

# Electronic Teaching Portfolios:

- Multimedia Skills + Portfolio Development = Powerful Professional Development

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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](mailto:afhcb@uaa.alaska.edu)

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



# 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?

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- 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

# Why use technology?

## (Barrett's assumptions, 1998)

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- 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

# 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

# Multimedia Development

## Instructional Design Stages

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

## Multimedia

### Authoring Skills

- Authoring Tool to structure navigation
- Scanning Graphics
- Digitizing Sound
- Digitizing Video
- Write CD-R/W or Post to WWW

# Combining Portfolio Development & Multimedia Development

<b><i>Portfolio Development</i></b>	<b>Electronic Portfolio Development</b>	<b><i>Multimedia Development</i></b>
<ul style="list-style-type: none"> <li>● <i>Purpose &amp; Audience</i></li> </ul>	<b>Defining the Portfolio Context &amp; Goals</b>	<ul style="list-style-type: none"> <li>● <i>Decide, Assess</i></li> </ul>
<ul style="list-style-type: none"> <li>● <i>Collect</i></li> <li>● <i>Interject</i></li> </ul>	<b>The Working Portfolio</b>	<ul style="list-style-type: none"> <li>● <i>Design, Plan</i></li> </ul>
<ul style="list-style-type: none"> <li>● <i>Select</i></li> <li>● <i>Reflect, Direct</i></li> </ul>	<b>The Reflective Portfolio</b>	<ul style="list-style-type: none"> <li>● <i>Develop</i></li> </ul>
<ul style="list-style-type: none"> <li>● <i>Perfect, Inspect</i></li> <li>● <i>Connect</i></li> </ul>	<b>The Connected Portfolio</b>	<ul style="list-style-type: none"> <li>● <i>Implement</i></li> <li>● <i>Evaluate</i></li> </ul>
<ul style="list-style-type: none"> <li>● <i>Respect</i> <i>(Celebrate)</i></li> </ul>	<b>The Presentation Portfolio</b>	<ul style="list-style-type: none"> <li>● <i>Present</i></li> <li>● <i>Publish</i></li> </ul>

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



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

	Stages of Electronic Portfolio Development				
<b>Levels of Portfolio Development</b> (based on level of difficulty)	<b>1</b> <b>Defining the Portfolio Context &amp; Goals</b>  Identify: the portfolio's <b>purpose</b> and <b>audience</b> ; the <b>standards</b> (goals) or organizing framework; the resources available (hardware, software, level of technology skills). Select the appropriate level/technology to begin.	<b>2</b> <b>The Working Portfolio</b>  Identify, <b>collect</b> and store portfolio artifacts based on purpose/audience/goals. <b>Interject</b> personality into the portfolio design by using appropriate multimedia to add style and individuality to the portfolio.	<b>3</b> <b>The Reflective Portfolio</b>  <b>Select</b> the artifacts that represent achievement of standards/goals. <b>Reflect</b> on why artifacts were selected, indicating meaning and value to the portfolio. Project <b>learning goals</b> for the future (direction).	<b>4</b> <b>The Connected Portfolio</b>  <b>Organize the digital artifacts.</b> Create <b>hypermedia links</b> between goals, artifacts, reflections. <b>Identify patterns</b> through the "linking" process.	<b>5</b> <b>The Presentation Portfolio</b>  <b>Record</b> the portfolio to an appropriate presentation and storage medium. <b>Share</b> the portfolio with an appropriate audience.
<b>1 - Text only.</b> 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.	<i>Development Software:</i> Any Word Processor	<i>Development Software:</i> Any Word Processor	<i>Development Software:</i> Any Word Processor	<i>Development Software:</i> Microsoft Word (linking to other Word documents) AppleWorks (linking to other Works documents)	<i>Publishing Tools:</i> Zip Disk or Floppy Diskette or Hard Drive or Server
<b>2 - With Graphics.</b> 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.	<i>Development Software:</i> Database PowerPoint or slide show HyperStudio  Inspiration (mind mapping software)	<i>Development Software:</i> Graphics software Database PowerPoint or slide show HyperStudio  Digital still camera	<i>Development Software:</i> Database PowerPoint or slide show HyperStudio	<i>Development Software:</i> HyperStudio	<i>Publishing Tools:</i> Videotape (digital-to-analog conversion)
<b>3 - With Navigational links</b> 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.				<i>Publishing Software:</i> Adobe Acrobat (PDFWriter, Exchange, Distiller)	<i>Publishing Tools:</i> CD-ROM
<b>4 - With WWW links</b> 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.		<i>Development &amp; Publishing Software:</i> HTML authoring software	<i>Development &amp; Publishing Software:</i> HTML authoring software	<i>Development &amp; Publishing Software:</i> HTML authoring software  PowerPoint*	<i>Publishing Tools:</i> WWW Server
<b>5 - With Audio &amp; Video</b> 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.		<i>Development &amp; Publishing Software:</i> Macromedia Director  Audio capturing software  Video capturing software (analog-to-digital conversion)	<i>Development &amp; Publishing Software:</i> Macromedia Director  Audio editing software  Video editing software	<i>Development &amp; Publishing Software:</i> Macromedia Director  Audio publishing software  Video publishing software	<i>Publishing Tools:</i> Streaming Server

# Stage 1

## Defining the Portfolio Context & Goals

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- 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)

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
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

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- 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]*

# A few words about the primary audience for the portfolio

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- If you focus on electronic portfolios for employment AND the primary audience (the principal) doesn't look at it, then students become **frustrated**.
- If you focus on electronic portfolios for evidence of professional development, AND the primary audience (the student & faculty) uses the portfolio to validate that growth, then students become **empowered**.

# 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.

# 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

# 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

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- **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

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- **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]*

## 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

# 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*

- 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.

- Multimedia Development

### *Develop*

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.

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“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)

# A portfolio without reflections:

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- 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]*

# Setting goals for future learning

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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

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- 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*]

# **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

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- Post the portfolio to WWW server  
OR
- Write the portfolio to CD-ROM  
OR
- Record the portfolio to videotape

# Helen C. Barrett, Ph.D.

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