Electronic Portfolio Scenario #1 by Helen C. Barrett, University of Alaska Anchorage

Context: Teacher Interns in a Teacher Education Program
Purpose: Summative Assessment/Demonstrating accomplishment of the Alaska State Teaching Standards and ISTE’s National Educational Technology Standards for Teachers

Summary: This is the scenario followed by the University of Alaska Anchorage with teacher education students to create their electronic assessment portfolios during a one-year post-baccalaureate teacher education program. The students collected their artifacts using a laptop computer over the single academic year, and spent the last six weeks of the program in a Capstone Course to construct their final portfolios. All of their documents were converted into PDF files, combined into a single file with bookmarks and hyperlinks. Each student was required to create at least one three-minute digital video clip in iMovie. Most of them created narrated slide shows using still images, although some were videotaped in the classroom and selected three minutes to illustrate achievement of one of the teaching standards. When all of the documents were finished, they burned two CD-ROMs: one for themselves and one for the program. A diagram of the process for the 2001-2002 cohort is included at the end of this file.

The national PT3 program recently highlighted UAA’s process on their website: http://www.pt3.org/stories/alaska.html

Background (the PT3 Program as a Catalyst for Change):

In 1999 and again in 2000, our university received two PT3 grants along with a Title III Partnership Grant to restructure our teacher education program. Four goals for the PT3 project address the needs to redesign the program, to provide faculty development, and to provide technology experiences for students throughout the program.

1. Program Development: Preservice teacher education programs will be redesigned to reflect best practice and include the infusion of appropriate technology.
2. Faculty Development: Faculty will have the training they need to successfully integrate technology into their courses.
3. Student Development: Students will have experiences that enable them to demonstrate effective and appropriate use of technology based on ISTE/NCATE standards.
4. K-12 Partnerships: School districts will become full partners in the preparation of new teachers, through shared training, program planning, PD Schools, and modeling best practices.

A major element of the Student Development component of this PT3 grant is the implementation of electronic portfolios to support documentation of professional growth and provide a framework for career-long professional development. After a year of planning with partners in K-12 and the private sector, the first cohort of students in a brand new 11-month post-baccalaureate program began in July, 2000. In June, 2000, the new ISTE/NCATE Foundations Standards were released. This program evaluated the technology skills of the interns at three points in the program: the General Preparation Standards at the end of their Foundations class (August, 2000); the Professional Preparation at the end of their first semester of combined Methods/Internship (December, 2000); and the Internship at the end of their Capstone course (June, 2001).
The interns received an introduction to electronic portfolio development in August, 2000, and were alerted to the fact that they needed to begin collecting digital evidence of achieving both our State Teaching Standards and the National Educational Technology Standards for Teachers. By the middle of August, 2000, they each received use of a laptop computer for use during the rest of the school year. A workshop was held on how to use a database to keep track of the evidence that they would collect during the program. In November, 2000, the interns were introduced to using Microsoft Word to build a reflective portfolio, and each of them created a basic reflection document, based on our State Teaching Standards and ISTE National Education Technology Standards #1, 5, and 6. A small group made presentations to their PDS mentors and university faculty.

In May, 2001, the interns enrolled in a Capstone course, the purpose was to reflect on their experiences over a very intensive year, and to build their electronic portfolio. Through five weeks, the interns used Word, PowerPoint, Adobe Acrobat and iMovie to create reflective portfolios, pressed to CD-ROM, demonstrating their achievement of our State Teaching Standards and all six ISTE NETS Standards. The last week before their presentations was a very intense experience, with many hours spent with lab aides and the instructor (me!) in the School of Education computer lab.

Each teacher candidate created a presentation on their portfolio, and led an hour-long discussion on the highlights of their year, attended by principals, mentor teachers, university faculty and fellow students.

The second year of the program was much better organized, based on the experience of the first cohort, and training materials that were developed. An electronic portfolio development handbook was created and provided for this second cohort of students. Below are excerpts from the E-Portfolio Handbook given to these students:

**First Checkpoint – Foundations I course (August, 2001)**

During the Summer Semester, 2001, interns will begin collecting the evidence that demonstrates that they are making progress toward meeting two sets of standards: the Alaska State Teaching Standards and the National Educational Technology Standards for Teachers. A document is provided on the CD-ROM with details on these standards. Over the length of the course, various assignments will be provided that build on these standards, and provide students with an opportunity to reflect on their growth as a professional educator.

**Reflection #1 with Artifacts covering all 8 Alaska Teaching Standards including plan for collecting digital artifacts throughout Internship**

The technology used for the portfolio during this first course will be common tool software, such as Microsoft Word (see Step-By-Step guide on *Creating and Electronic Portfolio using Microsoft Word*). Instead of identifying “Future Learning Goals” for each Teaching Standard, interns should design a plan for gathering and organizing the evidence that will demonstrate competency in meeting each standard. Discuss the strategies you would like to use for electronically recording and maintaining a working portfolio of this evidence throughout your year. The pre-assessment of the National Educational Technology Standards for Teachers (completed as part of the Essential Technology Skills Assessment) should also be included after the reflections on the Alaska State Teaching Standards.

**Portfolio-at-a-Glance**

Interns should set up a recordkeeping system to keep track of the evidence that is collected over the course of the program. An Excel spreadsheet is provided to print out and use for recording the evidence being collected and how each matches the standards.
Create archive folders to store artifacts on SOE server
Interns will create archive folders on the SOE Server to store final versions of the assignments for the portfolio. It is suggested that at least two folders be created: Work in Progress and Foundation Portfolio. Most of the files will be stored on the teacher intern’s laptop computer, but the server should be used for backing up important files. (see Step-By-Step guide on Accessing the SOE server).

One aspect of the digital portfolio is the capacity for multimedia artifacts. Interns are encouraged to use digital cameras, scanners, and other online resources to collect images. (see Step-By-Step guides on Scanning Basics; Using Digital Still Cameras; Screen Shots: Taking a Picture of Your Screen; Download Media Elements from the Internet). Interns will post their final portfolios (Word documents with links to appropriate artifacts) to the SOE server, in the Portfolio folder, by the date specified by the instructors. Copies of all Foundation Portfolio folders will be provided to the instructors on a CD-ROM by the SOE Lab Manager immediately after the due date.

Second Checkpoint – Internship I (December, 2001)

Reflection #2 with Artifacts covering all 8 Alaska Teaching Standards plus Technology Standards 1, 5, 6
During the Internship I, the interns will build on the portfolio created during the Foundations I class. In addition to updating the reflections on attaining each of the Teaching Standards, the portfolio should also address Technology Standards 1, 5, and 6.

Create archive of artifacts, converted to Acrobat format, store on SOE server
Interns will learn to convert their artifacts into Adobe Acrobat format, and will merge all documents into a single Acrobat file. (See Step-By-Step guide: Publishing Electronic Portfolios using Adobe Acrobat.)
This portfolio document will be copied to the SOE server and will be provided to the instructors on a CD-ROM by the SOE Lab Manager immediately after the due date.

Update Portfolio-at-a-Glance
As part of the process of updating the portfolio reflections, update the Excel spreadsheet or the database file with information and reflections on all artifacts. Either of these files can be converted to Adobe Acrobat and included in the portfolio.

Third Checkpoint – Internship 2 (April, 2002)

Reflection #3 with Artifacts covering all 8 Alaska Teaching Standards plus Technology Standards 2, 3, 4
During the Internship II, the interns will build on the portfolio created during the Internship I class, expanded by the Residency experience. In addition to updating the reflections on attaining each of the Teaching Standards, the portfolio should also address Technology Standards 2, 3, and 4. A document is provided on the CD, developed by the International Society for Technology in Education, which outlines the type of evidence that can demonstrate each of the performance indicators.

Finalize archive of artifacts and Portfolio-at-a-Glance
Interns will continue to convert their artifacts into Adobe Acrobat format, and will merge all documents into a single Acrobat file (rename this file to show that this is the second version of this Acrobat-based portfolio). (See Step-By-Step guide: Publishing Electronic Portfolios using Adobe Acrobat.)
This portfolio document will be shared with mentor teacher and faculty-in-residence as part of the summative evaluation meeting.

Optional: create WWW-based employment portfolio
Interns may choose to post their portfolios to a web server, to share with potential employers or their mentor teachers. (See Step-By-Step guide: Create an Electronic Portfolio website using Netscape Composer and posting to a web server)
Final Checkpoint – Capstone course (June 2002)

Create presentation on portfolio and Merge all Acrobat files into single file, create bookmarks, links
Interns will create a presentation with the highlights of their year, using PowerPoint. (An optional template for this presentation covering each of the standards is included on the CD-ROM). (See Step-By-Step guide: Presenting Electronic Portfolios using Microsoft PowerPoint)
This presentation will be converted to Acrobat and merged into the Acrobat portfolio document. Add appropriate links to artifacts and videos for the presentation.

Create iMovie of teaching and other experiences, convert to QuickTime
Interns will create at least one three-minute iMovie demonstrating some aspect of their experience. This video clip can be based on full motion video, based on a videotaping session conducted during the Residency, or based on still images collected over the year. The choice is up to the intern. (See web-based tutorials on CD-ROM as well as video tutorial on iMovie2 on the Atomic Learning website: http://www.atomiclearning.com/freeimovie.shtml )

Publish Portfolio on CD-ROM
When everything is completed (and probably the night before the presentation!) collect all of the portfolio documents (the portfolio/presentation Acrobat file plus any movies), and create at least two CD-ROMs (one for the intern, one for the School of Education). (See Step-By-Step guide: Burn a CD-ROM on an iMac with built-in CD-RW). Interns may also like to create a label for their CD, using the CD Stomper available in the SOE lab.

A proposed new process using an on-line database to manage the organization of the artifacts and reflections.

In my ten years of researching this topic, I find that there are many strategies for developing electronic portfolios, and they appear to fall under two general approaches: the common tools approach or using off-the-shelf software (as illustrated above), and the customized systems approach which involves designing a networked system or buying a proprietary software package or online service.

Common tools approach: Portfolios are developed with reflections and artifacts that more closely emulate the traditional 3-ring binder. The portfolio’s structure is imposed by the learner or the software for maximum flexibility and creativity. There is a relatively low cost for equipment or software, but there may be a higher cost for training. Student can continue developing their portfolio once out of the educational system.

Customized systems approach: Portfolios are also developed as online record-keeping systems that can be used to collect reflections and artifacts. They are usually highly structured using an online database, leaving the learner with limited flexibility and creativity. There is a high cost for equipment, network server and software development. There may be a lower cost for training, depending on system design. One concern is whether the students can continue developing the portfolio once they are out of the educational program and no longer have access to the system.

After reading more than 41 papers on Electronic Portfolios submitted to the 2002 Conference of the Society for Information Technology and Teacher Education (SITE), below is one paragraph from the Introduction to that section in the 2002 SITE Conference Proceedings document:
While visiting Alverno College, I heard about Dr. Mary Diez’ three metaphors for thinking about portfolios: mirror, map, and sonnet. Based on these metaphors, some questions come to mind. When the portfolio is highly structured (the sonnet), often as in an online data base to meet the organization’s need for uniformity in assessment data, does it lose the creativity of expression that has been a hallmark of paper portfolios for years? Where is the sense of ownership of the portfolio creator in constructing their own paths through their work (creating their own map)? What are the trade-offs between scaffolding the development process with templates or highly structured data bases, and students gaining the knowledge that can result from the process of constructing their own hyper-linked portfolios (seeing their work in new ways—the mirror) while linking and reflecting on their work? Also, at the risk of editorializing, should these online assessment management systems really be called electronic portfolios?

Nevertheless, below is my design for an online recordkeeping system to help educators track attainment of any set of standards:

Most often, the assessment would begin with reflection on how a specific piece of evidence meets one, and often several standards and performance indicators. Therefore, a comprehensive assessment system should be structured similar to a relational database: one database for the artifacts and one for all of the standards. The artifacts database provides an electronic “cover slip” for the pieces of evidence, observations, or activities that demonstrate one or more standards. The teacher/learner would use this database as a Working Portfolio to keep track of the evidence being compiled from the many learning activities. This “portfolio entry slip” database might contain the following fields:

- Name of artifact
- Date
- Source (module?)
- Description: Brief description of the artifact and context information.
- Analysis and Reflection on what you’ve learned.
- Connection: - Discussion of how this artifact demonstrates your competence of specific standard/performance indicators (there probably will be more than one demonstrated by each portfolio entry).
- Performance Indicator (in this portion of the database, there is the opportunity to identify specific performance indicators addressed—and these are linked to the Standards database.
- Link to the actual artifact (or link to URL where the artifact can be located online)
- Assessment(s) – feedback from assessor (probably the instructor)

The second database would cover the Standards and Performance Indicators. When a teacher/learner enters an artifact, and identifies the specific performance indicators on the Portfolio Entry Slip (above), this entry would automatically be listed under the Evidence field. The learner/teacher would complete the Reflection and Future Learning Goals when they are preparing their Summative Assessment to demonstrate that they have met all of the Standards. Below is a list of the fields that such a database might contain:

- Name/number of standard/performance indicator
- List of entries (“What?”)
- Reflection on meeting the standard/performance indicator (“So What?”)
- Future Learning Goals (“Now What?”)
- Assessment(s) – feedback from assessor (for certificate assessment)

The system should provide a “Portfolio at a Glance” screen (in a table format, such as might appear in an Excel spreadsheet) that allows the portfolio developer to view the list of artifacts submitted, with columns for each of the standards, and markers indicating which standards these artifacts address. Clicking on any marker in a cell should take the developer to the detailed screens noted above.

Once the database of artifacts and both formative and summative reflections are created, the entire portfolio could be archived on a CD-ROM (or DVD-R?) for the student to use to maintain their portfolio after they leave the program. My preferable format for the documents would be PDF with hyperlinks to digital video clips that would also be stored on the CD-ROM or DVD-R (but are probably too large to store on a web-based server with storage limitations).

Attachment: 2001-2002 Electronic Portfolios Development Process at the University of Alaska Anchorage School of Education.

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There is a quick overview of how we are putting the technology pieces of the electronic portfolio together over the four terms.

Foundations I Class
First Checkpoint
Summer, 2001

Internship I
Second Checkpoint
Fall, 2001

Internship II
Third Checkpoint
Spring 2002

Capstone Class
Final Checkpoint
Summer, 2002

Your reflective portfolio (reflections on achieving the standards) (in Word)

Your presentation on your portfolio (in PowerPoint)

Artifacts from your teaching (scanned or created by any application)

update portfolio reflections and artifacts (in Word)

update portfolio reflections and artifacts (in Word)

convert all files to Acrobat

Merge into a single Acrobat file (your Digital Archive)

Create bookmarks, hyperlinks between artifacts, thumbnails in Acrobat

Video clips of your teaching (from video tape, either VHS or digital)

Convert to QuickTime movie (with iMovie)

link Quicktime movie to appropriate place in Acrobat file

Write CD-ROM

Present the highlights of the portfolio (using Acrobat) from CD-ROM

Your Finished Portfolio

pictures (in JPEG)

convert to Digital Video and edit in iMovie

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