

# Designing Effective Assessment Activities

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# Presentation Overview

- Traditional Assessment, Authentic Assessment, and Student Learning Outcomes
- Examples of Authentic Assessment
- Different Approaches to Rubric Design
- Measuring High-Level Learning with Multiple Choice Questions

# Traditional Assessment

- Traditional assessment generally focuses on measuring what knowledge students have obtained through their courses and other experiences
- Assessment activities are largely determined by the course outline
- Assessment attitude: “I have presented this material to my students. Now, I will evaluate whether or not they have learned what was taught

# Traditional Assessment

- Assessment activities largely based on contrived exercises
  - Matching questions
  - Fill-in-the-Blanks
  - True-False
  - Multiple Choice
- Typically no evidence of *constructed* knowledge
- The student is more of a spectator than a participant in the learning material
  - “What have you seen and remembered,” not “What are you able to do?”

# Authentic Assessment and SLOs

- Authentic assessment is based on a “planning backwards” approach
- In designing curriculum, we ask ourselves first “What should a student who successfully completes this course or program be able to do as a result of their experience?”
- Teaching is directed at advancing students towards demonstrating proficiency in these tasks, which we call the “Student Learning Outcomes”, or SLOs
- Assessment drives curriculum!

# Authentic Assessment and SLOs

- Authentic assessment focuses on measurement of student achievement in accomplishing some “real-life” task
- Assessment vehicles involve significantly more participation on the part of the student
  - Creation or performance of artistic and/or written works
  - Demonstration of scientific laws through experiments
  - Completion of a “final” project or capstone course
  - Presenting arguments showing how historical events are relevant to us in the modern day

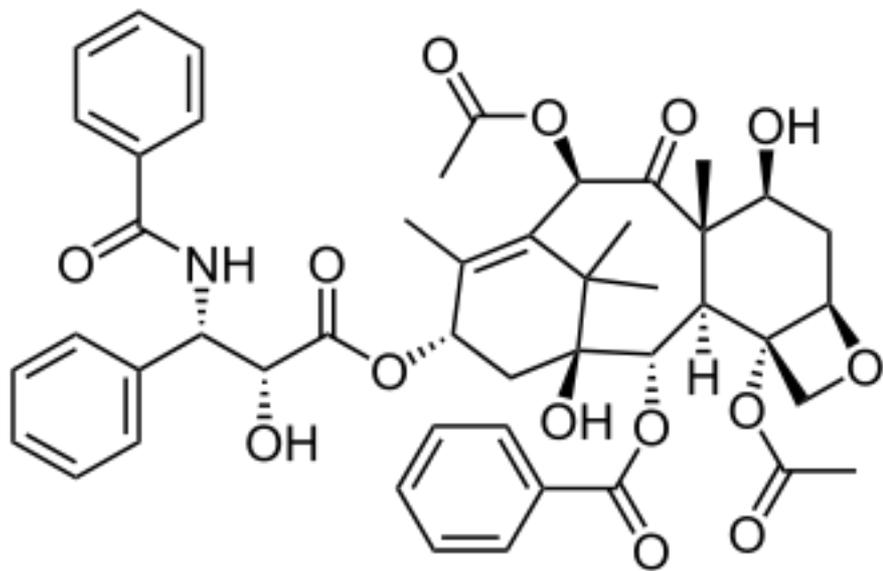
# Comparing Traditional and Authentic Assessment

- Is this the point: Authentic Good, Traditional Bad?
- No! Traditional assessment and authentic assessment should complement one another
- In evaluating students, we must have some insight into what they know
- Without authentic assessment, our picture of the student is incomplete
- They may have absorbed knowledge, but what can they do with it?

# Discussion Questions: Authentic Assessment, SLOs, and “The Emperor’s New Clothes”

- Haven’t we really been doing this all along, and now we’re just giving it a fancy name?
- Is there really any difference between the traditional, forward-planning approach and the authentic, backwards-planning approach? Is this just semantics?

# Backwards Thinking: An Aside



*“Taxol”*



*Pacific Yew*

# Examples of Authentic Assessment

- Authentic assessment activities require a *constructed* response
  - Students “construct new knowledge” by taking what they already know and applying it to some new situation
  - Emphasis is on synthesis of ideas and concepts
- Some typical assessment activities:
  - Short-answer essays
  - Designing concept maps (see Mindmap software)
  - Peer editing
  - Generation of own questions

# Examples of Authentic Assessment

- Evaluation of portfolios of student work is perhaps the most often-cited method of authentic assessment
- Virtually all work is *constructed*
- Allows for longitudinal comparison of student progress
  - Instructor and student see progress
- May include out-of-class work and “under the gun” in-class assignments

# Examples of Authentic Assessment

## "Table Perimeters" An Example from Elementary Geometry:

Task: You have invited some family and friends over for a celebration dinner. 23 people have responded that they can make it. Since you do not have room in your house to seat this many people you decide to rent some table and chairs to set up in your spacious backyard.

You call the rental store and they tell you they have 2.5 ft x 7.5 ft tables. Each chair needs at least 2.5 feet of space along a table. Hmm. You begin to wonder the best way to arrange the tables and chairs... one big row, a large square, each separate... there are many possibilities. You tell the rental place you will get back to them with exactly how many tables and chairs you want.

# Examples of Authentic Assessment

## Table Perimeters (continued):

Determine how many tables are needed if you keep all tables separate. Then draw a different arrangement where tables are pushed together, and determine how many tables would be needed if you chose this arrangement. Compare and contrast the two set-ups.

Source: <http://jonathan.mueller.faculty.noctrl.edu/toolbox/examples/bossenga08/table%20perimeters.pdf>

# Discussion Questions: Pros and Cons of Authentic Assessment

- Is this activity a good example of authentic assessment? Why or why not?
- What are the pros and cons of assessing students with such an activity?

# Authentic Assessment with Rubrics

- With activities based on constructed knowledge, there is the potential for tremendous variety in the responses we may receive
- Rubrics provide the structure needed to evaluate constructed responses
  - Keep educators focused on the outcomes
  - Grading is generally more objective
  - Grading is more transparent from the student's perspective
- [Rubric for "Table Perimeters" Assignment](#)

# Authentic Assessment with Rubrics

- This rubric was very specific to the given assignment
- Rubrics for our course SLOs are usually less specific
  - A particular assignment may be suggested, but not mandated
  - In most cases, constructed knowledge can be demonstrated through a variety of different tasks
- Rubrics for program SLOs are, by necessity, even more general

# Authentic Assessment with Rubrics

- Suppose we teach a course which is linked to the following General Education SLO:  
“(Students) Formulate strategies to locate, evaluate and apply information from a variety of sources – print and/or electronic.”
- At Rio Hondo, the general structure of the rubric is defined along with the SLO, including the *rubric scale* and the *proficiency standards*

Source of GE SLO: Assessment Plan for General Education/College-Wide Learning Outcomes, College of Marin.

# Authentic Assessment with Rubrics

- All courses linked with this SLO must have the same *structure*, but the guiding text may differ based on the specific content and/or level of the course

	Not Proficient	Proficient
Location		
Evaluation		
Application		

*Rubric Structure*

# Authentic Assessment with Rubrics

	Not Proficient	Proficient
Location		
Evaluation		
Application		

*GE (Program) Rubric Structure*

	Not Proficient	Proficient
Location		
Evaluation		
Application		

	Not Proficient	Proficient
Location		
Evaluation		
Application		

	Not Proficient	Proficient
Location		
Evaluation		
Application		

*Course Rubrics Have Same Structure*

# Authentic Assessment with Rubrics

- To facilitate grading, the *structure* of the rubric for an assignment should either be identical to the SLO rubric or designed to be easily aligned with it
  - Proficiency standards should be kept in mind
  - Most thought goes into differentiating degrees of proficiency

*Note: There is no requirement to construct or submit rubrics for individual assignments, but they may help for getting information into your SLO rubrics.*

# Authentic Assessment with Rubrics

- An alternative type or rubric scale one may wish to consider relies more on categorizing the “level” of student learning rather than simply whether or not a student is proficient
- For example, consider a Student Services SLO related to Financial Aid
  - Is a student really ever “proficient” at Financial Aid?
- A more useful rubric scale might be appropriate

# Authentic Assessment with Rubrics

*Example:* Proficiency Scale for an unspecified Financial Aid SLO (ranked low to high)

1. Awareness
2. Participation—Highly Dependent
3. Participation—Less Dependent
4. Self Sufficiency

# Discussion Question: Teaching to the Test

The dreaded phrase “teaching to the test” often comes up in discussions of standardized testing. Some advocates of authentic assessment state that, under this model, you are encouraged to do just that. Should students have access to assignment rubrics before their work is assessed? After?

# Multiple Choice Questions and High-Level Thinking

- Assessment through multiple choice questions typically does not require construction of knowledge by the student
- Consider the following question, which requires no construction or high-level thinking whatsoever

The planet closest to the sun is

a. Earth b. Mars c. Mercury d. Saturn e. Uranus

# Multiple Choice Questions and High-Level Thinking

- Multiple choice questions *can* measure high-level learning, but such questions take time to develop
  - Remember, in authentic assessment, we want students to *construct* knowledge, not just merely select from a list
- In writing these questions, a list of action verbs derived from *Bloom's Taxonomy* can prove quite useful in reminding us which skills we are trying to measure
- The answer choices themselves require substantial thought to ensure that students arrive at their conclusion through a form of constructed knowledge and not by simple guessing

# Multiple Choice Questions and High-Level Thinking

Questions from a Music Appreciation Final Exam (my own examples):

Section Instructions: The following questions are based on a brief excerpt from a larger work which will be played for you *twice*. Since this work was not presented in class or in any assignment it is likely the first time that you will have heard it. Your answers depend on your ability to evaluate this work based on your previous experience in the class. I will divide the excerpt into three sections, and identify them as the music is played.

# Multiple Choice Questions and High-Level Thinking

1. The structure of the first section played is best described as
  - a. a cadenza
  - b. theme and variations
  - c. a rondo
  - d. a fugue
  - e. a recitative
2. From the given choices, in which year was this work most likely completed?
  - a. 1695
  - b. 1783
  - c. 1820
  - d. 1865
  - e. 1957

# Multiple Choice Questions and High-Level Thinking

3. In the second section, all of the following percussion instruments are heard except  
a. triangle      b. timpani      c. xylophone  
d. cymbals      e. gong/tam-tam
  
4. This portion of the composition is meant to depict a specific event. What is this event?  
a. The coronation/crowning of a new king  
b. A particularly dangerous storm  
c. The death of a famous actress  
d. A military massacre of unarmed civilians  
e. The launch of a rocket into space

# Q & A Session

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# References

I have used several resources in developing this presentation. I relied heavily on material from the web site of Prof. Jon Mueller (North Central College, Naperville IL). *Bloom's Taxonomy* is another constant source of inspiration for assessment issues, and was particularly useful in developing the last part of this talk.

# Designing Effective Assessment Activities

Thank you for participating!