Factors that Contribute to ePortfolio Persistence

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This study examined factors that contributed to persistent use, or discontinued use, of ePortfolios beyond the program of study, as perceived by former educational technology students in a graduate program. The related literature points to contemporary research that choice, ownership, voice, and authentic learning are growing trends emerging as persistent factors that contribute to ePortfolio learning. To research whether these elements were critical to students' continued use of ePortfolios, a survey instrument was used that contained indicators related to choice, ownership, voice, and authentic learning. 141 former graduate students completed the survey and several students participated in semi-structured interview groups. Of the former graduate students, 17.7% of the students have continued to use their ePortfolio. Of those that are using the ePortfolio, the results of this study indicated that authentic projects, assessment of one's own earning, receiving feedback, and management of the ePortfolio during the learning process had significant influence on the continued or discontinued use of the ePortfolio after students graduated from the educational technology program. Open-ended interviews revealed that student participants preferred to create ePortfolios that allowed them some control, ownership, and agency over the learning process in various developmental aspects of ePortfolio learning.

ePortfolios as a learning tool are gaining recognition and momentum in higher education (Bryant & Chittum, 2013; Clark & Eynon, 2009; Deneen, 2014; Lorenzo & Ittelson, 2005; Miller & Morgaine, 2009; Shroff, Trent, & Ng, 2013) and need to be recognized for their transformational power in the learning process (Batson, 2013). As such, ePortfolios have the potential to transform pedagogy in higher education because they "respond to the growing movement" (Clark & Eynon, 2009, p. 18) towards active and student-centered learning and away from the traditional didactic approach. Research indicates that ePortfolios make learning visible and encourage learners to engage in deeper, integrated learning (Eynon, Gambino, & Török, 2014). To engage in deeper learning experiences, learners must first develop a sense of control and ownership over the learning process. This is one of the greatest current challenges that education faces today (Lindgren & McDaniel, 2012). Although there have been a multitude of studies about ePortfolio learning and its usage in higher education, much of the literature has examined assessment practices and knowledge sharing. This study focused on the factors of ePortfolio persistence beyond the program of study and how this information could inform and enrich research in the field of ePortfolio learning. In addition, a learning approach is unveiled that could build a pathway for a pedagogical shift in higher education.

Related Literature

ePortfolio Learning

Lorenzo and Ittelson (2005) defined ePortfolios as digital collections of student-generated authentic content that include resources and multimedia elements contained in a personal space. ePortfolio learning encompasses the offering and exchange of ideas between learners and their audiences that helps learners to develop critical thinking skills and personal presence. In their research, Janosik and Frank (2013) recognized that ePortfolio used as a learning tool pushed learners to continually grow in their accomplishments. When implemented carefully, ePortfolio learning can make great contributions to student learning experiences (Bryant & Chittum, 2013).

ePortfolio learning has roots in andragogy and heutagogy. The term andragogy, popularized by Knowles (1985) and building on the work of educators Alexander Kapp and Eugen Rosenstock-Huessy, introduced the idea that learners who internalized the learning process focused on how they learned, took control of the learning process on their own terms, and self-regulated their learning. Heutagogy, coined by Hase and Kenyon (2013) is defined as self-determined learning that builds upon constructivism and andragogy. Heutagogy fundamentals also include learning how one learns best, using strategies such as active and reflective learning. The learning approach proposed in this study contains aspects of andragogy and heutagogy that connect to attributes of constructivism and social constructivism, all of which contribute to the ePortfolio learning experience.

Attributes of Social Constructivism

Jonassen (1994) defined constructivism as an active process in which learners construct knowledge based on their experiences. Vygotsky's (1978) social learning theory described further how social interaction and collaboration influence the construction of knowledge. These two theories share characteristics of

social constructivism, where learning is enhanced by layers of social interaction combined with culture and context. Additionally, social environments and social contexts further enhance the learning process by allowing learners to become involved in a community of practice. Research by Carson, McClam, Frank, and Hannum (2014) supported social constructivist learner characteristics, recognizing that ePortfolios serve as tools to "elicit associations with social pedagogies" (p. 75) wherein these associations are meant to promote social learning and connectivity within a community of learners. Eynon et al. (2014) confirmed that social pedagogies are key to learner engagement. Similarly, Jonassen (1995) identified several attributes of meaningful learning. These attributes include learning that is active, constructive, collaborative, intentional, conversational, contextualized, and reflective. Learning is impacted by these attributes and further supported by technology that consists of designs that engage learners and learning environments that promote learner-initiated construction of knowledge when learners have opportunities to be socially connected with others. Jonassen (1990) stated that multiple perspectives and learner attributes contribute to meaningful learning opportunities. All of this takes place in the mind of the learner (Jonassen, 1990), and growth of mind cannot be achieved within one's own skin alone (Bruner, 1991). Bass (2014) acknowledged that ePortfolios and social pedagogies assist learners in developing a sense of agency that is critical to building experience in their chosen field. As ePortfolio learning combines with social learning and constructivist pedagogies, this relationship could have a profound impact on ePortfolio practices used for teaching and learning.

A Learner-Centered Approach

A critical understanding of ePortfolios using social constructivist principles requires a learning approach that complements the very origins of ePortfolio learning. The learning approach in the Digital Learning and Leading (DLL) program was designed with learner-centered principles that enable a shift of control and ownership of the learning process to the learner and away from the instructor. Researchers recognize this approach as a component of a self-regulated personal learning environment where learners exercise control over the selection of tools and resources that will be gathered and disseminated through choice of content and learning tools (Buchem, 2012; Buchem, Tur, & Hölterhof, 2014; Sheperd & Skrabut, 2011). Drawing upon Dewey's (1910) theory that reflection within the learning community deepens and complements learning, Nguyen and Ikeda (2015) acknowledge that ePortfolios can enhance the self-regulated learning process. As such, ePortfolios were acknowledged as the

eleventh high-impact practice in the field of education (Center for Engaged Learning, 2016). To create such an experience for learners, Eynon et al. (2014) proposed that "the most powerful ePortfolio practice is inherently connective and integrative" (p. 8) when combined with other high-impact learning practices. Since ePortfolio practice is inherently eclectic, it deserves an equally eclectic learning foundation. In the DLL program, we developed the COVA (choice, ownership, voice, and authenticity) learning approach to give our learners the freedom to choose (C) how they wish to organize, structure and present their experiences and evidences of learning. We give them ownership (O) over the selection of their authentic projects and the entire ePortfolio process—including selection of their portfolio tools. We use the ePortfolio experiences to give our learners the opportunity to use their own voice (V) to revise and restructure their work and ideas. Finally, we use authentic (A) or real world learning experiences that enable students to make a difference in their own learning environments (Harapnuik, 2016).

Subsequent paragraphs address the related literature that pertain to ePortfolio learning and the elements necessary for a learner-centered approach. We will refer to learner-centered ideas as the COVA learning approach.

Learner Choice in the Learning Environment

The first identified component of the COVA learning approach is learner choice in the learning environment. Learner choice in the development of ePortfolios is essential to the learner experience. Choice allows the personalized learning that learners require (Bolliger & Sheperd, 2010). Learning is personal when learners can adapt or develop learning goals and choose learning tools that supports the learning process (Buchem et al., 2014). When learners choose to participate in learning activities, the engagement factor in ePortfolio increases (Shroff et al., 2013), thus facilitating lifelong learning through an open-ended personal learning environment that the learner establishes (Sheperd & Skrabut, 2011).

Deneen (2014) examined key variables that impacted ePortfolio usage in higher education, using ePortfolio platforms as assessments for learning in higher education. Two eportfolio platforms, Mahara and Wordpress, were compared across 450 students and nine instructors. Findings indicated that learners who used Mahara found a steeper learning curve than expected, resulting in negative impressions of the chosen platform. In another course, findings from learners that selected Wordpress resulted in continuous engagement and positive perceptions of the experience. The results of this study substantiate why choice of the learning tools is necessary to promote a positive ePortfolio learning environment.

Clark and Eynon (2009) raise the point that too many standardized ePortfolio platforms take the ownership and responsibility from the learner. In doing so, student choice is limited, and the pedagogical goals of the learning process are pre-determined and limited; therefore, learner reflection and engagement are negatively impacted (Bryant & Chittum, 2013). To point to one example of this problem, students in an undergraduate program at Clemson University expressed the desire for more flexibility in their ePortfolio platform choice and design. As an outcome of the ePortfolio initative, faculty members would be reviewing student evidence of learning, so students wanted choice in how they shared their story (Ring & Ramirez, 2012).

Learner Ownership and Agency

Ownership and agency comprise the second essential part of the proposed learning approach. Shroff et al. (2013) examined factors that influenced student and teachers' attitudes toward value, control, and responsibility of their own learning using ePortfolios. Findings of 77 participants' attitudes toward learning revealed that personal responsibility increased their role as stakeholders in their own education. This is the point at which ePortfolio learning was recognized as promoting ownership of the learning process.

At LaGuardia Community College, students control all aspects of the ePortfolio process from visual appearance to critical thinking and collaboration. In comparison to learners without an ePortfolio, LaGuardia Community College found that students using ePortfolios showed higher degrees of engagement than those without an ePortfolio (Clark & Eynon, 2009). Miller and Morgaine (2009) found that learners do not automatically assume the role of responsibility for their own learning; their belief systems indicate that the teacher is responsible. Student ownership of learning cannot be assumed; learners must be "courted as investors" in their own learning so they learn to take control over the learning process itself (Shroff, Deneen, & Lim, 2014, p. 87).

ePortfolio fosters critical thinking and self-regulation of learning. Self-regulated learning using ePortfolios contributes to an increase in motivation and learning strategies. As a result, learners accept more responsibility and ownership of their learning (Nguyen & Ikeda, 2015). Buchem et al. (2014) studied personal learning environments in which learners use technology for learning to build autonomy and self-regulated learning strategies. In this study, the assumption was that the learning environment becomes personalized when learners perceive that all aspects of the learning and environment were controlled by the learner. A comparison of the impact of tangible and intangible elements of the learning environment were considered.

Nontangible elements included control of the content and information. Tangible elements included tools to develop the learning environment itself. The results of this study indicated that the ability to control the environment was more strongly related to ownership of the learning experience. The perception of the learner is tied directly to feelings of ownership, although learners may not completely control all elements of the learning environment. Ownership of learning was tied directly to agency when learners make choices and "impose those choices on the world" (Buchem et al., 2014, p. 20; Buchem, Attwell, & Torres, 2011).

Ownership and agency are critical components for learning (Buchem et al., 2014). Lindgren and McDaniel (2012) compared the student engagement and learning of 96 students enrolled in a course that contained elements of student narrative and agency with 129 students in a traditional course. The group of 96 students were given the option to choose course content that related directly to their own personal learning interests. Learner engagement surveys and perceptions indicated that learner agency impacted the learning process and learner engagement and also added to the expected learning outcomes. Ninety-one percent of the learners indicated an extremely positive or mostly positive learning experience. The findings of this study indicated that student agency aided student learning and promoted student engagement.

Reflective Voice in the Learning Process

Reflective voice in the learning process is the third component of the COVA learning approach. As part of the Connect to Learning framework at LaGuardia Community College (CUNY), ePortfolios that help learners connect with others through inquiry and integration are part of a much larger learning framework that involves learner engagement (Eynon et al., 2014). Bass (2014) identified that in the Connect to Learning Catalyst Model, social pedagogies are the main ingredient in making learning visible. At the core of making learning visible, Bass acknowledged three key practices learners must be involved with: constructing understanding, communicating understanding, and authentic audiences. Bass (2014) posited that learners need to engage in the learning process and share their knowledge publicly with people other than the course instructor and by doing this, learners can achieve broader student learning outcomes such as deepened understanding, learned flexibility of knowledge, "voice and a sense of purpose," (p. 3), accepting and sharing feedback, and a sense of personal significance. These learner-centered ideas are part of the key principles in which the COVA approach relies most heavily.

Landis, Scott, and Kahn (2015) examined specifically the role of reflection in ePortfolio learning and identified strategies instructors could use to foster

learner reflection in ePortfolio learning across all levels and fields. Such practices include explanation and advocacy, demonstration, assignments, social pedagogies, and formative assessment. The role of reflection was valued, but it was not the single most important aspect of using an ePortfolio. The study findings indicated that learners in advanced levels preferred a less prescriptive agenda and when given such freedom, they also desired long-term significant control of their learning process (Landis et al., 2015). Additionally, instructors found that reflection helped learners build metacognition and draw connections between the content and the learning outcomes. The COVA learning approach shares some of the same attributes as these principles.

Waycott, Sheard, Thompson, and Clerehan (2013) examined the perceived advantages and disadvantages of posting and sharing student work on the internet. The perceptions of 20 Australian instructors indicated that opportunities were abundant when making learning visible in areas such as collaboration, communication, and community building for students. Another key finding indicated that communities of students who built a collaborative atmosphere were inhibited by university standards and regulations for assessment of student work (Waycott et al., 2013).

Research shows that learning in high agency learning environments becomes highly visible because learners can examine and reflect on their own learning as they curate their body of work over time (Eynon et al., 2014). For example, the resident trainees at the University of Michigan Medical School use ePortfolios as a tool to record their thoughts, reflect upon situations, and analyze daily occurrences throughout their training. Spelman College used ePortfolios in the seminar courses for authentic assessment, not tied to any specific course, allowing for learners to continuously evaluate their own assignments demonstrating growth over time (Rhodes, 2011). In another graduate program, students recognized that reflective dispositions took a great amount of time and effort but also allowed them to see holistically the bigger picture. As a result, learners were better able to articulate their learning experiences and understand how they had learned (Janosik & Frank, 2013). Similarly, in an undergraduate program, ePortfolios support learner reflection as learners work to curate and tailor information added to their ePortfolios, synthesizing their own work to tell their own stories (Ring & Ramirez, 2012).

According to the Association of American Colleges and Universities (2009), ePortfolios provide a portable and transparent medium for learners to demonstrate what they have learned, allowing learners opportunities to reflect on the progress of their work (Miller & Morgaine, 2009). Furthermore, learners reported the need for ePortfolio portability to continue their work beyond the program of study (Ring & Ramirez, 2012).

Authentic and Deep Learning Experiences

The final component weaved into the learner-centered approach is authentic and deep learning opportunities. In the future, learners will need multi-modal approaches and opportunities to communicate effectively with their organizations and for group or social networking projects (Rhodes, 2011). For this reason, learners should be allowed to showcase their ePortfolios to authentic, external audiences, including peers and learning networks for feedback and collaborative work (Bass, 2014). Concomitantly, learners make their work accessible to others, providing transparency to resources that can be reviewed by other learners as a tool to improve their own work. Literature supports the pedagogical purpose of social technologies for use in a learning environment that allows for learners to partake in genuine communication and peer-to-peer collaboration. The very nature of ePortfolio learning enables learners to create personalized ePortfolios that are authentic, giving them opportunity to create and publish their own work, which highly individualizes the ePortfolio learning experience (Jones, Downs, & Jenkins, 2015).

O'Keeffe and Donnelly (2013) conducted a study that depicted the effect that ePortfolio learning had on augmenting student learning opportunities. The pedagogical impact of ePortfolio learning results in deeper learning when learners reflect and evaluate the claims made by others, build their own learning experiences, and apply their newly acquired knowledge to authentic settings (O'Keeffe & Donnelly, 2013; Penny Light, Chen, & Ittleson, 2012; Ring & Ramirez, 2012). Learners also reported the need for support to continue the freedom of authentic learning with peer support groups (O'Keeffe & Donnelly, 2013). Janosik and Frank (2013) conducted a study in which participants responded to several interview questions about their experiences and challenges with ePortfolio learning through focus groups and interviews. Themes such as aptitude for change, time for reflection and decision-making, affirmation, and the development of metacognitive skills made ePortfolio learning in higher education a valuable experience (Janosik & Frank, 2013).

Bolliger and Sheperd (2010) examined student perceptions of ePortfolio integration in online courses. Student perceptions of communication, connectedness, value, and perceived learning were examined. Key findings further support that most participants found ePortfolio learning to be a positive impact on their learning, also increasing their desire to learn (Bolliger & Sheperd, 2010). Through communication within the ePortfolio learning environment, learners are more likely to identify

gaps in their own understanding, clarify information and challenge assumptions posed by others.

ePortfolio and our Research Focus

Our research led us to first find out why learners continued or discontinued use of the ePortfolio beyond their program of study. It was necessary to identify students' perceptions of the ePortfolio experience in their previous master's program so we could gauge their experience with elements of learner choice, ownership and agency, voice, and authentic learning experiences. The COVA learning approach provides a functional foundation for the DLL Program at Lamar University. In this program, learners develop authentic innovation plans that impact their own organizational learning environments. These authentic projects along with the ePortfolio and the COVA approach are consistent foundational elements that unite all courses within the program. With ties to pedagogy, andragogy, and heutagogy, this learning approach enables deep and meaningful learning through authentic learning opportunities. Learners take ownership of the learning processs, and their choices are reflected in their voice as they share and promote their authentic work within their own program and workplace and to colleagues and learning communities. Their ePortfolios not only provide a location to host their media, authentic plans, and reflections, but they also become the digital staging points for the learning innovations that they are developing in their learning environments. The COVA approach has enabled us to give responsibility and accountability back to the learner and combine and utilize fundamental constructivist principles that are supported by the research.

Research Purpose and Question

According to Penny Light et al. (2012), one recognized aspect of ePortfolios in education is the ability for students to document the development of skills, ideas, and abilities enabling learner-centered control of the learning process. If ePortfolios are a such a good tool, why are students discontinuing their use beyond the academic environment (Batson, 2016)? The purpose of this mixed methods study was to examine the persistent use of ePortfolios or discontinued use of ePortfolio beyond the program of study. The significance of this study derived from the assumption that too many students may not continue to use ePortfolios after they graduate from their program. This idea led us to determine the reasons behind those decisions. The current master's degree program uses ePortfolios as the platform in which evidence of learning is presented and shared with the learners' community. The researchers determined that investigating the factors that contributed

to persistent ePortfolio use would add to ePortfolio scholarship in the field. The research question that guided this study is: Which factors contributed to the persistent use of, or discontinued use, of ePortfolios beyond the program of study?

Method

The study used a convergent parallel, mixed-methods design in which quantitative data was obtained through Likert scale items and qualitative data was gathered through open-ended questions. The mixed methods research design allows for collection of both quantitative and qualitative data that is analyzed and compared to determine if each data set supports or contradicts the other and to explain any discrepancies (Creswell, 2015). The survey instrument contained two Likert-scale questions. Semi-structured focus group interviews contained three open-ended questions eliciting open-ended and candid responses. Both quantitative and qualitative data were collected and the data were analyzed to better provide an assessment of graduates' persistent use of factors that contributed to ePortfolio use after completion of their master's degree program while considering factors that contributed to discontinued use of ePortfolios.

Participants

The population for this convergent mixed methods research study was comprised of 533 graduates of an online educational technology leadership (ETL) master's degree program. The ETL program was, and is currently, an 18-month program. All of the graduates were employed in PK-12 school settings throughout the duration of the program. Students were invited to participate in the study approximately 3-5 years after graduation. A mixture of male and female participants of all ages were invited to participate if they were educational technology graduates and developed an ePortfolio as part of their course of study. Of the 141 respondents, 18.5% or 26 were male and 81.5% or 115 were female. The timeline for conducting the survey and the focus group interviews spanned over a 2-month period.

The graduates created their ePortfolio in the first of 12 courses and utilized it throughout all of the courses in the master's degree program. Students used ePortfolios as a learning tool to post their evidence of learning from various courses. Examples could take the form of posting a powerpoint for peer review, a blog posting for discussion, or an authentic assignment. Students in the ETL program were given a choice as to which free ePortfolio platform they could use. Students selected open source platforms such as Google Sites, Wordpress, Weebly, and any others that were available. Students were able to select a blogging platform if the

platform allowed them to contribute, just as an ePortfolio would. A specific platform tied to a learning management system was not available in this program. ETL students were required to post evidence of learning from the courses that demonstrated how eportfolio learning contributed to: (a) more rigorous reflective practice for the master's students; (b) the transference of ePortfolio learning with PK-12 students; and (c) the use of differentiated assessment for PK-12 students. The ePortfolio was a graduation requirement in the final course of the ETL program. The capstone course, where all evidence of learning was posted, was monitored by students, professors, instructional associates, and stakeholders that consistently held students accountable for posting their work. In addition, the ETL students were encouraged to contribute to their ePortfolios beyond their program of study by continuing to add blog posts, content, and other information that was important to them.

Instrument

The preliminary question in the online survey asked: (a) Are you using or not using your ePortfolio? If participants confirmed, the quantitative sub-questions were asked: (b) What factors contributed to your continued use of your ePortfolio? and, (c) What factors contributed to your discontinued use of your ePortfolio? Sub-questions were set up in a Likert scale format ranging from *strongly disagree* to *strongly agree* and *not applicable*. These questions were sent to all educational technology graduate students to determine which indicators contributed to their use of ePortfolios and to identify factors that did not. The factors listed in Table 2 were considered important in finding out why students continued, or did not continue, to use their ePortfolio in a meaningful way after graduation. The degree of agreement with the Likert scale items in this study indicated whether the participants perceived the factors indicated as a contributing factor, or a non-contributing factor, to their continued ePortfolio persistence.

In addition to the survey, the following qualitative questions were asked during the focus group interviews for those that indicated they would be willing to participate in a semi-structured interview: (a) What are the top three factors that contributed to your continued use of the ePortfolio? (b) What are the top three factors that contributed to your discontinued use of the ePortfolio? (c) What could be done to heighten or improve your interest in ePortfolios? (d) Students who continued to use ePortfolios saw the value in the ePortfolio as a career tool. What are the most important things that can be done to help you recognize the value of ePortfolios? (e) Students who continued to use ePortfolios appreciate the value of authentic assessments. Finally, (f) what are the most important things that can be done to help you appreciate the value of authentic assessments?

Data Collection

All former educational technology graduates were invited to participate in a web-based survey created in SurveyMonkey that was distributed through e-mail. The survey was sent out a total of three times with each survey going out at least 2 weeks apart to elicit responses from a large group of participants to allow for generalization of the study findings. Of the 533 invited participants, 141 graduates completed the survey. Approximately eight participants volunteered to be part of the two semi-structured focus group interviews conducted after the survey. The purpose of the both sets of data was to determine if the two data sets converged or contradicted one another.

Data Analysis

Data from the survey were coded into rating averages for the top five indicators that were consistent with persistent use of ePortfolios. Likewise, data were also coded into rating averages for the top five indicators that were consistent with discontinued use of ePortfolios beyond the program of study. Data was cross-checked for accuracy by the research team. All interviews were transcribed and reviewed for errors by the research committee. Trends and topics shared by the participants were related to the persistent use, or discontinued use, of ePortfolios.

Reliability, Validity, and Transferability

To assure validity of the instrument used, experts in the field were asked to confirm the questions asked were appropriate and clearly articulated to accrue the information collected. This group of experts piloted the survey in a different test survey to ensure that the instrument worked as intended. To establish reliability, several participants that were representative of the target population of students confirmed that the questions asked in the survey were consistent (Creswell, 2015). Transcriptions and data were reviewed for similarities and differences. Findings of this study are written in such a way that each finding will inform the field of ePortfolio practitioners to make informed decisions about the future of ePortfolio learning in higher education.

Results

The online survey and open-ended questions were completed by 141 of the 533 (26%) possible participants.

Table 1 shows the response percent and count for the number of participants that have continued or discontinued their ePortfolios beyond their graduate program. Table 2 shows the indicators with the highest rankings that pertained to continued use or discontinued use of ePortfolios beyond the program of study. Participants were invited to two semi-structured focus group interviews conducted to investigate student values and interest in ePortfolios. Before the focus group interviews occurred, the team of researchers debriefed the participants on the data from the survey results.

Factors that Related to Continued Use

Data from this study suggested that students involved in ePortfolio learning could benefit from authentic learning experiences. Overall, participants indicated that real world projects and authentic artifacts were the top reasons for continuing the development of their ePortfolios. Very close in proximity came ePortfolio learning used as a career tool. In the first focus group interviews, one of the researchers asked how important authentic assessments were to the group of students in which they represented. In response to this question, one member of the focus group stated,

> When [ePortfolio] became less about me . . . and more being about sharing with other people and collaborating and being able to have certain people view things and all the capabilities my google site had, that's when [ePortfolio] became more relevant to me and the light bulb came on.

Table 1
Graduate Students Responses for Continued/Discontinued Use of ePortfolio

Answer option	Response percent	Response count
Yes	17.7%	25
No	82.3%	116

Table 2
Graduate Students' Mean Averages for Continued/Discontinued Use of ePortfolio

Indicator	M	
	Continued use	Discontinued use
Choice of ePortfolio tool/platform	3.48	**3.28** (4)
Control over the ePortfolio tool	3.56	3.21
Choice over evidence of learning (artifacts)	3.72	2.99
Control over the ePortfolio development process	3.60	3.06
Opportunity to be creative with ePortfolio presentation and development	3.52	3.30
Real world projects and authentic artifacts	**3.84** (2)	3.14
Management of ePortfolio	**3.76** (4)	**3.47** (2) (3)
Proprietary software availability after the program	3.64	**3.24** (5)
Assessment of own learning	**3.79** (3)	2.90
Deepened my interest in learning more	3.72	2.60
Access to good examples of ePortfolios	3.72	2.96
My instructor's ePortfolio example	3.65	2.74
Receiving feedback and comments	**3.75** (5)	2.96
Community or social connections in ePortfolio use	3.54	2.98
Personal interest level in ePortfolio use	3.68	**3.47** (2) (3)
Discussion about lifelong use of the ePortfolio	3.60	2.95
School's or institution's attitude toward ePortfolio use	3.60	2.99
Used as a career tool	**3.88** (1)	2.77
Planning	3.70	3.17
Time	3.65	**3.50** (1)

Note. Bolded numbers are in the top five rating averages for the indicator. The number in parenthesis indicates the place of the indicator in the top five from highest rating average to lowest rating average within the top five indicators. Likert scale items ranged from 1 (*strongly disagree*) to 6 (*strongly agree*), with 0 (*not applicable*).

In the second focus group, one respondent shared that the ePortfolio learning felt authentic to the specific course work, but not to the personal career. This respondent was given a choice of platform, but none of the platforms were discussed in detail, so she did not search any further and defaulted to the platform shared in the program.

Data from this study revealed that ePortfolios may provide students with a medium for choice and voice in the learning process. Management of content and assessment of one's own learning were the key indicators that represented choice and voice in the survey. Data from this study suggested that choice of ePortfolio platform is necessary to contribute to continued use of ePortfolios. Respondents to the survey referred to ownership of the ePortfolio as follows: "Because it is yours, you are initiating everything that is going on here but you also allow others to share their thoughts and idea." One respondent shared that students need to be aware that they are "in charge of their brand" and "their brand is very important if they are going to pursue careers in educational technology."

Data showed that feedback and comments were of value to students in the ePortfolio process. While participants did not mention feedback specifically, several participants mentioned that an example would have been helpful. Although instructor's example and access to good examples did not make it into the top five reasons that students continued or discontinued to use ePortfolios, many of the participants recollected that "It would have absolutely helped me out to see examples" and "It would have greatly been helpful to see other examples."

Factors that Related to Discontinued Use

The primary factor that related to discontinued use of ePortfolios was time; management and personal interest tied for second and, the third factor was choice of the ePortfolio tool. One participant openly stated that, "Time was a big factor for me." Another participant stated that her ePortfolio was what she was "doing to satisfy the assignment" where she indicated that she felt the connection to her classroom career was irrelevant. On the contrary, another participant stated that "when I started the ePortfolio for the coursework, I didn't really see it as that valuable. I realized what it could become."

The data suggested that personal interest levels in ePortfolios contributed to discontinued use of ePortfolios. This finding is parallel to participants' responses to the open-ended interviews. One participant indicated that no ideas were shared about how the ePortfolio could be used after the program. Another participant indicated that students need to be given some direction about how this applies to their lives after they graduate.

Limited choice and proprietary software were indicated as the third and fourth highest rated factors contributing to the discontinuing the ePortfolio. One participant stated that if ePortfolios were not properly curated, they would be similar to "those 20-page vitae where no one gets past the first paragraph." The same participant stated that the ePortfolio is not going to be this "static thing that's going to exist and solve all of their problems"; rather, it needs to be authentic with curated aspects of the ePortfolio. It was clear that some participants did not fully understand the difference between ePortfolios and the software because one respondent stated that she did not have an ePortfolio, but she did have a Wordpress site.

Discussion

The findings from the study suggest that if learners were provided learning conditions in which they had considerable choice over the learning process, combined with elements of voice, authenticity, and ownership of the process, then ePortfolios could be an invaluable tool and a resource used beyond the program of study. With only 17.7% of students using the ePortfolio beyond the program of study, we can be certain that something can be done to increase ePortfolio use.

Initially, participants did not see the value in building an ePortfolio; the ePortfolio was seen as a course requirement only. One participant indicated that no one shared ideas about how the ePortfolio could be used after the program, although others mentioned the contrary. This finding is important because it confirms that interest level in ePortfolio learning can be connected to how students might use ePortfolios beyond their program. Another participant indicated that students need to be given some direction about how ePortfolios apply to their lives after they graduate, urging that students struggle with the value of ePortfolios. This finding is important because it confirms that lower interest levels in ePortfolios could influence whether students continue to use ePortfolios beyond their program of study. One could assume that if students do not see the value of ePortfolio in the beginning of their degree program, it could hinder their interest level throughout the program. Decreased interest levels could also be a result of an unintentional perception that they have little ownership and autonomy in the developmental aspect of the ePortfolio.

Another finding points to ePortfolios as a valuable tool for students in online programs; however, not all learners reported positive experiences. Learning environments necessitate a design and balance that incorporates personal learning attributes (Bolliger & Sheperd, 2010). Concurrent findings that coincide with

this study suggest that learners agree that expanding the choice of an ePortfolio platform would allow students to focus on their own strengths and creativity. The learning environment could be impacted by faculty guidance and frequent meetings with extended support (Janosik & Frank, 2013).

Our findings revealed the unique feature that management of the ePortfolio produced ratings in the top five for both continued and discontinued use. Could management of ePortfolios be enough to cause a halt in persistence because management takes away from the value of ePortfolio learning? It is also evident that students desire more control over the process, so instructors may wish to introduce learners to using the ePortfolios as a "catalyst" for reflection (Janosik & Frank, 2013, p. 94).

In summary, if ePortfolios are utilized effectively, they can provide a vehicle for deeper learning and meaningful engagement opportunities. Furthermore, ePortfolio learning promotes social pedagogy by paving a pathway that leads to learner reflection and social pedagogies while enhancing institutional change (Eynon et al., 2014). This is very important because employers want to see how learners solve unscripted problems and apply their learning to authentic situations (Rhodes, 2011). When combined with other high impact practices, ePortfolio learners engage in higher order thinking and interconnected learning (Eynon et al., 2014). The results of this study suggest that ePortfolio learning has the potential to dynamically shift from knowledge-bearing repositories and assessment options to an interactive learning tool that promotes learner-centered principles, collaboration, and social constructivism. Further research and a replication of the study could substantiate or dispute the findings generated from this study.

Limitations

As noted in the Methodology section, all former educational technology graduates that used an ePortfolio as part of their graduate program were invited to participate in the study. Of the contact emails provided, there was no way to account for the number of students the survey reached. Since the survey did not reach every student, the results of the survey and interview questions call for further investigation.

Specific demographic information such as years of experience and current job positions were not requested for the preliminary study. This information could have provided some further information to investigate if individuals with varying demographics had similar perceptions. To offset this imbalance, we decided to use a mixed methods design to substantiate and reciprocate any statistical data from this study.

Implications for Future Research

There are several findings from this study that are ripe for future research opportunities. The current study does not describe a precise explication between each of the elements in the learning approach. For example, learner attitudes toward ownership and learner responsibility could provide additional information about student motivation to learn (Shroff et al., 2014). Furthermore, there could be unrecognized consequential effects when learners are given choice and agency of the learning process beyond expectations (Lindgren & McDaniel, 2012)? Additional qualitative data that considers student perceptions of specific aspects of the COVA learning approach might provide some insight into the exclusive relationships between the elements proposed in this study.

As described in this study, ownership and responsibility for one's learning, as it relates to ePorfolios, could play a much larger role than is generally recognized in the literature. In contrast, for learners that engage willingly without any prerequisite of an ideal such as ownership, research needs to be conducted to determine the level at which the learning curve could become too steep (Shroff et al., 2014). Further research into ePortfolio learning could explore student perceptions of learner choice, ownership, voice, and authenticity in the learning process itself. Ultimately, the COVA learning approach could be used to evaluate which aspects of the approach contribute extensively to "significant learning environments" (Harapnuik, 2016, para.1). To extend this further and relate it back to the findings of this study, what relationship does the learner's perception of the ePortfolio's value impact the "essential facet of ownership of learning" (Shroff et al., 2013, p. 154).

The current state of ePortfolio research encompasses methods of assessment, student engagement, reflective ability, knowledge attainment, and critical thinking, to name a few (Bryant & Chittum, 2013). Further questions about transparency of ideas using ePortfolios could be a follow-up to this study. For example, to what degree do students feel vulnerable in sharing their personal ideas during the peer review process that many courses employ (Jones et al., 2015)? The findings of this study contribute to current research on ePortfolio learning and its impact on the learning process, where the findings could be shared across disciplines.

Conclusion

While factors that contribute to ePortfolio persistence are certainly important in the ePortfolio process, there is a much larger conceptual framework that contributes to the power and impact of ePortfolio.

Our current program prompted us to first understand student perceptions about which aspects were important to them in the creation of ePortfolios. Based on the survey and focus group interviews, students revealed factors that contributed to persistent use, and discontinued use, of ePortfolios beyond their program of study. While these factors could not be predicted with certainty, our research and findings remind us that ePortfolio learning is a high impact practice, but has many areas that are yet to be explored. Choice, ownership, voice, and authenticity, as in the COVA learning approach, could be the linking factors that contribute to persistent use of ePortfolios beyond the program of study. Student perceptions of the COVA learning approach and its implications for the field of ePortfolio will be the focus of subsequent research.

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