

# Transitioning from Paper to Electronic Portfolios in Beginning Composition

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## OVERVIEW

Two English graduate students pass each other in the maze-like corridors of Padelford Hall at the end of the quarter. One struggles under the weight of a large cardboard box overflowing with bulky, overstuffed manila envelopes; the other casually walks down the hall with a laptop slung over her shoulder. Both are teaching assistants for English 131, the required composition course for University of Washington students. Both are bringing home everything they need to grade their students' final portfolios. The difference: the first teaching assistant taught his section using the traditional paper portfolio model, while the second implemented electronic portfolios.

As participants in the National Coalition for Electronic Portfolio Research, Catalyst researchers are collaborating with representatives from nine other colleges and universities to study e-portfolio adoption. Our ongoing research on e-portfolios seeks to improve our understanding of how students learn to compose in this medium. We began our exploration during the 2004/5 academic year by holding an e-portfolio contest and collecting data from entrants. A complete report of our findings from that study is available online: [http://catalyst.washington.edu/webbeats/Portfolio\\_otn.pdf](http://catalyst.washington.edu/webbeats/Portfolio_otn.pdf). In 2005/6 we had the opportunity to partner with Expository Writing Program (EWP) in the department of English to better understand the effects of using e-portfolios within the context of a course.

During the 2005/6 academic year, EWP piloted the use of e-portfolios in nine sections of English 131, a required beginning composition course. Upwards of 30 sections of the course are offered each quarter, all of which are taught by teaching assistants (TAs). For the past several years, EWP has used a well-developed paper portfolio system to assess student learning. The established paper portfolio and clearly articulated learning outcomes made English 131 an ideal setting for introducing e-portfolios, since the conceptual work required to integrate portfolios in a program was complete; we could focus exclusively on the effects of transitioning to an electronic format. Other aspects of EWP made the program a less than ideal site, however, for technology adoption. Nearly all sections of English 131 are taught by TAs in the first year of their appointment at UW; many have no prior teaching experience. In addition, TAs are contractually bound by union regulations to spend no more than 220 hours per quarter on the activities of their appointment, including teaching and all instructor trainings. This constraint necessitates minimizing time spent on the introduction of a new technology. Another complicating factor is that English does not, traditionally, have a strong technology culture. This combination of circumstances makes EWP an interesting case for studying technology adoption; we are able to focus on the specific effects of introducing e-portfolios in a context that offers few supports for technological change. The findings and discussion we provide in this report will be useful to individuals or programs considering the adoption of electronic portfolios or other similar technologies.

The goal of Catalyst's investigation of the e-portfolio pilot in EWP was to understand the effect of the transition from paper to electronic portfolios on teaching and learning. Specifically, we were seeking an answer to the following question: What value, if any, is added by using electronic portfolios for the required portfolio assignment? In addition, we were interested in understanding how the use of e-portfolios affected different populations within the program: specifically, how did the use of e-portfolios influence TAs' teaching practices, students' learning, and administrators' views on potential learning in the course?

### **Key Findings**

- Despite challenges of context (new teachers and little history of technology integration), e-portfolios proved easy to use by both TAs and students.
- TAs reported that the use of e-portfolios improved the portfolio process in the course, led to more efficient grading, and helped students consider the demands of a wider audience.
- E-portfolios helped students make strong connections to course learning outcomes and utilize evidence effectively.
- Students' experience with the portfolio process varied more by instructor than by format (paper versus electronic portfolios).
- Administrators expressed optimism about extending the use of e-portfolios to other courses in EWP.

## **STUDY DESIGN**

### **Context**

English 131: Introduction to Expository Writing is built around four course outcomes. Although individual instructors determine the exact texts and assignments for each section of the course, all students in English 131 complete assignments designed to target these outcomes. For the final portfolio, students are required to choose one major paper and 4-6 shorter papers and develop a statement about how these works demonstrate achievement of the course outcomes. Currently, for the paper portfolio, students are asked to write their statement in the form of a cover letter to their instructor.

### **Participants**

Six TAs assigned to teach sections of English 131 in fall, winter, and spring volunteered to participate in the study. Two of the TAs were instructors in the Computer-Integrated Courses (CIC) program, where they taught once each week in a computer classroom. While all TAs expressed interest in implementing e-portfolios in their classes, they ranged widely in their knowledge of and comfort with educational technology. Two administrators from the English department also participated in the study, as did students from sections of 131 taught by participating TAs.

### **Study Procedures**

Before the pilot began, Catalyst researchers used the *Portfolio Project Builder* to create a project template that TAs could easily modify. The design closely matched the traditional paper portfolio, distributing portions of the cover letter over several Web pages and asking students to demonstrate achievement of the course outcomes. We also drew on our previous e-portfolio research in designing scaffolding within the template (see Figure 1). In the original project template, we organized pages by outcome; we later created a second project template organized by students' papers, since some students and TAs preferred

this organization. We also made two sample e-portfolios using these project templates; materials for these portfolios came from students who had taken 131 in the fall.

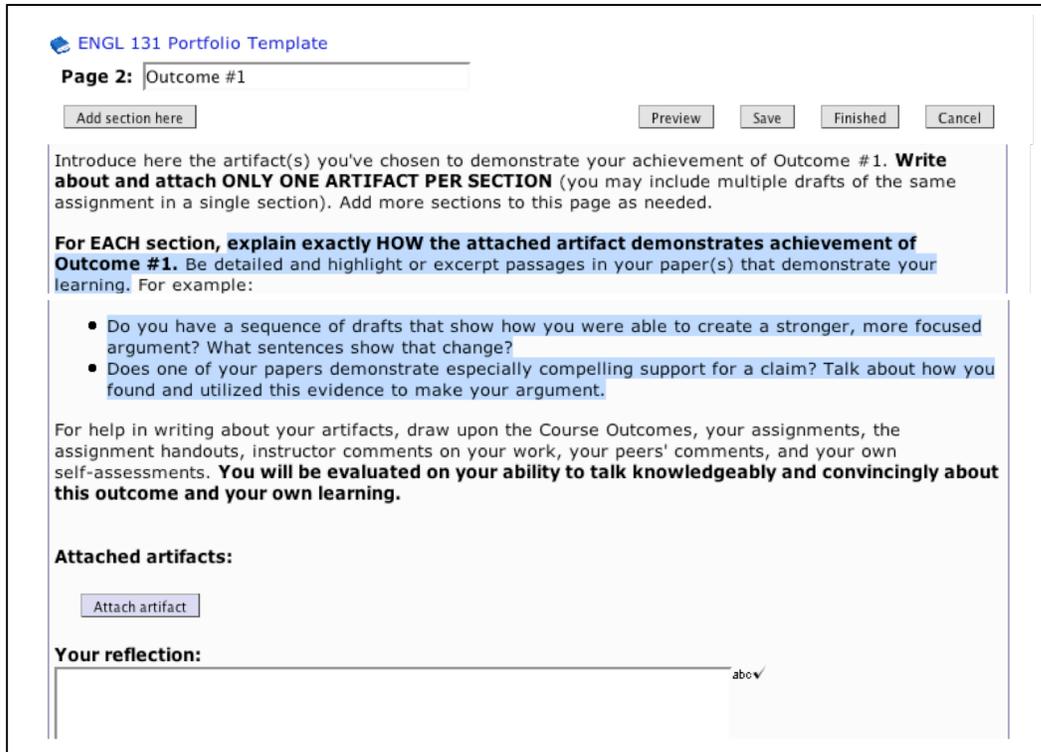


Figure 1: Excerpt from the ENGL 131 Portfolio Project Template highlighting how scaffolding was used to help students write effective reflections. Other areas of the template reminded students to consider their audience and provided information about how students could use HTML to create a professional look for their portfolio.

At the start of winter quarter, we used the sample templates and e-portfolios as resources for participating TAs in a one-hour training session. We encouraged TAs to modify the project templates as they saw fit and to share the e-portfolio models with their students. They were also encouraged to make a model portfolio of their own, if possible. To control for effects of simply teaching the course a second time, three TAs taught with paper portfolios during winter quarter and three taught with e-portfolios; all six used e-portfolios in spring. At the beginning of spring quarter, all six TAs met to discuss their experiences; our hope was that TAs new to teaching with e-portfolios would learn helpful strategies from those who had implemented them the previous quarter.

To ensure that all students received the same instruction on the technology, Catalyst researchers taught students how to use *Portfolio* during two trainings each quarter: The first was a 15-minute training held early in the quarter and in the regular classroom. This training focused on how to upload documents into *Portfolio*. The second was a 30-minute training in a computer lab during the last three weeks of the course. This training focused on how to complete the *Portfolio* project template; it included instructions written by Catalyst on how students could use features of the software and simple HTML to include a range of artifacts and customize their e-portfolios.

## Data Collection

At the start of winter quarter, all participating TAs completed a questionnaire about what challenges and opportunities they anticipated, for themselves and for their students, in the transition from paper to electronic portfolios. At the end winter and spring quarters, we interviewed TAs and asked them about their experiences using paper or e-portfolios and what they discovered (positive and negative) in this process. We also collected copies of each TA's portfolio assignment and any support materials they distributed to their students. During the interviews, TAs shared three sample portfolios that represented a range of responses to their assignment.

Students in participating sections of English 131 also completed a questionnaire at the end of winter and spring quarters. The surveys asked students about their overall experience completing the paper portfolio (three sections in winter) or e-portfolio (three sections winter, six in spring). At the start of winter quarter and at the completion of the study, we interviewed two administrators from English about the challenges and opportunities they anticipated in a transition from paper to electronic portfolios, and later what they had experienced or learned as a result of the study.

## FINDINGS

### Technical Considerations

After only brief overviews on Catalyst *Portfolio* (1 hour for TAs and 45 minutes for students), TAs and students in all sections of the e-portfolio pilot were able to use this tool successfully. All TAs successfully made minor modifications to customize the original project templates for their individual courses and distributed them to their students. Students in all nine courses (three in winter, six in spring) successfully created e-portfolios. Catalyst received no reports of technical problems winter quarter. Spring quarter, eight technical issues were reported to Catalyst. The majority of these were minor and quickly resolved.

In interviews, TAs also reported a variety of minor technical problems encountered by students, but were able to resolve these issues on their own. TAs speculated that the increase in technical issues in spring was caused by students missing class during training sessions (they noted higher rates of absenteeism in spring), beginning their e-portfolios close to the due date, and/or not following the instructions closely. Given that approximately 180 students were introduced to the e-portfolios and very little time was spent on training, the problems encountered were minimal. On a technical level, the pilot project was extremely successful, especially given the unique challenges of introducing it to new instructors, and new students, within the context of EWP.

### TA Teaching Practices

Over the course of the study, we tracked TAs' changing perspectives on the opportunities they envisioned for the use of e-portfolios in English 131. We first asked them to list these opportunities in a brief questionnaire at the start of the study, before they began teaching with e-portfolios. TAs initially identified three primary areas of opportunity.

- 1) The public nature of e-portfolios: TAs commented on the importance of asking students to write for an audience beyond the teacher, as well as the options e-portfolios provided for facilitating the exchange of work between students.

- 2) Improvements to the portfolio process: TAs felt that e-portfolios would use less paper and provide an avenue for students to learn technology skills.
- 3) Increased efficiency in grading: TAs felt that the introduction of e-portfolios would streamline their grading process by allowing them to comment more efficiently and develop schemas for evaluation more easily.

In interviews at the end of spring quarter, TAs reported that these opportunities had been realized, with a few minor exceptions. One TA observed that the extent to which the e-portfolios were public depended on factors beyond the electronic format, such as options for students to share their work during the quarter. Additionally, while TAs reported that the e-portfolios did make grading more efficient, the primary reasons given for the change were different than those listed above: TAs found the organization of the e-portfolios allowed them to easily ascertain whether or not students had fulfilled the course learning outcomes. They were also pleased to not have stacks of paper portfolios to carry around at the end of the quarter; instead they could evaluate e-portfolios on any computer with Internet access. According to one TA, “Now I’m not flipping through things, now I’m not keeping track of them. I don’t have to carry 22 [portfolios] back home.” In these final interviews, TAs also identified several new opportunities: e-portfolios allowed students to incorporate a wide variety of evidence from their own papers and other sources; e-portfolios made it possible for students to easily include media objects (images, video, etc); e-portfolios provided an authentic audience and an authentic genre, since students learned to write for the Web; and, perhaps most significantly for TAs’ own practice, teaching with e-portfolios helped TAs increase their own comfort with technology.

We also tracked TAs’ changing perspectives on the challenges of using e-portfolios. In the initial questionnaires, TAs identified three main challenges to using e-portfolios.

- 1) The training needs of TAs and students: TAs reported varying levels of comfort with technology and were concerned that some students would have difficulty with the format.
- 2) Concerns over student response to e-portfolios: TAs expressed concern that their students would resent the introduction of this new element in the course and/or might view the e-portfolio as being less substantial than a traditional paper portfolio.
- 3) Challenges in evaluating some aspects of the new format: TAs were uncertain how to grade custom elements of the e-portfolios (colors, visuals, etc).

At the end of the study, TAs reported that most of these challenges either had not materialized or had not materialized to the extent that they initially feared. For instance, although student comfort with technology did not end up being a significant challenge, some TAs did find student resentment to be a problem, since the assignment was different than what students were doing in other sections of English 131. TAs who had taught with e-portfolios for two quarters, rather than one, found this to be less of a challenge. Some TAs also struggled with how to evaluate the design elements of the e-portfolios—some chose to ignore these elements completely while grading, while others considered them as part of the academic presentation of a student’s work. By the end of spring quarter, TAs had identified several new challenges in using e-portfolios: timing the introduction of the e-portfolio during the quarter to minimize the transition at the end, balancing directions on how to complete the e-portfolios with options for students to exercise their creativity, developing systems to help students name and organize materials in their e-portfolios, and concerns that the public nature of e-portfolios may eventually increase opportunities for plagiarism (no plagiarism was reported during the pilot).

## Student Learning

In winter, three pilot classes completed the e-portfolio and three completed the paper portfolio. Since students take English 131 only once, these sections allowed us to compare experiences of students completing the paper and electronic formats. Responses to the student survey at the end of the quarter revealed no significant differences between the two groups. Some students who completed e-portfolios remarked that they would have preferred completing a paper portfolio; at least one student reported the opposite. Survey responses collected from both winter and spring suggested that students' experience of English 131 and of the portfolio process differed more based on the instructor and specific assignment they received than on the paper or electronic format of the portfolio itself.

While students themselves could not compare their performance on a paper versus an electronic portfolio, TAs were able to compare general performance across quarters, since all TAs had taught with paper portfolios in autumn. TAs observed that on the whole, students who completed e-portfolios wrote two to three times more in their reflections than students who completed cover letters for the paper portfolio. TAs speculated that writing reflections in the e-portfolio was easier for students than writing a cover letter, because the template broke the writing down into smaller sections and provided scaffolding for each section. In terms of actual performance, TAs reported that the strongest e-portfolios submitted by students were equal to or better than the strongest paper portfolios that they had received during the previous autumn and/or winter quarter, and that their weakest e-portfolios did not differ greatly from the weakest paper portfolios they had previously received. TAs speculated that students with low- to mid-range writing skills tended to have a higher degree of success with the e-portfolios than similar students did with the paper portfolio; they observed more success in this group of students in providing evidence for the course outcomes and highlighting the strengths of their work.

Evident in the sample student e-portfolios TAs shared during their interviews were a wide range of responses to the portfolio assignment in terms of design. In part, the range reflected the degree to which individual TAs encouraged students to experiment with the digital format. The e-portfolios we reviewed included everything from a straightforward translation (essentially the paper portfolio submitted electronically) to a very sophisticated design in which embedded images and music complemented themes in the student's papers and in the portfolio overall. Some students in winter quarter submitted portfolios with visual design choices that made them difficult to read (i.e. bright yellow text on red background); in spring, TAs showed sample e-portfolios and were careful to remind students that part of an effective e-portfolio included design for readability.

## Administrator Perspective

From the start, administrators in English were enthusiastic about the potential benefits a transition to e-portfolios might provide for students, TAs, and the department as a whole. In regard to students, administrators were especially interested in how e-portfolios might support the development of metacognitive skills. As one administrator described, paper portfolios lend themselves to a kind of matching between a course outcome and a particular paper. In contrast, e-portfolios allow students to think more flexibly about their work, because students can easily create hyperlinks between a single course outcome and multiple artifacts, including papers, excerpts from papers or electronic feedback, images, etc. In addition, administrators were interested in the potential of e-portfolios to improve students' multi-media literacy and to increase the opportunities for students to write for an authentic "public" beyond the classroom.

Administrators continued to be enthusiastic about these benefits at the end of the pilot, having witnessed what some students were able to do with their portfolios. Particularly impressive to the administrators was evidence of students' improved ability to produce extended and detailed discussions of their work in relation to the course outcomes. One administrator even worried that the e-portfolios might allow students to be *too* persuasive—to effectively argue for a level of proficiency in the outcomes not warranted by the actual work.

While the administrators were initially concerned with how much time it would take to instruct students and TAs on how to use the *Portfolio* software, they also believed that transitioning from paper to an electronic format would ease training for TAs in the future—as one administrator explained, it is more practical and less expensive to provide a link to sample e-portfolios than to make many paper copies for incoming TAs each year. In addition, they felt that experience with e-portfolios would provide TAs with marketable technological skills. What administrators did not anticipate from the study was how the experience with e-portfolios might affect TAs' enthusiasm about their students and teaching. One administrator reported receiving email from an excited TA sharing links to impressive student e-portfolios; never before, he said, had TAs come to his office to share a student's impressive *paper* portfolio.

Departmentally, administrators expressed optimism about extending use of the e-portfolio to other EWP courses and to courses in writing across the disciplines. E-portfolios could easily be used for low-stakes writing assignments and formative assessment, explained one administrator, or for students to showcase all that they have learned about writing in a specific discipline at the end of their college career. Acknowledging that English as a department is not generally known for technological innovation, administrators expressed pride in the program's pioneering efforts to integrate e-portfolios in composition, and anticipated adding an additional course outcome for English 131 focused on visual rhetoric. However, the lack of a prior emphasis on technology also poses logistical challenges for the department, as few classrooms assigned to composition courses are equipped to support instruction in e-portfolios or other educational technologies.

## CONCLUSION

We began this report by invoking an encounter between two TAs, one encumbered by box of paper portfolios and one carrying a laptop. This example illustrates but one effect of transitioning from paper to electronic portfolios; many of the other effects we discussed in this report have more significant implications for teaching and learning, in EWP and elsewhere. The speed and ease with which TAs and students were able to learn the technology suggest that e-portfolios are a relatively easy technology to adopt—at least when one has an already well-established paper portfolio culture and clearly defined learning outcomes. In this study, the e-portfolio project template also showed promise in helping students make explicit connections between the course learning outcomes and their work. We believe this result was due in large part to the scaffolded prompts within the template; similar scaffolding with a paper portfolio assignment might produce similar gains in the quality of student reflection. Unique to the digital environment is the potential for students to combine words and images in a coherent argument, to link to a wide range of artifacts, and to easily share their work with a broad audience beyond the classroom. Although TAs and administrators became increasingly aware of these benefits over the course of our study, it will take time (modified learning outcomes, assignments and teaching practices, TA training) to fully realize them in beginning composition. Lessons learned in EWP, however, can contribute to the vision shared by administrators of a future where e-portfolio use expands to other courses and contexts.

## **NEXT STEPS**

We will continue to study the implementation of e-portfolios in EWP. In 2006/7 all English 131 TAs have the option of teaching with e-portfolios. In addition, in autumn 2006 all new EWP TAs are creating an electronic teaching portfolio for a graduate-level course on composition theory. We will follow several TAs as they make decisions about whether or not to teach with e-portfolios. We will also survey students in select sections of English 131 and interview administrators. In order to better understand how students are responding to the assignment, we have added an additional component to our study—the collection of student portfolios, both paper and electronic. This will allow us to analyze more closely how elements of visual design and audience awareness are manifested in these different formats. We will continue to update the University community of our research findings.

This year we are also planning to return to our previous research on e-portfolios. During spring 2007, we will hold a second portfolio contest. We will use the contest to understand how student use of e-portfolios has changed since we first held the contest two years ago and to identify the impact of our attempts to raise awareness of e-portfolios on campus. We will continue to investigate the conditions that help students create effective portfolios. Look for more information in early 2007.

Based on our research on e-portfolios and the ongoing development of the Catalyst Web tools, we are planning to make changes to the Catalyst Portfolio tool. Data from the portfolio contest study and our research in EWP suggest that an ideal Portfolio tool would marry the tool's current option to create project templates with the kind of flexibility in visual design and content structure afforded by Web authoring software. These modifications will coordinate with the redesign of Catalyst SimpleSite.

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