The Effects of using e-Portfolios in Teaching and Learning Curriculum

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# Introduction

Learners today can demonstrate their knowledge and skills in many ways, especially with the introduction of educational technology and its continued advances within classrooms and curricula. Educators guide dual credit high school, early college, and college students, to consider asking various open-ended prompts usually in the form of questions, including areas such as what students learned, how they know when and how the knowledge is gained, what the information they comprehended is suitable for moving forward, and others. E-portfolios make available a unique digital platform to gather and collect evidence of learning in various software platforms and applications, links, websites, web 2.0 tools, images, music, audio, videos, blogs, and other digital file types (Chen & Light, 2010). Developing an electronic portfolio involves selecting, collecting, reflecting, and connecting evidence demonstrating learning and competencies (Chen & Light, 2010). In addition to the final product of an e-portfolio, one advantage is the potential benefits they offer students, like the process of creating and maintaining them (Chen & Light, 2010). “‘Folio thinking’ emphasizes the need for structured opportunities to create portfolios as well, as opportunities for reflection on the purposes of creating coherence and making meaning” (Chen & Light, 2010). E-portfolios, through the students’ creating and maintaining them, afford students opportunities for deeper and more meaningful learning experiences as they connect in various ways and communities throughout these continued connections, processing, and thinking. In an e-Portfolio, an artifact, such as documents, images, videos, audio, and other digital file types, is considered work students attained in a course, which displays as evidence combined with students-related meaningful reflection. “A key to helping students reflect and make meaning of their learning is a good, open-ended questioning technique designed to plumb the depths of student understanding.” (Burns et al., 2000, p. 17) Assessment tools such as rubrics are used for students and faculty to guide and understand expectations of students learning the course content and to strengthen review and assessment of student learning progress.

# Statement of the Problem

Colleges, including freshman, sophomore, and dual credit high school students and faculty, are faced with ways to assess learning throughout coursework at these institutions. Since academic institutions are transitioning to using educational technology and online learning, e-Portfolios are a great tool to satisfy assessment and technology within the institution. In addition to some advantages of using e-portfolios, there are also challenges that colleges and faculty must consider, including cost, time, ownership of, who owns the portfolio, compatibility, portability, software platform or learning management system, and copyright issues to name a few. These are all challenges that colleges and faculty must consider before proceeding with using e-portfolios to assess students’ coursework. In addition, there are relevant and necessary considerations to be prepared for and willing to plan on when using these educational technology tools in their curriculum and dual credit high school and college coursework, certificate, and degree programs.

# Review of Related Literature

Over time, portfolio meaning evolved to education in the 1970s from the area of art, which included the introduction into higher education, where there was a shift away from standardized testing towards quality assurance with theories of learning to new research (Farrell, 2020). In addition, with the ever-growing evolution of educational technology, academic institutions were becoming more familiar with the development and use of e-portfolios. Research by Farrell (2020) established the meaning of e-portfolios through growth from the beginning as a container to hold loose papers for use in other areas and subjects of students’ academic studies. E-portfolios became a digital keeper of work done by students where faculty would teach students to choose which work should be kept and reflected on. Then students were taught how to categorize such work in these electronic repositories. Throughout academic studies, faculty have introduced into the curriculum such portfolios originally in paper format as a means for students to collect, organize, and even showcase classwork to see learning progress from the beginning to the end of specific classes. Furthermore, Farrell (2020) noted to assist students in developing individual internal reflective experts, that higher education institutions were using e-portfolios more frequently. In addition to the increased use of e-portfolios, Herring and Notar (2011) explained that the importance of e-portfolio implementation success was the need for a collaborative team effort of administration, faculty, staff, and students all requiring execution strategies and training, among other tools and resources.

To effectively manage the assessment of e-portfolios, academic evaluators were vital, Ring and Ramirez (2012) suggested, along with the discussion, implementation preparations, repetition, and time. One motivation for introducing e-portfolios into higher education academics originated from discontentment with current methods of quantitative standardized testing and a concern that this format of testing in at least some subject areas did not seem to adequately reflect what students learned in the subject matter of a given course. An alternative to this traditional method of testing, e-portfolio assessment, began to be used to assess students learning (Habib & Wittek, 2007; Lam, 2018).

Underwood and Austin (2016) stated that e-portfolio use in higher education and professional graduate programs was increasing. Also, integrated technology uses directed higher education to transition to electronic portfolios or e-portfolios as they provided user-friendly updating of artifacts and ease of sharing (Lin, 2008), among other advantages like showcasing interactive materials (Ring, Weaver, & Jones, 2009). One of the most favorable benefits of e-portfolio use was that the students determined what artifacts to include (Lorenzo & Ittleson, 2005). In addition, students were the owners of the e-portfolios and chose digitalized artifacts to showcase from each subject area throughout their academic work in higher education. According to Gadbury-Amyot and Austin (2014), with access to the internet, faculty and students could review and maintain the contents of the e-portfolios.

E-portfolio use for educators’ professional development, Guder (2013) noted that reflection transforms the collection and selection method into “one of personal growth and lifelong learning.” Professional development documentation and tracking for educators from e-portfolio use were also positive advantages. Additionally, faculty used e-portfolios to document and track various activities like volunteer work and educator training with reflections post sessions was beneficial. According to Darling-Hammond and Bransford (2005), educators should be guided and molded to be flexible experts so that they can continue to add knowledge and skills throughout their teaching careers. Finally, Scott and Kim (2015) stated that the core of the e-portfolio movement was that these tools are used to distribute authentic proof artifacts of an educator’s capability to achieve work that has meaning to the individual, employer, and others.

Learning was at the core of educational goals; there were many ways to effectively use e-portfolios as a tool that allowed users to demonstrate the learning process and the progress one achieved from primary school up throughout higher education and on to one’s professional life (Drury, 2006). However, there were concerns and advantages of using e-portfolios in higher education, like connectivity, which educational technology tools to use to collect e-portfolios, and accessibility, to name a few challenges identified through the years. Some additional challenges noted while using e-portfolios in higher education were the age of the students, the comfort with their use of technology in learning, and the age and technology skills of the educator were observed to be challenging factors. Furthermore, the educators’ readiness on various levels, including their individual technology-related skills and comfort level using technology, as well as their understanding of course design with e-portfolios, were potential obstacles (Wuetherick & Dickinson, 2015).

Often e-portfolio contexts were developed for curricular learning purposes; however, their goal was to promote lifelong learning skills (Jones & Leverenz, 2017). This format of e-portfolio by the student was used to maintain a portfolio to document their level of success, growth, and knowledge and showcase these artifacts as meaningful learning memories. Additionally, e-portfolios were used to showcase and share knowledge and skills that were documented for potential employment purposes. Career services provided important advice that graduating seniors used in job searches were effective and successful as desired (Cordie et al., 2019).

Without an institutional mandate for e-portfolios, software application platforms, shared implementation, or advocates for new technologies, one institution’s departments, schools, and faculty employed e-portfolios in silos (Paulson & Campbell, 2018). This posed a challenge in that once individual faculty adopted the use of e-portfolios for their courses and incorporated the use of a specific software application to use for e-portfolios once the course ended. The student moved forward to the next course in their sequence of degree program courses. That course instructor uses e-portfolios but uses a different software application platform. This posed trials for the students and the instructor with the choice of a software platform for e-portfolio. The instructor changed the general curriculum regarding the course content e-portfolio used. This was the primary challenge associated with e-portfolio integration and reported uses included technology and instructional implementation (Wilhelm et al., 2006).

Previously, certain e-portfolio features worsened issues in distance learning environments, stated Shepard and Bollinger (2011). Because of the students learning environment in distance learning, there were challenges with receiving support as they were working on the e-portfolio reflections and feedback, which became difficult for students. Since students experienced issues proceeding as they worked via distance learning, the instructor provided face-to-face support-centered guidance to restate the purposes of the e-portfolio and assisted students with choosing artifacts for e-portfolios and others (Wolf, Whinery, & Hagerty, 1995). E-portfolio use through online education has proved to be a challenge to students when they are often unable or unwilling to reach out for additional assistance. To help decrease communication and support problems students experience under these conditions, facilitators proceeded to provide embedded guided prompts within the e-portfolio templates (Banister, Vannatta, & Ross, 2005; Shepherd & Hannafin, 2011).

E-portfolio objectives were hindered by technology tools (Bartlett & Sherry, 2006; Shepard & Hannafin, 2011). Some students found e-portfolio use complicated as they were not technology savvy. Factors that affected students’ use of e-portfolios included their age of the student, their learning style, and their technical skills of the student. Cost of the e-portfolio platform used as well as the needed features they provided proved to be a difficulty for students. Incorporating e-portfolio tools into distance education settings exacerbated some student anxiety and reasoning demands due to limited help, various delivery tools used, and learner resources varying (Sheperd & Bollinger, 2011).

Chen and Light (2010) stated that the benefits of e-portfolios “are not limited to the final product—the ePortfolio itself—but also derive from engagement in the process of portfolio creation.” In the beginning, students were allowed to select the software platform used to create and maintain their academic e-portfolios. This was the case in higher education, where faculty used e-portfolios in their college courses. Some students used website builders like Weebly, Word Press, and Google Sites to create e-portfolios (Cote & Emmett, 2015). Ultimately when a higher education institution decided to adopt a specific software platform, they often go through a selection committee where they choose a software platform such as Foliotek or Digication. This software application selected and adopted by the higher education institution afforded students and faculty the benefit of an e-portfolio platform that was set up in the same format. Still, students and faculty used their individualized artistic creativity and customized the e-portfolios to fit their creative skills. In addition, the vendor of the e-portfolio software platform worked with the institutions and faculty to customize and personalize the e-portfolio templates that the students and classes of students will use to work with. The e-portfolio continues to be a growing and active educational technology tool that a user creates and maintains lifelong learning content to share and publish online to showcase knowledge and skills for others to view. Slepcevic-Zach and Stock (2018) stated that the construction and management of a reflective portfolio signify a challenge for learners. As modifications are made, the e-portfolio continues to be an excellent and valuable student learning tool that includes an adequate digital space to encourage and demonstrate personal and individual growth, reflection, college, student, and faculty planning, and career research (Cote & Emmett, 2015).

# Research Questions

The following research questions will be examined in this study:

1. How effective are e-portfolios in higher education?
2. What are the main advantages and benefits of e-portfolio use by colleges and teachers?
3. What are the main barriers, challenges, and constraints to e-portfolio use by colleges and teachers?

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