Assessing Student Learning

Veronica G. Thomas, Ph.D.
Department of Human Development and Psychoeducational Studies

March 22, 2006
Objectives of Presentation

• To discuss the importance of assessing student learning

• To examine the relationship between learning outcomes and assessment strategies

• To examine steps in the assessment process

• To highlight specific tools for assessing student learning
Two Fundamental Questions Framing Higher Educational Reform Efforts

• How well are students learning?

• How effectively are university faculty teaching?
Fuel for current emphasis on student learning assessment

- Perceived mismatch between what society needs and gets from the higher education system
- Accountability movement
- Scholarship on learning and new conceptions of knowledge
- Shift from “instruction” paradigm to “learning” paradigm
University faculty must be

- discipline experts
- effective communicators
- skilled assessment practitioners
The good news!

Classroom assessment does not require specialized training.
Before focusing on assessment, we need to:

first, draw our attention to learning
What Does Learning Mean To You?

- Achieving quantitative increases in knowledge
- Memorizing
- Using facts and skills
- Making sense/abstracting meaning
- Understanding reality in a different way
So, broadly speaking what is assessment?

The systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development.
Assessment and Higher Education: The Big Picture in Higher Education

- To guide improvement in classroom instruction
- To enhance the overall curriculum
- To provide student feedback
- To challenge students to take ownership of their own learning
- To push students toward deeper learning
Levels of Student Assessment

Institution

School/College Level

Department/Program Level

Classroom

School/College Level

Department/Program Level

Classroom

School/College Level

Department/Program Level

Classroom

School/College Level

Department/Program Level

Classroom

School/College Level

Department/Program Level

Classroom
Classroom Assessments

- Approaches designed to help faculty find out what students are learning in the classroom and how well they are learning.

- Can be done across three stages – baseline, formative, summative assessments.

- Viewed as purest form of assessment-for-improvement.
The Driving Questions

Faculty: How will we know what students know and are able to do at the end of the course?

Students: How will they know what they know and are able to do at the end of the course?

Faculty: How can we better help students to learn?
How we assess our students has a profound effect on...

- What they learn
- How they learn
Steps in the Assessment Processes (The Assessment Loop)

Step 1: Identify clear, valid, and appropriate student learning outcomes

Step 2: Collect evidence that outcomes are being achieved

Step 3: Analyze and interpret evidence

Step 4: Use data to document, explain, and improve performance
Step 1: Identify Explicit Learning Outcomes (The What)

- Establish specific behaviors that demonstrate student learning and skill development
- Set appropriate criteria and high standards
- Make expected outcomes explicit and public
Step 2: Collecting Evidence
(The How and When)

• Select appropriate assessment tools

• Decide timing of assessment activities
Best Assessment Method

• Methods that “fit the purpose”

• Methods that employ diverse strategies
Assessments Methods that Fit the Purpose Must Be:

• Appropriate to context
• Appropriate to students
• Appropriate to subject matter
<table>
<thead>
<tr>
<th>Bloom’s (1956)</th>
<th>Anderson &amp; Krathwohl (2001)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1: Knowledge</td>
<td>Level 1: Remembering</td>
</tr>
<tr>
<td>Level 2: Comprehension</td>
<td>Level 2: Understanding</td>
</tr>
<tr>
<td>Level 3: Application</td>
<td>Level 3: Applying</td>
</tr>
<tr>
<td>Level 4: Analysis</td>
<td>Level 4: Analyzing</td>
</tr>
<tr>
<td>Level 5: Synthesis</td>
<td>Level 5: Evaluating</td>
</tr>
<tr>
<td>Level 6: Evaluation</td>
<td>Level 6: Creating</td>
</tr>
</tbody>
</table>
Assessment Strategies Based Upon Bloom’s Taxonomy

**Knowledge**: assess recall of material (facts, terms, concepts, principles, theories)

**Comprehension**: assess ability to classify, interpret, compare and contrast, explain/restate

**Application**: assess problem solving and applying knowledge to new situations

**Analysis**: assess ability to identify the organization structure of something (differentiate, distinguish, discriminate); to identify parts, relationships, and organizing principles

**Synthesis**: assess to create something new; to formulate, invent, produce, design, compose, hypothesize

**Evaluation**: assess ability to appraise, judge, criticize, defend, compare
Typical Assessment Methods

Studies show that approximately 80% - 90% of university student assessments consist of essays, reports, and traditional time-constrained exams related to knowledge acquisition.
<table>
<thead>
<tr>
<th>Examples of Formative Assessment Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Minute Papers</td>
</tr>
<tr>
<td>• Muddiest Point</td>
</tr>
<tr>
<td>• Application Cards</td>
</tr>
<tr>
<td>• One Sentence Summary</td>
</tr>
<tr>
<td>• Word Journal</td>
</tr>
<tr>
<td>• What’s the Principle</td>
</tr>
<tr>
<td>• Empty Outlines</td>
</tr>
<tr>
<td>• Analytic Memo</td>
</tr>
<tr>
<td>• Focused Listening</td>
</tr>
<tr>
<td>• Directed Paraphrasing</td>
</tr>
<tr>
<td>• Pro and Con Grid</td>
</tr>
<tr>
<td>• Concept Maps</td>
</tr>
</tbody>
</table>
### Examples of Summative Assessment Techniques

<table>
<thead>
<tr>
<th>Traditional</th>
<th>Nontraditional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple choice</td>
<td>Group exams</td>
</tr>
<tr>
<td>Matching</td>
<td>Paired testing</td>
</tr>
<tr>
<td>True-false (with justification)</td>
<td>Portfolios</td>
</tr>
<tr>
<td>Essay</td>
<td>Performance test</td>
</tr>
<tr>
<td>Short-answers</td>
<td></td>
</tr>
<tr>
<td>Problem sets</td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
</tr>
</tbody>
</table>
Step 3: Analyze and Interpret Evidence (The Meaning)

- Analyze and share results
- Make appropriate and fair inferences
- Is timely and detailed
- Is targeted to enhance learning
Step 4: Using assessment data

• To document performance
• To explain performance
• To improve performance
Assessment Best Practices

- Learner-centered
- Teacher-directed
- Mutually beneficial
- Formative
- Context specific
- Ongoing (and timely)
- Rooted in good practice
Now, your next step should be to ask yourself:

What information on student learning do you currently collect (e.g., first-day surveys, class assignments, tests, etc)?

How informative are each of these to understanding the student learning process?

How do these data sources relate to course objectives?

Are there gaps between the information that you collect and your course objectives?

What other information do you need to have to understand whether students are meeting course objectives?
A Few Assessment Resources

Online Resources


Books


