

Designing & Developing Standards-Based Electronic Portfolios

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- 5 Stages of Electronic Portfolio Development
 - Defining the Portfolio Context & Goals
 - The Working Portfolio
 - The Reflective Portfolio
 - The Connected Portfolio
 - The Presentation Portfolio



Dr. Helen Barrett

School of Education e-mail: afhcb@uaa.alaska.edu

University of Alaska Anchorage - <http://portfolios.alaska.edu/>

Assumption

As we move to more standards-based teacher performance assessment, we need new tools to record and organize evidence of successful teaching, for both practicing professionals and student teachers.

What is a portfolio?

- a purposeful collection of student work that demonstrates effort, progress and achievement (based on standards)
- provides a richer picture of student performance than can be gained from more traditional, objective forms of assessment
- traditional standards-based portfolios are 3-ring notebooks, organized with dividers and sections for documents demonstrating each standard

(Campbell, et.al., 1997)

What is an Electronic Portfolio?

- uses electronic technologies
- which allows students/teachers to collect and organize portfolio artifacts in many media types (audio, video, graphics, text)
- using **hypertext links** to organize the material
- connecting evidence to appropriate standards (*in a standards-based portfolio*)

Electronic or Digital Portfolio?

- An Electronic Portfolio contains artifacts that may be in analog form, such as a video tape, or may be in computer-readable form
- A Digital Portfolio contains artifacts that have been transformed into computer-readable form (digitized/scanned/input)

What is a teaching portfolio?

“A teaching portfolio is the structured, documentary history of a set of coached or mentored acts of teaching, substantiated by samples of student portfolios, and fully realized only through reflective writing, deliberation, and conversation.” (Shulman, 1998)

Campbell, Melenyzer, Nettles, & Wyman (2000).
Portfolio and Performance Assessment in Teacher Education.
Boston: Allyn & Bacon.

“A portfolio is not merely a collection of course projects, assignments, videotapes, and pictures designed to impress someone. If it is to meet its full potential, a portfolio must be organized, goal-driven, performance-based evidence that indicates the attainment of the knowledge, skills, and attitudes needed to be a teacher.” (p.21)

Campbell, Melenyzer, Nettles, & Wyman (2000).
Portfolio and Performance Assessment in Teacher Education.
Boston: Allyn & Bacon.

“We have found that as students progress through a teacher education program that has a portfolio assessment system, they increasingly understand the power and potential of portfolios for giving direction to reflect on throughout their professional lives.” (p. x)

Scrapbook or portfolio?

“...Tom Bird...asked us to think about the distinction between the teachers’ filing cabinet and the teachers’ portfolio. As teachers, we accumulate a great deal of documentation of our work. But depending on the case we have to make, we draw from the filing cabinet and create a particular portfolio.”
(Shulman, 1998)

Types of Portfolios

- **Working Portfolios**
 - an intentional collection of work guided by learning objectives
- **Display, Showcase, or Best Works Portfolios** - demonstrate the highest level of achievement - a celebration of learning
- **Assessment Portfolios**
 - to document student learning on specific curriculum outcomes

Why use technology?

Sheingold's Reasons (1992)

- To make work in many media accessible, portable, examinable, widely distributable
- To make performance replayable and reviewable; it is important to see more than once
- To address ownership issues of student-created work
- To address storage issues

Why use technology? (Barrett's assumptions)

- Today, many documents are initially created with a computer, anyway.
- Hypertext links allow clear connections between standards and portfolio artifacts
- Creating an EP can develop teachers' skills in using multimedia technology
- Modeling: A teacher with an EP will be more likely to have students with EPs.
- It's fun & easier to manage the process!
(especially storage, presentation, and duplication)

Benefits of Professional Portfolios

- Documentation of Growth & Achievement
- Self-assessment of Professional Goals
- Staff Development
- Employment Interviews
- Advancement
- Performance Reviews
- Lifelong Learning Tool
- Source of Affirmation & Pride
- Sharing with Students

Electronic Portfolio Development is based on two bodies of literature:

Portfolio Development Literature

- Collection
- Selection
- Reflection
- Projection
(or Direction)

(Danielson & Abrutyn (1997)
An Introduction to Using Portfolios in the Classroom. Alexandria: Association for Supervision and Curriculum Development.

Multimedia Development Literature

- Assess/Decide
- Design
- Develop
- Implement
- Evaluate

Ivers, K., & Barron, A. E. (1998) Multimedia Projects in Education. Englewood, CO: Libraries Unlimited, Inc.

Collection

- The primary activity of a working portfolio.
- Don't save everything!
- Purpose and audience and future use of artifacts will determine content.

Danielson & Abrutyn (1997). *An Introduction to Using Portfolios in the Classroom*. ASCD

Selection

- Students examine what has been collected to decide what should be moved to a more permanent assessment or display portfolio.
- Criteria should reflect the learning objectives of the curriculum.

(Danielson & Abrutyn [ASCD], 1997, p. 13)

- This is where many electronic portfolios end!

Reflection

- Students articulate their thinking about each piece in their portfolio.
- Through this process of reflection, students become increasingly aware of themselves as learners.
- Use reflective prompts.
- Include reflections on every piece plus overall reflection on entire portfolio.

(Danielson & Abrutyn [ASCD], 1997, pp.15-16)

Reflection

- “The use of portfolios not only helps students make better progress on the skills in the curriculum; it also helps them develop critical skills such as **reflection and self-evaluation** which are fundamental to excellence in any walk of life.”

(Danielson & Abrutyn [ASCD], 1997, p. 26)

Projection

- Looking ahead and setting goals for the future.
- Students see patterns in their work.
- These observations can help identify goals for future learning.

(Danielson & Abrutyn [ASCD], 1997, p. 18)

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **PROJECT** purposes
- **COLLECT** and organize artifacts
- **SELECT** key artifacts
- **INTERJECT** personality
- **REFLECT** metacognitively
- **INSPECT** to self-assess
- **PERFECT** and evaluate
- **CONNECT** and conference
- **INJECT/EJECT** to update
- **RESPECT** accomplishments

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **PROJECT** purposes
 - the “big picture” goals for the portfolio

Projecting is focusing.

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **COLLECT** and organize the artifacts

Collection is abundance.

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **SELECT** key artifacts
 - contents of the portfolio
 - prioritize

Selection is abandonment.

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **INTERJECT** personality
 - cover, design, layouts
 - personal touch

Interjection is style and flair.

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **REFLECT** metacognitively
 - label each artifact for meaning and value
 - give voice to why an artifact is included

Reflection is a mirror into the self.

Reflection and Learning

"We do not learn from
experience.

We learn from reflecting on
experience."

-John Dewey

...from Kay Burke (1997)

Designing Professional Portfolios for Change

"Without written commentaries, explanations and reflections, the portfolio is no more than a notebook of artifacts or a scrapbook of teaching mementos. Such a portfolio does not reveal the criteria for collecting the contents, the thoughts of why the items were selected, or what the teacher and the students learned."

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

● **INSPECT** to Self-Assess

- meet long-term & short-term goals
- evidence of strengths & weaknesses

*Inspection ensures one is on
course.*

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **PERFECT** and Evaluate
 - fine-tuning the content
 - getting ready for grading

Perfecting is to make a polished final draft or a finished product.

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **CONNECT** and Conference

- share the finished product with someone

- use portfolio as basis for meaningful dialogue

Connecting is conversing.

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **INJECT/EJECT** to update
 - keeps portfolio manageable
 - regular honing keeps the portfolio fresh

Injecting/ejecting is the cycle of the portfolio.

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **RESPECT Accomplishments**
- formal exhibition before an audience

Respecting is celebration.

The Portfolio Connection

(Burke, Fogarty, Belgrad, 1994)

- **Three Options for Portfolio Development**
- **Essential Portfolio**
 - Collect, Select, Reflect
- **Expanded Portfolio**
 - Project, Collect, Select, Reflect, Perfect, Connect
- **Elaborated Portfolio**
 - Project, Collect, Select, Interject, Reflect, Inspect, Perfect, Connect, Inject/Eject, Respect

Portfolio Organizer

(decision-making points, not a step-by-step process)

- Purpose, Type, Audience, Time Frame
- Categories for Entries
- Criteria for Entries
- Work Samples
- Reflections
- Storing and Organizing Portfolios
- Sharing the Learning: Conferences & Responses
- Goal Setting
- Self-Evaluation
- Getting Started

Rolheiser, Bower, & Stevahn (in press) The Portfolio Organizer: A Guide for Decision Making

Multimedia Development

Instructional Design Stages

- **Assess or Decide**
- **Design or Plan**
- **Develop**
- **Implement**
- **Evaluate**
- **Present or Publish**

Multimedia Authoring Skills

- Use Authoring Tool to structure navigation
- Scan Graphics
- Digitize Sound
- Digitize Video
- Write CD-R/W or Post to WWW

Combining Portfolio Development & Multimedia Development

<i>Portfolio Development</i>	Electronic Portfolio Development	<i>Multimedia Development</i>
● <i>Purpose & Audience</i>	Defining the Portfolio Context & Goals	● <i>Decide, Assess</i>
● <i>Collect</i> ● <i>Interject</i>	The Working Portfolio	● <i>Design, Plan</i>
● <i>Select</i> ● <i>Reflect, Direct</i>	The Reflective Portfolio	● <i>Develop</i>
● <i>Perfect, Inspect</i> ● <i>Connect</i>	The Connected Portfolio	● <i>Implement</i> ● <i>Evaluate</i>
● <i>Respect</i> <i>(Celebrate)</i>	The Presentation Portfolio	● <i>Present</i> ● <i>Publish</i>

Levels of digital portfolio development based on ease of use

0	All documents are in paper format. Some portfolio data may be stored on videotape.
1	All documents are in digital file formats, using word processing or other commonly used software, and stored in electronic folders on a hard drive, floppy disk, or LAN server.
2	Portfolio data is entered into a structured format , such as a database or HyperStudio template or slide show (such as PowerPoint or AppleWorks) and stored on a hard drive, Zip, floppy disk, or LAN.
3	Documents are translated into Portable Document Format (PDF) with hyperlinks between standards, artifacts, and reflections using Acrobat Exchange and stored on a hard drive, Zip, Jaz, CD-R/W, or LAN server.
4	Documents are translated into HTML , complete with hyperlinks between standards, artifacts, and reflections, using a Web authoring program and posted to a Web server .
5	Portfolio is organized with a multimedia authoring program , incorporating digital sound and video , then converted to digital format and pressed to CD-R/W or posted to the Web in streaming format.

Levels of Digital Multimedia Development

1	2	3	4	5
Text Only	Add Images	Add Navigation (hypertext links)	Add digitized sound	Add digitized video

Levels of Digital Storage

1	2	3	4	5
Floppy Diskette Hard Disk Drive	Zip Disk Jaz Disk	LAN Server	CD-R/W	WWW Server

Stage 1

Defining the Portfolio Context & Goals

- Portfolio Development
Purpose, Audience
 - Identify the **purpose** of the portfolio.
 - Identify the learner outcome **goals** or **standards**
 - Identify the **resources** available
 - Identify the hardware and software
 - Identify time, staff development, etc.
 - Assess the **technology skills** of students/teachers
 - Identify the **audience** for the portfolio
- Multimedia Development
Decide, Assess

Level of Teacher Skill (Relative Ease of Use)

1	2	3	4	5
Limited experience with desktop computer - able to use mouse, menus, run simple programs	Level 1 PLUS proficiency with a word processor, basic e-mail and Internet browsing; enter data into a pre-designed database	Level 2 PLUS able to build a simple hypertext (non-linear) document with hypertext links (using either a hypermedia program like HyperStudio, Adobe Acrobat Exchange, or an HTML WYSIWYG editor)	Level 3 PLUS able to record sounds, scan images, output computer screens to a VCR; design an original database	Level 4 PLUS multimedia programming or HTML authoring; create QuickTime movies live or from tape; program a relational database

Stage 1

Appropriate Technology Tools & Strategies

- Use whatever software tools are currently being used to collect artifacts, storing them on a hard drive, a server, or videotape. Set up electronic folders for each standard to organize the artifacts (any type of electronic document). *[Level 1]* AND
- Use a **word processor, database, hypermedia software** or **slide show** to articulate the standards to be demonstrated in the portfolio and to organize the artifacts. *[Level 2]* OR
- Use an **HTML editor** to articulate the standards to be demonstrated in the portfolio and to organize the artifacts. *[Level 4]* OR
- Use a **multimedia authoring program** to organize by the standards to be demonstrated in the portfolio. *[Level 5]*

Elements of Portfolio Planning

- Purpose
- Audience
- Process

Why use Standards in Portfolios?

“Standards come alive when they are assessed through performance-based means such as portfolios.”

National Evaluation Systems (1997) Linking Standards and Assessment. (p.30)

Organizing framework

- Most states have adopted standards for both students, practicing teachers, and new teachers. These standards form an ideal framework for thinking about organizing an electronic portfolio.

Campbell, Melenyzer, Nettles, & Wyman (2000).
Portfolio and Performance Assessment in Teacher Education.
Boston: Allyn & Bacon.

“Some teacher educators believe that students should impose their own organizational schemes on their portfolio documentation. Certainly when a portfolio is being designed solely as a marketing tool, this might be desirable. It would allow for the greatest flexibility and enhance opportunities for individuality and creativity.” (p. 21)

Campbell, Melenyzer, Nettles, & Wyman (2000).
Portfolio and Performance Assessment in Teacher Education.
Boston: Allyn & Bacon.

“However, when portfolios are being used by a teacher education program to focus the efforts of both faculty and students on achieving standards for professional performance, it makes more sense to organize at least most of the portfolio around the chosen standards. The easiest way for your students to do this is to divide the portfolio into labeled sections, one for each of the standards.” (p.21)

Electronic Portfolio Planning Worksheet

Stage 1

You will know you are ready for the next stage when:

- You have identified the purpose and primary audience for your portfolio.
- You have identified the standards or goals that you will be using to organize your portfolio.
- You have selected the development software you will be using and have completed the first stage using that tool.

What is the best electronic portfolio program???

IT DEPENDS . . .

- on the assessment context
- and a variety of other factors, human and technological, that exist in a classroom, school or district.

Generic Construction Tools (off-the-shelf software)

- **Relational Data Bases**, - FileMaker Pro 4.0 or Microsoft Access
- **Hypermedia "card" formats**, such as HyperStudio, HyperCard, Digital Chisel, or SuperLink + commercial templates available.
- **Multimedia authoring software**, such as Macromedia Authorware, Macromedia Director
- **Network-compatible hypermedia:**
 - HTML/WWW Pages
 - Adobe Acrobat (PDF)
- **Office "Suite" Multimedia slide shows**, such as Microsoft PowerPoint, AppleWorks

See article in *Learning & Leading with Technology*,
April, 2000

Stage 2

The Working Portfolio

- Portfolio Development
Collect, Interject
 - Multimedia Development
Design, Plan
- Identify the **content** of portfolio items and the type of evidence to be collected
 - Select the most appropriate **software development tools** based on the portfolio context and the resources available.
 - Identify the **storage** and **presentation/publishing medium** most appropriate for the situation
 - Gather the **multimedia materials** that represent learning achievement. Interject personality into the portfolio design.

Stage 2

Appropriate Technology Tools & Strategies

- **Select software to organize selected artifacts:**
 - Use **Word Processing, Slide Shows, Hypermedia, or Database** programs to list and organize the artifacts that will be placed in the Working Portfolio. *[Level 2]*
OR
 - Use an **HTML editor** (or any tool that is normally used) to develop and organize the artifacts for the Working Portfolio. *[Level 4]*
OR
 - Use a **multimedia authoring program** to organize the selected artifacts. *[Level 5]*

Stage 2

Appropriate Technology Tools & Strategies

- **Convert student work into digital format**
 - Use **appropriate multimedia** to add style & individuality to portfolio.
 - Use a scanner (or camera) to digitize **images**
[Level 2]
 - Use a microphone and sound digitizing program to digitize **audio** artifacts *[Level 4]*
 - Use a video camera/VCR, digitizing hardware and software to digitize **video** artifacts *[Level 5]*

Electronic Portfolio Planning Worksheet

Stage 2

You will know you are ready for the next stage when:

- You have a collection of digital portfolio artifacts that represent your efforts and achievement throughout the course of your learning experiences.
- You have used the graphics and layout capability of the chosen software to interject your personality into the portfolio artifacts.
- It is time to turn this collection into a portfolio.

Stage 3

The Reflective Portfolio

- Portfolio Development
Select, Reflect, Direct
 - Multimedia Development
Develop
- Write **general reflective statements** on achieving each standard.
 - **Select artifacts** that represent achievement of the standards or goals.
 - **Write reflective statements** for each artifact, elaborating on why it was selected and its meaning and value in the portfolio.
 - From the reflections and feedback, **set learning goals** for the future.

A portfolio without reflections:

- is just a multimedia presentation
- or a fancy electronic resume
- or a digital scrapbook

Stage 3

Appropriate Technology Tools & Strategies

- Use **Word Processing, Slide Shows, Hypermedia,** or **Database** programs to record the reflections and future goals that will become the Reflective Portfolio. *[Level 2]*
OR
- Use an **HTML editor** (or any tool that is normally used) to record the reflections and future goals that will become the Reflective Portfolio. *[Level 4]*
OR
- Use a **multimedia authoring program** to record the reflections and future goals that will become the Reflective Portfolio. *[Level 5]*

Campbell, Melenyzer, Nettles, & Wyman (2000).
Portfolio and Performance Assessment in Teacher Education.
Boston: Allyn & Bacon.

We also like the three questions suggested by Van Wageningen and Hibbard (1998)”

1. “What?”

2. “So what?”

3. “Now what?”

(p.22)

Campbell, Melenyzer, Nettles, & Wyman (2000).
Portfolio and Performance Assessment in Teacher Education.
Boston: Allyn & Bacon.

“To use these questions, the student would first summarize the artifact that documents the experience, in order to answer the question
“What?””

(p.22)

Campbell, Melenyzer, Nettles, & Wyman (2000).
Portfolio and Performance Assessment in Teacher Education.
Boston: Allyn & Bacon.

Second, the student would reflect on what he or she learned and how this leads to meeting the standard, which answers the question “**So what?**” (p.22)

Campbell, Melenyzer, Nettles, & Wyman (2000).
Portfolio and Performance Assessment in Teacher Education.
Boston: Allyn & Bacon.

“And third, the student would address implications for future learning needed and set forth refinements or adaptations, in order to answer **“Now what?”** (p.22)

Levels of Meta-Cognition and Reflection

(Turning a “collection” into a “portfolio”)

0	1	2	3	4	5
<p>Little or no reflection or mention of standards or goals. A collection of artifacts - A scrapbook or multimedia presentation</p>	<p>Simple overall reflection on the portfolio as a whole.</p>	<p>Level 1 PLUS Standards or portfolio goals are included.</p>	<p>Level 2 PLUS Reflections on achieving each standard or goal PLUS future directions (learning goals).</p>	<p>Level 3 PLUS Reflections on the role of each artifact in the portfolio.</p>	<p>Level 4 PLUS Feedback from portfolio conferencing and responses from others. Includes self-evaluation of the portfolio.</p>

Setting goals for future learning

This is the stage that turns

portfolio development

into powerful

professional development

Electronic Portfolio Planning Worksheet

Stage 3

You will know you are ready for the next stage when:

- You have selected the artifacts that are going into your formal or presentation portfolio.
- You have written the reflective statements and identified learning goals for the future.

Stage 4

The Connected Portfolio

- Portfolio Development
Perfect, Inspect, Connect
- Multimedia Development
Implement, Evaluate
- **Organize the digital artifacts** using **hypertext links**.
- **Identify patterns** through the "linking" process.
- **Final review and editing** of the portfolio & goals.
- **Share** the portfolios with an appropriate audience.
- Use the portfolio to **make** instruction/learning or professional development **decisions**.

Stage 4

Appropriate Technology Tools & Strategies

- Convert word processing, database or slide show documents into either PDF [*Level 3*] or HTML [*Level 4*] AND
 - Create hypertext links between goals, student work samples, rubrics, and assessment.
Insert multimedia artifacts [*Level 3 & 4*]
- OR
- Create a hypermedia presentation using a multimedia authoring program, creating links between goals, student work samples, rubrics, and assessment. [*Level 5*]

Ease of Navigating Electronic Portfolio

1	2	3	4	5
Simple, linear presentation document. No navigation links (or may have "broken" links)	Hyperlinks (i.e., buttons) from table of contents (TOC) to standards May have links to artifacts.	Hypertext links between TOC, standards, artifacts, reflections.	Fully hyper-linked document between TOC standards, artifacts, reflections.	Interactive presentation with animation and intuitive navigation.

User Choice in Navigation

1	2	3	4	5
No user choice in navigation.	Minimal user choice in navigation.	Appropriate and clear user choice in navigation.	Maximum and obvious user choice in navigation.	Maximum and obvious user choice in navigation.

Seamless integration of standards, artifacts, reflections

1	2	3	4	5
Documents in original, separate files	Documents may be in separate files or merged into a single file.	Documents are consolidated into a single file (PDF).	Documents are in a single directory on a web site.	Integrated, engaging, self-running multimedia presentation.

Appropriate Use of Multimedia

1	2	3	4	5
No audio/video, or inappropriate use, distracting from content of portfolio	Audio may be included.	Appropriate audio and/or video optional.	Appropriate audio and/or video included.	Appropriate audio and video integrated seamlessly into presentation.

Electronic Portfolio Planning Worksheet

Stage 4

You will know you are ready for the next stage when:

- Your documents are converted into a format that allows hypertext links and you can navigate around your document using those hypertext links.
- You have inserted the appropriate multimedia artifacts into the document.
- You are ready to share your portfolio with someone else and/or you are ready to publish your portfolio.

Stage 5

The Presentation Portfolio

- Portfolio Development
Respect (Celebrate)
 - Multimedia Development
Present, Publish
- **Record** the portfolio to an appropriate presentation and storage medium.
 - **Present** the portfolio before an audience (real or virtual).
 - **Evaluate** the portfolio's effectiveness in light of its purpose and the assessment context.

Stage 5

Appropriate Technology Tools & Strategies

- Post the portfolio to WWW server

OR




- Write the portfolio to CD-ROM

OR

- Record the portfolio to videotape

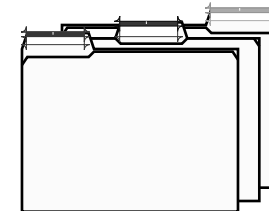
A few final words

Become a “digital pack rat”

- Set up an electronic filing system 
- Use “high density storage” devices
 - Zip disks, Jaz disks 
 - CD-R, DVD-RAM 
- Don’t leave the “collection/selection” until the last minute
- Plan for an electronic portfolio from the beginning of the program

Identify standards

- Use for portfolio organization
- Set up “folders” to store artifact for each standard
- Suggested Standards:
NCATE/ISTE (Technology)
INTASC (Pre-service)
NBPTS (National certification)
State or Local Teaching Standards



Select artifacts

- Select the artifacts that demonstrate achievement of each standard
- Possible types of artifacts to include:
 - significant papers, projects;
 - evaluations from all practicum/field experiences;
 - professional correspondence, letters of reference;
 - letters of recognition, awards, certificates, etc.;
 - samples of effective and reflective writing;
 - stories, journal entries, articles, manuals ;
 - photographs, drawings, sketches;
 - lesson plans/curriculum that you have created;
 - audio, video, or other electronic evidence;

Write reflective statements

- For each standard
OR
- For each artifact

- Could set up a standard form to be completed
 - » Using a database program
 - » Using a PDF form with “fields”

Electronic Portfolio Artifact

**Artifact for
Standard #**

1

**Basic Technology Operations and
Concepts**

Indicator

1.1.4

operate and interface peripheral devices with a computer system supporting imaging including scanner, digital camera, and/or video camera.

**Name of
Artifact**

Date

Source

**Type of
Media**

**Rationale
Statement**

Artifact

Create an outline or storyboard

- Use word processor with outlining
(such as Microsoft Word)
OR
- Use slide show with outlining
(such as PowerPoint)
OR
- Use mapping software
(such as Inspiration)

Create a Table of Contents

- Divide into sections:
 - » Introduction
 - Acknowledgement
 - Table of Contents
 - » The Standards and Reflections
 - » The artifacts

Create a portfolio matrix

- Single page overview/cross reference if individual artifacts document achievement of more than one standard
- Use spreadsheet or table in word processor

	A	B	C	D	E	F	G	H	I
1		Standard 1	Standard 2	Standard 3	Standard 4	Standard 5	Standard 6	Standard 7	Standard 8
2	Artifacts								
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

**Educational Technology Foundations Standards
International Society for Technology in Education**

Graduate Course Only

Indicator	Artifact--->	1	2	3	4	5	6	7	8	9	10
Projects completed for Undergraduate and Graduate courses (UAA's ED 320 and ED 620)	Word processing	Internet tools	Database	Spread sheet	Graphics	Non-linear multimedia presentation	Plan for portfolio development	Personal Philosophy of Tech Use	Research paper	online discussion of reading	
1.1.1 operate a multimedia computer system with related peripheral components to successfully install and use a variety of software packages.	X								X		
1.1.2 use terminology related to computers and technology appropriately in written and oral communications.			X								
1.1.3 describe and implement basic troubleshooting techniques related to using a multimedia system with related peripheral devices.					X						
1.1.4 use imaging devices such as scanners, digital cameras, and/or video cameras with computer systems and software.						X					
1.1.5 demonstrate knowledge of uses of computers and technology in business, industry, and society.								X		X	
1.2.1 use productivity tools for word processing, database management, spreadsheet applications.	X		X	X							
1.2.2 apply productivity tools for creating multimedia presentations.	X				X	X					
1.2.3 use computer-based technologies including telecommunications to access information and enhance personal and professional productivity.	X	X									
1.2.4 use computers to support problem solving, data collection, information management, communications, presentations, and decision making.			X	X		X					
1.2.5 demonstrate awareness of resources for adaptive assistive devices for students with special needs.	X										X
1.2.6 demonstrate knowledge of equity, ethics, legal, and human issues concerning use of computers and technology.								X		X	X
1.2.7 Identify computer and related technology resources for facilitating lifelong learning and emerging roles of the learner and the educator.								X		X	X
1.2.8 Observe demonstrations or uses of broadcast instruction, audio/video conferencing, and other distant learning applications.	X	X									
1.3.1 explore, evaluate, and use computer/technology resources including applications, tools, educational software, and associated documentation.	X	X									
1.3.2 describe current instructional principles, research, and appropriate assessment practices as related to the use of computers and technology resources in the curriculum.								X	X	X	X
1.3.3 design, deliver, and assess student learning activities that integrate computers/technology for a variety of student grouping strategies for diverse student populations.					X		X	X	X		
1.3.4 design student learning activities that foster equitable, ethical, and legal use of technology by students.							X	X			
1.3.5 practice responsible, ethical and legal use of technology, information, and software resources.							X	X			

Convert Artifacts to PDF

- Create PDF files from word processing or slide show files (or any application)
- Use PDF Writer
- OR convert Postscript files with Acrobat Distiller (print to file)

Edit PDF Files in Exchange

- Edit Pages in Exchange

- » Insert pages
- » Extract pages
- » Replace pages
- » Delete pages
- » Move pages
- » Crop pages
- » Rotate pages

- Page Actions

- » Use forms
- » Add web links
- » Add multimedia objects
 - Sound
 - QuickTime movies
- » Notes
- » Navigation tools

Create Multimedia Files

- Digitize and edit sound clips
 - use sound editing software:
Sound Companion
Kaboom!
- Digitize and edit video clips
 - use video editing software:
Movie Player Pro, Avid Cinema,
Adobe Premiere, Apple's new Final Cut

Navigation

- Organize portfolio with hypertext links between
 - Standards
 - Artifacts
 - reflections
- Create bookmarks & thumbnails
- Add movie links
- Insert sound clips
- Add “buttons” with Forms tool

Publish Portfolio

- Record to appropriate medium

Floppy disk (no multimedia)

CD-Recordable

WWW server

Video tape

DVD (coming soon)

Technology Skills for developing Electronic Portfolios in Acrobat

1. Converting files from any application to PDF using PDFWriter or Acrobat Distiller
2. Scanning/capturing and editing graphic images
3. Digitizing and editing sound files
4. Digitizing and editing video files (VCR -> computer)
5. Organizing portfolio artifacts with Acrobat Exchange, creating links & buttons
6. Organizing multimedia files and pre-mastering CD-ROM using Jaz disks
7. Writing CD-Recordable disc using appropriate CD mastering software
8. Recording computer images with narration to video tape (computer -> VCR)

Don't double your learning!

- When learning **new tools**,
use **familiar tasks**;
- When learning **new tasks**,
use **familiar tools**.

Barrett, 1991

Remember the portfolio is a unique document...

...illustrating your achievements as an educator. It should:

- identify and reflect positively on relevant learning achievements
- critically analyze experiences and articulate the learning achieved
- demonstrate increased awareness of own potential and aspirations
- demonstrate improved self-confidence to develop own learning
- identify academic and professional development
- demonstrate skills, knowledge and understanding gain from coursework
- demonstrate skills, knowledge and understanding gain from the practicum
- demonstrate skills, knowledge and understanding gain from related professional work experiences
- critically reflect your thoughts and self assessment

- from UAA Adult Education Portfolio Handbook, 1998

Above all else:

**Let your love of
lifelong learning
shine!**

And have fun!

Helen C. Barrett, Ph.D.

- Web Site on Electronic Portfolios
<http://transition.alaska.edu/www/portfolios.html>
<http://portfolios.alaska.edu>
- Listserv: el-port@uaa.alaska.edu
- E-Mail: afhcb@uaa.alaska.edu

The "5-by-5" Model of Electronic Portfolio Development - Overview of Technology Options

© 2000, Helen C. Barrett	Stages of Electronic Portfolio Development				
Levels of Portfolio Development (based on level of difficulty)	<p style="text-align: center;">1</p> <p style="text-align: center;">Defining the Portfolio Context & Goals</p> <p>Identify: the portfolio's purpose and audience; the standards (goals) or organizing framework; the resources available (hardware, software, level of technology skills). Select the appropriate level/technology to begin.</p>	<p style="text-align: center;">2</p> <p style="text-align: center;">The Working Portfolio</p> <p>Identify, collect and store portfolio artifacts based on purpose/audience/goals. Interject personality into the portfolio design by using appropriate multimedia to add style and individuality to the portfolio.</p>	<p style="text-align: center;">3</p> <p style="text-align: center;">The Reflective Portfolio</p> <p>Select the artifacts that represent achievement of standards/goals. Reflect on why artifacts were selected, indicating meaning and value to the portfolio. Project learning goals for the future (direction).</p>	<p style="text-align: center;">4</p> <p style="text-align: center;">The Connected Portfolio</p> <p>Organize the digital artifacts. Create hypermedia links between goals, artifacts, reflections. Identify patterns through the "linking" process.</p>	<p style="text-align: center;">5</p> <p style="text-align: center;">The Presentation Portfolio</p> <p>Record the portfolio to an appropriate presentation and storage medium. Share the portfolio with an appropriate audience.</p>
	<p>1 - Text only. All documents are in digital file formats, using word processing or other commonly-used software, and stored in electronic folders on a hard drive, floppy diskette or LAN server.</p>	<p><i>Development Software:</i> Any Word Processor</p>	<p><i>Development Software:</i> Any Word Processor</p>	<p><i>Development Software:</i> Any Word Processor</p>	<p><i>Development Software:</i> Microsoft Word (linking to other Word documents) AppleWorks (linking to other Works documents)</p>
<p>2 - With Graphics. Portfolio data is entered into a structured format, such as a database or HyperStudio template or slide show (PowerPoint or AppleWorks) and stored on a hard drive, Zip, floppy diskette or LAN server. Video may be collected in analog form on video tape. Presentation portfolio may also be recorded on video tape.</p>	<p><i>Development Software:</i> Database PowerPoint or slide show HyperStudio</p> <p>Inspiration (mind mapping software)</p>	<p><i>Development Software:</i> Graphics software Database PowerPoint or slide show HyperStudio</p> <p>Digital still camera</p>	<p><i>Development Software:</i> Database PowerPoint or slide show HyperStudio</p>	<p><i>Development Software:</i> HyperStudio</p>	<p><i>Publishing Tools:</i> Videotape (digital-to-analog conversion)</p>
<p>3a - With Navigational links Documents are translated into Portable Document Format with "hyper-links" between standards, artifacts, and reflections using Adobe Acrobat Exchange and stored on a hard drive, Zip, Jaz, CD-R/W, or LAN server.</p>				<p><i>Publishing Software:</i> Adobe Acrobat (PDFWriter, Exchange, Distiller)</p>	<p><i>Publishing Tools:</i> CD-ROM</p>
<p>3b - With Audio & Video Portfolio incorporates digitized audio and video artifacts linked to the portfolio, and stored on CD-ROM or server.</p>		<p>Audio capturing software Video capturing software (analog-to-digital conversion)</p>	<p>Audio editing software Video editing software</p>		<p><i>Publishing Tools:</i> CD-ROM</p>
<p>4 - With WWW links Documents are translated into HTML, complete with "hyper-links" between standards, artifacts, and reflections, using a web authoring program (i.e., Netscape Composer, Adobe PageMill or CyberStudio, Macromedia Dreamweaver) and posted to a WWW server.</p>		<p><i>Development & Publishing Software:</i> HTML authoring software</p>	<p><i>Development & Publishing Software:</i> HTML authoring software</p>	<p><i>Development & Publishing Software:</i> HTML authoring software PowerPoint*</p>	<p><i>Publishing Tools:</i> WWW Server</p>
<p>5 - With Interactive Multimedia Portfolio is organized with a multimedia authoring program, incorporating digital sound and video is converted to digital format and pressed to CD-R/W or posted to WWW in streaming format.</p>		<p><i>Development & Publishing Software:</i> Macromedia Director</p>	<p><i>Development & Publishing Software:</i> Macromedia Director</p>	<p><i>Development & Publishing Software:</i> Macromedia Director</p>	<p><i>Publishing Tools:</i> Streaming Server</p>