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Cara Lane

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by Cara Lane

The "e" in e-portfolio makes a powerful statement. It divides the electronic portfolio from its paper counterpart, and in that separation it unlocks new opportunities for teaching and learning. In particular, a Web-based e-portfolio can become a vehicle for raising awareness of Web conventions and for fostering multimedia literacy, ultimately boosting students' online presentation skills. The power of e-portfolios, however, cannot be fully captured by their differences from paper portfolios; e-portfolios also present a valuable foil for social Web spaces, such as Facebook profiles, MySpace accounts, and blogs and Web sites created primarily for the purpose of sharing personal information with a social network. In contrast to these online environments, e-portfolios provide academic and professional Web spaces. Much of the power inherent in e-portfolios thus lies not only in their potential to build technology and Web publishing skills, but also, and more importantly, in their ability to advance students' knowledge of how to apply those skills effectively in academic and professional contexts.

In scholarly studies of e-portfolios, the idea of fostering online presentation skills has received little attention. Instead, e-portfolios have been touted as forums for reflective learning (Zubizarreta 2004). They owe much of their increasing popularity to their usefulness in documenting progress towards academic standards (Gaide 2006; Lind 2007). From a long-term perspective, the perceived value of e-portfolios lies in their potential as a space for lifelong learning (Greenberg 2004). However, although the online context of most e-portfolios has been overshadowed in academic discussions, it has not been entirely ignored. Indeed, e-portfolios have long been recognized for their ability to help students develop basic technology skills (Springfield 2001). In a recent survey, Penn State students rated the acquisition of Web publishing skills as one of the most worthwhile aspects of their institution's e-portfolio project (Johnson and DiBiase 2004).

My emphasis on e-portfolios as vehicles for teaching academic and professional Web presentation skills arises from research conducted by Catalyst Research and Development at the University of Washington (UW) on how students approach e-portfolios. The understandings of e-portfolios shared by student practitioners highlight different issues than those commonly discussed in the academic literature; instead of discussing reflection or standards, students emphasize design and audience. Interestingly, the latter elements engage students in some aspects of the former, requiring them to think critically about how best to present their accomplishments. In this article I provide data to illustrate how students understand e-portfolios in relation to social Web spaces, how e-portfolios allow students to increase their understanding of Web conventions, and how e-portfolios serve as a means of fostering multimedia literacy.

Capturing Student Perspectives on e-Portfolios

As a member of the National Coalition for Electronic Portfolio Research (NCEPR), UW is one of a cohort of ten institutions investigating e-portfolio implementations. Catalyst Research and Development, a resource center operated by the university's Office of Learning Technologies, has been actively involved in e-portfolio development and implementation since 2002 when we released the first version of Catalyst Portfolio, a software application designed specifically for e-portfolio construction (Exhibit 1). At our university the use of e-portfolios does not arise from an institutional mandate; rather, individual faculty members, students, or programs can choose to implement Catalyst Portfolio to support their educational activities (click here to see sample e-portfolios). In 2005, Catalyst held an undergraduate e-portfolio contest in order to better understand the types of portfolios that students were creating using Catalyst Portfolio and other Web-authoring software (Exhibit 2). We received 123 valid contest entries. A panel of faculty judges awarded one grand prize and

additional prizes in three portfolio categories: professional, academic, and personal/reflective.

In coordination with this contest, we conducted research to better understand how students perceive e-portfolios, to identify the cognitive and technical skills they need to create effective e-portfolios, and to learn where and how they acquire those skills (Exhibit 3). For this study, all participants in the Catalyst e-portfolio contest completed a brief questionnaire, and 12 contestants participated in interviews. The students chosen for interviews represented a range of disciplines, portfolio types, and skill levels. Some had chosen to create e-portfolios on their own initiative; others had been introduced to e-portfolios within a course context. The analysis of contest entries, questionnaires, and interview data led to three main findings: (a) students' understandings of what comprises an e-portfolio are influenced not only by their discipline but also by their experience with other online presentation forums; (b) strong e-portfolios require detailed knowledge of their intended audience; and (c) communicating in an online environment (regardless of the tool employed) requires some level of visual and Web design skills. Taken in sum, these findings indicate the need for e-portfolio practitioners to think critically about the environment in which e-portfolios are created and presented. My focus on online environments arises from the data collected—all of the students who participated in the contest built their e-portfolios for the Web—but many of the ideas discussed in the interviews can be adapted for other digital media. In the next sections, I share students' insights on the importance of using e-portfolios to build online presentation skills.

Separating e-Portfolios from Social Web Spaces

In interviews, students' understandings of e-portfolios varied according to their level of familiarity with the portfolio genre. Those with limited exposure to portfolios described their work in terms of other, more social, forms of online communication. According to one freshman, "I think it was pretty easy to make a portfolio because I always put my thoughts online . . . like another blog entry." This student's view demonstrates a common trend. When students were not provided with a detailed explanation of the e-portfolio's purpose, they relied on their prior knowledge of social Web spaces to define the genre.

The student described above had created her e-portfolio as a requirement for General Studies 199: The University Community, part of the Freshman Interest Group (FIG) program. In this context the e-portfolio project offered a forum for reflection on the first quarter of university life. However, students' approaches to this project may have been strongly influenced by the fact that their primary audience, the instructor, was a fellow student. According to another FIG student, "If I was writing for professors who were going to look over my portfolio, I probably would have been more academic minded." However, since her instructor was "maybe a few months older" than she, the student was sure that her instructor would want to see something "kind of fun and not boring." Therefore, this student included a picture of her boyfriend and a photo of a BMW. These choices indicate that the student relied on her knowledge of conventions of social Web spaces, particularly a focus on personal information, to construct her e-portfolio.

In contrast, advanced students who had greater familiarity with the genre found ways to differentiate their e-portfolios from other forums for online presentation. Interestingly, two students used the same standard for making this distinction. According to one student, "I've never been interested in making a Web site where I just talk about myself and put pictures of my dog and stuff." In the words of another, "I wouldn't put pictures of my dog on it." Unlike the student who included personal pictures to please her peer instructor, these students defined their e-portfolios in terms of the exclusion of social elements such as personal photos. For these students, a photo of a dog (or a BMW) became a litmus test for whether their e-portfolios told a personal story or an academic one.

Rather than seeing the e-portfolio as a blog or personal communication space, students with advanced understandings of e-portfolios viewed them as an extension of their academic and professional work. In the words of one student, "A portfolio is a collection of your best work and you define your purpose as what skills you want to showcase. You hope your portfolio makes a good argument for what you are trying to prove to your audience." This student understood the e-portfolio as a vehicle for arguing that she possessed skills of

value in her field. While this student gained her insight into e-portfolios from her professor, other students independently sought out advice from those working in their fields or used other academic or professional e-portfolios as models. Making decisions on how to best present their work required students to reflect on the connection between their accomplishments and their audience's needs. When conceptualized as academic and professional Web spaces rather than social ones, e-portfolios allow students to demonstrate their academic, discipline-based knowledge and showcase their educational and professional accomplishments.

Building Awareness of Web Conventions

e-Portfolios provide a useful context for raising awareness of Web conventions. Students can learn to make knowledgeable presentation choices that take into account the visual and structural limitations and opportunities of a Web environment: the spatial constraints of screen parameters, the seamless integration of text and images, the ability to communicate with color, and other similar characteristics. While any digital environment can offer a similar learning opportunity, the popularity of e-portfolios makes them a valuable venue for teaching students to make appropriate choices for presenting online content to an academic or professional audience.

The study data from interviews and questionnaires revealed that most students acquired Web and design skills on their own with varying levels of success. In general, students who already had advanced technology skills found learning on their own to be effective, but students with less developed skills would have preferred to learn these skills within the context of a course. Whether or not they had strong skills in these areas, students viewed them as important. According to one student, "I think the background says as much as the text itself." Based on this belief, this student struggled with his difficulties in acquiring skills that would allow him to control more fully the background and other visual elements of his e-portfolio: "I'm interested in being able to convey and create emotions through colors and photographs and I'm completely impotent to do that." In contrast, a student with strong Web and visual design skills spent considerable time during his interview explaining his design choices. For instance, he emphasized his awareness of the limits imposed by the parameters of the screen: "I wanted it all to fit on the screen at one time—that was an important design decision that I made." It is not only in terms of visual design that students make important choices but also in coordinating various elements of their e-portfolios. According to a student who combined textual commentary with visual artifacts, "There are a lot of things that you can't express in words that you can express through artifacts." Making and implementing smart decisions about design and structure helped students to communicate their ideas effectively.

There is one caveat to the potential of e-portfolios: The software employed must offer some level of student control over design, or this learning opportunity is lost. The Penn State e-portfolio initiative, mentioned earlier, asked students to create e-portfolios using basic Web-authoring software, which allowed them to develop Web publishing skills. The numerous e-portfolio tools available allow students to exercise varying levels of creative and technical control over the presentation of their work. Catalyst Portfolio allows students to make various levels of design decisions, depending on its configuration and students' knowledge, but not all e-portfolio tools allow students control over these aspects. In our contest, the students who created e-portfolios using Web-authoring software had greater control over the design of their e-portfolios than those who used Catalyst Portfolio; however, the students who chose to use Web-authoring software also exhibited, in general, higher levels of technical skills. I am not arguing that all students need advanced technical skills to create effective e-portfolios, but, rather, that if students are able to make choices in the development of their e-portfolio—either scaffolded by a tool that provides options or in a freeform authoring environment—they have a valuable opportunity to learn how to best present themselves and their work.

Building Multimedia Literacy

While the information we gained from students emphasized the importance of visual and Web design skills, specifically with regard to the close integration of visual and textual elements, students did not tend to make much use of video, audio, or other dynamic elements in their e-portfolios. The few contest entries that used

audio or video employed these components for spectacle; for instance, one student submission included a video clip of a bicycle crash. The higher level of technical knowledge required to integrate these types of materials is a likely reason that we did not see a variety of multimedia content. Another possible explanation may be provided by students' disciplinary backgrounds; the entries laregly showcased textual and visual skills developed in fields that focus on textual and visual materials. Indeed, one student who created a sophisticated e-portfolio to demonstrate her technical writing and Web design skills was not sure how an e-portfolio could be used in less technical disciplines: "I think it depends on your major. I don't think you should say that every student should have this level [of technical skill] when they graduate. I can't imagine my friend, a music major who sings opera, needing to sit in front of the computer and do this." Coincidentally, prior to this study, a student working at Catalyst had created an e-portfolio to showcase her abilities as a vocal performer. Audio files could make e-portfolios valuable tools for opera singers, other musicians, or anyone in a field that relies on audio performance to demonstrate ability. Video could also fill a variety of discipline-specific needs. For instance, Lind (2007) describes an e-portfolio program for music education students in which students include both audio and video files of their performances as musicians and as teachers. Integrating multimedia elements into e-portfolios has the potential to teach students how to identify which types of media best facilitate the communication of different types of information. Even though the contest entries did not demonstrate the effective use of multimedia, the development of students' literacy in this area is a logical future step in e-portfolio development.

Implications

Thinking of e-portfolios as vehicles for teaching online presentation skills unlocks a variety of teaching and learning opportunities beyond those most commonly discussed among e-portfolio scholars. Focusing on these skills directly engages students' intuitive understandings of e-portfolios and provides an opportunity to position these tools as vehicles for academic communication, as opposed to social communication. Understanding e-portfolios in this way provides a valuable opportunity to raise students' awareness of Web conventions for academic and professional discourse and, ultimately, to build multimedia literacy skills. If implementation and technology choices are made to allow students a high degree of creative control over their e-portfolios, online presentation skills can be developed in conjunction with uses of e-portfolios that engage students in reflective practice, demonstrate achievement in academic standards, and promote habits of lifelong learning. Indeed, aspects of these practices are a part of the process of making presentation decisions. These decisions require students to think critically about how to relate their accomplishments to a particular audience, and this is a reflective skill that students will continue to connect with long after graduation.

Opportunities to develop academic and professional online presentation skills can be provided at all levels of curriculum, allowing students to expand their skills as their education progresses. A first step towards this ideal is to integrate e-portfolios and the development of online presentation skills into one or more key courses. Likely candidates for such integration are courses that target graduating seniors (focusing on professional skills) or new freshmen (focusing on academic skills). The winner of the UW 2005 e-portfolio contest and three of the finalists were the product of the former approach. They created their e-portfolios as part of the Professional Portfolio Program within the Department of Technical Communication. This senior course teaches students how to create e-portfolios that demonstrate the professional skills they obtained during their course of study. Since the program emphasizes technical proficiency, students typically build e-portfolios on their own rather than using a structured e-portfolio tool.

The FIG program, described earlier, uses e-portfolios to help new freshmen reflect on their first quarter of university life. After the e-portfolio contest, the program has worked with Catalyst to alter some aspects of their e-portfolio assignment. The portfolio project template now offers more guidance to help students consider the needs of their audience and develop visual and Web design skills. Both of these elements are essential building blocks for using e-portfolios as vehicles for academic communication although the personal nature of the FIG course makes it a difficult venue to teach students to write in an academic voice.

However, a new implementation of e-portfolios at UW may fill this void. In the year following the e-portfolio contest, the Expository Writing Program (EWP) in the Department of English piloted the use of e-portfolios in nine sections of beginning composition, a required course for nearly all incoming freshman. The EWP e-portfolio seeks to help students develop an academic voice, reflect on their writing, and provide evidence for how their written work fulfills the learning outcomes for the course (Exhibit 4). Due to the highly textual nature of composition, initial e-portfolios created in the program made little use of the visual and multimedia opportunities of the Web. As e-portfolios become more familiar, instructors are starting to emphasize visual rhetoric and create more assignments that integrate text and images. Ideally, EWP would like to expand the use of e-portfolios to other courses in the program and, eventually, to other writing courses at the University.

Individuals or institutions interested in using e-portfolios to teach students academic or professional online presentation skills should work to develop courses that include the following elements:

- Technology that allows students some level of creative control over the contents and appearance of their e-portfolios;
- Discussion of presentation conventions within an academic institution, discipline, or profession;
- Models of effective and ineffective e-portfolios;
- Discussion of differences between e-portfolios and social Web spaces, such as Facebook, MySpace, and blogs;
- Analysis of Web sites to enhance familiarity with Web conventions;
- Basic technology instruction, such as how to use the e-portfolio tool, scan and format images for the Web, and perform other basic tasks;
- Activities that integrate text and images;
- Engagement with a variety of media, with discussion of which type of media is best suited for demonstrating particular skills;
- Opportunities to share e-portfolios with peers;
- An authentic audience beyond the classroom;
- Discussion of intellectual property issues;
- Evaluation criteria adapted to evaluating Web-based materials.

Conclusion

E-portfolios are versatile teaching and learning tools. At UW, they have been used to capture students' reflections on their transition to the university, to document progress towards learning outcomes, and to showcase professional skills. The power of e-portfolios lies not only in their flexibility but also in their publication format; as products of the Web, they provide a valuable forum for teaching online presentation skills. Many students already have some familiarity with presenting themselves online through their exposure to social Web spaces. However, this prior knowledge can be an obstacle in e-portfolio implementation since students are likely to view e-portfolios as an extension of these informal forums unless they are provided with an alternate model. Teaching students to think of e-portfolios as academic or professional spaces where they can engage a specific academic or professional audience is a crucial step in unlocking the full potential of this educational technology. Through e-portfolios, educators can teach students to engage the Web as a site of formal learning. This education will allow students to utilize the powerful presentation forum provided by the Web to communicate effectively with academic, professional, and social audiences during their time at the university and throughout their professional careers.

[This article was modified from a Webcast for Electronic Portfolio Action and Communication International (EPAC) on April 14, 2006. Archive available at https://www.elluminate.com/pmtg.jnlp?psid=d759565344.425078.]

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