Setting the Stage

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ISTE’s 2001 PT3 Catalyst Grant

Objective # 5: Conduct at least one annual national Development Symposium on Using Technology to Support Assessment in Teacher Education in conjunction with a national or international technology conference such as SITE, ED-MEDIA or NECC

These Slides will be posted to:
http://electronicportfolios.org/pt3/

NCLB & NCATE 2000 = New Assessment Requirements

- No Child Left Behind Legislation (NCLB) and NCATE 2000 require a Culture of Evidence
- E2T2: how to effectively assess teacher and student technology competency and the impact on student learning.
- Assessing NETS-T and NETS-S

ISTE’s 2nd Annual Assessment and Technology Forum

- Focus on standards-based assessment
- We will examine:
  - 1) strategies for using technology to promote data-driven decision-making
  - 2) methods for assessing achievement of technology standards and integration into the curriculum

Participants will:

- learn about using both traditional and alternative assessment to provide authentic evidence of student learning and teacher integration of technology, within the current emphasis on scientifically-based research

Participants will…

- gain a better understanding of the diverse tools and strategies (i.e., e-portfolios, performance assessments, surveys and classroom observation instruments) that produce evidence of learning to support the culture of evidence required by both NCATE and NCLB
Participants will…

- receive a copy of ISTE’s new book, *NETS for Teachers: Resources for Assessment*

**Bridging traditional and alternative assessment**

- to provide authentic evidence of student learning or teacher integration of technology, within the current emphasis of scientifically-based research.
- present multiple perspectives on technology, showcasing various ways to support standards based assessment using technology

**K-12 Teachers**

- discover how to provide performance-based evidence of effectively integrating technology into instruction and assessment

**K-12 Administrators**

- will gain a better understanding of how to assess teachers' integration of technology

**University Faculty**

- will increase their knowledge of tools and methods to use in assessing teacher candidates' use and integration of technology
- producing performance-based evidence of successful teaching as well as student outcomes

**ALL participants**

- Will have a hands-on experience using technology to facilitate the assessment process
- Will model collecting performance-based data required in this new accountability environment
Types of Assessment

- Focus on three components:
  - Traditional Assessment
  - Performance Assessment
  - Portfolio Assessment

Key Points

“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)

Resource on Assessment

- The Science and Design of Educational Assessment
- Published by National Academies Press
- Edited by James Pellegrino, Naomi Chudowsky, and Robert Glaser
- http://www.nap.edu

Key Points

- 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
**Key Points**

- One type of assessment does not fit all.
- A single assessment is often used for multiple purposes.
- “…the more purposes a single assessment aims to serve, the more each purpose will be compromised.” p.2

**Effective Teaching with Technology Assessment**

Models of Successful Assessment
Developed at the State Educational Technology Directors Association (SETDA)
National Leadership Institute (NLI) on Evaluation
December 2002

**Framework for Assessing Effective Teaching with Technology**

*Screenshot of a flowchart showing assessment components.*

**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

- **Observation**
- **Interpretation**
- **Cognition**

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

### How People Learn (1999)

- Technology can be used to help teachers understand student thinking and provide meaningful, timely feedback.

### Three Dimensions of Educational Assessment

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Focus</th>
<th>Scope of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving learning</td>
<td>Learning act</td>
<td>Nation</td>
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<tr>
<td>Informing instruction</td>
<td>Instructional module</td>
<td>State</td>
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<tr>
<td>Placement</td>
<td>Course</td>
<td>Project/program</td>
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<td>Promotion</td>
<td>Competencies or achievement</td>
<td>District</td>
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<td>Accountability</td>
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<td>School/grade</td>
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<td>Research &amp; evaluation</td>
<td></td>
<td>Class</td>
</tr>
<tr>
<td>Grading</td>
<td></td>
<td>Individual</td>
</tr>
</tbody>
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### Assessment Design Principles

- 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 as a System

- 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

A Focus on Student Learning in new Teaching Standards

- An excerpt from the Washington state Professional Certification Standards

Washington TQ Assessment

- Students use Reflection and Goal Setting
  - Students review records of their learning progress to identify specific needs for growth.
  - Students regularly use their work to examine and reflect on their achievement of content goals.
  - They set individual goals and outline the steps required to reach those goals.
  - Students keep an articulation of their reflection with the collection of their work.
  - Students are regularly guided through strategies to monitor, evaluate, and self-regulate their process of learning and express it verbally and in writing.
  - Students can articulate what worked, what did not, and what they need to do differently next time.
Questions to ask…
- How do you know?
- What evidence do you have?
- Where is the data?

How does Technology fit?
- Everywhere!
- Ease the process of:
  - Data Collection
  - Organization
  - Interpretation
  - Presentation

Our Assessment & Technology Forum Program
- Gallery Walk this morning
  - Look at examples of using technology to support assessment
  - Collect data using Palms that will be “beamed” to base stations
- Breakout Sessions this afternoon
  - Opportunities to discuss issues in more depth
  - Give us feedback on the sessions
- Closing Session this afternoon
  - Sharing from Breakout Sessions
  - Final feedback

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

Grant Wiggins
- The move toward more authentic assessment is under way and will accelerate
**The Bottom Line:**
- Improved Student Performance
- Improved Student Attitude toward Learning

**An Authentic Test**
- A test the student wants to take
- A challenge worth taking from the students’ point of view

**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.

**Technology to help assess problem solving**
“Technology is making it possible to assess a much wider range of important cognitive competencies than was previously possible. Computer-enhanced assessments can aid in the assessment of problem-solving skills by presenting complex, realistic, open-ended problems and simultaneously collecting evidence about how people go about solving them.” p. 266

**Technology-Enhanced Learning Environments with embedded assessment**
- Integrates formative and summative assessment
- Gives instant feedback to students
- Disseminate course materials
- Maintain individual student records

TI Navigator

**U. Minn., VT, IMMEX, Vanderbilt**
Assessment for Learning Continuum

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


Assessment for Learning Continuum - Enhanced

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

Technology to Support: Self-Assessment
- Individual or Organization
- Weblogs
- Reflective journals
- Online discussions
- Profiler
- Other Self-report surveys

Technology to Support: Rubric Development
- RubiStar
  http://rubistar.4teachers.org/
- TaskStream
  http://www.taskstream.com

Technology to Support: Portfolio Development
- Generic Tools
- Customized Systems

California Lutheran, University of Florida, Johns Hopkins, MNSCU, OSPI, U. Missouri
+ 3 breakout sessions
**Assessment Management Systems or e-Portfolios?**

- **Electronic Portfolios**
  - Student-centered
  - Diversity of tools and storage media
  - Requires and demonstrates higher technology skills
  - Multiple purposes

- **Online Assessment Management Systems**
  - Institution-centered
  - Primarily online database
  - Requires and demonstrates lower technology skills
  - Single purpose

More details in Barrett/Carney Breakout session

**Electronic Portfolio or Assessment Management System?**

- **Electronic Portfolios**
- **Assessment Management Systems**

**Technology to Support: Performance Assessment**

- Creating rich problem-solving environments
- Assessed by computer or human observers
- Video clips to document performance
- Online Writing Assessment

**Technology to Support: Observation Assessment**

- Support observation of students or teachers
- Learner Profile
- PDAs

*Wireless Generation, Johns Hopkins Teacher Compass, + 2 breakout sessions + use of Palms*

**Technology to Support: Testing**

- Online traditional testing (multiple choice)
- Online performance assessment (simulations)

*Riverside Publishing, IC3, Cisco + 1 breakout session*

**One final thought about the day ahead…**

- Assessment for Learning
- Learning for Assessment
- Your active engagement is critical!
Resource on Biology of Learning

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

Experiential Learning Model

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

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)

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Self-Report Assessment Instruments

- Doug Daniell, Research and Evaluation, ISTE

Breakout Sessions
Aligning ISTE NETS with Your States' Standards and University Courses: Florida Accomplished Practices and NTSC -
- Gail Ring, University of Florida
- Helen Padgett, Arizona State University West

Using Digital Portfolios for School Change*
- David Niguidula, IDEAS Consulting
- Hilarie Davis, Technology for Learning Consortium

Note change in title from agenda—the yellow sheet is correct.

E-Portfolios: Decisions and Dilemmas
- Helen Barrett, University of Alaska Anchorage
- Joanne Carney, Western Washington University

PDAs and Bluefish - Analyzing the Data -
- Stacey Warner, Rockman, et al
- Randy Hansen, Johns Hopkins University
- James Fisher, Bluefish

Creating Valid Performance Assessments
- Liz Neal, Maryland
- Chris Mattia, St. Mary's College of Maryland
- Amy Keefe, St. Mary's College of Maryland
- Yi-Ping Huang, University of Maryland, Baltimore County

Classroom Observation Assessment Tools
- Doug Daniell, ISTE
- Helen Padgett, ASU West
Getting Their Hands Dirty: Moving Electronic Portfolios from Pre-Service Education to the K–12 Classroom

Mike Searson, Kean University

NETS Resources for Assessment: In-depth Look

Peggy Kelly, California State University San Marcos
Helen Barrett, University of Alaska Anchorage