Electronic Teaching Portfolios:

• Multimedia Skills + Portfolio Development = Powerful Professional Development

Society for Information Technology & Teacher Education
San Diego, February 9, 2000

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

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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
• 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

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<th>Portfolio Development</th>
<th>Electronic Portfolio Development</th>
<th>Multimedia Development</th>
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<td><strong>Purpose &amp; Audience</strong></td>
<td>Defining the Portfolio Context &amp; Goals</td>
<td><strong>Decide, Assess</strong></td>
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<td><strong>Collect</strong></td>
<td>The Working Portfolio</td>
<td><strong>Design, Plan</strong></td>
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<td><strong>Interject</strong></td>
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<td><strong>Select</strong></td>
<td>The Reflective Portfolio</td>
<td><strong>Develop</strong></td>
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<td><strong>Reflect, Direct</strong></td>
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<td><strong>Perfect, Inspect</strong></td>
<td>The Connected Portfolio</td>
<td><strong>Implement</strong></td>
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<td><strong>Connect</strong></td>
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<td><strong>Evaluate</strong></td>
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<td><strong>Respect (Celebrate)</strong></td>
<td>The Presentation Portfolio</td>
<td><strong>Present</strong></td>
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<td><strong>Publish</strong></td>
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<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>All documents are in paper format. Some portfolio data may be stored on videotape.</td>
</tr>
<tr>
<td>1</td>
<td>All documents are in digital file formats, using <strong>word processing</strong> or other commonly used software, and <strong>stored in electronic folders</strong> on a hard drive, floppy disk, or LAN server.</td>
</tr>
<tr>
<td>2</td>
<td>Portfolio data is entered into a <strong>structured format</strong>, such as a <strong>database</strong> or HyperStudio template or slide show (such as <strong>PowerPoint</strong> or <strong>AppleWorks</strong>) and stored on a hard drive, Zip, floppy disk, or LAN.</td>
</tr>
<tr>
<td>3</td>
<td>Documents are translated into Portable Document Format (<strong>PDF</strong>) with hyperlinks between standards, artifacts, and reflections <strong>using Acrobat Exchange</strong> and stored on a hard drive, Zip, Jaz, CD-R/W, or LAN server.</td>
</tr>
<tr>
<td>4</td>
<td>Documents are translated into <strong>HTML</strong>, complete with hyperlinks between standards, artifacts, and reflections, using a Web authoring program and posted to a <strong>Web server</strong>.</td>
</tr>
<tr>
<td>5</td>
<td>Portfolio is organized with a <strong>multimedia authoring program</strong>, incorporating digital <strong>sound</strong> and <strong>video</strong>, then converted to digital format and pressed to CD-R/W or posted to the Web in streaming format.</td>
</tr>
</tbody>
</table>
## The "5-by-5" Model of Electronic Portfolio Development - Overview of Technology Options

<table>
<thead>
<tr>
<th>Stages of Electronic Portfolio Development</th>
<th>Levels of Portfolio Development (based on level of difficulty)</th>
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</thead>
<tbody>
<tr>
<td><strong>1 - Text only.</strong> 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.</td>
<td>Development Software: Any Word Processor</td>
</tr>
<tr>
<td><strong>2 - With Graphics.</strong> 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.</td>
<td>Development Software: Database, PowerPoint or slide show, HyperStudio, Inspiration (mind mapping software)</td>
</tr>
<tr>
<td><strong>3 - With Navigational links</strong> Documents are translated into Portable Document Format with &quot;hyper-links&quot; between standards, artifacts, and reflections using Adobe Acrobat Exchange and stored on a hard drive, Zip, Jaz, CD-R/W, or LAN server.</td>
<td>Development Software: Database, PowerPoint or slide show, HyperStudio, Digital still camera</td>
</tr>
<tr>
<td><strong>4 - With WWW links</strong> Documents are translated into HTML, complete with &quot;hyper-links&quot; 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.</td>
<td>Development &amp; Publishing Software: HTML authoring software, PowerPoint*</td>
</tr>
<tr>
<td><strong>5 - With Audio &amp; Video</strong> 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.</td>
<td>Development &amp; Publishing Software: Macromedia Director, Audio capturing software, Video capturing software (analog-to-digital conversion), Streaming Server</td>
</tr>
</tbody>
</table>

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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)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Limited experience with desktop computer - able to use mouse, menus, run simple programs</td>
<td>Level 1 PLUS proficiency with a word processor, basic e-mail and Internet browsing; enter data into a pre-designed database</td>
<td>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)</td>
<td>Level 3 PLUS able to record sounds, scan images, output computer screens to a VCR; design an original database</td>
<td>Level 4 PLUS multimedia programming or HTML authoring; create QuickTime movies live or from tape; program a relational database</td>
</tr>
</tbody>
</table>
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]
A few words about the primary audience for the portfolio

- 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*
  - 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.

- Multimedia Development
  *Design, Plan*
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*]
### Levels of Digital Multimedia Development

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Only</td>
<td>Add Images</td>
<td>Add Navigation (hypertext links)</td>
<td>Add digitized sound</td>
<td>Add digitized video</td>
</tr>
</tbody>
</table>

### Levels of Digital Storage

<table>
<thead>
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<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floppy Diskette</td>
<td>Zip Disk</td>
<td>LAN Server</td>
<td>CD-R/W</td>
<td>WWW Server</td>
</tr>
<tr>
<td>Hard Disk Drive</td>
<td>Jaz Disk</td>
<td></td>
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</tbody>
</table>
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
  \textit{Select, Reflect, Direct}
  - Write \textbf{general reflective statements} on achieving each standard.
  - \textbf{Select artifacts} that represent achievement of the standards or goals.
  - \textbf{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, \textbf{set learning goals} for the future.

- Multimedia Development
  \textit{Develop}
"We also like the three questions suggested by Van Wagenen and Hibbard (1998)"

1. “What?”
2. “So what?”
3. “Now what?”

(p.22)
“To use these questions, the student would first summarize the artifact that documents the experience, in order to answer the question “What?”

(p.22)
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)
“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:

- 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

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*
  - 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.

- Multimedia Development
  *Implement, Evaluate*
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*
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
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