

# Electronic Portfolios in Evolution

Roger Olsen

David O. McKay School of Education  
Brigham Young University  
U.S.A.  
rlo@email.byu.edu

Nancy Wentworth

David O. McKay School of Education  
Brigham Young University  
U.S.A.  
Nancy\_Wentworth@byu.edu

David Dimond

David O. McKay School of Education  
Brigham Young University  
U.S.A.  
dim0112@alpine.k12.ut.us

**Abstract:** Electronic Portfolios in Evolution describes a dynamic process of transformation. The story began with a single university class attempting to present limited artifacts of teaching skills electronically and is now moving to an entire school of education working together to create electronic portfolios based on INTASC and ISTE standards. Also included are the AIMS standards, which are the goals exclusive to the Department of Teacher Education.

This project is called Electronic Portfolios in Evolution because, just as horticulturists can take a wild fruit and through cross pollination, grafting, and selective reproduction produce a wonderfully delicious and beautiful fruit, so have the electronic portfolios at Brigham Young University come from a crude beginning and matured into something quite desirable. This maturation involved cross-disciplinary conversation within the David O. McKay [DOM] School of Education, which led to refinement of the portfolios through both augmentation and reduction.

## Overview

This paper will show how electronic portfolios developed by elementary education majors at Brigham Young University evolved through:

- Collaboration with other faculty members,
- Ongoing conversations with small groups of students,
- Input from public school administrators,
- Technical support from the department in both equipment and personnel,
- Help from PT3 funding for training (both local and national), and
- The enthusiastic desire of students to create electronic portfolios.

This evolution was made possible through a PT3 grant i.e. training of faculty and public school people from the BYU Public School Partnership, training of lab assistants to provide help to the students doing electronic portfolios, utilizing the expertise of specialists (such as Helen Barrett), attending national conferences (SITE), and numerous other helps.

Another component that helped in the evolution of the electronic portfolio was bringing on board master teachers from the public schools to spend two years at the university assisting in the teacher education program. These teacher educators (called Clinical Faculty Associates) brought outstanding technical skills that have had a major impact on the development of electronic portfolios.

The following chronology will tell the story of the evolution of electronic portfolios over the past three years in the Teacher Education Department at Brigham Young University.

## **Chronology of the Evolution**

### **Spring 1999**

The idea of the electronic portfolio was born out of a request from the department chair that something be done by a cohort (a group of approximately thirty students who take all of the education courses together) to involve the students in using technology. As the cohort class was not a technology class, the first challenge was to find something required in the class that could be done better with the use of technology and not merely add another assignment to the extremely heavy workload of the students. After a careful analysis of the course assignments, the instructors decided to replace the students' least favorite assignment, the paper show portfolio, with an electronic portfolio. Students had complained that the traditional portfolio was of little or no value since employers were not interested in seeing them. Electronic portfolios seemed, by their very nature, to have greater potential appeal to the students as well as the ability to show to a broader degree the strengths of the pre-service teacher.

### **Summer 1999**

One of the cohort's instructors took a class on "Creating Electronic Portfolios". The creation of what seemed to be a simple product became a nightmare when an attempt was made to include a small sound file. The rendering of the file was so slow that the thought of including sound and video files in the electronic portfolios seemed nearly impossible. Nevertheless, the idea of using video and sound in an electronic portfolio was presented to the department chair. Discouragement once again set in as he explained the vast amount of memory required for digital video and the lack of available hardware within the college to make its use feasible.

Although the path leading to the creation of electronic portfolios was daunting, a vision had been created in the mind of the course instructor. The advantages of an electronic show portfolio over the paper version as envisioned at that time were: to create a portfolio that would be of interest to employers; to show the students' personality, teaching strategies, and management through video; and to showcase students' technological skills. The first experience of having students create electronic portfolios would have been best characterized as a lonely, painful expedition; there was no one else in the department producing electronic portfolios with whom to collaborate.

### **Fall 1999**

Naiveté on the part of the instructors allowed them to start the horrendous process of developing electronic portfolios with a cohort of students. The idea of changing to electronic portfolios was presented to students. Students were given the option of either continuing with the traditional paper portfolios or creating portfolios in electronic format. All thirty students chose to do electronic portfolios. The categories for organizing the electronic portfolio were the same as those used with the paper version, i.e. educational philosophy, effective teaching, classroom management, the learner, diversity, personal and professional development, curriculum, assessment, and parents and community. Those involved in this project had no suspicion of the challenges they would face breaking new ground at the university in capturing and editing video, creating multimedia presentations, accessing hardware to compress video, and utilizing hardware to burn CD's.

After attending a class offered by the university, the instructors decided to use PowerPoint as the software for organizing and presenting the portfolios. They soon discovered that many of the students were unfamiliar with PowerPoint, and none showed any skill in capturing and editing video. Since outside help to teach PowerPoint was not available, a team member condensed the PowerPoint manual into a simplified step-by-step tutorial that could be used in creating the electronic portfolio.

## **Winter 2000**

The first real challenge in the project came after the thirty students had all been videotaped. How would they import the video into their portfolios? Not only were the students lacking the skills to perform the task themselves, but also the required hardware was not available to undergraduate students. Expertise from another faculty member was sought and the grueling work began for one of the instructors to capture and compress all the video clips and burn them onto CD's for the students to include in their portfolios. To determine whether or not they were pursuing the right course, the instructors searched the internet for examples of electronic portfolios with minimal success, leaving little possibility for comparison.

The first electronic portfolios generated did effectively demonstrate that video and still images greatly enhanced the visual appeal of the presentation of students' abilities. However, both the format and content of the portfolios were in the initial stages of the evolution.

## **Spring 2000**

As an assistant to the dean and others in the department saw that electronic portfolios were becoming a reality, funding was given to purchase two additional digital video cameras and offers to give additional support were made.

## **Summer 2000**

Through a PT3 grant, summer workshops were offered providing training in creating multimedia presentations in PowerPoint, digital imaging, adding sound to presentations, and scanning. These seminars gave those involved in the project greater confidence in their own technological skills as they assisted students with their electronic portfolios.

## **Fall 2000**

Electronic portfolios were introduced to a second cohort. As with the first group of students, they were given the option of compiling either the traditional paper portfolio or an electronic one. Once again every student chose the electronic format.

Problems in creating the electronic portfolios experienced by the first students were still in place with the second cohort. One of the goals for this group was to give them more responsibility in capturing and editing the video before its compression. This was extremely difficult because of the availability of only one computer in a graduate student lab to accomplish the task. Students had to schedule their work around the graduate students' use of the computer, which added additional stress in the development of the electronic portfolios.

As an assistant to the dean learned of the difficulties students were having in gaining access to the hardware needed, he arranged for the new computer lab that was under construction at that time to be modified to help meet the needs of students doing electronic portfolios. Five video editing stations were added to the original plans, complete with software, CD burners etc.

A fellow professor and one member of the technology support staff in the department worked with the cohort instructors to train them in the use of iMovie and other software. They were also instrumental in seeing that lab assistants in the new lab would be trained to give support to the students.

Technology workshops continued to be offered by the department to give assistance. The employee in the department over external affairs attended conferences and brought back ideas of what others were attempting to do with electronic portfolios.

A turning point in the evolution of the electronic portfolios came as the professor assigned to evaluate the department goals and student growth viewed several samples of the portfolios. As one student showed his electronic portfolio and then proceeded to tell this professor what he had learned from creating the portfolio and the insights he had gained into his teaching strengths and weaknesses, the professor responded, "That's what should be in the portfolio." As the electronic portfolios were shown to other

professors and staff, similar comments were made. There was a glaring weakness in the electronic portfolios--the lack of reflections.

The focus up to this point had been in refining the technical aspects of portfolios, but after those conversations changes were made to incorporate more reflection on the artifacts in the portfolios.

### **Winter 2001**

A great boost came as the department adjusted scheduling to allow a professor who created video teaching ethnographies with his students to also teach the cohort. Since his teaching ethnographies required students to create a CD with video clips of their teaching, they were learning skills and gathering artifacts that would be used in compiling their electronic portfolios. Collaboration took place as instructors from both courses worked together to provide experiences in the public schools for students to record and analyze their teaching philosophies and practices.

During this semester the new computer lab was finished, which gave students access to the hardware and software needed for their electronic portfolios. However, problems still existed as computer lab assistants lacked sufficient training in the software being utilized, and graduate students used all the hard drive space for their projects. As difficult as it was, students were still successful in creating their electronic portfolios, and the workload for the instructors was significantly reduced. Portfolios produced that semester were also more reflective than those from previous cohorts.

The INTASC standards were presented to the education faculty as the standards the state would be using for new teacher licensure. They were then introduced to the students as a possible framework for organizing their portfolios. This was the beginning of a shift from showing evidence of being able to meet local expectations to meeting teaching standards (INTASC) more widely recognized throughout the country.

Samples of electronic portfolios from the cohorts were shown to all thirty-eight elementary school principals in the Alpine School District to see if they would be interested in viewing electronic portfolios as part of the hiring process for new teachers. (Previously, principals had not shown interest in seeing paper portfolios.) All principals indicated in a questionnaire they would like to view the electronic portfolios when interviewing.

Two of the cohort instructors attended the SITE conference in Orlando along with other department faculty. At that conference, another milestone in the evolutionary process occurred. Helen Barrett<sup>1</sup> opened their vision to the deeper, more encompassing purposes of electronic portfolios. To this point, portfolios produced by cohorts were collections of artifacts with some reflection added. It was evident that previous efforts at producing portfolios had focused on creating show portfolios for prospective employers. Working portfolios, with the tremendous opportunities they afford students to evaluate their practices and philosophies, had not been given adequate emphasis. It was determined while at the SITE conference to arrange for Helen Barrett to conduct a workshop at Brigham Young University for the faculty in the David O McKay School of Education.

The leadership in the David O McKay School of Education committed the necessary resources to make it possible for education majors to construct electronic portfolios. Because of this commitment the Alpine team presented samples of electronic portfolios to partnership liaisons and leaders responsible for the cohort program in other school districts. This group seemed impressed with the electronic portfolios; however, most felt they were not ready to attempt electronic portfolios because of inadequacy with technical skills. To address concerns and help in the creation of electronic portfolios a task force was formed. This task force began a dialogue with those who teach the technology courses and other faculty to build a support system for students to create portfolios electronically.

### **Summer 2001**

Helen Barrett instructed the faculty for three days in the purposes of portfolios and how they could be enhanced electronically. Her instruction proved helpful in refining and emphasizing the goals of the working portfolio.

---

<sup>1</sup> Helen Barrett, professor at the University of Alaska Anchorage, is a leading authority on electronic portfolios in teacher education. See her website at: <http://transition.alaska.edu/www/portfolios.html>

## **Fall 2001**

The purposes of the portfolio had now evolved into an opportunity for students to carefully study their teaching as they progressed through the teacher preparation program and to design a sampling of their philosophies and skills that would be of interest to prospective employers. They were built upon the INTASC standards with ideas from Helen Barrett added to refine what had previously been done. The fall cohort had already spent a semester working on their portfolios, so they were not required to change the structure of what they had started but were invited to make the change if they desired. Fifteen of the twenty-three students adopted the INTASC standards and incorporated many of Helen Barrett's ideas.

A high point of the semester was the enthusiasm the students exhibited as they caught a vision of how the portfolio could show evidence that they were meeting generally accepted teaching standards, both during their pre-service experience, and as they met licensure requirements in the first years of teaching. Students who desired were invited to meet with the instructors beyond class time to collaborate on developing electronic portfolios. Students were anxious to meet to share ideas, ask questions and get feedback. The synergism of the group was tremendous as they realized ownership of their portfolios. Much of the energy seemed to come as students recognized that their ideas were valued as much as those of the instructors. They moved from merely collecting artifacts for an assignment to gathering evidence of their own teaching skills.

Some BYU faculty and teams of technology leaders from the partnership districts traveled together to the Classroom Connect Conference in Las Vegas for the purpose of building cohesion in the technology skills taught at the university and those needed by classroom teachers. Many benefits came from the conference, but one in particular was the district's support of electronic portfolios. Since the majority of the new teachers in Alpine District come from BYU, they were excited to learn of the skills that the graduates would bring to the district. They expressed their support for continuing electronic portfolios with those new teachers as they collect evidence to meet licensure requirements during their first two years of teaching.

Several other administrators from the Alpine District met with students and viewed their electronic portfolios. Involving the administrators had a two-fold purpose. The main objective was to provide feedback to the students from a public school viewpoint. Another objective was to evaluate the portfolios in general to see if they actually showed (from an administrators' point of view) evidence that students met the INTASC standards. The response was very favorable from the administrators, but showed that the working portfolios would need to be modified to accomplish show portfolio goals.

Several students who produced portfolios in previous semesters provided some interesting insights into the worth of the project. One stated she was very grateful she had produced her portfolio because of the technological skills she had developed. Another stated that even though the technical aspects of creating her portfolio electronically had proven beneficial as she began her teaching career, she valued the insights she gained into her teaching much more highly. She felt that viewing herself as she taught from an outside perspective was invaluable.

## **The Future**

Electronic portfolios seem destined to play a prominent role in pre-service education at Brigham Young University. Greater acceptance of the INTASC standards within the [DOM] School of Education and more varied technological skills of the faculty are creating an openness to change. The value of media not traditionally connected with paper portfolios in reflection is beginning to open the vision of a relatively new resource to analytical minds.

As the evolution continues, possible changes being considered are: (1) Utilizing HTML format to allow easier accessibility in the show portfolio and to enable artifacts consisting of full pages of text to be displayed in the working portfolio. (2) Beginning the working portfolio in the semester before entering the upper level course work and continuing gathering evidence throughout the two cohort semesters. (3) Creating the show portfolio after the student teaching experience.

Just as cross pollination in the plant world can be used to produce a more desirable fruit, flower or vegetable, so can collaboration improve practices in education. Collaboration has been and will be essential in the evolution of the electronic portfolio.