Developing Your Master’s E-Portfolio: 
An Instructional Module

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Abstract: Graduate students in the Online Educational Technology Masters program (OTEC) at the University of Hawaii Manoa are required to produce an electronic portfolio in order to graduate. This task is addressed throughout the course of the program, yet is outside the scope of any specific course, leaving students to proceed independently with the production of their e-portfolios. This instructional module provided information to support students’ work on their e-portfolios. The module was delivered through a website that utilized VoiceThreads to provide information and an interactive learning space as well as sample student work and additional resources. Survey results indicated that all participants found the module helpful in providing information regarding various aspects of the task. All participants showed improvement in one of the most challenging areas, understanding and application of the AECT standards to the e-portfolio. Responses indicated an appreciation for straightforward, clarifying information and additional resources for this task. Questions and suggestions from participants will be shared with program instructors for consideration.

Introduction

Graduate students in the Online Masters in Educational Technology (OTEC) program at the University of Hawaii Manoa are required to produce an electronic portfolio in partial fulfillment of their graduation requirements. Concomitantly, the e-portfolios meet the requirements of the College of Education’s accrediting body, the National Council for Accreditation of Teacher Education (NCATE). Those requirements are based on standards developed by the Association for Educational Communications and Technology (AECT). Accordingly, those AECT standards in the areas of design, development, utilization, management, and evaluation should be reflected in the e-portfolio. In effect, portfolios should reflect student progress and showcase professional growth over the course of the OTEC program.

Students begin creating the e-portfolio in their first semester in the OTEC program, a task that involves setting up a website with the required sections and collecting appropriate first-year work. In the graduation year, students submit a final portfolio reflecting their learning and growth in the program.
Guidance for this assignment has included a brief online, text-based description of the assignment, with a few sample portfolios and some classroom discussion. This has left the learners with many questions about how best to develop the electronic portfolio, questions which have remained somewhat open as the portfolio is outside of the realm of the coursework for any given course. The purpose of this instructional design project was to develop and evaluate an instructional module to assist graduate students in producing the required electronic portfolio in partial fulfillment of their Masters of Education in Educational Technology in the Department of Educational Technology at the University of Hawaii at Manoa.

Background

Student e-portfolios date back to the mid-eighties; became prevalent in higher education by the mid-nineties; and by 2005, became “most prevalent in college of education programs” (Lorenzo & Ittelson, 2005, p.3). At that point, the use of electronic portfolios had “become a primary way for students, faculty, and staff to document skill sets and reflect on learning, accomplishments, and career goals. Institutions are beginning to realize that e-portfolios are a viable tool that strengthens self-study and accreditations processes” (Lorenzo & Ittelson, 2005, p.16). Students are telling “highly individual stories while enabling the larger learning community within the institution to put these stories into conversation and to collectively reflect on what it values and how well it is doing” (Cambridge 2008, p.54).

In a study of a similar population comprised of masters in educational technology students, Dr. Shuyan Wang concludes,

Findings from this study show that creating electronic portfolios helps students develop technology-related knowledge and skills as well as critical thinking and problem-solving skills. Findings from this study indicate that creating electronic portfolios is a meaningful task because it provides an opportunity for students to synthesize what they have learned in the Master’s program, show their growth over time, and demonstrate that they have mastered the program’s standards. The whole process of developing electronic portfolios involves metacognition and self-evaluation because students have to reflect on their strengths and weaknesses and set their future learning goals. (Wang, 2005, p. 292)

The Department of Educational Technology at the University of Hawaii Manoa College of Education uses the electronic portfolio task for both of those processes. Students must develop personal, illustrative work, and research sections in their e-portfolios. In developing a statement of educational philosophy and goals and a reflection on experiences and growth during the program, the e-portfolio is used as a self-study tool that requires critical thinking in order to reflect on growth and learning.

Even in a graduate program, this is not an automatic outcome. Reflecting on her experiences in creating her e-portfolio, Aifang Wang (2004, p. 285) states, “Reflecting on the work was the most difficult part of the experience,” and suggests, “Students should be
instructed on how to write reflectively and be encouraged to do so as their program progresses. If students are not guided in reflective writing, they will tend to summarize what the selection is, rather than analyzing and extrapolating what went into it, why it represents learning, etc.”

The AECT standards spell out the use of the e-portfolio in the development standard, “Candidates demonstrate the knowledge, skills, and dispositions to develop instructional materials and experiences using print, audiovisual, computer-based, and integrated technologies” (AECT 2010, p.23). Development indicator 2.0.7 states, the learner will “contribute to a professional portfolio by developing and selecting a variety of productions for inclusion in the portfolio” (AECT 2010, p.24).

In each of the AECT standards areas, design, development, utilization, management, and evaluation, there are numerous indicators that are tied to student work in the master’s program. Learners therefore enjoy wide latitude in selecting work that demonstrates mastery of the standards. Nonetheless, planning can play a critical role in the selection process. Wang (2004, p.285) reports,

In selection, I felt I was not adequately able to select the work as evidence that best matched the course objective based on standards within the electronic portfolio framework by myself. I felt I lacked the knowledge of making the connections between coursework and the standards. I needed to see the syllabus and had to rethink objectives into standards. I recommend that when students enroll in a course, they add the course’s syllabus and associated standard modules to their portfolio. Then, they should respond to the standards as the course progresses.

The research further suggested that feedback from instructors and peers adds value to the electronic portfolios (Chitpin & Simon, 2009). In OTEC e-portfolios, students must include feedback from instructors and peers and explain how they used it to revise their work.

Methodology

The purpose of this research was to support the development of the e-portfolio by master’s students in the OTEC program through the use of a single website with lessons for each section of the portfolio. The website contained embedded pre- and post-surveys, embedded VoiceThreads to provide instruction and interaction, and additional resources for each section.

Instructional strategies

In consideration of the participants high level of technology skills and knowledge, as well as their need for information and time constraints placed upon them by program coursework, instruction was designed to be straightforward and modular. The site was designed so that the user could work through the module with ease of navigation and
multi-modal means to acquire information. An introduction provided an overview of the module. The remaining pages each covered a section of the e-portfolio, from general requirements to the personal, illustrative work, and research sections. Each section contained a description from the assignment, a few focus questions, and content delivered through a VoiceThread. VoiceThreads invited participation by users.

In addition, resources such as sample e-portfolios, professional vita, templates, and other elements of the assignment were provided. Links to further instruction such as a Web Style Guide were included. It was expected that students would gather relevant information to be used later in the semester as needed.

Technologies

All instruction and data collection took place through an eight-page Weebly website with links to additional resources as needed. Weebly, a webpage creation site, was selected for module development in order to provide the greatest ease of access, a wide range of drag and drop elements, and time to focus on content rather than on website development.

VoiceThreads, multimedia slideshows that allow participants to add comments to each slide, were used to deliver the narrated introduction and lessons. Participants were encouraged to comment on each VoiceThread. Their comments were hidden from view unless opened by the researcher. The use of VoiceThreads can contribute to learning when they are used as collaborative learning spaces (Brock, 2009).

To accommodate participants needing visual or auditory supports, and those with technology issues, all of the material in the VoiceThreads was available in textual format for copying or downloading.

Population

A call for participation was sent by email to students active in the OTEC program, with the link and password to enter the website. The participants did not need support in using the technologies involved, so no instruction was given in this regard. Half of the 18 participants were in their first year of the OTEC program, while the other half were in their second through fourth years of the program.

Data Collection

Quantitative and qualitative data were collected using pre- and post-surveys to determine the effectiveness of the instructional module. The surveys were built in Google documents and embedded in the website. To ensure that the surveys were anonymous, participants were asked to create and input a code on both the pre- and post-surveys. The only demographic information collected was the participant’s year in the program. Likert scale questions compared pre- and post-understanding of the e-portfolio project and its elements. Open-ended responses allowed for further comments, including the delivery of the instruction.
Two problems became evident in the data collection phase. There were 18 responses to the pre-surveys, and 11 responses to the post-surveys. Based on the respondents’ codes, only nine participants took both the pre- and post-surveys. This limited the results for comparing pre and post-survey data. Responses to the open-ended questions were still valid and reported in the results.

The second problem that affected the results is that four of the respondents may have missed the wording of the Likert scales and answered using the opposite of what was intended. While the Likert scale responses reflected negative growth in understanding, their open-ended responses indicated the opposite. In fact, one of the other participants even remarked,

Only comment I have is that the survey rating questions could be more consistent. The first two questions go from negative to positive (know nothing to highly knowledgeable) - but then all the other questions go from positive to negative (strongly agree to strongly disagree). For students who aren't really paying attention they may give a rating they don't really meant [sic] to give.

Results

All of the nine participants who responded to both the pre- and post-surveys reported that they had a better understanding of the e-portfolio as a result of the module except one who reported being highly knowledgeable from the start (see Figure 1).

Figure 1. Knowledge of e-portfolio requirements.
According to the data, all nine respondents had little understanding of the AECT standards before starting the instructional module and all reported increased understanding after participation (see Figure 2).

Figure 2. Understanding of AECT standards.

Two of the questions in the surveys dealt with areas reported by OTEC instructors as lacking in the e-Portfolios. Question three asked participants rate their understanding of how to use the e-portfolio to reflect on their progress over the course of the program, and question four asked participants to rate their understanding of how to use the e-portfolio to showcase professional growth over the course of the OTEC program (see Figures 3 and 4).

Figure 3. Understand how to use the e-portfolio to reflect progress.
Figure 4. Understand how to use the e-portfolio to showcase growth.

The data for the questions from figures 3 and 4 showed a negative outcome for some participants. It was suggested by one of the other participants that the change in direction of the Likert scale responses might cause mistaken responses. The same participants had like results for both questions. The data also suggested that the module did not clearly convey how to use the e-portfolio to reflect or showcase growth during the program.

Data from the open-ended responses from all participants were compiled and then generalized by themes to derive meaning from which possible conclusions could be drawn. When asked what questions they had about e-portfolios in the pre-survey, there were over twenty questions asking what should be included. For example, there were specific questions such as whether to include personal information about family and extra-curricular activities. Another eight responses were questions about design, security, and submission of the e-Portfolio. Four questions were about grading, and three participants felt completely lost in spite of initial work on the e-portfolios.

The responses to all of the open-ended questions on the post survey by all of the participants indicated that the instructional module was highly successful in providing support for the development of the e-portfolios, providing further evidence that the participants with the negative ratings on the Likert scale may have responded in error because of the change in direction of the scales.

The majority of the responses indicated that participants had a better idea of what they needed to do. “The instructional module provides more information regarding the e-portfolio. The information about how to plan, gather, save, and think of ideas was extremely helpful.” Another participant responded,
I liked how there were resources provided for each section. It forced me to think about the e-portfolio again. It was mentioned last semester that this is an ongoing project but with all the requirements for my current classes, the e-portfolio took a back seat. I hope that this site will remain up so I can refer to it. (First-year OTEC program participant)

It was apparent in several responses that this assignment was viewed as stressful. “I feel more confident and less overwhelmed about the assignment,” and “You removed some of the “fear factor” of the dreaded e-portfolio by breaking down the components and clearly stating their purpose,” are two of many expressions of the unease associated with this task.

A few responses suggested the need for continued support for students. “I thought the instructional module was very well planned and presented. Follow up synchronous sessions may be helpful.” Another student stated, “I enjoyed seeing the use of VT as a collaborative learning space. I am looking forward to coming back to your module at a later date to see what our classmates have added.”

Discussion

It appears that participants all felt they benefited from the additional instruction provided by the website (Figure 1). The results also indicated that all students had only nominal familiarity with the AECT standards. Since these standards were an important part of developing the e-portfolio, students might benefit from discussion of the applicable standards in all major course projects to increase knowledge of the standards and their relationship to coursework throughout the program.

Fostering familiarity with the standards and their connections to student learning and products might diminish the stress reported by students over producing the e-portfolio. This way, students document their learning and make connections between coursework and standards as they progress through the program.

There seemed to be mixed results as to whether participants better understood how to accomplish two of the instructional goals, how to use the e-portfolio to reflect on progress and how to use the e-portfolio to showcase professional growth. This is another area that warrants further exploration. Wang reported that it would have been better to prepare each project for the portfolio as soon as the project was completed rather than waiting until graduation drew near. She had to forego the use of an artifact she wished to use because she had no way to redo the references since they were not saved. She suggests that students “first, save your coursework in a folder by the course; second, revise the mistakes in your coursework and clear out the files you do not need when the final copy is completed” (Wang 2004).

Finally, although the responses indicated that the VoiceThreads seemed to be an effective way to deliver the content, only one participant used the comment feature. It would have been helpful to include a question about the use of the VoiceThreads. Another participant
was interested in seeing comments from classmates. If similar VoiceThreads were used as part of the e-portfolio development, there may be more discussion over time. As it stands, since the module was part of a master’s project, participants possibly did not expect to return and benefit from the comments.

**Conclusion**

E-Portfolios are an integral part of learning in the Online Master’s in Educational Technology program at the University of Hawaii Manoa. They are meant to provide a means by which students can reflect on their growth and address the common standards by which the program is judged.

The connections between the AECT standards and the e-portfolio need to be clearly understood by students from the outset of the program in order for them to conscientiously and consistently work towards them and then select exemplars to demonstrate their growth in the e-portfolio. Since the standards form the basis of the portfolio and dictate what kind of work should be showcased within, this is an area that should be worked on throughout the OTEC program, to guide students in the development of their work and collection of exemplars for their portfolios.

It is therefore vital that additional and ongoing support be provided to ensure that the e-portfolio becomes an informative, reflective learning activity that is developed over the course of a student’s tenure in the program. Wang (2004, p.286) shares that “The greatest value of this process is that it allowed me to examine my learning process, see the ‘gap’ in my learning, set goals for future learning, and see my growth and change over time.”

Thus, it would benefit students to complete reflections of their work with the connections to the standards after each project is completed. If this can be built in to the coursework, metacognition and in-depth analysis will make the e-portfolio a learning opportunity throughout the course of the program, and at best, this becomes a practice embedded in their classrooms as well.

Overall, the study recommends that:

A. AECT standards and their role in the e-portfolio be introduced early in the program.
B. Learners be asked to identify and reflect on AECT standards for each project they develop.
C. Learners work continuously on e-portfolios each year they are in the program.
D. Instructors establish a collaborative, online setting such as a VoiceThread for the e-portfolio task to provide instructor and peer support.
References


