

# Optimizing Integrative Learning by Connecting Curriculum and Performance Assessment

**NC State University Undergraduate  
Assessment Symposium  
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# Integrative Learning

Our aspiration is for students to integrate—to continually make connections and create new wholes out of multiple—parts between knowledge and skills in the subject areas, for example.



# Learning That Lasts is Integrative

The learner begins to integrate, to continually make connections and create new wholes out of multiple parts: his or her knowledge and ability/skill, individual abilities/skills needed in a given situation, and abilities/skills and the situation or context. Students learn to integrate knowing and doing by performing in class and off-campus. They *do what they know* in performance assessments that reflect the world they live in...

Mentkowski, M., & Associates. (2000). *Learning that lasts: Integrating learning, development, and performance in college and beyond* (p. 227). San Francisco: Jossey-Bass.



# Performance is the integration of knowing and doing— in class and off campus

To think of learning as performance is often to think in terms of acting out, or applying, what is learned. This misdirects. Performance is a kind of learning in which a student is actively engaged and involved, whether it be in creating a painting, solving an experimental design problem, or developing a public relations strategy for a business.



# Definition of Complex Performance

*Multidimensional performance* entails the whole dynamic nexus of the individual's intentions, thoughts, feelings, and construals in a dynamic line of action and his or her entanglement in an evolving situation and its broader context. Such a context may be within or across work, family, civic, or other settings (Rogers, Mentkowski, & Reisetter Hart, 2006, p. 498).



# Performance Assessments

## Embedded in Courses

- Performance assessments are part of the student's everyday coursework
- They primarily serve individual student learning (fostering, certifying)

## Embedded in Curriculum

- Performance assessments are also used for studying patterns of student performance (e.g., in capstone courses; in external assessments within and across the disciplines/professions)



# Innovation and Inquiry (IISL) Consortium of 2-Year Colleges

Alverno College (coordinator)  
Anne Arundel Community College  
Bellevue College  
Butler Community College  
Cascadia Community College  
Central Piedmont Community College  
Chippewa Valley Technical College  
Clark College  
College of the Menominee Nation  
Columbus State Community College  
Dallas County Community College District  
Durham Technical Community College  
Edison College  
Edmonds Community College  
Flathead Valley Community College  
Gateway Technical College  
Georgia Highlands College  
Georgia Perimeter College  
Heartland Community College  
Hocking College  
Inver Hills Community College  
Isothermal Community College

**43 Institutions, 97 Participants**  
<http://iisl.alverno.edu>

LaGuardia Community College  
Lake Washington Technical College  
Lorain County Community College  
Madison Area Technical College  
McHenry County College  
Middlesex Community College  
Milwaukee Area Technical College  
Minneapolis Community and Technical College  
Mt. San Antonio College  
Olympic Community College  
Peninsula College  
Pierce College  
Prairie State College  
Quinebaug Valley Community College  
Sinclair Community College  
Skagit Valley College  
St. Philip's College  
Tarrant County College District  
Tunxis Community College  
Valencia Community College  
Waukesha County Technical College  
Wisconsin Indianhead Technical College

**2006-2010**



# Examples from a Consortium of 2-Year Colleges Engaged in Collaborative Inquiry

- Faculty rely on integrative learning from beginning learners and model it themselves—they help students connect previous learning to new learning in the classroom





# Consortia for Collaborative Inquiry

- engagement in **inquiry** by faculty and other academic personnel
- laced with **examples, evidence,** and citation
- documented **discovery** of what they learned and how they learned it
- **peer review** within consortia across diverse institutions and professions

# UK Assessment Project Network

- Assessment Plus
  - Gloucestershire Business School
  - Northumbria University
  - Open University
  - Oxford Brookes University
  - Queen's University Belfast
  - Sheffield Hallam University
  - Southampton Solent University
  - University College London
  - University of Exeter
  - University of Luton
  - University of Newcastle
  - University of Nottingham
  - University of Oxford
  - University of Plymouth
  - University of Strathclyde
  - University of York
- 
- Alverno College, US
  - University of Technology, Sydney Australia

**43 contributors from 19 institutions**



# Insights from the UK Assessment Project Network

Collaborative inquiry by diverse disciplines and institutions yields innovative practices in curriculum and assessment.

Bryan, C., & Clegg, K. (Eds.). (2006). *Innovative assessment in higher education*. London, UK: Taylor & Francis.

# Student Learning Initiative

- Alverno College
- Avila College
- Birmingham-Southern College
- Bowling Green State University
- California State University, Fullerton
- California State University, Monterey Bay
- Central Missouri State University
- Clayton College and State University
- DePaul University School for New Learning
- Fort Valley State University
- Huston-Tillotson College
- Indiana University of Pennsylvania
- Indiana University Purdue University, Indianapolis
- James Madison University
- Niagara University
- North Carolina State University
- Olivet College
- Rivier College
- Rose-Hulman Institute of Technology
- Samford University
- Seton Hill College
- State University of New York College at Fredonia
- Truman State University
- University of Alaska Southeast
- University of Washington
- University of Wisconsin-La Crosse

**71 participants from 26 institutions**

# Characteristics of Learning-Centered Institutions: A Framework

- **Achieving clarity about learning outcomes**
- **Coordinating teaching and assessment to promote student learning**
- **Aligning structures and resources to serve student learning**
- **Working continuously to improve the environment for learning**

## **Student Learning Initiative**

(Student Learning Initiative, 2002, p. 3)



# Insights from the Student Learning Initiative

- When learning outcomes are integral to the degree, they make a significant difference in student learning.
- So assessments should require students to integrate knowledge and skill in their disciplines/professions.

**26 institutions**

**Student Learning Initiative**

(Student Learning Initiative, 2002, p. 3)



# Insights from the Student Learning Initiative

Performance assessments embedded in the curriculum encourage collaborative inquiry by faculty about how students integrate knowledge (biology, management) and abilities/skills (communication, problem solving). Later, these students can integrate a range of learning outcomes and gradually transfer them across the curriculum and co-curriculum.

**26 institutions**

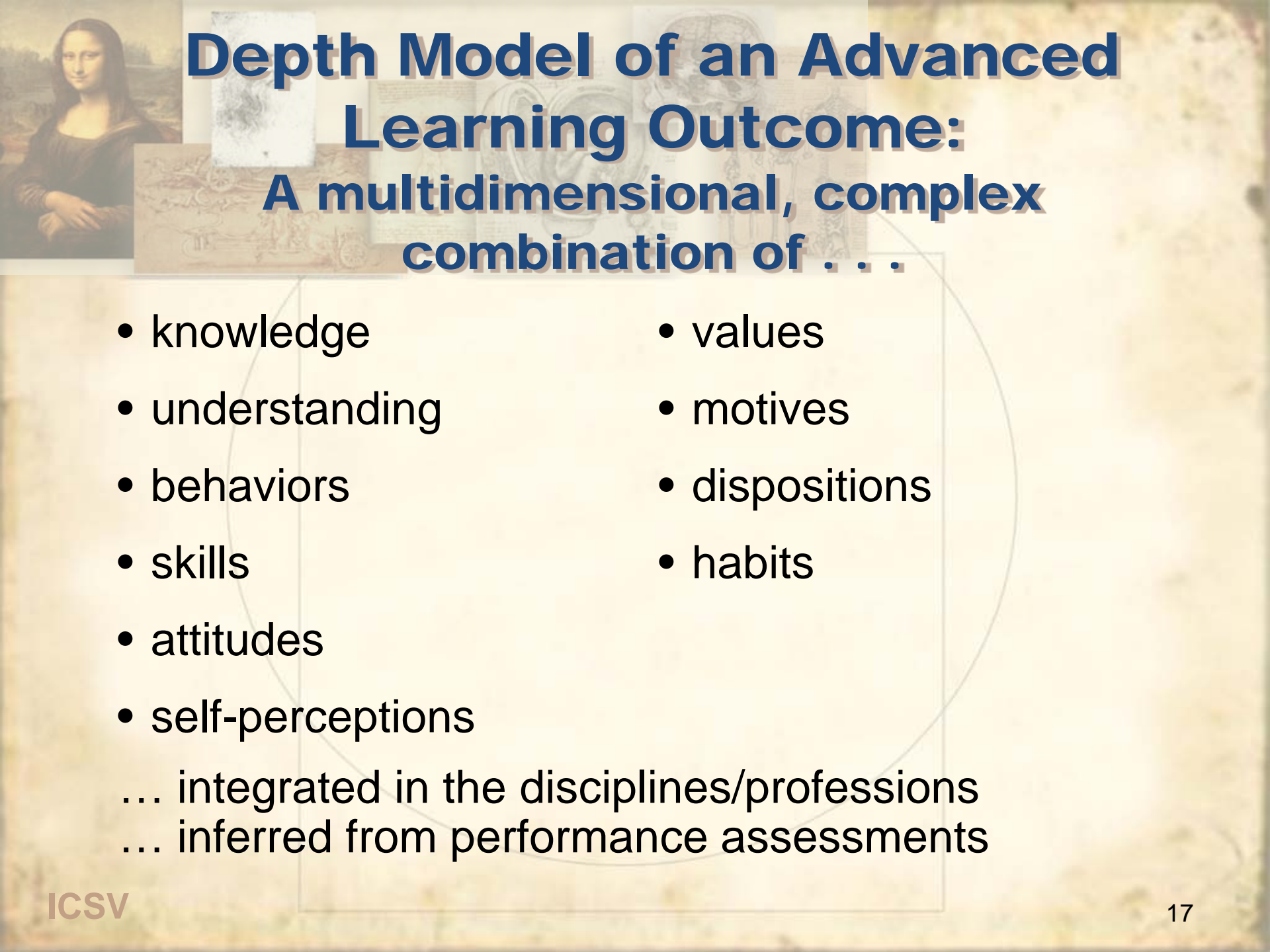
**Student Learning Initiative**

(Student Learning Initiative, 2002, p. 3)

# Alverno's Eight Curriculum Abilities Integrated with the Disciplines/Professions

- **Communication**
- **Analysis**
- Problem Solving
- Valuing in Decision-Making
- Social Interaction
- Developing a Global Perspective
- Effective Citizenship
- Aesthetic Engagement



The background of the slide features a collage of images. On the left is the Mona Lisa. In the center and right are various anatomical diagrams, including a human skull and a detailed view of a brain or organ. The text is overlaid on this background.

# Depth Model of an Advanced Learning Outcome:

A multidimensional, complex combination of . . .

- knowledge
- understanding
- behaviors
- skills
- attitudes
- self-perceptions
- values
- motives
- dispositions
- habits

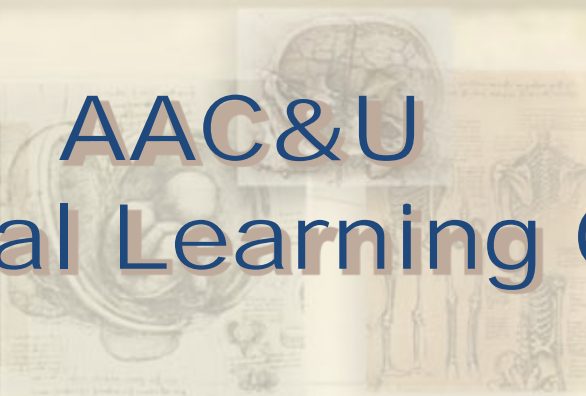
... integrated in the disciplines/professions

... inferred from performance assessments



# Why integrative learning?

- Faculty rely on integrative learning from beginning learners and model it themselves—they help students connect previous learning to new learning in the classroom
- **Integrative learning is at the heart of applied learning**



# AAC&U The Essential Learning Outcomes

- **Knowledge of Human Cultures and the Physical and Natural World**
- **Intellectual and Practical Skills**
- **Personal and Social Responsibility**
- **Integrative and Applied Learning**

[www.aacu.org](http://www.aacu.org)



# Integrative Learning

- **Integrative and Applied Learning, Including**

- Synthesis and advanced accomplishment across general and specialized studies

*Demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems*



## AAC&U

# The Essential Learning Outcomes

- **Knowledge of Human Cultures and the Physical and Natural World**
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# Why integrative learning?

- Faculty rely on integrative learning from beginning learners and model it themselves—they help students connect previous learning to new learning in the classroom
- Integrative learning is at the heart of applied learning
- **Sophisticated integration of knowledge, skills, and responsibilities is best assessed in complex performance that calls for transfer of learning outcomes across time and settings**



# Learning That Lasts is Situated and Transferable

- Learning is most secure when it is situated in the context of its ultimate use. Internships, mentorships, and apprenticeships embody situational dynamics that become concrete resources for learners...students develop an integrated sense of themselves as learners and performers who shape and reshape “what they do with what they know” as situations change.<sup>1</sup>

<sup>1</sup>Mentkowski & Associates, 2000, p. 242



# Learning That Lasts is Situated and Transferable (cont.)

- Students ground their performances in a particular context, and begin to construct and interpret their roles across various situations. Thus, they begin to connect disciplinary learning to real-world performing. Through learning experiences and performance assessments across settings, students learn to transfer college learning from one context to another.<sup>1</sup>

<sup>1</sup>Mentkowski & Associates, 2000, p. 243





# AAC&U VALUE Project<sup>1</sup>

## Valid Assessment of Learning in Undergraduate Education

### **Some campuses with e-portfolios:**

- **Alverno College**
- **Bowling Green State University**
- **City University of New York – LaGuardia Community College**
- **College of San Mateo**
- **George Mason University**
- **Kapi'olani Community College**
- **Portland State University**
- **Rose-Hulman Institute of Technology**
- **San Francisco State University**
- **Spelman College**
- **St. Olaf College**
- **University of Michigan**

<sup>1</sup> <http://www.aacu.org/value/>



# Integrative Learning Rubric Criterion for Assessing Transfer<sup>1</sup>

Levels:

1. **Connects** familiar frameworks to new situations
2. **Applies** familiar frameworks to new situations
3. **Synthesizes** familiar frameworks into new uses
4. **Adapts** familiar frameworks for new uses

<sup>1</sup> AAC&U VALUE Project, Criterion for Integrative Learning, Integrative Learning Workgroup, 12/08



# Integration and Transfer<sup>1</sup>

## 1. Connects

Makes connections between what was learned in the first biology course and new learning in the second biology course.

## 2. Applies

Uses concepts and skills developed in a local project to reframe a related global problem.

<sup>1</sup> Mentkowski, M. (2009, April). *Optimizing integrative learning by connecting curriculum and performance assessment*. Plenary speech at the North Carolina State University Undergraduate Assessment Symposium, Cary.



# Integration and Transfer<sup>1</sup> (cont.)

## 3. Synthesizes

Synthesizes and develops historical, scientific, or artistic concepts by thinking with them and interacting with them in specific situations.

## 4. Adapts

Reframes one hypothesis from studying various topics across previous science courses to form several creative, testable hypotheses in an unscripted setting.

<sup>1</sup> Mentkowski, M. (2009, April). *Optimizing integrative learning by connecting curriculum and performance assessment*. Plenary speech at the North Carolina State University Undergraduate Assessment Symposium, Cary.



## A Student Example

An English literature student: “By the time we studied *Othello*, I feel I was able to demonstrate how a text shapes my expectations and interpretations as a reader. **I found myself using my prior knowledge of Shakespeare’s use of language, tone, irony, foreshadowing;** and passages I was marking followed a common theme.”

Alverno College Faculty. (2000). *Self assessment at Alverno College*. (G. Loacker, Ed.). Milwaukee, WI: Alverno College Institute.



# A Student Example

A psychology student: “This project showed me two important things for future academic work. The first was, it taught me how to make connections where there aren’t any.

**I made connections from animal-assisted therapy and developmental theories on my own.** I wasn’t very confident in my ability to do this and I think this was apparent...”

Alverno College Faculty. (2000). *Self assessment at Alverno College*. (G. Locker, Ed.). Milwaukee, WI: Alverno College Institute.



## A Student Example

A chemistry student: “I learned that chemistry requires a higher proportion of analysis than of performing the actual procedure in the laboratory. I saw that even when a protocol is followed completely, results do not occur as expected. Therefore, analysis is needed when the protocol accomplishes the desired results. **This is so the actual mechanisms are learned and can be applied to future use.”**

Alverno College Faculty. (2000). *Self assessment at Alverno College*. (G. Loacker, Ed.). Milwaukee, WI: Alverno College Institute.



# Benefits of Assessing “Complex Performance”

- Students can transfer learning when it is embedded in multiple performance contexts and when they use self assessment to abstract their abilities beyond the performance.
- Examples of performance provide an opportunity for diverse groups to have a conversation about actual and desired student and alumni outcomes.





# Learning Outcomes Linked to Student-Attributed Causes

- instructor affirmation and empathy, feedback, self assessment → • taking responsibility for learning
- experiential validation, instructor coaching, professional application, integration of abilities → • making relationships among abilities/skills and their use
- practice, feedback, modeling, peer learning → • using different ways of learning

These students gradually learn to define abilities as an integration of knowledge, skills, attitudes, motives, and dispositions



# Exercise in Creating Meaning: Collaborative Inquiry with Colleagues

1. How do I know my students are improving/optimizing their integrative and applied learning?
  - at the course level for individual students
  - OR
  - at the level of the department for students as a whole



# Exercise in Creating Meaning: Inquiry with Colleagues on Your Campus

1. What has our department been doing in the last few years to improve/optimize integrative student learning?

Suggestion: Choose an example where we are clear about learning goals:

- at the course level for individual students

OR

- at the level of the department for students as a whole



# Academics Engaging in Collaborative Inquiry that Leads to Connecting Curriculum and Assessment

- Communicate and analyze educational values, beliefs, and assumptions about education, learning, inquiry, and assessment.



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- Communicate and analyze educational values, beliefs, and assumptions about education, learning, inquiry, and assessment.
- **Use a language of learning and assessment in free, frank, and fair discussion.**





# Academics Engaging in Collaborative Inquiry that Leads to Connecting Curriculum and Assessment

- Communicate and analyze educational values, beliefs, and assumptions about education, learning, inquiry, and assessment.
- Use a language of learning and assessment in free, frank, and fair discussion.
- **Engage in peer review with constructive feedback in a culture of inquiry.**

# Five kinds of language likely to emerge in conversation

- context-specific language of learning and assessment to discuss observed student learning across the majors
- terms and methods that reflect different modes of inquiry
- disciplinary and role language that have different meanings
- more abstract language in education as a discipline
- what other academic personnel know about learning and assessment



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\*

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