

Why ePortfolios? Student Perceptions of ePortfolio Use in Continuing Education Learning Environments

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Over the past decade, there has been an increased exploration of ePortfolios in higher education across disciplines at both the undergraduate and graduate level. ePortfolios have been significantly under-explored, however, in the context of non-traditional continuing education environments within higher education. This paper explores students' perceptions of ePortfolios in a non-credit continuing education environment in three programs—Fine Arts, Writing and Editing, and Residential Interiors—unpacking some of the opportunities, challenges, and barriers associated with ePortfolio use. It concludes that continuing education students, at least in programs where traditional (hard copy) portfolios are commonplace, are positively inclined towards the introduction and use of ePortfolios, though the study still identifies two major concerns that need to be addressed—the level of computer literacy in the student body due to their variability in age and previous educational backgrounds, and the support for and portability of the ePortfolios for students and instructors.

Why use ePortfolios? What are students' expectations of ePortfolios? What might be barriers to their effective use? Critical questions like these are important to understand when any technology is introduced to the teaching and learning environment, but it is easy to jump instead right to the question of how we implement said technology. How educators come to understand these questions as they relate to ePortfolios might be even more complex in disciplines where traditional portfolios have been used for many years. And within those disciplines, these questions are arguably even trickier when applied to the continuing education environment within higher education.

While some work has been done to measure student perspectives on ePortfolio integration (Ritzhaupt, Singh, Seyferth, & Dedrick, 2008), the identification of baseline evaluation data for ePortfolios is needed, particularly within the continuing education learning environment, to allow researchers to review existing ePortfolio initiatives and assess adequately the outcomes of ePortfolio projects. This paper attempts a more systematic exploration of the possible use of ePortfolios in non-credit continuing education programs. In particular, it explores students' perceptions of ePortfolios in a non-credit continuing education environment in three programs—Fine Arts, Writing and Editing, and Residential Interior Decorating—where traditional portfolios had been required or recommended parts of the programs. In doing so, this paper unpacks some of the opportunities, challenges, and barriers associated with ePortfolio use in this context.

Literature Review

In the last decade, ePortfolios have been receiving increased attention as an effective approach to providing learner-centered assessment for online

courses (Mason, Pegler, & Weller, 2004) and as a vehicle for formative and summative student assessment (Chatham-Carpenter, Seawel & Raschig, 2010; Klenowski, Askew & Carnell, 2006; Lam & Lee, 2009). The existing literature indicates that portfolios may have several advantages over other forms of assessment. In particular, portfolios possess integrative learning potential: the ability to connect experiences and knowledge gained in the academic context with a variety of other contexts, including the workplace and community (Acosta & Liu, 2006; Light, Sproule, & Lithgow, 2009; Tosh, Wedmuller, Chen, Light, & Haywood, 2006).

The research on ePortfolios builds on years of research supporting the use of portfolios as both a formative and summative assessment tool in higher education. Shulman (1998) articulated several benefits of portfolios, including the fact that they permit tracking of longer episodes of teaching and learning more effectively than single observations do, as well as encourage important connections between process and product. They can also help institutionalize norms of collaboration, reflection, and discussion and help to shift responsibility for demonstrating learning to the student as a participant rather than observer. Shulman (1998) also articulated several risks that might occur with portfolio use, including: (a) *lamination* (the portfolio can become a mere exhibition, enabling a student to show off without giving a true representation of the work); (b) *heavy lifting* (it can be powerful, but considering the amount of time portfolios can take to assemble, the benefit may not be worth the effort); (c) *trivialization* (it can result in students documenting things that are not worth reflecting upon); (d) *perversion* (if the assessment of a portfolio is not done well, it can result in a perversion of the assessment process, becoming like a checklist task); and (e) *misrepresentation* (it might result in an emphasis on

examples of “best work” that might not be an accurate picture of the students’ overall competence in the field).

Overviews that have been undertaken of ePortfolio initiatives at universities across North America and Australia demonstrate the breadth and scope of the types of approaches and comprehensive application of ePortfolios for teaching, learning, and professional development (Hallam & Creagh, 2010; Hallam et al., 2008; Lorenzo & Ittelson, 2005). There are numerous ways in which the ePortfolio can support teaching and learning processes, including, but not limited to, assessing student performance, facilitating student reflection, and displaying student achievement (O’Keeffe & Donnelly, 2013; Penny Light, Chen, & Ittelson, 2012; Sherman, 2006). There have also been explorations comparing traditional portfolios with ePortfolios (Van Wesel & Prop, 2008).

Well developed ePortfolios have the potential to enable students to share their projects, documents, and reflections from coursework spanning their entire program, with clear program-related criteria, in a collaborative virtual environment (Bryant & Chittum, 2013; Challis, 2005). Successful ePortfolio projects also integrate self-assessment and peer-assessment, are flexible in the types of content they can include, and act as both a means to demonstrate learning over a span of time and a presentation platform for self-promotion and future employment (Wade, Abrami, & Sclater, 2005). In addition, ePortfolio projects can facilitate self-regulation and critical reflection in students (Carmean & Christie, 2006; Jenson, 2011). In particular, leadership oriented programs and programs that involve a cohort model appear to benefit from the integration of an ePortfolio into program design (Barnett, 1995; Barnett, Basom, Yerkes, & Norris, 2000).

ePortfolios can also provide students and faculty with an opportunity to perceive learning and teaching as a process of discovery, one that started long before attending the university and will extend long after university. With an ePortfolio, professors and students can see and can share learning progress over the course of their studies. With some ePortfolio approaches and tools, students can also integrate their reflections with learning that extends beyond their studies, and thus provide not only proof of lifelong learning, but also of their life-wide learning (Chen, 2009). Indeed, it has been argued that it is possible to make learning visible through ePortfolios when educators bring together the “right” pedagogy (one focused on student development, reflection, and a holistic sense of learning) with the right technology (one that allows students to focus on the content rather than the construction of the portfolio; Johnsen, 2012).

The possible applications for ePortfolios extend beyond the educational sector. In the medical field, for

example, ePortfolios are being tested at as a means to restructure and reorganize performance assessments and continuing professional development (Dagley & Berrington, 2005; Davis, Myers, & Myers, 2010; Driscoll & Teh, 2001). In the business sector, social ePortfolio software has been suggested as a means to create spaces for intra-organizational collaboration and knowledge transfer (Lesser & Storck, 2001). ePortfolios have also been seen as a contemporary approach to presenting oneself to potential employers (Kersten, 2004; Yu, 2011).

Although there are potential barriers to implementing ePortfolio projects effectively—such as the need for student support—there is also evidence to suggest that students are able to assist in peer ePortfolio development (Shepherd & Bolliger, 2011). Open source tools are also being explored as a means to develop virtual communities that can generate social capital, generally regarded as potentially a central component of developing successful virtual learning communities (Daniel, Schwier, & McCalla, 2003) with ePortfolio implementations. Similarly, Bolliger and Shepherd (2010) found that ePortfolios developed using free and readily accessible online tools, such as various tools in the Google suite, can successfully create a virtual learning community in which peers provide support for each other via student directed review and discussion posts. In addition, assistance can occur through student directed collaboration and communication (Wang, 2009).

While the use of ePortfolios is spreading, research on their utility is just beginning to emerge in the literature (Bryant & Chittum, 2013; Challis, 2005; Hallam & Creagh, 2010), particularly within formal and informal continuing education programs. Few studies on ePortfolio use in continuing education have been conducted thus far. Although some authors have indicated that ePortfolios are appropriate for demonstrating the integrative learning of non-traditional students (Acosta & Liu, 2006), little has been written regarding non-traditional student perceptions of using an ePortfolio. While Mason (2006) found that ePortfolios can be successfully implemented for adult students enrolled in an online continuing education master’s degree program, the author acknowledged that this particular subset of adult learners is not representative of all adult learners.

Context

This study was completed at a large, public medical-doctoral research university in Western Canada, with over 37,000 students registered in graduate and undergraduate programs and over 10,000 students in non-credit certificate and general interest programs. It was completed as one part of a multi-faculty study exploring ePortfolio use across the

institution in both credit and non-credit programs. This paper looks specifically at the perceived benefits of ePortfolio use among adult learners in three non-credit programs in which traditional portfolios had been commonly used—Residential Interiors, Fine Arts, and Writing and Editing programs. These programs, over the year preceding the study, had over 650 students totaling over 2,000 individual course registrations.

All three programs included in this study had a significant history of using traditional portfolios as part of their program. For example, the Fine Arts and Residential Interiors certificate programs both had incorporated portfolio reviews as a significant part of their program completion, and the ethos of portfolio pedagogy—the use of portfolios as a major tool to assess students' ongoing development—was used at the individual course level across all three programs. Prior to this project, the programs had no previous experience using ePortfolios as a way for students to store, organize, reflect on, and communicate their work to instructors. Many instructors and students, however, had previously developed web-based portfolios to communicate their own work separate from the requirements of the program.

The introduction of ePortfolios across the programs, as an optional tool to submit digital (image-, video-, audio-, or document-based) content for review, was intended to inform the potential adoption of an ePortfolio tool embedded in the institutional learning management system (LMS). The original purpose of the pilot project was to allow students to choose to either develop an ePortfolio or continue using a traditional portfolio. There was, however, significant resistance among instructors in these programs to participating in the pilot. Instructors expressed concerns about the students' highly variable ages, previous education backgrounds, and unknown levels of computer literacy, so this study was developed and completed to explore the interest, perceived usefulness, and readiness of the continuing education students to utilize an ePortfolio tool, prior to pursuing a formal roll out of ePortfolios as a tool within the three programs.

Method

Instrument

The survey was intended to explore the perceptions of traditional portfolio use among non-credit continuing education students, to assess the students' perceptions of the usefulness of ePortfolios in their current program, and to assess the comfort level of students with various computer technologies. The first section of the survey was designed to gather detailed demographics of the continuing education students in the programs, including data not normally gathered in

the continuing education registration process (e.g., previous educational background and age).

The second section of the instrument explored the students' perceptions of portfolio use in general and the perceived appropriateness and usefulness of ePortfolios in particular. This section was developed following an in-depth analysis of the literature in the field of ePortfolio use in higher education (Carmean & Christie, 2006; Dagley & Berrington, 2005; Klenowski et al., 2006; Lorenzo & Ittelson, 2005; Ritzhaupt et al., 2008; Van Wesel & Prop, 2008). Finally, the section of the instrument exploring students' readiness with various forms of technology built on a previous study by the authors exploring the use of educational technology amongst continuing education students in a different field of study (Wuetherick, Dickinson, & Daniels, 2015; Mason, 2006). A copy of the survey is available in the Appendix.

Distribution

The survey was distributed online and took between 5 and 10 minutes to complete. Students were informed that their email addresses had been obtained from the Faculty of Extension Registration office with permission from the institutional Privacy Office and the Research Ethics Board, and that by completing the survey, they were consenting to be research participants.

A questionnaire administered online was a desirable way to collect information as computer access is increasingly widespread, email makes it very easy to contact participants and excludes paper, postage, and data entry costs (including open-ended questions), there are reduced data entry errors, follow-up reminders are easy and inexpensive, and it is less likely that participants will answer questions inappropriately. Some disadvantages of this format include that some respondents (especially with our target demographic) may be uncomfortable with the online format, the immediacy of e-mail can make it more likely that respondents will indefinitely defer completing the survey, and it may be possible that the person completing the survey is not the intended respondent. For the quantitative data, the researchers used SPSS for all data analysis, while for the open-ended questions NVivo was used to code the data for analysis of major themes.

Analysis

Two statistical tests were used for the majority of the current project: the Kruskal Wallis test and The Mann-Whitney U test. The Kruskal Wallis test, a nonparametric equivalent to the one-way ANOVA, was used to identify significant differences across age groups and program areas. This test was used for two main reasons: first, it is appropriate for ordinal level

variables such as the Likert-style items on the student questionnaire; second, it does not assume normality in the response distribution (an assumption the responses violate). The Mann-Whitney U test, a nonparametric equivalent to the independent t test, was used to test for differences by gender. This test is appropriate when only two categories exist in the independent variable (i.e., male and female).

Participants and Demographics

The study surveyed 668 students from three program areas: Residential Interiors, Fine Arts, and Writing and Editing. In total, 218 responses were collected, resulting in a response rate of 33%. By program type, 44.1% ($n = 81$) of respondents were enrolled in Fine Arts, 33.5% ($n = 66$) in Writing and Editing, and 25.4% ($n = 50$) in Residential Interiors. As shown in Table 1, the majority of students have already completed a post-secondary program, with 34.7% and 23.6% having completed an undergraduate degree and graduate degree, respectively. Fewer students reported their highest credential to be a diploma, certificate, or high school degree.

Gender and program area. In this sample, 87.2% of students are female and 12.8% are male. Pearson chi-squared tests revealed that this ratio is not even across the three program areas, however, with the highest percentage of female students in Residential Interiors, followed by Writing and Editing and then Fine Arts, $\chi^2 = 6.455$, $df = 2$, $p = .040$ (see Table 2). These gender distributions were almost identical to the overall gender distribution of all students in the programs, so it was determined that this sample was representative from the perspective of gender.

Age and program area. Although students range in age from under 20 to 70 and older, the largest numbers of students are aged 50-59 (29.4%), followed by 40-49 years of age (24.8%; see Table 3). There are also significant ($p < .001$) differences in age by program type. Post hoc tests reveal that students of the Residential Interiors program have a significantly lower mean age than students in either the Fine Arts ($p < .001$) or Writing and Editing ($p < .001$) programs. Again, based on a brief analysis of the overall student body's registration statistics, these age distributions are very similar to the distributions for the overall student body within these three programs.

Results

Student Perceptions of Portfolio Use

Most students reported that they had not created a portfolio in their previous educational experiences, with only 38.4% reporting previous use. In two of the

programs surveyed (Fine Arts and Residential Interiors), a (hard copy) portfolio was a required component for the completion of the certificate, and a portfolio was encouraged as an option in the other program area (Writing and Editing). At their current place in their programs, the respondents' exposure to a portfolio varied considerably by program area. While 60.5% of students in Fine Arts and 40.0% of students in Residential Interiors had developed a portfolio as part of their current program, only 3% of students in the Writing and Editing program had done the same. This being said, students in both the Residential Interiors and Fine Arts perceived their current portfolio to be a useful part of their program. These students also found the portfolio review process to be beneficial and believed that the portfolio will continue to be important after completing their program (see Table 4).

When asked to specify, in their own words, the best part about having to complete a portfolio, four main themes emerged in the student responses. First, many students indicated that the ability to share a representative sample of their work was advantageous ($n = 22$ coding references). Second, many students found the feedback they received after submitting their portfolio to be useful ($n = 15$ coding references). Third, the process of simply completing a portfolio was, in itself, a useful exercise. It allowed students to organize their work and prepare it for presentation to others ($n = 14$ coding references). Fourth, students indicated that being able to demonstrate evidence of progress, growth, and ability through their portfolio was useful ($n = 10$ coding references). Less common themes in the responses included the ability to facilitate self-assessment and reflection, to develop relevant professional skills, and to develop the personal discipline to complete and document projects fully.

Student Perceptions of an ePortfolio

Overall, student perceptions of the potential use of an ePortfolio were positive. Students currently utilizing a portfolio believed that aspects of the portfolio component of their program might have been possible in an electronic form, with 58.8% of students from Residential Interiors and 71.1% of students in Fine Arts in agreement. When asked to explain, in their own words, why aspects of the portfolio might have been possible in electronic form, two main themes emerged in the student responses. Most frequently, students cited the ease with which one can share works in electronic form ($n = 24$ coding references).

Regardless of whether submitting works to their instructor for grading, sharing works with clients or galleries, or granting general access to the public, the convenience afforded by the ePortfolio was the main reason why students reported they might be useful.

Table 1
Responses to: "What is the Highest Credential that You've Completed?"

	Frequency (<i>n</i>)	Percent (%)
High School	22	10.2
Certificate	26	12.0
Diploma	42	19.4
Undergraduate degree	75	34.7
Graduate degree	51	23.6

Table 2
Program Area by Gender

Program	Male	Female
Residential Interiors	6.3%	93.8%
Fine Arts	21.3%	78.8%
Writing and Editing	10.8%	89.2%

Table 3
Responses to: "How Old are You?"

	Frequency (<i>n</i>)	Percent (%)
< 20	2	0.9
20-29	33	15.4
30-39	32	15.0
40-49	53	24.8
50-59	63	29.4
> 60	31	14.4

Table 4
Student Perceptions of the ePortfolio

Program	How useful is the portfolio component of this program?		How beneficial is/was the portfolio review process?		How important will a Portfolio be to you once you complete the program?	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Residential Interiors	4.35	0.988	3.76	1.091	4.55	0.826
Fine Arts	4.16	0.943	3.82	0.936	4.04	1.051

Note. For each item where a mean is reported, a higher mean corresponds to an increasingly positive response (e.g., more useful, greater benefit, greater importance). The number of students in the Writing and Editing program who completed a portfolio ($n = 2$) as part of their program was too low for meaningful comparison.

Students also indicated that the ePortfolio would allow them to include additional works in their portfolio, including digital work and those inappropriate for a physical portfolio ($n = 6$ coding references). This is congruent with the finding that students tended marginally to agree that compared to a traditional portfolio, an ePortfolio would be more useful ($M = 3.79$, $SD = 0.988$; see Table 5).

As shown in Table 5, students across all program areas reported that that it would be useful to be able to record and/or present digital media and files ($M = 3.95$,

$SD = 1.173$). When asked to rate the importance of various features of an ePortfolio, students rated transportability (i.e., the ability to keep the ePortfolio even when they are done with their program) as most important ($M = 4.51$, $SD = 0.892$). This was of particular interest, as the ability to make the LMS-embedded portfolio available after the program was limited at the time of the pilot. Ease of storage ($M = 4.39$, $SD = 0.920$) and being able to give people remote access ($M = 4.35$, $SD = 1.021$) were also important to students. While the ability to include

Table 5
Student Perceptions of the ePortfolio

Program	Compared to a traditional portfolio, how useful would an ePortfolio be to you?		How useful would it be to you to be able to record and present digital media and/or files?		If you were to create an ePortfolio how important would the following be to you?							
					Transportability		The ease of storage		Being able to give people remote access?		The ability to include digital content	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Residential Interiors	3.96	0.947	4.24	0.870	4.67	0.658	4.50	.839	4.39	0.862	4.41	0.814
Fine Arts	3.74	1.111	3.98	1.214	4.47	0.937	4.37	.887	4.47	0.950	4.06	1.238
Writing & Editing	3.73	0.851	3.70	1.277	4.42	0.978	4.33	1.024	4.17	1.193	4.14	1.175
Total	3.79	0.988	3.95	1.173	4.51	0.892	4.49	0.920	4.35	1.021	4.17	1.128

digital content ($M = 4.17$, $SD = 1.128$) was the lowest rated item in terms of importance, it nonetheless remains an important quality of the ePortfolio for students.

Demonstrating Learning and the Importance of Reflection

There were significant differences by program type ($p = .003$; see Table 6) in student perceptions around the importance of being able to demonstrate learning to others. More specifically, *post hoc* tests reveal that significant differences existed between students in Residential Interiors and Fine Arts ($p = .005$) and between Residential Interiors and Writing and Editing ($p = .008$). Residential Interiors students were generally more positive in how they rated the importance of demonstrating their learning to others ($M = 4.27$), which was significantly higher than students in the other program areas. In both the Fine Arts and Writing and Editing programs, students were mixed ($M = 3.57$ and 3.48 , respectively). Across all programs, when separated by gender, female students ($M = 109.98$) rated the importance of demonstrating their learning to others higher than male students ($M = 75.35$, $p = .004$). No other significant gender differences were found.

Significant differences ($p = .003$; see Table 6) also existed in student perceptions about the importance of being able to reflect on what is learned during their program. Post hoc tests revealed that significant differences existed between Residential Interiors and Writing and Editing students ($p = .005$). Students in Residential Interiors perceived reflection to be more important than those students in Writing and Editing. In all three programs, however, students were more positive that reflection is an important aspect of the program's learning experience, though only marginally

so for students in Writing and Editing ($M = 3.80$ compared to 4.45 for Residential Interiors and 4.11 for Fine Arts students).

Student Experience and Comfort Using Technology

Due to the demographics of the students involved in these three continuing education programs, in order to explore students' experience and comfort using technology, respondents were separated into three age categories: under 30, 30 to 49, and 50 or older. As predicted, both experience and comfort using technology vary as a function of age. Generally speaking, those students who are under the age of 30 are more experienced and more comfortable using technology than their counterparts aged 30 to 49 and 50 or older (see Tables 7 and 8).

More specifically, there are significant differences in experience using the Internet in general ($p = .005$), graphical and design applications ($p = .001$), presentation software ($p = .003$), HTML ($p = .013$), video editing ($p = .000$), audio editing ($p = .004$), and digital photography ($p = .020$). Further *post-hoc* tests reveal that for each item, significant differences ($p = .035$) exist between those students who are under 30 and those who are 50 or older, and in each case students in the under 30 group are significantly more experienced than those in the 50 or older group. For experience with video editing, audio editing, and digital photography, there are also statistically significant differences between students under 30 and those aged 30 to 49, with those under 30 also being significantly more experienced than those 30 to 49 years of age. Finally, statistically significant differences also exist between students aged 30 to 49 and 50 or older in terms of experience using graphical and design applications ($p = .003$). In this case, both students under 30 and

Table 6
Demonstrating Learning and the Importance of Reflection

Program	How important is it to you to be able to demonstrate your learning to others?		How important is it to you to be able to reflect on what you've learnt through the program?	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Residential Interiors	4.27	0.953	4.45	0.792
Fine Arts	3.57	1.244	4.11	1.025
Writing & Editing	3.48	1.438	3.80	1.193

Note. * $p \leq .05$.

Table 7
Age and Experience with Technology

Technology	Age					
	< 30		30-49		50+	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Computers in general	4.06	0.933	3.99	0.848	3.67	1.039
Internet in general	4.36	0.783	4.08	0.829	3.80	0.917
Word processing packages	4.16	0.884	3.90	1.043	3.60	1.197
Graphical and design applications	2.58	1.200	2.54	1.246	1.99	1.229
Presentation software	3.06	1.190	2.65	1.313	2.25	1.373
HTML	2.48	1.326	2.23	1.206	1.83	1.063
Video editing	2.00	1.061	1.51	0.925	1.29	0.652
Audio editing	1.82	0.846	1.51	0.938	1.37	0.798
Digital photography	3.45	1.301	2.77	1.090	2.80	1.234

Table 8
Age and Comfort with Technology

Technology	Age					
	< 30		30-49		50+	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Computers in general	4.44	0.716	4.13	0.984	3.81	1.037
Internet in general	4.66	0.545	4.19	0.874	3.92	0.915
Word processing packages	4.48	0.851	3.95	1.153	3.72	1.168
Graphical and design applications	2.97	1.251	2.79	1.389	2.09	1.283
Presentation software	3.25	1.047	2.84	1.386	2.32	1.386
HTML	2.63	1.431	2.33	1.310	1.81	1.070
Video editing	2.28	1.198	1.84	1.175	1.47	0.900
Audio editing	2.06	0.982	1.81	1.147	1.52	0.971
Digital photography	3.63	1.070	3.04	1.191	2.94	1.254

those aged 30 to 49 are significantly more experienced than students 50 or older.

As shown in Table 8, a similar pattern can be seen in terms of students' comfort using technology. Statistically significant differences by age exist for comfort using computers in general ($p = .006$), the internet in general ($p < .001$), word processing packages ($p = .003$), graphical and design applications ($p < .001$), presentation software ($p = .001$), HTML ($p = .004$), video editing ($p < .001$), audio editing ($p =$

.003), and digital photography ($p = .021$). Again, in each case, post hoc tests reveal that those students under 30 were significantly more comfortable than those aged 50 or older ($p < .020$). Students under 30 were also significantly more comfortable than students 30 to 49 in terms of Internet use in general ($p = .035$).

Finally, statistically significant differences existed between students aged 30 to 49 and 50 or older in terms of comfort using graphical and design

applications ($p = .002$), presentation software ($p = .039$), and HTML ($p = .029$). For these items, those aged 30 to 49 are significantly more comfortable than students 50 or older. There are no significant differences in experience or comfort using technology by gender.

Discussion and Conclusion

At the beginning of this paper, the following questions were asked: (a) Why use ePortfolios? (b) What are students' expectations of ePortfolios? and (c) What might be barriers to their effective use? By pushing these questions into the realm of continuing education, where very little research has been conducted related to ePortfolio use, the intention of this study was to expand the understanding of ePortfolio use in non-traditional learning environments. The results of this study demonstrate that ePortfolios, at least within a continuing education environment for disciplines in which traditional portfolios were used as required or recommended parts of the programs, are generally seen in a positive light.

The continuing education students who participated in our study agreed that portfolios, in general, were important aspects of their program and that the portfolio review process was an important component of their continued learning. Further, the results indicated that students were more inclined to believe that an ePortfolio would be as beneficial as or more beneficial than a traditional portfolio, particularly because of the ease of sharing work in a digital format. As indicated above, whether they were submitting works to their instructor for grading, sharing works with clients or galleries, or granting general access to the public, the convenience afforded by the ePortfolio was the main reason why students reported they might be useful. These results are similar in many ways to previous research done on traditional undergraduate and graduate student environments, as well as on learners in more informal learning environments (Acosta & Liu, 2006; Challis, 2005; Mason, 2006; Ritzhaupt et al., 2008).

Even with these positive perceptions of the use of ePortfolios, there remains a significant concern for the implementation of ePortfolios within the continuing education environment—the varied demographics of the students participating in such programs. The results of this study demonstrate that there are still significant differences between the experience and comfort level of younger and older students with various technologies that are key to the effective implementation of ePortfolios. These concerns resonate strongly with previous work by Van Wesel and Prop (2008), who identified self-reflection skills (moving past superficial to critical) and computer skills as the two keys for the successful implementation of ePortfolios. It also

resonates with other recent research on the implementation of other learning technologies in continuing education, such as computer-assisted language learning (Wuetherick et al., 2015; Mason, 2006). If the variability in student skill levels is not addressed adequately as part of the program in the supports provided and the assessments used, it may result in unacceptable validity issues in the assessment of ePortfolios due to student variability.

In the end, with appropriate supports in place for students (Shepherd & Bolliger, 2011; Wang, 2009), it might be possible to mitigate many of these concerns within a continuing education environment. There are, however, additional concerns when the readiness of instructors to implement ePortfolios is added to the mix. While not formally included in the research project, when these research results on the students' perceptions of ePortfolios were shared with a meeting of the instructors in the three programs, they expressed an almost uniform concern that made it appear they were significantly more reluctant than students to want to use ePortfolios. Their concerns were primarily focused around the variability in students' experience and comfort level with technology, while also emphasizing their own variability in this respect. Instructor readiness seemed to be an issue at multiple levels, particularly with their personal technology-related skills and comfort level using these technologies, as well as their understanding of course design with ePortfolios (particularly how to undertake student assessment fairly). There also appeared to be several preconceptions about the usefulness of ePortfolios in certain disciplines and in certain courses. These concerns align with those articulated by Van Wesel and Prop (2008), who identified fair assessment (focusing on content rather than appearance due to variability in student technical skills), reviewer reliability (ensuring consistency despite a potential variability in appearance, in how each portfolio is reviewed), and the different course characteristics (recognizing that one size does not necessarily fit all, particularly when encouraging student creativity in their portfolios) as key challenges that need to be overcome in implementing ePortfolios.

The second key challenge that emerges from this study is the high importance that students placed on the transportability of their portfolio upon the completion of their courses or program. This pilot study was completed in the context of evaluating an LMS-embedded ePortfolio tool, to which students did not have access upon the completion of their program or even upon completion of their course, if their registration was episodic (which is quite common in continuing education environments). Anecdotally, when the results of this study were presented to students at a public forum, one student stated that if it was necessary

to migrate the portfolio to another platform in order to access it upon completion of the program, then why not just build the portfolio in that other platform when creating the initial portfolio. Indeed, these findings might reinforce Bolliger and Shepherd's (2010) model of using freely available tools, such as Google Sites, rather than relying on the LMS-embedded portfolio tool.

Even given these reservations about the readiness and willingness of instructors to use ePortfolios and the administrative IT challenges that need to be overcome related to the transportability of the ePortfolios, the results of this study demonstrate that it is time to consider seriously implementing ePortfolios in the realm of continuing education, particularly within those areas where traditional portfolios have been used historically. Due to the highly varied nature of the student body in such learning environments, however, the implementation of ePortfolios must be done thoughtfully and with the full suite of support mechanisms in place for students, including the development of peer-driven communities of support for the use of various tools in the creation of student ePortfolios, and with the full suite of support required for the valid and reliable assessment of ePortfolios by instructors.

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Appendix
 Liberal Studies ePortfolio Survey

1. Have you completed or are you in the process of developing a portfolio as a part of this program?
 Yes
 No

2. How useful is the portfolio component of this program?
 Not at all useful
 2
 3
 4
 Very useful

3. What is the best part about having to complete a Portfolio? (Open-ended)

4. How beneficial is/was the portfolio review process?
 Not at all beneficial
 2
 3
 4
 Very beneficial

5. How important will a Portfolio be to you once you complete the program?
 Not important at all
 2
 3
 4
 Very important

6. Are there any aspects of the portfolio component of the program that you think might have been possible in an electronic form?
 Yes
 No
 If yes, why? (open-ended)

	Not important at all	2	3	4	Very important
7. How important is it to you to be able to demonstrate your learning to others?					
8. How important is it to you to be able reflect on what you've learnt through the program (e.g., see progress from class to class)?					

9. Have you had to create/use a portfolio in any prior learning experience?

- Yes
- No

10. How useful would it be to you to be able to record and present digital media and/or files (e.g., text documents, photos, audio files or video files)?

- Not at all useful
- 2
- 3
- 4
- Very useful

11. Compared to a traditional portfolio, how useful would an ePortfolio be to you?

- Much less
- 2
- About the same
- 4
- Much more

12. If you were to create an ePortfolio, how important would the following be to you?

	Not at all important	2	3	4	Very important
a) Transportability (i.e., the ability to keep it even when you are done the course/program)					
b) The ability to include all forms of digital content					
c) The ease of storage					
d) Being able to give people remote access? (e.g., potential employers, instructors, colleges, galleries, etc.)					
e) Other (please specify below):					

Other (please specify):

13. Please rate your experience and comfort level with the following:

	Experience					Comfort				
	Not experienced at all	2	3	4	Very experienced	Not at all comfortable	2	3	4	Very comfortable
a) Computers in general										
b) Internet in general										
c) Word processing packages										
d) Graphical and design applications										
e) Presentation software										
f) HTML										
g) Video editing										
h) Audio editing										
i) Digital photography and editing										
j) Other (please specify below):										

Other (please specify):

14. Are you:

- Male
- Female

15. How old are you?

- < 20
- 20 - 29
- 30 - 39
- 40 - 49
- 50 - 59
- 60 - 69
- > 69

16. Which program are you in? (Check all that apply)

- Residential Interiors
- Fine Arts
- Writing and Editing

17. What is the highest credential that you've completed?

- Less than high school
- High School
- Certificate
- Diploma
- Undergraduate degree
- Graduate degree