Using e-Portfolios to Measure Student Learning in a Graduate Preparation Program in Higher Education

By

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Abstract

Ten second-year master’s students in a higher education program participated in this study designed to assess their experience with an electronic portfolio recently introduced as a primary component of their comprehensive exam. This qualitative study used a focus group and long-interview methods for data collection. Participants responded to an interview protocol of several open-ended questions that allowed them to discuss their experiences and challenges with this capstone experience. Through a variety of coding techniques, five themes emerged: (a) students have difficulty adapting to change; (b) reflection and decision-making takes time; (c) students need regular reassurance; (d) students learn a great deal about themselves; and (e) the e-Portfolio is a very powerful experience. Findings suggest several implications for practice, including preparing new professionals, being a new professional, and supervising new professionals.

Keywords: e-Portfolio, student learning outcomes, assessment, knowledge, skills, and dispositions

Regional accreditors, along with other external constituents, have called for institutions of higher education to offer concrete evidence that demonstrates students are graduating with the requisite knowledge, skills, and dispositions to succeed in their chosen fields of study (Dietrich & Olsen, 2010). In fact, individuals are often asked to provide a record of their accomplishments or show progress in mastering a field or to document educational outcomes (Challis, 2005). While faculty members in all disciplines have created learning outcomes for their individual classes for quite some time, measuring the overall outcomes of academic programs have remained a difficult task.

e-Portfolios, a digital container capable of storing visual and auditory content including text, images, video and sound (Abrami & Barrett, 2005), have emerged as valuable online tool that learners, faculty members, and institutions can use to collect, store, update, and share information. e-Portfolios allow students to reflect on their learning, communicate with instructors, document credentials, and provide potential employers with examples of their work (EDUCAUSE, 2005, ¶ 1). They can also promote professional knowledge development,
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professional growth, and reflective thinking and practice, all of which are important components of professional development.

e-Portfolios were introduced in 2010 as a new component of a comprehensive program evaluation and assessment program developed for a master’s program at a research-intensive university in the southeast. The evaluation and assessment program consists of a 6-step process that is used for continuous program improvement. While a complete discussion of the model for outcomes assessment and program evaluation goes beyond the focus of this study, the measures and instruments used to evaluate program quality included pre-graduation measures, graduation measures, and post-graduation measures (Janosik, Frank, & Hirt, 2011). Figure 1 illustrates the flow chart for the model and highlights the e-Portfolio as one of three pre-graduation measures.

The goal of including the e-Portfolio as the major component of the comprehensive exam was two-fold. First, we wanted to enhance the ability of the faculty to determine if students about to complete the program had acquired the desired knowledge, skills, and dispositions that were identified as program outcomes. Second, we wanted to create a more robust evaluation process so that students would be encouraged to reflect more deeply on their graduate experience, what they had learned, and what they could do as a result of their participation in the program.

The faculty members involved in the comprehensive exams in the first year of the implementation of the e-Portfolio were very pleased and overwhelmingly positive about the results. They reported, informally, that students had no difficulty in translating course assignments, graduate assistant placements, and field studies into examples of knowledge learned, skills acquired, and professional dispositions developed.

The purpose of this research, then, was to address the second goal and determine if the e-Portfolio added value to the overall program evaluation and assessment plan from the students’ perspective. The following research question guided this study: How did participants describe their experience with a newly created e-Portfolio process as the major component of their comprehensive exam?

Method

A qualitative approach was used in data collection and analysis to explore the efficacy of newly introduced e-Portfolio designed to measure participants knowledge, skills, and dispositions for graduating master’s students in a higher education program. Open-ended questioning and grounded theory analysis were appropriate choices since our goal was to explore the variety of experiences among a similar group of participants (Creswell, 1998). Such an approach enabled us to present the “essence” (Merriam, 2002) of the phenomena through the eyes of the participants. We wanted to include contextual information as well as stories of the participants from their individual points of view (Marshall & Rossman, 2006).

Participants

After obtaining Institutional Review Board approval for data collection, we selected participants using a purposeful sampling method (Patton, 2002). Twelve students participating
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in the e-Portfolio process for the program were sent an email message inviting them to participate in a focus group exploring their experience. While all 12 students initially agreed to participate in the research process, only 10 were able to complete the interview process.

All of the participants were enrolled in 9 hours of coursework and held full-time (20 hours per week) assistantships at the time the study was conducted. Their program consisted of 48 credit hours of coursework, which included a minimum of two field experiences, and was located at a large public research-intensive university in the southeast. All 10 students had applied for graduation and were in good academic standing. Interviews were conducted after their exams and all course work had been completed. Six of the respondents were women and four of the students were men. When we examined race, we found that six respondents were Caucasian, two respondents were African American, one respondent was Asian American, and one respondent was biracial.

Data Collection

Data on our participants’ experience with e-Portfolios were collected via a focus group and one long interview. A focus group consists of individuals with similar backgrounds participating in an interview process that encourages discussion and allows individuals to share their personal experiences in the social context of others (Patton, 2002). This focus group was used to capture the individual and group experiences of those participating in the e-Portfolio process and distinguish patterns of responses within the group. The focus group consisted of nine students who had completed the e-Portfolio requirement at the time of their interview. Not all participants were able to participate in the focus group, however. One researcher conducted the focus group and a standardized, open-ended interview with one participant who was unable to attend the focus group. Although she knew the participants well, she was not responsible for grading any coursework or determining the outcome of the comprehensive exam. This individual was asked the same questions that we developed for the focus group.

To attend to the purpose of the research project, we developed several prompts to elicit information. Examples of these prompts included:

- How might the instructions and orientation about the e-Portfolio process be improved?
- What was the easiest part of the e-Portfolio process?
- What was the most difficult part of the process?
- What did you learn about yourself as a result of this process?
- How have you used the e-Portfolio beyond the requirements for the exam?

While the interview captured only an individual’s experience, common themes were found between the focus group and the individual interview.

Data Analysis

The focus group and individual interviews were recorded and transcribed. Pseudonyms were given to each student to protect the individual’s identity. Content analysis was conducted
by each of the researchers in an attempt to make sense of the qualitative data obtained through the focus group and individual interview. First, open coding was used. Then, axial and selective coding processes were used to develop emergent themes from the data (Stauss & Corbin, 1998; Patton, 2002). Finally, we used a constant comparative strategy to integrate these emerging themes into core themes.

To help establish trustworthiness (Creswell, 1998), participants’ responses were transcribed verbatim to ensure the accuracy of the data. As a measure of analytic trustworthiness, we worked independently to analyze the data and identify emergent themes. Then, we compared emerging themes for congruence and dissonance (Renn & Hodges, 2007) and agreed on a set of five core themes.

Limitations

The major limitations of the study stem from the nature of the sample. Participants were drawn from one master’s program. Clearly, the findings gleaned from this sample cannot represent the experiences of all master’s level student affairs professionals with an e-Portfolio process designed to measure the knowledge, skills, and dispositions gained in their graduate program. Additional limitations lie in data collection. Some researchers question the credibility of self-report data (Furnham & Henderson, 1982; Howard, 1994). While there is always the chance that respondents might say things to represent oneself in a favorable light, we had no reason to believe our participants did so. In addition, we did not perform member checks and there was no direct follow-up with participants to clarify or deepen their responses. Still, we believe that the findings can contribute to a deeper understanding of the utility of using an e-Portfolio as the cornerstone of a comprehensive exam in a graduate preparation program.

Findings

Five core themes emerged from the data related to the research questions: (a) students have difficulty adapting to change; (b) reflection and decision-making take time; (c) students need regular reassurance; (d) students learn a great deal about themselves; and (e) the e-Portfolio is a very powerful experience. After analyzing the transcripts, each researcher generated, independently, a list of potential themes. The themes outlined in this paper are a result of consultation and agreement between the two researchers.

Students Have Difficulty Adapting to Change

The e-Portfolio was introduced in early October, after the start of the cohort’s first year in the program. As the first cohort completing an e-Portfolio, students were reluctant to accept the change in curriculum. Initially students were unclear about the value of the exercise. One student stated, “I know when I was originally thinking about it, I was just thinking of it as kind of a glorified power point… and then I got into it and realized [there] was much more reflection [involved] than I thought. Delia stated, “. . . the big picture, like what we were supposed to be actually doing was difficult to understand.”
Students also had difficulty adapting to the platform (Scholar) used for creating the e-Portfolios. The interface was slow. Although it operated in a fashion much like Microsoft Word and used common HTML (HyperText Markup Language) commands, Scholar was reported as being less than user-friendly. Several students asked and were given permission to use other platforms. David stated that:

If the [faculty] requires students to use Scholar, I don’t know how [we] will do it . . . I feel like I need training in HTML, which is so beyond our scope . . . how would we, as education students, . . . know how to do that?

Ellen also expressed some concern by stating, “I feel like [in] Scholar [when] you make one little mistake . . . it erased the entire page I had been working on for days.” Other students expressed similar frustrations. John offered a solution by suggesting:

I wouldn’t want to, as a future incoming student, be limited . . . to Scholar or . . . Google. I think [the platform choice] could be open to whatever because there’s more opportunities or different venues to create an e-Portfolio. I think assigning one or mandating one or requiring one would . . . limit the possibilities of where the e-Portfolio could go in the future.

Students agreed generally that expanding the platforms available could encourage creativity and allow students to create an e-Portfolio that used their strengths.

**Reflection and Decision-Making Take Time**

Throughout the students’ two-year program, faculty members would remind students of the learning objectives for the program and how they could be incorporated into their e-Portfolios. To help with the development of the final product, students were encouraged to upload files and make notes on a frequent basis. They were also required to enroll in a 3-credit independent study as a way to focus their attention on this task. Overall, students felt that figuring out how the e-Portfolio could best reflect their work and growth during their tenure in graduate school took time and significant effort. Deciding what content best described their graduate school experiences was difficult. Ann stated:

I think the hardest thing for me was trying to decide what you were going to put in the e-Portfolio because there’s a lot of information you cover within two years; your cognates, academic curriculum, practicum experiences . . . deciding what’s more important than others . . . was a challenge.

Putting the e-Portfolio together took much more time than students anticipated. Many participants stated they underestimated the amount of time it would take to put together an effective e-Portfolio. Jenny stated, after being asked what surprised her most about the e-Portfolio process, responded:

The time it took . . . I know we had all semester for this independent study but I really thought I could put this together in a couple of weeks. I found out quickly that was not
the case. I was spending eight hours a day trying to put it together. I think it took a very long time to incorporate all of the information.

Students Need Regular Reassurance

During the course of the first year, one class meeting in the introductory course for the Master’s program was devoted to creating the e-Portfolio, another general information session was held, and two meetings were scheduled with staff members in Learning Technologies who were responsible for supporting the e-Portfolio project at the institution. These staff members, with guidance of the program faculty members, also developed a standard template for student use and a users manual specifically for the students in the program. Despite these resources, students needed to consult regularly with faculty members while working on their e-Portfolios. They needed regular reassurance that they were developing their e-Portfolios in ways that met expectations. Tom reported:

. . . a few of us sat down [with the faculty] . . . and said we don’t know what the physical end product will look like and, I realized that might be dichotomous thinking, but that was a lot of pressure since this was basically what we were going to use to decide whether we passed or not.

Michael further stated, “The hardest part of this entire thing, I think, was the ambiguity in it.”

Even though there were some meetings with faculty members to determine format and expectations, student reported wanting these meetings to occur more frequently throughout the semester as well as earlier in their graduate career. Stacy stated:

But I think, at the same time, it would have been nice if it started from your first semester to say you need to start thinking about these things, you need to start cataloguing your experiences, you can track them, and then be intentional about getting experiences you don’t have. I think that would have been nice to hear that first semester.

Brian also stated, “what might help the structure [the e-Portfolio process] is having more frequent meetings, like once a month, and saying we expect you to have one of these tabs by now,” [referring to what content should be finished by a certain date]. Students consistently stated they needed more guidance regarding content expectations and tied that guidance to frequent meetings with faculty members.

Students Learn a Great Deal About Themselves

Students acknowledged that the e-Portfolio process pushed them to grow and recognize how much they had accomplished during their graduate careers. Many indicated they had more content for the e-Portfolio than they knew what to do with and that surprised them. Students indicated the experience that the e-Portfolio provided and how evaluating that experience using the e-Portfolio made it easier for them to talk about their growth as student affairs professionals, particularly in job interviews. John said, “I did find myself really reflecting in my [e-Portfolio]. . . it was really helpful to me to articulate some of those things in job interviews…”
Students also remarked that the e-Portfolio process helped them see the bigger picture, how they had learned holistically through their graduate career. One student stated, “What I have learned in terms of my own growth was looking at big picture things and not always expecting things to be laid out for me.” Jenny reported that the e-Portfolio let her see “how much you have accomplished and if you had your goals written down initially . . . you can say I really did accomplish that or I didn’t really expect to do this but I did and I am grateful now . . .” Another student stated the e-Portfolio process taught her that, as a professional going into the field, she will have to craft her own experience. “For me, that’s what I learned. It’s a skill set. I am going to have to take responsibility for my own education and make my own experience.”

The e-Portfolio is a Powerful Experience

Despite technological glitches and initial uncertainty with the assignment, students reported the e-Portfolio experience to be powerful and meaningful, particularly with the job search process. Students reported going through the e-Portfolio process made them feel much more competent and one student remarked that, “it made me a lot more confident that I can be a meaningful contributor to the field.” “Increased confidence” was mentioned by several students, saying the e-Portfolio was a real “confidence booster.” This confidence led students to feeling strong in their interview experiences because they were able to articulate what they had learned and what they could do, as evidenced by their e-Portfolio. Michelle reported:

“It helped me articulate my experience better in my interviews because you really have that time to reflect on it and connect it and frame it under those professional preparation, professional involvement, etc. [categories]. You outline your values, where you plan to go in the future, etc. and all of those came up in interviews so it really helped me.

Brian, when asked how the e-Portfolio process added value to his educational experience, responded:

The e-Portfolio allowed us to reflect on all of our experiences and we get to talk about what it is we have learned, how we’ve grown, and that’s just a great experience. I think, at this point, as we are becoming a master, so to speak, in our field, that’s a good opportunity to have.

Discussion

Participants were unanimous in suggesting that the e-Portfolio created the opportunity to reflect deeply on their graduate school experiences. The template used as a guide in this study served to focus student attention on the learning outcomes of the master’s program and gave them a mechanism by which they could translate their experiences into evidence in the domains of knowledge, skills, and dispositions. In addition, requiring students to present their e-Portfolio as a major component of their comprehensive exam, provided participants with an opportunity for reflection on their learning and performance as a means to further development, construct personal expertise, and explore their professional identity (Rickards, et al., 2008). Given the findings in this study, those contemplating the use of an e-Portfolio process as part of an assessment plan would be wise to consider the following implications for practice:
1. Before considering the adoption of an e-Portfolio process, **develop a comprehensive assessment plan** (Dietrich & Olsen, 2010). The mission or objectives of the program should drive the curriculum and the learning outcomes. Desired outcomes must be clearly articulated and re-enforced by classroom faculty members as well as those who advise students and supervise field experiences. Learning outcomes and examples of evidence must also be identified. Students in this study wanted clear direction on what their portfolios should include and what they should look like at the end.

2. **Consider carefully the platform that will be used for the e-Portfolio.** While several universities have developed their own templates, free or commercially available platforms are also available (e.g., Google, Carbonmade, Wix, Krop, and Design Taxi, etc.). This is an important consideration. Depending upon the complexity of the template developed and the technological sophistication of the students using the platform, computer and server capacity, and speed become important factors. Video and audio files, pictures, and complex presentations will require large amounts of both.

3. **Construct an e-Portfolio template and supporting documentation** for students and faculty members based on the desired outcomes of the program. Providing this type of structure will reduce the ambiguity of the assignment and lessen the anxiety students (and faculty members) experience with any new procedure or process. Detailed guidance will also increase the likelihood that the final produce will meet expectations.

4. **Identify the technical support and training needs of the faculty and students.** Although today’s college students may possess a high level of skill with all types of technology, there may be a wide range of ability in any particular cohort. Program faculty members may not always be early adopters of technology and some may need much more help than others. Integrating an e-Portfolio experience into the curriculum must be user friendly for all who use it. Resources must be devoted to continual training and nurturing of those involved in this assessment process.

5. **Assess the efficacy of the e-Portfolio process on a regular basis.** Processes and communication can always be improved. Those who coordinate e-Portfolio processes should request feedback from everyone who uses this tool on a regular, if not annual basis. Use the information collected as a way to improve the quality of the final product and the learning that occurs.

**Conclusion**

Miller and Legg (1993) suggest that portfolio assessment is a specific form of authentic or performance assessment that attempts to measure higher order thinking skills such as the ability to communicate clearly, make judgments, and demonstrate certain competencies. This was exactly what we hoped to measure and upon which we hoped our students and faculty members would focus. In the experience of the faculty members and students engaged in this process for the first time, the use of the e-Portfolio enhanced our examining process and exceeded our expectations in this regard. We found the use of the e-Portfolio to add great value as the foundation for our comprehensive exam. Students enjoyed the opportunity to show what
they had learned and how they had spent their time in the program. The experience was quite
developmental and reaffirming for all involved. That said, some familiar challenges remain.
Determining the authenticity of the evidence offered, establishing consistent judging and grading
of the portfolio, and addressing difficulties with the user interface are issues with which students
and faculty members will have to grapple. Based on our initial assessment, we believe the
rewards are well worth the effort.
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