REAL Electronic Portfolios
Reflection, Engagement, and Assessment for Learning

Balancing “Portfolio as Test” with “Portfolio as Story”
Dr. Helen Barrett

Legacy from the Portfolio Literature
- Much to learn from the literature on paper-based portfolios
- As adult learners, we have much to learn from how children approach portfolios

"Everything I know about portfolios was confirmed working with a kindergartener"

The Power of Portfolios
What children can teach us about learning and assessment
Author: Elizabeth Hebert
Publisher: Jossey-Bass
Picture courtesy of Amazon.com

From the Preface (1)
"Portfolios have been with us for a very long time. Those of us who grew up in the 1950s or earlier recognize portfolios as reincarnations of the large memory boxes or drawers where our parents collected starred spelling tests, lacy valentines, science fair posters, early attempts at poetry, and (of course) the obligatory set of plaster hands. Each item was selected by our parents because it represented our acquisition of a new skill or our feelings of accomplishment. Perhaps an entry was accompanied by a special notation of praise from a teacher or maybe it was placed in the box just because we did it."
“We formed part of our identity from the contents of these memory boxes. We recognized each piece and its association with a particular time or experience. We shared these collections with grandparents to reinforce feelings of pride and we reexamined them on rainy days when friends were unavailable for play. Reflecting on the collection allowed us to attribute importance to these artifacts, and by extension to ourselves, as they gave witness to the story of our early school experiences.”


“Our parents couldn’t possibly envision that these memory boxes would be the inspiration for an innovative way of thinking about children’s learning. These collections, lovingly stored away on our behalf, are the genuine exemplar for documenting children’s learning over time. But now these memory boxes have a different meaning. It’s not purely private or personal, although the personal is what gives power to what they can mean.”


Let’s get personal… Think for a minute about:

Something about your COLLECTIONS:

Suggested topics:
- If you are a parent, what you saved for your children
- What your parents saved for you
- What you collect…
- Why you collect…

Some issues to consider

- What do your collections say about what you value?
- Is there a difference between what you purposefully save and what you can’t throw away?
- How can we use our personal collections experiences to help learners as they develop their portfolios?

The power of portfolios (to support deep learning) is personal.

What is a Portfolio in Education?

A portfolio is a purposeful collection of student work that exhibits the student’s efforts, progress and achievements in one or more areas [over time].

Northwest Evaluation Association, 1990

What is a Portfolio in Education? (2)

The collection must include:
- student participation in selecting contents
- the criteria for selection
- the criteria for judging merit
- evidence of student self-reflection

Northwest Evaluation Association, 1990
NLII e-Portfolio Definition
- a collection of authentic and diverse evidence,
- drawn from a larger archive representing what a person or organization has learned over time
- on which the person or organization has reflected, and
- designed for presentation to one or more audiences for a particular rhetorical purpose.

“The Blind Men and the Elephant”
- Eskimos having 49 different words for “snow”
- Those who don’t live in that environment tend to see it all as the same cold white stuff
- Same goes with “portfolio”

Purpose & Goals for the portfolio (Determine Content)
- Multiple purposes:
  - Learning/Process
  - Assessment
  - Marketing/Showcase

Think about the differences between:
- Learning Portfolio and Portfolio Learning
- Assessment Portfolio and Portfolio Assessment
- Portfolio = Concept, Product, and Process

Metaphors!
- Mirror, Map, Sonnet
- C.V. or Multimedia Resume
- Test
- Story
- http://electronicportfolios.org/metaphors.html
Learning Portfolios

- “know thyself” = a lifetime of investigation
- self-knowledge as outcome of learning

Reflections

- The Heart and Soul of the Portfolio
- An electronic portfolio without reflection is just a digital scrapbook
- Fancy electronic resume
- Multimedia Presentation
- Personal web site

Showcase Portfolios

- Marketing
- Employment
- Tell your story
- A primary motivator for many portfolio developers

Assessment Portfolios

- A major movement in Teacher Education in U.S.
- A major new commercial market
- A primary motivator for organizations

A few thoughts about Assessment -- What Type?

- Assessment OF Learning? or
- Assessment FOR Learning?

www.qca.org.uk

Ages 3-14

Assessment for Learning
Principles of Assessment FOR Learning

Definition: Assessment for Learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there.

Overlap of Assessment Types*

Portfolios used for Assessment OF Learning

- Purpose of portfolio prescribed by institution
- Artifacts mandated by institution to determine outcomes of instruction
- Portfolio usually developed at the end of a class, term or program - time limited
- Portfolio and/or artifacts usually "scored" based on a rubric and quantitative data is collected for external audiences
- Portfolio is usually structured around a set of outcomes, goals or standards
- Sometimes used to make high stakes decisions
- Summative - what has been learned to date? (Past to present)
- Requires Extrinsic motivation
- Audience: external - little choice

Portfolios that support Assessment FOR Learning

- Purpose of portfolio agreed upon with learner
- Artifacts selected by learner to tell the story of their learning
- Portfolio maintained on an ongoing basis throughout the class, term or program - time flexible
- Portfolio and artifacts reviewed with learner and used to provide feedback to improve learning
- Portfolio organization is determined by learner or negotiated with mentor/advisor/teacher
- Rarely used for high stakes decisions
- Formative - what are the learning needs in the future? (Present to future)
- Fosters Intrinsic motivation - engages the learner
- Audience: learner, family, friends - learner can choose

A Resource on K-12 Portfolios

- By Evangeline Harris Stefanakis
- Published by Heinemann
- Includes a CD-ROM with examples of student portfolios

Assessment for Learning Continuum - Enhanced
Which approach should you take?

- Are you looking for an electronic portfolio…
- Or an assessment management system?
- What's the difference? Along a Continuum

Electronic Portfolio or Assessment Management System?

<table>
<thead>
<tr>
<th>Electronic Portfolio</th>
<th>Assessment Management System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multipurpose: Learning, Assessment, Employment</td>
<td>Single purpose: Formative and Summative Assessment</td>
</tr>
<tr>
<td>Data structure varies with tools used to create the portfolio; common data formats (converted to HTML, PDF)</td>
<td>Data structure most often uses a relational database to record, report data</td>
</tr>
<tr>
<td>Primary type of data: qualitative</td>
<td>Primary type of data: qualitative and quantitative</td>
</tr>
<tr>
<td>Data storage in multiple options: CD-ROM, videotape, DVD, WWW server, LAN</td>
<td>Data storage primarily on LAN or on secure WWW server</td>
</tr>
<tr>
<td>Visual design and hyperlinks often under control of portfolio developer</td>
<td>Visual design and hyperlinks must often controlled by database structure</td>
</tr>
<tr>
<td>Learner choice of artifacts</td>
<td>Institutional choice of artifacts</td>
</tr>
<tr>
<td>Learner-Centered</td>
<td>Institution-Centered</td>
</tr>
</tbody>
</table>

What is your portfolio?

- A standardized checklist of skills? (Positivist)
- A reflective story of deep learning? (Constructivist)

Tension between two approaches

- "The two paradigms produce portfolio activities that are entirely different."
- "The positivist approach puts a premium on the selection of items that reflect outside standards and interests."
- "The constructivist approach puts a premium on the selection of items that reflect learning from the student's perspective."

F. Lenn Pashen & Pearl Paulson (1994)

How can we address both types of portfolios?

Use three different systems that are digitally linked:

- A digital archive of a learner’s work
- An institution-centered database to collect faculty-generated assessment data based on tasks and rubrics
- A student-centered electronic portfolio
I. Digital Archive of Learner Artifacts (Working Portfolio)

Interactive Process

Evidence = +Artifacts +Reflection +Validation
**Positivist Paradigm**  
*(Evaluation and Making Inferences)*

*Portfolio as Test*

**Assessor**  
**EVALUATES**  
**required artifacts**

Performance Tasks & Rubrics for evaluation

**Data collected for certification/licensure**  
*(high stakes)*  
and for accreditation

**II. Assessment Management System**  
(institution-centered data management system)

**Resulting in...**

Institution-centered aggregated data leading to certification/licensure and accreditation
Focus on Limited-Term Evaluation

External Locus of Control
- Includes prescribed artifacts and rubrics
- Requires database to manage information
- Focuses on faculty’s formative and summative evaluations

Digital Archive of Learner Artifacts (Working Portfolio)

Constructivist Paradigm
(Making Meaning and Assessment as Learning)

Portfolio as Story

Learner COLLECTS artifacts from learning experiences
Reflection on Learning (self-selected artifacts for self-evaluation)

Learner SELECTS artifacts and reflections to meet self-determined purpose(s)

III. Electronic Portfolio(s) (presentation portfolios for multiple purposes)

Resulting in… Student-centered documentation of deep learning, for developing self-concept and presentation to multiple audiences (peers, employers, etc.)

Focus on Lifelong Self-Directed Learning

Internal Locus of Control
- Includes choice of artifacts
- Results in personalized e-portfolio
- Focuses on learner's celebration of uniqueness
Both approaches result in a:

Balanced Assessment System

A tale of two paper portfolios

- High School graduates in Washington state (and Utah, too!)
- High school freshman in NY (Jim Mahoney, *Power and Portfolios* published by Heinemann)

What's the difference between those two stories?

- What are the variables that produce these extremes in attitudes toward ownership of portfolios?

Activity Theory

Implications for human-computer interaction

Cautions about Portfolio Use (Lucas, 1992)

1. The weakening of effect through careless imitation
2. The failure of research to validate the pedagogy
3. The co-option by large-scale external testing programs

Lee Shulman’s 5 dangers of portfolios

1. "lamination" - a portfolio becomes a mere exhibition, a self-advertisement, to show off

2. "heavy lifting" - a portfolio done well is hard work. Is it worth the extra effort?

3. "trivialization" - documenting stuff that isn't worth reflecting upon

4. "perversion" - when used as a form of high stakes assessment “why will portfolios be more resistant to pervasion than all other forms of assessment have been?”

5. "misrepresentation" - "...And if one of the requirements ... is that you develop a sufficiently objective scoring system [for portfolios] so you can fairly compare people with one another, will your scoring system end up objectifying what's in the portfolio to the point where the portfolio will be nothing but a very, very cumbersome multiple choice test?" (p. 35)
Lee Shulman’s 5 dangers of portfolios
5. "misrepresentation" - does "best work" misrepresent "typical work" -- not a true picture of competency

Joanne Carney’s Dilemmas of Electronic Portfolios
1. Multiple Purpose Dilemma
2. Personal Revelation Dilemma
3. Cognitive Overload Dilemma
4. Self-Expression Dilemma
5. Dead-End Dilemma
6. Data-Aggregation Dilemma

Lee Shulman’s 5 benefits of portfolios
1. document longer episodes of teaching and learning
2. encourage the reconnection between process and product.
   - very best teaching portfolios contain excerpts of student portfolios & highlight the results of teaching that lead to student learning.
3. institutionalize norms of collaboration, reflection, and discussion
4. portable residency... introduces structure to the field experience
5. (most important) shifts the agency from an observer back to the teacher intern...

Constructions Meaning
"The portfolio is a laboratory where students construct meaning from their accumulated experience."
(Paulson & Paulson, 1991, p.5)

Portfolio tells a Story
"A portfolio tells a story.
It is the story of knowing. Knowing about things... Knowing oneself... Knowing an audience... Portfolios are students’ own stories of what they know, why they believe they know it, and why others should be of the same opinion."
(Paulson & Paulson, 1991, p.2)

Portfolios tell a Story
“A portfolio is opinion backed by fact... Students prove what they know with samples of their work.”
(Paulson & Paulson, 1991, p.2)
Linking Two Dynamic Processes to Promote Deep Learning

Portfolio Development Process
Digital Storytelling

ePortfolio as Storytelling

Portfolio Development Process
Traditional + Technology
- Collecting
- Archiving
- Selecting
- Linking/Thinking
- Reflecting
- Storytelling
- Directing
- Collaborating
- Celebrating
- Publishing

Reflective Questions that tie the Past to the Future

Some concerns...
- Assessment for Learning
- Portfolios for Learning
- What about Motivation?
Components of Portfolio Development

- **Content**: evidence = artifacts + reflections + validation

- **Purpose**: the reason for developing the portfolio – includes audience
  - Learning & professional development - Process
  - Assessment (of and for learning)
  - Showcase (Employment/Marketing)

- **Process**: tools used
  - sequence of activities
  - rules
  - evaluation criteria (rubrics)
  - collaboration/conversation

Developmental Levels of Portfolio Implementation

- **Extrinsic Motivation**: institutional directed content, purpose & process – external locus of control
- **Mixed Motivation**: learner ownership over one or two of the components
- **Intrinsic Motivation**: learner ownership of content, purpose and process

Learner Ownership and Control of Electronic Portfolio Development

- Learner Control vs. Organizational Control
  - Assumption: Greater Learner Control leads to more Intrinsic Motivation
**Linked to...**

Digital Tools to Support Reflection:
- Online Portfolios
- Blogs & Wikis
- Digital Storytelling
- Games

**Blog** #1 word of the year*

- Merriam-Webster Inc announced its top 10 “words of the year” list, with the immensely popular “blog” taking the number one place.
- Compiles list each year by taking the most researched words on its various Web sites.

* Internet Scout Report, December 3, 2004

**Portfolios provide Encouragement for Reflection**

- ...provides both the discipline and the freedom of structure, allowing one to see one’s own work. (Sonnet)
- ...provides the opportunity to assess one’s own strengths and weaknesses through examination of a collection of samples, as well as to get feedback on one’s performance from others. (Mirror)
- ...the process of self assessment leads one to setting goals for future development and professional growth. (Map)

(Mary Diez, 1994)

**Helping Students to Reflect**

- Provide models and examples
- Begin with forms or prompts
- Move to journals/blogs
- Be careful that reflection in portfolios doesn’t become an exercise in filling in the blanks on a web-based form.

**North Carolina Reflection Cycle**

Self-Assessment: The Reflective Practitioner

1. Select
   - What do I want to do?
   - Do I understand the process?
   - Do I accept the limitations?
   - Do I accept the labeling?
2. Describe
   - Why?
   - What?
3. Analyze
   - Why?
4. Appraise
   - Building blocks
   - Building blocks revisited
5. Transform
   - How might an e-portfolio support development of personal knowledge?

http://www.ncpublicschools.org/ph/Pblreflect.htm

Norman Jackson
Higher Education Academy, U.K.
How might an e-portfolio support reflection and development of metacognition?

Digital Storytelling Process
- Learners create a 2-4 minute digital video clip
  - First person narrative
  - Told in their own voice
  - Illustrated by (mostly) still images
  - Music track to add emotional tone

Center for Digital Storytelling

Why include Digital Storytelling in ePortfolios?
Learner Motivation and Affect
Brain Research on Emotion in Learning

Resource on Biology of Learning

The Learning Cycle
David Kolb from Dewey, Piaget, Lewin
- Deep Learning (learning for real comprehension) comes from a sequence of
  - Experience
  - Reflection
  - Abstraction
  - Active testing
- Zull: the learning cycle arises naturally from the structure of the brain (p.19)
Reflection and Emotion
James Zull
- Even if we experience something that has happened to us before, it is hard to make meaning of it unless it engages our emotions. (p. 166)
- Reflection is a search for connections. (p. 167)
- Sleep researchers postulate that dreams help us make connections... We discover what is important to us, because we dream about what matters most. (p. 168)
- For comprehension we need time. (p. 168)

My own story
- "ON1 go0d 1xample of w0rPh 1000 Ph10rAs"
- Th1 Asu1 Of Ph1n1 aNd l1arNA1g - r1a0h1ArPh1r PrANs1, A1N and d10A1NI p0Ar Al a l0Ng Qa11r, r1fl10PA1g ON Ph1 mAlspON1s Al my lA1
- Play "0hOA0I1s"

Reflection and Emotion
James Zull
- "Even if we were able to decrease our emphasis on speed and information and increase the possibilities for reflection, we still would have to give our students the kind of experience that would produce dreams--experiences that engage their emotions." (p. 168)
- "...our experiences must matter in our lives if we are to learn from them." (p. 168)
- "...it suggests how seriously we have to take emotion if we want to foster deep learning." (p. 169)

Experiential Learning Model
Lewin/Kolb with adaptations by Moon and Zull
- Outside
  - Concrete experience
  - Testing implications of concepts in new situations
  - Try out what you have learned
- Inside
  - Observations and reflections
  - Reflect on the experience
  - Learn from the experience
- (Kolb, 1984, p. 21)
Storytelling = Narrative Inquiry

- Aristotle: narrative – natural framework for representing world of action
- Everyday sense-making role of storytelling
- Stories reveal the way ideas look in action
- Narrative provides explanation
- Motivation for telling stories: to wrest meaning from experiences

Links between Learning and Storytelling

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<tbody>
<tr>
<td>Noticing</td>
<td>Story finding</td>
</tr>
<tr>
<td>Making sense</td>
<td>Story telling</td>
</tr>
<tr>
<td>Making meaning</td>
<td>Story expanding</td>
</tr>
<tr>
<td>Working with meaning</td>
<td>Story processing</td>
</tr>
<tr>
<td>Transformative learning</td>
<td>Story reconstructing</td>
</tr>
</tbody>
</table>


Storytelling as Reflection (Schön, 1988)

"...for storytelling is the mode of description best suited to transformation in new situations of action."

"Stories are products of reflection, but we do not usually hold onto them long enough to make them objects of reflection in their own right."

"When we get into the habit of recording our stories, we can look at them again, attending to the meanings we build into them and attending, as well, to our strategies of narrative description."
Constructivist Approach to Project-Based "Assessment-as-Learning"

Learner Ownership and Engagement with Portfolio

- The tools should allow the learner to feel in control of the process, including the "look and feel" of the portfolio.

Deep Learning
- involves reflection,
- is developmental,
- is integrative,
- is self-directive, and
- is lifelong


Voice = Authenticity
- multimedia expands the "voice" in an electronic portfolio (both literally and rhetorically)
- personality of the author is evident
- gives the reflections a uniqueness
- gives the feeling that the writer is talking directly to the reader/viewer

Digital Paper or Digital Story?

Digital paper = text and images only
Digital story = tell your story in your own voice.
Multimedia = audio and video

Graduate Student Examples
- ...Or you are a graduate...
  - Digital paper: reflect on what you draw.
  - Digital story: tell your story in your own voice.
  - Multimedia: audio and video

- Play "OMAlg full 0A011"
- Play "a journey to the missing"
What's Your Story?

Digital Story as Legacy

Digital Storytelling Becomes a Lifelong, Life Wide Skill

Digital Family Stories -from birth to end-of-life
Digital Family Stories -help people reflect on life transitions
Digital Family Stories -preserve multimedia memories as a legacy for future generations

Recommendations!

Unsolicited e-mail messages

From a Teacher Educator in Ohio

This past quarter, I worked with my graduate students (all inservice teachers) on telling their “digital stories” of why they have stayed in teaching for so many years or why they went into teaching, their thoughts on the future of education and their philosophy of teaching. Some of the stories were so passionate, I cried as I graded them. In fact my whole hallway cried and laughed as we watched them. Digital storytelling is a very powerful medium for expressing the art and passion of inservice teachers about their own teaching. It was one of the most fantastic experiences for my own “learning about my students” that I have had in recent years! We used Moviemaker and VideoStudio 8, one free and the other $69. Since we are doing all of this in an online environment and the teachers have to purchase their own software for the courses, the teachers loved it — and keep sending me ideas now of how they are going to use it in their own classrooms. Enjoy the digital storytelling — it is well worth the time.

From a Teacher Educator in Florida

Each of my students this semester produced two digital stories, one focusing on their philosophy of teaching, and the other dealing with their field experience. We used PhotoStory 3 because it was a free Microsoft Download. I was most impressed with their efforts and they have told me it was a most meaningful activity.
Presentation online and stories are on my CD
- [http://electronicportfolios.org](http://electronicportfolios.org) and click On-Line Publications
  “Electronic Portfolios as Digital Stories of Deep Learning”
- [http://electronicportfolios.org](http://electronicportfolios.org) and click Recent Conference Presentations
- My CD has examples of digital stories as well as hands-on activities to learn the process on Mac and Windows XP

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