.

This mental relationship-building process, *reflection*, was emphasized by Dewey (1933) as the importance of reflecting on experience in learning. Reflection is valued within the education profession, as Schön (1983) advocated for educational professionals to be reflective practitioners. The National Board (2016) identified five Core Propositions for Professional Teaching Standards, one of which states, "Teachers think systematically about their practice and learn from experience" (Proposition 4). This motivates educators to implement reflective practice as they grow in their profession. Reflective practice is an ongoing, continual, systematic, intellectually engaging, and iterative process through self-examination and/or seeking others' advice. Through this, learners gain new understanding, adjust, and implement the new understanding into practice. Schön (1983) found that the most effective educational professionals use their previous experiences and knowledge to understand and figure out new and challenging situations whenever they encounter them. Roger (2001) emphasized the importance of guided reflection to support students' achievement of anticipated learning outcomes. Such guided reflective practice can be facilitated when implemented as part of an academic plan, such as the implementation of portfolios, to increase self-confidence, enhance capacity for practice, create supportive relationships among those involved in the reflective process, enhance one's ability to mentor, and ultimately transform one's professional practice (Bell, 2001; Kahn et al., 2006; Russell, 2005). Focusing on helping students to advance their intelligence through active reflection, educators consider a few constructivist educational principles: (a) engage the students' interest, (b) inspire active experimentation with all its necessary grouping and error, and (c) foster cooperation between teachers and students and among students themselves (DeVries & Kohlberg, 1987; DeVries & Zan, 2012). Being able to reflect on one's learning is a skill that takes practice and refinement. Landis et al. (2015) found that "reflection in ePortfolio

can foster many forms of success" (p. 118). In our project, intentional reflective practices are embedded throughout the learning opportunities provided from the beginning to the end of the ePortfolio capstone project.

Many students in the ECE program did not start with this skill of reflective practice. Throughout the Capstone course, each week students examine a specific SLO, identify an aligned artifact, and reflect on how that artifact demonstrates their learning, growth, and understanding in relation to the SLO. By the time students complete the ePortfolios with the SLO-related assignments, they have had ample opportunities to reflect on their learning throughout the program and on their practices as early childhood educators. They grasp the value of and hone their skills in reflecting on their learning and on their practice as early childhood professionals, which is evident by the depth of their reflections and analysis. For example, in the Cornerstone course, students begin developing their mission statement and educational philosophy, both of which are included as components of their ePortfolio. Like the ePortfolio itself, a student's mission statement and educational philosophy are living documents that evolve as the student grows in knowledge and experience. These components of the ePortfolio encourage students to continuously reflect on their beliefs and commitment to their profession as well as to examine firsthand their growth through the program. During the Capstone course at the completion of the program, students again reflect upon, revise, and consider feedback from fellow students and the instructor in the process of refining their mission statement and educational philosophy, through which they demonstrate their learning and development as educators. The following is an example of Payne's (2020) mission statement transformation and her reflection on its evolution:

- October 2017: As a teacher, it is my personal and professional mission to provide a nurturing environment where my students are encouraged to explore, create, and imagine, all while harboring a love for learning and establishing a deeper relationship with God who created all, and is in all. (In the Cornerstone course)
- October 2019: As a teacher, it is my personal and professional mission to provide a nurturing and safe environment where students are encouraged to explore, create, and take risks, all while harboring a love for learning to help my students to develop into the best version of themselves, identify their unique strengths and talents, and provide them with the opportunity to fulfill their God-given purpose. (In the Capstone course)
- Reflection: When I looked back on the original mission statement that I had written at the beginning of my program, I remember thinking how simple it seemed. I had learned so much about the education of young children

and I wanted my mission statement to reflect all the new knowledge I had acquired. Once I was hired as an educator, I had revisited my ePortfolio and reflected on how my mission statement had changed once again after having new experiences in the classroom.

Students also have additional opportunities to reflect on what they have learned throughout the degree program and to develop their critical thinking skills as they select artifacts for their ePortfolios that demonstrate their knowledge, skills, abilities, and dispositions in relation to each of the six SLOs. In addition to selecting the artifacts to include in the ePortfolio, students also write a reflective narrative about each artifact to explain why that artifact connects to the SLO and how it provides evidence of their development of competence in relation to the SLO. As Carraccio and Englander (2004) found, demonstrating their learning, growth, and understanding of the SLO through the artifact is challenging for the students initially. Thus, *scaffolding*—based on the application of Vygotsky's theory (Wood et al., 1976)—is provided by the instructor through a structured set of questions to be answered in each of the reflective narratives. Additionally, students have access to a sample reflective narrative that provides a high-quality example to guide their development of reflective narratives. Through the process of creating their ePortfolios and the various assignments to be included in the ePortfolio, students reflect on what they have been learning throughout the degree program and who they have become as early childhood professionals. As a result of this process, students would have experienced deepened learning, developed critical thinking skills, and built mental relationships. Payne reflected on her experience with constructing mental relationships and her reflection of the SLOs as follows:

I did not realize how much knowledge I had obtained from my undergrad program until I started working through my Student Learning Outcome (SLO) Reflections. When I started the program, I could *read the lines*. As I read the SLOs, I could read what the words said, but I had no idea how to interpret what that meant in the classroom. As I started to take some classes, I started to be able to *read between the lines*. I was able to read the SLOs along with the National Association for the Education of Young Children Professional Standards and Competencies for Early Childhood Educators and start to understand what those principles looked like in the classroom. As I gained practical experience implementing those principles into my teaching, my understanding deepened, and I started to *read beyond the lines*. I saw how each principle was interdependent with one another and why they are important to the role of a teacher.

Figure 1
Images Created by Payne for Her ePortfolio
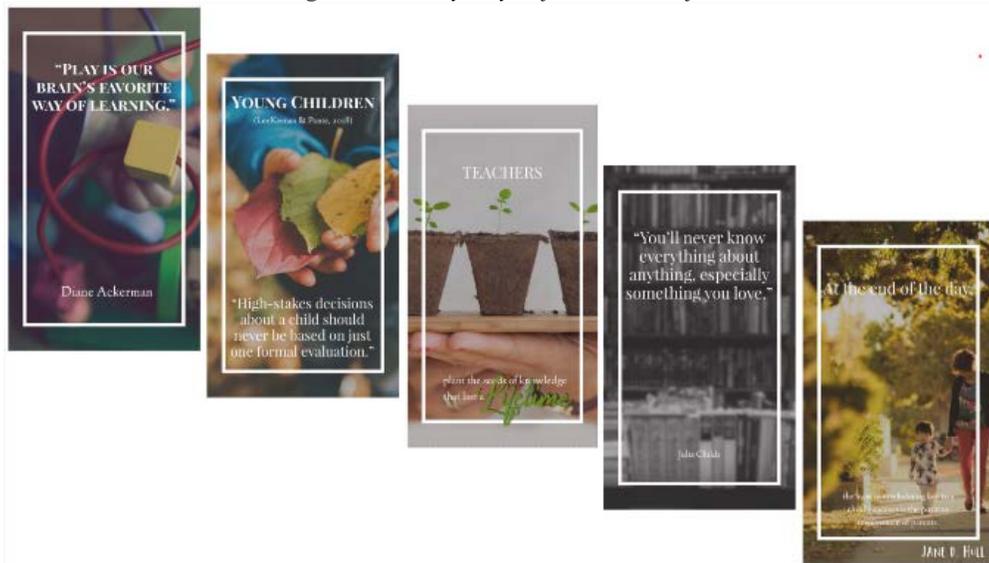
As students invest in the design of their ePortfolios, mental relationships are further developed and reinforced. Through the promotion of creative freedom in the design of their ePortfolios, students are encouraged to explore diverse technologies. As students engage with the ePortfolio platform, they develop skills in website building and design as they learn how to format their ePortfolio pages. Using personal images from their experiences in the classroom and photos from the internet requires students to ensure that all original sources are given proper credit. Students also learn from seeing examples of other students' ePortfolios and their use of technology and design. Through this, students are motivated to try out new things in their own ePortfolios. However, students encounter the challenges of mastering new technology skills, learning about fair use and copyright law, and making meaningful connections with the content. When faced with the limitations of design, formatting, and fair use, some students looked to graphic design applications to create visuals that were original, as well as fit the design of and supported the theme and purpose of the ePortfolio. Figure 1 shows an image and reflection created by Payne, who also wrote:

> I really wanted the images in my ePortfolio to have meaning and support the purpose of my ePortfolio. I wasn't working in the classroom yet, so I didn't have a lot of photos from my personal experiences to include on the pages to enhance the aesthetics. Trying to find images on the internet posed many challenges including copyright restrictions and size

formatting for my pages. To problem solve, I learned how to make all my own images using a graphic design software which allowed me to accentuate quotes that supported my purpose and fit the layout of my design. I enjoyed learning how to use this new software and it has helped me in many visual design projects since.

Such digital literacy skills are highly valued by employers in current society, which is supported by the findings of Finley (2021). Her study shows that digital literacy was one of the top-ranked essential learning outcomes that employers believe college graduates should have. Creating an ePortfolio provides students ample opportunities to do so.

Sociomoral Atmosphere and Co-Construction of Knowledge

The ePortfolio project was designed to ensure students would be active participants in their learning and co-constructors of knowledge among their co-learners in a safe, sociomoral atmosphere. DeVries and Zan (2012) discussed the importance of creating a sociomoral atmosphere in building mental relationships and learning. In a sociomoral atmosphere, the classroom functions as a learning community where there is mutual respect between student and teacher and students with one another, and where students feel safe to be mentally active and to be bold in their learning (Howes & Ritchie, 2002; Watson & Ecken, 2003). In such an environment, dialogue, guidance, feedback, and

social interactions drive and transform potential development into reality (Ehiyazaryan-White, 2012). By the time students take the Capstone course, many of the students have already met online, having interacted together with those peers enrolled in the ECE courses throughout their degree program. These learning communities allow for genuine conversations where students guide and support each other in their learning.

As the course progresses and the learning community develops, meaningful collaboration occurs among the students as they provide feedback to one another in the development of their ePortfolios. Students continuously encourage each other in the co-construction of knowledge through their constructive feedback, interactions, and support, which inspires the co-learners to achieve higher levels of understanding. Payne reflected on a time she and another student set up their own time to meet virtually to offer support and to help one another as they faced challenges regarding their ePortfolio design:

> I was continuously blessed by feedback from my peers. If I was unsure of something, or had questions, I knew that I could pose my questions without judgment or ridicule. Likewise, when I saw that a peer had a question or was asking for feedback, I was glad to offer my help and assistance to help support that individual in their growth and understanding. One of my classmates and I met on a weekly basis as we worked through our Capstone course together, providing feedback on each other's ePortfolios.

Each week, students share a specific component of their ePortfolio (e.g., philosophy of education, professional goals, reflective narratives) with their co-learners and instructor in a discussion forum. Weekly discussions form a learning community and provide time for collaboration as students develop and share components of their ePortfolios. In such a sociomoral environment, students feel safe in sharing their work and offering constructive feedback to one another as they co-construct knowledge in the learning community. While certain elements of the ePortfolios are required to be shared, the students have the option to share their final draft of their ePortfolios with the class. However, due to the sociomoral atmosphere created, most students feel respected and safe to share their entire ePortfolios. This is an authentic example of social constructivism originated from Vygotsky, which is a learning theory that views learning as a social process in which students collaborate by engaging in group activities for meaningful learning to take place (Akpan et al., 2020). In other words, social constructivism views knowledge acquisition as the responsibility of the student as an active participant as well as a co-constructor of knowledge. Jones and Lea (2008) found that in a discussion forum, students play various roles such as a supporter to fellow learners, a friend, and a teacher. The process of developing the ePortfolios, and sharing through the discussion forums and other interactions, leads students to develop a professional learning community in which they see themselves as valuable contributors and co-constructors of knowledge as early childhood professionals.

Studies show that the mentor's guidance could increase the effectiveness of the reflective practice (Bell et al., 2010; Russell, 2005). The VU ePortfolio project is an excellent example of such practice. The instructor scaffolds in multiple ways such as providing instructional guidance that facilitates the discovery and construction of students' learning while they interact and work together in the learning process and designing opportunities into the online environment for students to interact with one another, with the instructor, and with the course content. The instructor remains actively engaged with students through the ePortfolio construction to guide the students. The instructor gives specific guidelines in the ePortfolio Handbook for what to include and how the ePortfolio will be built step-by-step through the course. The template created in Google Sites provides an organized, simple way for students to begin creating and personalizing their own Google Sites for their ePortfolios. Instructor-created videos provide instructions for students to get started in Google Sites to create the website and edit the template, and another short video shows students some examples of completed ePortfolios to stimulate their creativity and individualization of the template. Sample SLO reflection PowerPoint presentations and reflective narratives from previous students also stimulate student creativity and encourage reflection.

Course assignments are designed using backward planning to help the students achieve the course outcomes and to be meaningful and relevant to the ePortfolio. The ePortfolio assignment functions as a tool for both the assessment of student learning and the assessment for program review. Using the SLOs as an organizational framework for the ePortfolio enables instructors to assess students' knowledge, understanding, and skill in relation to each SLO. As students develop each element of the ePortfolio (e.g., reflections on each SLO, philosophy of education), the instructor assesses and provides feedback to the students before the assignment is added to the ePortfolio. This formative assessment process enables students to continue to reflect on the assessment/feedback and revise the assignment before adding it to their ePortfolios. Additionally, the ePortfolio project provides an opportunity for the program to evaluate student learning. The ECE program at VU has established key assessments/assignments in a

variety of courses that provide an evaluation of student learning and achievement of the program's SLOs. The ePortfolio project serves as one of the key assessments used in the program review process. The instructor's formative feedback throughout the entire process of the ePortfolio development is critical for the co-construction of knowledge. Formative feedback encourages students' reflection and guides appropriate revisions of the elements of the ePortfolio. As weekly assignments are submitted, timely and relevant feedback is provided by the instructor to the students to help them make improvements as they develop their ePortfolios, versus providing only a summative assessment at the end of the course.

Implications Beyond an Online Classroom

Students in the ECE program at VU begin the program with different levels of professional experience. Typically, students in the ECE program are already early childhood education practitioners, are directors of early childhood education facilities, or are looking to advance their career in the field of education. Regardless of their current role in the education system, students share through course evaluations that the ePortfolio has been a useful tool that helps them make connections beyond the online classroom.

Prior students have reflected at the end of the course on how beneficial it would be to incorporate ePortfolios in their current instructional settings. Utilizing multi-media tools, teachers and students can take pictures and videos that capture and document learning moments in the classroom. For example, a student who builds a tower with blocks only shares that experience for a short period until it is knocked down for another student to use. By using a camera to take a picture that can be uploaded digitally, the student can reflect on prior building experiences to grow and develop an understanding of early engineering skills. Since the artifacts are housed digitally, they can be easily shared with families to engage them in their child's educational experiences.

Some students in the VU ECE program are already directors of early childhood learning centers. For the same reasons stated previously, these students share their goals for implementing an ePortfolio in their current program as an assessment tool amongst students and staff alike. Having teachers create an ePortfolio that supports the mission and vision of the learning facility helps stakeholders properly assess the effectiveness of the program. Likewise, using student portfolios also helps ensure the quality of the instruction provided, in which teachers and program facilitators can monitor student development.

In line with the National Association for the Education of Young Children's Professional Standards and Competencies for Early Childhood Educators, one of the VU ECE program's SLOs focuses on the student's ability to build family and community relationships. Through intentional design within the EC program, students are given opportunities in various classes to develop these skills and build relationships. Some students currently working as practitioners in the early childhood education setting have expressed an interest in using their digital portfolio to share and connect with families. When a child enters an early childhood education facility, this is usually a family's first educational experience with their child. Families want to know that their child is in good hands. By creating and sharing an ePortfolio, families can see the level of professionalism of their teacher and the teacher can connect with families in a way that also encourages and extends learning experiences to the home environment.

For students who would like to advance their careers, the ePortfolio is a modern, digital showcase of their personal and professional knowledge, skills, and experience. Students find value in being able to share a hyperlink to their ePortfolios that makes it easily accessible to future employers. Students may continue to add information to their ePortfolio that describes more about their personality, educational philosophy, and teaching practices than what can be found on a resume. With the variety of digital artifacts, students can include videos of lesson demonstrations and interactions with students, helping future employers visualize the candidate as a part of their organization. Finley (2021) found that more employers recognize the usefulness of the ePortfolio during the hiring process to gauge the knowledge and skills job applicants need to succeed in their business or organization. She also found that nearly 90% of employers stated that an ePortfolio would be useful to them when evaluating job applicants and that nearly 50% of employers responded that they would be "very likely" to click on the ePortfolio link of a college graduate. Payne reflected on her ability to use her ePortfolio as she sought employment:

> By the time I had completed my ePortfolio, I was proud of the final product, and I looked forward to sharing it with potential employers as I applied for my first teaching position. I was easily able to insert the link to my ePortfolio at the top of my resume. Through my ePortfolio I was able to demonstrate all the learning I had accomplished and my understanding for what it meant to be an effective teacher, along with my passion for learning, teaching, and growing as a professional. I was also able to showcase my technology skills firsthand, which made me stand out as a candidate.

Conclusion

When a degree program has clearly articulated SLOs, and those learning outcomes are reinforced through each course, the ePortfolio project in the capstone course solidifies prior learning, allowing for the students to truly reflect on their learning and growth as professionals throughout the degree program. The VU ECE program's case demonstrates that designing and implementing an ePortfolio as a capstone project for an online degree program using a constructivist approach deepens student learning, offers a useful means for assessment of student learning through the program, and provides students with a validation of their learning and development as a professional that can be utilized to advance their careers. Bartlett stated:

> Many students start out with anxiety about creating the ePortfolio. However, it is inspiring to see the students' portfolios develop and through it how they can master the process of ePortfolio and website development, to reflect meaningfully on their learning through the degree program as they grow in their appreciation of all they have learned in the degree program, and to value continuous improvement, learning, and growth as ECE professionals.

The following are some key recommendations for implementing an ePortfolio as a capstone project:

- Design/assignment development:
    - Program implementation: Implement within a program starting from cornerstone to capstone.
    - Backward design approach: Align with institutional or program SLOs and national academic disciplinary standards.
    - ePortfolio platform: Select a user-friendly, web-based platform that is accessible beyond graduation.
    - Defined steps: Develop specific assignments.
- Student-centered learning:
    - Autonomy: Provide student freedom for creativity and personalization.
    - Co-constructing opportunities: Offer discussion forums to facilitate peer-peer and student-instructor interactions.
    - Reflective assignments: Foster building mental relationships through reflection.
    - Goal setting: Develop a professional growth plan in relation to SLOs.
- Instructor guidance:
    - Tutorial videos: Create short step-by-step instructions.
    - ePortfolio handbook: Outline student expectations and requirements.
    - ePortfolio template: Build an ePortfolio framework for personalization.
    - Feedback and formative assessment: Provide feedback and formative assessments frequently throughout.
    - Rubric and summative assessment: Develop and share rubrics and assessments with students at the beginning of the ePortfolio project.

With the advancements in technology and the flourishing of remote/digital learning, a constructivist approach to creating an ePortfolio helps students develop valuable 21st-century skills such as effective self-reflection, goal setting, self-regulation, collaboration, critical thinking, problem solving, and autonomy. Students produce a creative final product that demonstrates their achievement of the SLOs, illustrates their knowledge and skills as professionals, and exemplifies their personalities, creativity, strengths, and passion for their field of endeavor.

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SEON CHUN-BURBANK has her BA and MA in Early Childhood Education, EdD in Curriculum and Instruction, Master's in Public Administration with a Public Finance concentration, Early Childhood Education Teaching Credential in Korea, and the Center for Early Education STEM Presenter certification. She

has been in the field of Early Childhood Education for over 20 years as a full-time faculty member and an administrator in three higher education institutions, a pre-K teacher, a consultant, and a researcher. She currently works at Vanguard University of Southern California in Costa Mesa, California as an Associate Professor and Chair of the Early Childhood Education program. She is active in the professional community by presenting nationally and internationally, researching, and co-chairing a conference, and has served various professional and community-based non-profit organizations including as an Executive Board Member for the California Association for the Education of Young Children as a member of the Orange County Child Care and Development Planning Council, and as a member of the Orange County Department of Education Transitional Kindergarten Advisory Network. She currently serves for Association for Constructivist Teaching on the Board of Directors and for Iowa Regents' Center for Early Developmental Education as an Advisory Board Member.

KAILA PAYNE is a Vanguard University alumnus, having received her BA from the Early Childhood Education program, graduating summa cum laude. She also graduated summa cum laude with an MA in Education Technology from Concordia University, Irvine. She currently holds a position at Hutto Independent School District in Hutto, Texas as a K-5 Technology Specialist, helping students create their own digital learning portfolios. She has been recognized by her district as a Digital Navigator, and her peers have nominated her for two leadership awards as an educator who (a) empowers learners and (b) uses technology to individualize learning. She also teaches as an adjunct professor for the Early Childhood program at Vanguard University of Southern California, serving the program she graduated from. At Vanguard University, she has helped design and implement a new STREAM concentration for the Early Childhood program.

CYNTHIA BARTLETT earned her BS from Arizona State University and her MA in Education with a concentration in Early Childhood Education from Concordia University, Irvine. She has served in the field of education for over 40 years as a Preschool Director, Director of Schools PK-Grade 8, Director of eLearning, an adjunct faculty member at several universities, and Coordinator of the Child Development Program at Vanguard University where she led the WASC Substantive Change Report Committee for the Online Early Childhood Education BA degree program. Currently, she serves as an adjunct faculty member for the Early Childhood Education program at Vanguard University of Southern California. She served as a member of the California Commission on Teacher Credentialing Design Team for the new ECE Program Quality Peer Review Process. She has presented at numerous educational conferences and has served on many accreditation visiting committees in various capacities including both Chairperson and Team Member.