Assessment with a Proper Purpose

Principles of Design for Meaningful Assessment

El Camino College -- August 22, 2013
Presentation Outcomes

This presentation will enable participants to:

- Explain the perspectives of two distinct assessment cultures;
- Define, distinguish, and relate two types of learning outcome;
- Describe a research-oriented basis for assessment plans;
- **Use assessment data to diagnose potential program issues that hinder student learning;**
- Identify responses to assessment data that promote program improvement.
Two cultures: A contrast in approaches

Elements of Design
The Student Learning Assessment Cycle

1. Identify Assessments
2. Gather Results
3. Analyze Results
4. Strategize Program Improvement
5. Write Outcomes
6. Identify Assessments

This cycle iterates continuously, ensuring ongoing improvement and assessment of student learning.
Perception of the Assessment Cycle

- Identify Assessments
- Gather Results
- Format Reports
- Submit Reports
- Write Outcomes
- ACCREDITATION
The Culture of Compliance
Students become unimportant elements of the assessment process

- Sees accreditation as an end in itself
- Seeks information about what accreditors want to see
- Worries about whether what they have matches accreditors’ expectations
Another View of the Assessment Cycle

- Expectations for Learning
- Communicate Expectations to Students
- Collect Student Work
- Determine Extent of Learning
- Strategize Plans for Student Success

STUDENTS
The Culture of Intentionality

Students become the primary focus of the assessment process

- Seeks information about how well students are learning
- Accepts (some) responsibility for student learning
- Reflects on what we teach and how we teach it
- Experiments with new strategies for student success
The Core: Student Learning Outcomes

A student learning outcome...is...defined in terms of the particular levels of knowledge, skills and abilities that a student has attained at the end (or as a result) of his or her engagement in a particular set of collegiate experiences.

(Peter Ewell, 2001)
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Student Learning Outcomes: The Student Perspective

*Learning Outcomes* are goals that describe how a student will be different because of a learning experience. More specifically, learning outcomes are the knowledge, skills, attitudes, and habits of mind that students take with them from a learning experience.

(Linda Suskie, 2009).
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Intentionality & the SLO

Outcomes offer students goals:

- SLOs make explicit for students what will be expected of them so they know what to expect.
- Students are not required to intuit what learning is expected.
A Foundation for Assessment

Defining Student Learning Outcomes
Learning outcomes include three key components that ensure clear communication:

- **Audience**: to whom the SLO pertains
- **Behavior**: what the audience is expected to know or be able to do
- **Context**: circumstances under which learning will take place
An Outcome’s Components

Learning outcomes include three key components that ensure clear communication.

C
Upon completion of Physics 375, students
B
will apply the laws of thermodynamics to
solve relevant problems in physics.
Objects of Learning Outcomes

- **Content:** facts, concepts, principles/theories

- **Skills:**
  - **Cognitive:** information literacy, thinking strategies, computational skills
  - **Social:** communication skills, collaboration skills, initiative/leadership skills
  - **Aesthetic:** arts appreciation, proficiency in creative procedures, creativity

- **Values:** open-mindedness/love of knowledge, social responsibility, diligence/integrity,
Differentiating Outcome Types

Program Level Outcomes:

- Broadly inclusive statements that might be considered areas of competency within a given discipline
- General areas of competency within a GE program

Example 1: Content

Explain major psychological theories, concepts, testing and assessment strategies, research methodologies and therapeutic techniques, and their development over time.

Example 2: Skill

Apply basic research methods in psychology including research design, data analysis, and interpretation of findings, and, reporting of results both in written and oral forms that are in conformance with APA format.
Differentiating Outcome Types

Student Learning Outcomes:
Specific statements that identify student responses to learning experiences and thereby indicate what learning looks like within a discrete area of a program.

Example 1: Content
Identify basic research methods and ethical considerations in the study of behavior.

Example 2: Skill
Critique psychological studies and their study design, results, and the conclusions reached by the researchers involved.

Example 3: Skill
Analyze and compare the results of two different studies in the same area of psychology.
Differentiating Outcome Types

PLO: I

Apply basic research methods in psychology including research design, data analysis, and interpretation of findings, and, reporting of results both in written and oral forms that are in conformance with APA format.

SLO 1.1: Identify basic research methods and ethical considerations in the study of behavior.

SLO 1.2: Analyze and compare the results of two different studies in the same area of psychology.
SLO Pitfalls

Beware these frequent problems with outcomes statements to encourage stronger results.

- **Too many outcomes:** for every outcome there must be a means of measurement.
- **Too few outcomes:** avoid concealing other expected learning.
- **Wordy statements:** make students your target audience.
- **Procedural statements:** be aware of process-oriented constructions or assignment stipulations.
- **Un-measurable outcomes:** be conscious of assessment possibilities for each outcome.
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Features of Effective SLOs

Employ these strategies for writing strong outcomes statements that communicate clearly what students will know and be able to do.

- Focus on learning, not processes or assignments
- Avoid vague verbs (*know, understand, demonstrate*)
- Use action verbs (*Bloom’s taxonomy*)
- Use verbs that reflect the level of learning
- Ensure that outcomes are observable and measurable
Using the SLOs for Compliance

The Culture of Compliance
- Rarely communicates SLOs to students
- Files SLOs with the appropriate office
- Sticks with what has always been done
- Works on SLO assessment for an accreditation cycle

The Culture of Intentionality
- Makes SLOs visible to students
- Incorporates SLOs into faculty practice
- Assesses SLOs appropriately
- Uses SLOs for ongoing conversations about teaching effectiveness
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Assessment as Research

Principles of Meaningful Assessment
Assessment as Research

The Culture of Intentionality’s focus on student learning opens a clear approach to assessment.

1. What do we want students to know, understand, and be able to do?

2. Where do students learn what we expect them to learn?

3. How well did students learn what you expected them to learn there?

4. How do we know how well they learned what we expected them to learn there?
A Process of Questions

The Culture of Intentionality’s focus on student learning opens a clearer approach to assessment.

1. What do we want students to know, understand, and be able to do? (PLOs / SLOs)

2. Where do students learn what we expect them to learn?

3. How well did students learn what you expected them to learn?

4. How do we know how well they learned what we expected them to learn?
Where do they learn it?

PLO/SLO-Curriculum Map

<table>
<thead>
<tr>
<th>Utilize higher order thinking in applying basic research methods in psychology including research design, data analysis, and interpretation of findings, and, reporting of result both in written and oral forms that are in conformance with APA format.</th>
<th>PLO 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify basic research methods and ethical considerations in the study of behavior.</td>
<td>SLO 2.1</td>
</tr>
<tr>
<td>Analyze and compare the results of two different studies in the same area of psychology.</td>
<td>SLO 2.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>SLO 2.1</th>
<th>SLO 2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course 1</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Course 2</td>
<td></td>
<td>X X</td>
</tr>
<tr>
<td>Course 3</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Course 4</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Where do they learn it?

### Natural Sciences

**Institutional (ILO), Program (PLO), and Course (SLO) Alignment**

<table>
<thead>
<tr>
<th>Program: Environmental Horticulture</th>
<th>Number of Courses: 9</th>
<th>Date Updated 4.10.13</th>
<th>Submitted by T. James Noyes Ext 3356</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Institutional SLOs</th>
<th>I. Content Knowledge</th>
<th>II. Critical, Creative, and Analytical Thinking</th>
<th>III. Communication and Comprehension</th>
<th>IV. Professional and Personal Growth</th>
<th>V. Community and Collaboration</th>
<th>VI. Information and Technology Literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Rating</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Program Level SLOs

1. Upon completion of their study of course materials for the Environmental Horticulture Program, the successful student will be able to accurately identify a set of plant material, use that plant material in a landscape design, and prepare a maintenance schedule for the chosen plant materials.

<table>
<thead>
<tr>
<th>Program Level SLO</th>
<th>ILOs to PLOs Alignment (Rate 1-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
</tr>
<tr>
<td>1.</td>
<td>4</td>
</tr>
</tbody>
</table>

2. Upon completion of their study of course materials for the Environmental Horticulture Program, the successful student will be able to select plant material based on water requirements, growth habits and design requirements.

<table>
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<tr>
<th>Program Level SLO</th>
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<tr>
<td>2.</td>
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3. Upon completion of their study of course materials for the Environmental Horticulture Program, the successful student will be able to select plant materials for a given landscape that are pest and disease resistant, water conserving and benefit from a specific soil type.

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<thead>
<tr>
<th>Program Level SLO</th>
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<td></td>
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</table>

#### Course Level SLOs

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Course to Program SLO Alignment Mark with an X</th>
<th>ILOs to Course SLOs Alignment (Rate 1-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HORT 41 General Horticulture #1</td>
<td>The successful General Horticulture student will be able to demonstrate an understanding of several of the basic concepts of horticulture.</td>
<td>X X X</td>
<td>4 4 2 2 4 2</td>
</tr>
<tr>
<td>HORT 41 General Horticulture #2</td>
<td>The successful General Horticulture student will be able to demonstrate an understanding of the plant binomial nomenclature system.</td>
<td>X</td>
<td>4 4 2 2 4 2</td>
</tr>
<tr>
<td>HORT 41 General Horticulture #3</td>
<td>The successful General Horticulture student will be able to demonstrate an understanding of the typical terms used in conjunction with locations on typical trees and shrubs.</td>
<td>X</td>
<td>4 4 2 2 4 2</td>
</tr>
<tr>
<td>HORT 41 General Horticulture #4</td>
<td>The successful General Horticulture student will be able to demonstrate an understanding of the four basic plant groups used in landscaping: monocots, dicots, gymnosperms and ferns.</td>
<td>X X</td>
<td>4 4 2 2 4 2</td>
</tr>
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</table>
A Process of Questions

The Culture of Intentionality’s focus on student learning opens a clearer approach to assessment.

1. What do we want students to know, understand, and be able to do?

2. Where do students learn what we expect them to learn?

3. How well did students learn what you expected them to learn?

4. How do we know how well they learned what we expected them to learn?
How well did they learn it?

Assessment data is produced all the time in educational practice. Three types are frequent:

1. Direct
2. Indirect
3. External

- **Direct assessment** embeds artifacts in practice (assignments in classes)
  - Student essays, exams and presentations
  - Case studies and field work
  - Group projects and service learning
  - Journals and article critiques
  - Performances and artworks

- **Indirect assessment** seeks opinions of student learning
  - Student meta-cognitive reports
  - Internship supervisor reports

- **External assessment** uses outside exams
  - Non-degree standardized tests
How well did they learn it?

**Outcome**
- Identify & locate specific and scaled SLOs
- Bloom Verb

**Measure**
- Align assignments to the expectations of a given outcome or set of outcomes.
- Correlating Assignment
How well did they learn it?

PLO 1: Identify the major writers, periods, and genres of British and American literature with sufficiency to explain the importance of works and genres within their historical contexts and over time.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Aligned Measure</th>
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<tbody>
<tr>
<td>Identify major writers, periods, and genres of British &amp; American literature</td>
<td>Objective Test</td>
</tr>
<tr>
<td>Explain the use of genres within the literary culture of a given period of British &amp; American literature</td>
<td>Take-home Essay Exam</td>
</tr>
</tbody>
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Adapted from CSUSB
## How well did they learn it?

| PLO 1: Identify the major writers, periods, and genres of British and American literature with sufficiency to explain the importance of works and genres within their historical contexts and over time. |
|---|---|---|
| SLO 1.1: Identify major writers, periods, and genres of British & American literature | SLO 1.2: Explain the use of genres within the literary culture of a given period of British & American literature | SLO 1.3: Comparatively interpret authors’ use of genre in works from two periods of British and/or American literature |

<table>
<thead>
<tr>
<th>British Literature I and II</th>
<th>Objective Exam</th>
<th>Course Essay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studies in a Literary Period</td>
<td>Wiki Project</td>
<td>Group Project</td>
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<td>Studies in a Literary Theme</td>
<td>Analytical Paper</td>
<td>Essay Exam</td>
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<tr>
<td>Culminating Course</td>
<td>Research Paper</td>
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The Culture of Intentionality’s focus on student learning opens a clearer approach to assessment.

1. What do we want students to know, understand, and be able to do? **PLOs / SLOs**

2. Where do students learn what we expect them to learn? **Curriculum Mapping**

3. How well did students learn what you expected them to learn? **Aligning Measures to Outcomes**

4. How do we know how well they learned what we expected them to learn?
How do we know how well they learned?

Two challenges confront conscientious educators who have developed outcomes and seek to assess their programs:

1. Gathering and wading through data
2. Knowing what to look for
3 Tips for Smaller Piles

1. Assess a subset of the PLOs and their SLOs each year in a consistent annual cycle

2. Draw direct assessment samples from selected classes

3. Collect a random, representative sample of work from across sections

Managing the Data

Assess a manageable subset of outcomes and use sampling to gather a reasonable set of data
### Managing the Data

<table>
<thead>
<tr>
<th>PLO 1: Identify the major writers, periods, and genres of British and American literature with sufficiency to explain the importance of works and genres within their historical contexts and over time.</th>
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<td><strong>SLO 1.1:</strong> Identify major writers, periods, and genres of British &amp; American literature</td>
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3 Steps for Simple Evaluation

1. Specify the criteria that will be evaluated in the assignment artifacts
   - These can derive from the SLOs under the Program Level Outcomes

2. Identify the levels of student performance
   - Four levels? (superior, good, adequate, inadequate)
   - Three levels? (above expectations, meets expectations, below expectations)

3. Define the standards for the program’s success
   - Set what percentage of students will meet or exceed expectations

Knowing What to Look For

We have our student samples to provide data—now what?

Define a rubric
- Criteria
- Levels of performance

Set Standards
## How do we know how well they learned?

<table>
<thead>
<tr>
<th>PLO 1: Apply critical thinking within the context of professional work practice</th>
</tr>
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<tbody>
<tr>
<td><strong>ARTIFACT:</strong> Student case presentation</td>
</tr>
<tr>
<td><strong>GOAL:</strong> 85% meet or exceed expectations</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Student . . .</th>
<th>3-Exceeds Expectations</th>
<th>2-Meets Expectations</th>
<th>1-Below Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrates evidence of problem solving skills.</td>
<td>Identifies the problem &amp; contributing factors and poses solution that addresses each factor</td>
<td>Identifies the problem and proposes an adequate solution</td>
<td>Fails to identify the problem or proposes an incomplete solution</td>
</tr>
<tr>
<td>Determines appropriate assessment of client population's needs and articulates appropriate resources.</td>
<td>Describes complex assessment of needs and articulates resources for each need identified</td>
<td>Makes an appropriate assessment of needs and identifies at least 3 appropriate resources</td>
<td>Determines an incomplete assessment and articulates inappropriate or fewer than 3 resources</td>
</tr>
</tbody>
</table>

Adapted from BYUH
A Process of Questions

The Culture of Intentionality’s focus on student learning opens a clearer approach to assessment.

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2. Where do students learn what we expect them to learn? **Curriculum Mapping**

3. How well did students learn what you expected them to learn? **Aligning Measures to Outcomes**

4. How do we know how well they learned what we expected them to learn? **Sampling & Rubrics**
Making Data Make a Difference

Creating Meaningful Change
If student learning for an outcome meets expectations at the standard:

- Take no action
- Identify this area as a program strength
- Consider increasing expectations or rigor outlined in SLOs
- Raise the standard of attainment
- Consider surveying students about their experience of the program
If student learning does not meet expectations at the standard, consider:

Curricular Issues

- Ensure PLOs/SLOs are clear and aligned with expectations
- Review and revise teaching & learning methods used by faculty
- Review and revise course content
- Revise or establish pre-requisites
- Review and revise course sequences
If student learning does not meet expectations at the standard, consider:

Administrative Issues

- Develop advising systems for students
- Appoint coordinators for multi-section courses
- Establish guidelines for multi-section courses
- Build systems for communicating expectations to students

What Happened?

Assessment may find that student learning does not meet expectations at the determined standard for some outcomes
For meaningful change to occur...

Faculty must be the driving force and they must work collectively.

- **Faculty:**
  - know the curriculum
  - are responsible for facilitating student learning
  - will be the ones who have to innovate practice

- **Administration:**
  - creates space for the work to occur
  - fosters the culture of intentionality
Responding to the Results

Students benefit from an institution’s thoughtful response to an honestly undertaken attempt to determine a program’s strengths and weaknesses in educating them.
To Conclude

With an approach that strives for student-centered intentionality, compliance becomes a matter of completing forms and writing narratives. Accreditation thereby takes care of itself.
Resources