**ePortfolios: Digital Stories of Deep Learning**

Dr. Helen Barrett  
Research Project Director  
The REFLECT Initiative  
University of Alaska Anchorage (retired)

---

**Themes**

- **Context**
  - 21st Century Learning
- **Product**
  - Electronic Portfolios vs. Assessment Management Systems  
  - Assessment for Learning
- **Process**
  - Reflection  
  - Storytelling
- **Examples**

---

**Context**

Why Electronic Portfolios Now?

---

**Education that...**

- Connects to students’ lives
- Reduces GAP between how students live and how they learn
- Reflects “How People Learn”
  1. Uses prior knowledge to build new understanding
  2. Able to organize knowledge within conceptual framework
  3. Metacognitive approach, take control of learning, monitor progress, improve achievement

---

**21st Century Learning Skills**

- Information and Media Literacy Skills
- Communication Skills
- Critical Thinking and Systems Thinking
- Problem Identification, Formulation and Solution
- Creativity and Intellectual Curiosity
- Interpersonal and Collaborative Skills
- Self-Direction
- Accountability and Adaptability
- Social Responsibility

---

The Partnership for 21st Century Skills

[http://www.21stcenturyskills.org/](http://www.21stcenturyskills.org/)
21st Century Assessment

The World in Flat

• Thomas Friedman, New York Times Columnist
• A look at the change and globalization since Y2K

10 “Flatteners”

10 Major political events, innovations, companies

1. 11/9/89
2. 8/9/95
3. Work Flow Software
4. Open-Sourcing
5. Outsourcing
6. Offshoring
7. Supply-Chaining
8. Insourcing
9. In-forming
10. The Steroids

Walls down + Windows up
Netscape went public
Applications talk to each other
Self-Organizing Collaborative Communities
Y2K panic + help desks (India)
Shifting production (Asia)
Wal-Mart (China)
UPS
Google, Yahoo, WebSearch
Digital, Mobile, Personal, Virtual

A Whole New Mind

Daniel Pink
Balancing Right-Brain skills for the “Conceptual Age” with Left-Brain skills from the “Information Age”

Causes of shift from LEFT to RIGHT Brain

• Abundance
• Asia
• Automation

6 Essential High-Concept, High Touch Aptitudes

Dan Pink, A Whole New Mind

1. Design (not just function) - create objects beautiful, whimsical, emotionally engaging
2. Story (not just argument) - the ability to fashion a compelling narrative
3. Symphony (not just focus) - synthesis - seeing the big picture
4. Empathy (not just logic) - forge relationships - care for others
5. Play (not just seriousness) - laughter, lightheartedness, games, humor
6. Meaning (not just accumulation) - purpose, transcendence, and spiritual fulfillment.
Context for ePortfolios

Purpose(s)
Audience(s)
Ownership
Tools
Literacy Level

If we build it, will they use it?

And how will they use it?

What about the users?

Why would learners want to use an ePortfolio?

Product

Electronic Portfolios
(technology matures)

ePortfolio Technology over Time

Storage
• 1991: Desktop
• 1995: CD-R
• 2000: Internet
• 2004: DVD-R
• 2005: Pocket Tech (PDAs, flash drives, phones, iPods)
• What’s Next?

Software
• Common tools
  – Office & PDF
  – HTML Editors
• Customized Systems
  – Online data bases
  – Work Flow Management
  – Assessment Management
• Interoperability (currently in “silos”)

Levels of ePortfolio Implementation

• Working Portfolio
  – The Repository
  – The Digital Archive
  – The Artifacts (meta-tagged)
  – Personal Information
  – Reflective Journal

• Presentation Portfolio(s)
  – The ‘Story’ or Narrative
  – Multiple Views (public/private)
  – Varied Audiences (permissions)
  – Varied Purposes

Metaphors!

• Mirror, Map, Sonnet
• C.V. or Multimedia Resume
• Test
• Story

• http://electronicportfolios.org/metaphors.html
**Constructed 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)

**Portfolio Development Process**

- Selection
- Collection
- Reflection
- Direction
- Celebration

**Portfolio Processes**

**Traditional**
- Collecting
- Selecting
- Reflecting
- Directing
- Celebrating

**Technology**
- Archiving
- Linking/Thinking
- Storytelling
- Collaborating
- Publishing

**“The Blind Men and the Elephant”**

Thanks to Alan Levine
Eskimos and “Snow”
• 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
  – Marketing/Showcase
  – Assessment

A few thoughts about Assessment -- What Type?
• Assessment OF Learning? or
• Assessment FOR Learning?

Assessment of Learning? or
• Assessment OF Learning = Summative Assessment
  • Past-to-Present
• Assessment FOR Learning = Formative Assessment
  • Present-to-Future

www.qca.org.uk
 ages3-14

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.
**Crucial Distinction**

- **Assessment OF Learning**
  How much have students learned as of a particular point in time?

- **Assessment FOR Learning**
  How can we use assessment to help students learn more?

Rick Stiggins
Assessment Training Institute

---

**Overview**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Assessment OF Learning</th>
<th>Assessment FOR Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Inform</td>
<td>Students about themselves</td>
<td>Others about students</td>
</tr>
<tr>
<td>Focus</td>
<td>Standards</td>
<td>Enabling targets</td>
</tr>
</tbody>
</table>

---

**The essential question**

- Can we use assessment to help our students **want to learn**?

Rick Stiggins
Assessment Training Institute

---

**Assessment FOR Learning Strategies**

1. Student-friendly targets from the beginning (no surprises, no excuses)
2. Models of strong and weak work
3. Continuous descriptive feedback
4. Teach self-assessment and goal setting
5. Teach one facet of quality at a time
6. Teach focused revision (how to improve their work one facet at a time)
7. Teach self-reflection to track growth

---

**What is your portfolio philosophy?**

- **A standardized checklist** of skills? (Positivist)
  or
- **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.


Overlap of Assessment Types*

Portfolios that support Assessment OF Learning
- Institution-centered

Portfolios that support Assessment FOR Learning
- Learner-centered

Portfolio Differences

Assessment OF Learning
- Purpose prescribed
- Artifacts mandated - scoring for external use
- Organized by teacher
- Summative (Past to present)
- Institution-centered
- Requires extrinsic motivation

Assessment FOR Learning
- Purpose negotiated
- Artifacts chosen - feedback to learner
- Organized by learner
- Formative (Present to future)
- Student-centered
- Intrinsically motivating

Which approach should you take?

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

How can we address both types of portfolios?

Use three different systems that are digitally linked:
I. A digital archive of a learner’s work
II. An institution-centered database to collect faculty-generated assessment data based on tasks and rubrics
III. A student-centered electronic portfolio

Process

Electronic Portfolios
Reflection
The “Heart and Soul” of a Portfolio

What is Reflection?

- Major theoretical roots:
  - Dewey
  - Habermas
  - Kolb
  - Schön
- Dewey: “We do not learn from experience…we learn from reflecting on experience.”

Jennifer Moon on Reflection

- Reflection is a form of mental processing – like a form of thinking – that we use to fulfill a purpose or to achieve some anticipated outcome. It is applied to relatively complicated or unstructured ideas for which there is not an obvious solution and is largely based on the further processing of knowledge and understanding and possibly emotions that we already possess (based on Moon 1999).

North Carolina Reflection Cycle
Self-Assessment: The Reflective Practitioner

1. Select
- What evidence is required?
- Do you want or need to include any additional artifacts or evidence?
- What standards are you addressing?

2. Describe
- Who?
- What?
- When?
- Where?

3. Analyze
- Why?
- How?

4. Appraise
- Interpret events
- Determine impact
- Determine effectiveness
- Determine the relationship to goals, values, philosophy

5. Transform
- Utilize the information and data
- Apply to teaching practice
- Develop new goals and strategies based on the data

Resource on Biology of Learning

- Enriching the Practice of Teaching by Exploring the Biology of Learning
- James E. Zull
- Stylus Publishing Co.

http://www.ncpublicschools.org/pbl/pbreflect.htm
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

Experiential Learning Model
Lewin/Kolb with adaptations by Moon and Zull

Concrete experience
Observations and reflections
Formation of abstract concepts and generalizations
Testing implications of concepts in new situations

Have an experience
Try out what you have learned
Reflect on the experience
Learn from the experience

Reflection and Emotion
James Zull
• Hard to make meaning of experience unless it engages our emotions. (p.166)
• Reflection: a search for connections
• Sleep researchers: dreams help us make connections...we dream about what matters most. (p.168)
• For comprehension we need time. (p.168)

Moon on Reflection
• One of the defining characteristics of surface learning is that it does not involve reflection (p.123)
• Conditions for Reflection:
  – Time and space
  – Good facilitator
  – Curricular or institutional environment
  – Emotionally supportive environment

How might an e-portfolio support development of personal knowledge, reflection, and metacognition?
Linked to...

Online Portfolios
Digital Storytelling
Blogs & Wikis
Games

How can you leverage the technologies students own?

• Accessibility from home computers
• Connectivity with cell phones & PDAs (digital images, reflections)
• Video storage or streaming video
• Podcasting = audio-only digital stories and blogs

Helping Students Tell Their Stories

• COLLECT more than text documents
  – Pictures
  – Audio
  – Video
• Focus on REFLECTION over time
• Help students make CONNECTIONS
• Support multimedia presentation formats

Digital Storytelling Process

• Learners create a 2-4 minute digital video clip
  – First person narrative [begins with a written script ~ 400 words]
  – Told in their own voice [record script]
  – Illustrated (mostly) by still images
  – Music track to add emotional tone

“Free” Digital Storytelling Tools
http://electronicportfolios.org/digistory/tools.html

Macintosh
• Audio recording
  Audacity
• Image editing
  iPhoto, GIMP
• Video editing
  iMovie

Windows
• Audio recording
  Audacity
• Image editing
  GIMP
• Video editing
  MovieMaker2
Storytelling as a Theory of Learning

- Two educators from New Zealand - staff developer and health educator
- Relates storytelling to literature on learning and reflection
- Provides stages of storytelling related to reflection

Storytelling = Narrative Inquiry

Mattingly in Schön (1991)

- 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

Digital Stories and e-Portfolios

- Highly motivating project-based learning activity
- Powerful artifacts in electronic portfolios
- The importance of reflection in e-portfolios
- Tools for scaffolding reflection: blogging and digital storytelling
- Overview of the literature on reflection and learning
- Some new perspectives on storytelling as reflection on experience to improve learning (McDrury & Alterio)
- The role of reflection in brain-based learning (Zull)

Digital Storytelling is BOTH... HIGH TECH and HIGH TOUCH

Constructivist Approach to Project-Based “Assessment-as-Learning”
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

Digital Paper or Digital Story?

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

What's Your Story?

Richness not possible in print
Audiences worldwide but most likely small and intimate.

Digital Story as Legacy

Not just for professional development
Or skills-based portfolios

Digital Storytelling Becomes a Lifelong Skill

- Cousin of scrapbooking and genealogy
- Cross-age collaborations
- Children interview elders
- Illustrate with family photos
Digital Storytelling Becomes a Lifelong 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

The REFLECT Initiative
reflect@taskstream.com
http://electronicportfolios.org/reflect/

A research project to assess the impact of electronic portfolios on student learning, motivation and engagement in secondary schools.

My Website and my CD

A brief look at the tools
More in-depth tutorials and examples
Self-directed tutorials on e-portfolio development and digital storytelling

My Final Wish...

May all your electronic portfolios become dynamic celebrations and stories of deep learning across the lifespan.

Dr. Helen Barrett

- Research Project Director, The REFLECT Initiative
eportfolios@comcast.net
http://electronicportfolios.org/