Differentiating Electronic Portfolios and Assessment Management Systems

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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”

Portfolio Processes

Traditional
- Collecting
- Selecting
- Reflecting
- Projecting
- Celebrating

+ Technology
- Archiving
- Linking/Thinking
- Storytelling
- Planning
- Publishing

Portfolios support a Culture of Evidence

- Evidence = Artifacts
  - Reflection (Rationale)
  - Validation (Feedback)

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

- Learning
- Accountability
- Self Assessment
- Informal Feedback
- Rubrics
- Portfolios
- Performance-Based
- Standardized Tests
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

Purpose

- **Electronic Portfolio**
  - Multiple: Learning, Assessment, Employment
- **Assessment Management System**
  - Single: Assessment

Data Structure

- **Electronic Portfolio**
  - Data structure varies with the tools used to create the portfolio; most often common data formats (documents often converted to HTML, PDF)
- **Assessment Management System**
  - Most often uses a relational database to record, report data

Primary Type of Data

- **Electronic Portfolio**
  - Qualitative
- **Assessment Management System**
  - Quantitative and Qualitative

Data Storage

- **Electonic Portfolio**
  - Multiple options: CD-ROM, videotape, DVD, WWW server, LAN
- **Assessment Management System**
  - LAN or secure WWW server
  - Digital Divide Issues
**Technology Skills Required**

- **Electronic Portfolio**
  - Medium → High
  - More advanced skills: information design through hyper linking, digital publishing strategies, file management

- **Assessment Management System**
  - Low → Medium
  - Minimal skills, equivalent to using a web browser and adding attachments to an e-mail message

**Technology Skills Demonstrated**

- **Electronic Portfolio**
  - Medium → High
  - Depending on tools used to create portfolio

- **Assessment Management System**
  - Low → Medium
  - Depending on the sophistication of the artifacts added to the portfolio

**Selection of Contents**

- **Electronic Portfolio**
  - Artifacts selected by portfolio developer

- **Assessment Management System**
  - Artifacts prescribed by institution

*Free choice is difficult to aggregate*

**Control of Design & Links**

- **Electronic Portfolio**
  - Artifacts under control of portfolio developer

- **Assessment Management System**
  - Artifacts controlled by database structure

*Hyperlinking reinforces metacognition*

*Design=Individuality*

**Locus of Control**

- **Electronic Portfolio**
  - Student-Centered

- **Assessment Management System**
  - Institution-Centered

**Electronic Portfolio or Assessment Management System?**
Further issues with Portfolios and Accountability Systems

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 perversion than all other forms of assessment have been?”
5. "misrepresentation" - does "best work" misrepresent “typical work” -- not a true picture of competency

Lee Shulman’s 5 benefits of portfolios

1. tracking and documentation of longer episodes of teaching and learning
2. encourage the reconnection between process and product.
   - very best teaching portfolios consist predominantly of student portfolios” & highlight the results of teaching that lead to student learning.
3. institutionalize norms of collaboration, reflection, and discussion
4. a portable residency... introduces structure to the field experience
5. (most important) shifts the agency from an observer back to the teacher interns...

My questions

- Will ePortfolios become another tool by educational organizations for mechanistic forms of high-stakes summative assessment?
- Or will educators recognize that ePortfolios are the best way to recognize and showcase learning in highly complex self-organizing human systems

More questions

- How can we preserve the “soul” of the portfolio while still collecting the assessment data we are required to collect?
- How can we avoid Lucas’ Cautions and Shulman’s Dangers
- What does the literature on Assessment say?
Purpose of Educational Assessment

“Educational Assessment seeks to determine how well students are learning and is an integrated part of the quest for improved education. It provides feedback to students, educators, parents, policy makers, and the public about the effectiveness of educational services.” (p.1)

Factors that are improving assessment

- Advances in cognitive sciences
  - Broadened concept of what is important to assess
- Advances in measurement sciences
  - Expanded capability to interpret more complex forms of evidence

Multiple Measures

- One type of assessment does not fit all
- A single assessment is often used for multiple purposes

Problem:

- “...the more purposes a single assessment aims to serve, the more each purpose will be compromised.” p.2

Assessment ...

- Is always a process of reasoning from evidence
- Is imprecise to some degree
- Results are only estimates of what a person knows and can do
Every Assessment Rests on Three Pillars

- Model of how students represent knowledge and develop competence in a content domain
- Tasks or situations that allow one to observe students’ performance
- An interpretation method for drawing inferences from performance evidence

Assessment Triangle

<table>
<thead>
<tr>
<th>Observation</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognition</td>
<td></td>
</tr>
</tbody>
</table>

3 elements must be explicitly connected and designed as a coordinated whole

We need a richer and more coherent set of assessment practices

- Assessment design should always be…
  - Based on a model of student learning
  - Well designed and tested
  - Clear sense of the inferences about student competence
  - For the particular context of use

Implications for assessment practice in the classroom

- Integral part of instruction
- Information about qualities of work
- Students understand learning goals and landmark performances
- Based on cognitive science

Think Through Assessment Systematically

- Needs to be
  - Comprehensive
  - Coherent
  - Continuous
- Shift emphasis back into classroom where learning occurs
Assessment as Celebration

- Celebrating the successes of what we’ve learned through assessment
- Done through documentation
- Students take charge of their own learning

Assessment should...

- Be based on modern knowledge of cognition and its measurement
- Be integrated with curriculum and instruction
- Inform as well as improve student achievement

“The promise of these new kinds of assessments remains largely unfulfilled, but technology should substantially change this situation.” p.261

New Information Technologies...

- Can advance the design of assessments:
  - Bring greater efficiency
  - Timeliness
  - Immediately adapt items based on performance
  - Analyze, score, report assessment data
  - Allow learners to be assessed at different times and in distant locations
  - Enliven assessment tasks with multimedia
  - Add interactivity to the assessment task

A significant contribution of Technology...

- To design systems for implementing sophisticated classroom-based formative assessment
- Assessment embedded in instruction
- Holds great promise for enhancing educational assessment at multiple levels of practice
- Raises issues of utility, practicality, cost, and privacy.

How do we create an Institution-Centered Assessment and Accountability System...

Without losing the power of the portfolio as a student-centered tool for lifelong learning and professional development?

How do we maintain the authenticity of the portfolio process...

And help our teacher candidates develop the skills and attitudes necessary to implement this strategy with their own students once they have their own classrooms? Modeling!
Accountability System (based on Assessment Triangle)

- Congruent with Conceptual Framework
- Feedback Loop for Continuous Improvement
- Tasks, Rubrics, and Record of Achievement
- Analysis and Reporting System

Congruence with Conceptual Framework

- Create a system that is congruent with your underlying learning philosophy or conceptual framework
  - behaviorism vs. constructivism
  - positivism vs. hermeneutics
  - portfolio as test vs. portfolio as story

Tasks, Rubric, Record of Achievement

- Identify tasks or situations that allow one to observe students’ performance...
- Create rubrics that clearly differentiate performance (3 or 4 levels only)
- Create a recordkeeping system to keep track of the rubric/evaluation data
  - based on multiple measures/methods

Reporting System and Feedback Loop

- Create a reporting process
  - to summarize assessment data
  - to be able to draw inferences from performance evidence
  - to use for program improvement

Contrasting Paradigms of Portfolios

- Positivism
- Constructivism


"Assessing Portfolios Using the Constructivist Paradigm"
in Fogarty, R. (ed.) (1996) Student Portfolios
Palatine: IRI Skylight Training & Publishing

Positivist Portfolios

"The purpose of the portfolio is to assess learning outcomes and those outcomes are, generally, defined externally. Positivism assumes that meaning is constant across users, contexts, and purposes... The portfolio is a receptacle for examples of student work used to infer what and how much learning has occurred."


"Assessing Portfolios Using the Constructivist Paradigm"
in Fogarty, R. (ed.) (1996) Student Portfolios
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**Constructivist Portfolios**

“The portfolio is a learning environment in which the learner constructs meaning. It assumes that meaning varies across individuals, over time, and with purpose. The portfolio presents process, a record of the processes associated with learning itself; a summation of individual portfolios would be too complex for normative description.”


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**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.”


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**Tension between two approaches**

“It is important to recognize the dangers of the portfolio process— the possibilities for trivialization as well as mindless standardization.”

(p.5)


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**How can we address both types of portfolios?**

- Use two different systems that electronically talk to each other:
  - A student-centered electronic portfolio
  - An institution-centered database to collect faculty-generated assessment data based on tasks and rubrics

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**Why?**

- Learner Ownership and Engagement with Portfolio
- Emotional Connection
- Portfolio as Story
- Portfolio as Lifelong Learning/Professional Development Tool

Constructivist model supports deep learning

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**Deep Learning**

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

**Who?**

Who has successfully kept these two strategies separate, but connected?

- Baylor University College of Ed
- University of Denver (campus-wide)
- Ball State University College of Ed

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**University of Denver**  
http://portfolio.du.edu

**DUPC Portfolio Component**  
(from DU Syllabus Conference Presentation)

- User-centric
  - Easy to set up and maintain
  - Portfolio owner controls & manages the content and how the content is shared

- Community capabilities
  - Expands communication beyond individual courses
  - Invites participation by people from outside of DU

Complies with FERPA and with DU’s privacy & intellectual property guidelines

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**DUPC Assessment Component**  
(from DU Syllabus Conference Presentation)

- Supports online assessment of student work
- Contains a rubric library and rubric builder
- Provides powerful reporting tools
- Allows for extensive assessment management functionality
- Is secure and separate from portfolio component

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**Ball State University**

Student-created web-based portfolio PLUS
What next?

Research!

Setting a Research Agenda

- Need for more data collection and longitudinal research on the perceptions of teacher candidates and faculty on the value and purpose of electronic portfolios
- Do the benefits extend to the classroom and enhance K-12 student learning?
- Is the extra effort worthwhile?

Need to Share Evaluation Strategies

- The time is right to move beyond implementation issues to research and evaluation
- What are your research questions?
- Can we collaborate and share evaluation instruments?

Activity Theory

Implications for human-computer interaction

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My Final Wish…

May all your electronic portfolios become dynamic celebrations of learning across the lifespan.
Contrasting Assessment Management Systems with Electronic Portfolios

**Positivist Paradigm of Evaluation and Making Inferences**

"Portfolio as Test"

**Institution-centered data collection for accreditation and evaluation**

Assessment Management System
(data management system for single purpose)

Focus on Near-Term Evaluation

External Locus of Control

Data recorded for accreditation and high stakes decision-making

Performance Tasks & Rubrics for evaluation

**Traditional & Performance Assessment**

Institution-centered data collection for accreditation and evaluation

**Focus on Lifelong Self-Directed Learning**

Balanced Assessment System

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

**Constructivist Paradigm of Assessment and Making Meaning**

"Portfolio as Story"

**Digital Archive of Learner Artifacts (Working Portfolio)**

Learner COLLECTS artifacts from learning experiences

Evidence = + Validation + Reflection + Artifacts

Reflection on Learning

Learner SELECTS artifacts and reflections to meet specific purpose(s)

Evidence = Balanced Assessment System

Learner

Student-centered documentation of deep learning

Self-Assessment

Internal Locus of Control

Learning Experiences embedded in curriculum

**Focus on Performance Assessment**

Performance Tasks & Rubrics for evaluation

Assessor EVALUATES required artifacts

External Locus of Control

Validating artifacts

Assessor

Institution-centered documentation of deep learning

Assessor evaluates + validation + reflection + artifacts

Electronic Portfolios
(presentation portfolios for multiple purposes)

Electronic Portfolio(s)

Electronic Portfolio(s)

Electronic Portfolio(s)