Testing/Assessment/Evaluation

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Seminar in College Teaching
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“Origins” of “Life” in the “Universe”

Tough competition

http://0.tqn.com/d/politicalhumor/1/0/4/A/2/global-warming-myth-tmwha080610.gif
http://www.lhup.edu/~dsimanek/philosop/creation.htm
http://dailygrail.com/ Alien-Nation/2012/8/Sht-Ancient-Aliens-Say
“Origins” of “Life” in the “Universe”

Tough Warring Teaching Styles

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http://dailygrail.com/Alien-Nation/2012/8/Sht-Ancient-Aliens-Say
Some Definitions for Starters

- **Test**: examination written for multiple students against a standard “key”
- **Assessment**: tool that measures student progress towards an objective
- **Evaluation**: study of the effectiveness of a teacher’s methods

**X**: “Good” Teacher vs. High “G.P.A.”
Why do we test?

• The Test Experience: stress, anxiety, and uncertainty
  - Best and worst case scenario?
  - Personal analysis

• Tests solidify the goals of a course and influence student methods of learning
  - Model questions
Improving the Odds

1. Guidance of material
2. Clarity of content and structure
3. Multiple opportunities to demonstrate understanding

- Questionnaire
Improving the Odds

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Learning is cumulative, habitual, and an investment
Using Learning Objectives as an Organizational Tool

➢ Writing objectives

Our job is to communicate:
1. Why is it important to understand the material?
2. How can students understand the material?
3. How do you prove that they understand?
Taxonomy of educational objectives: the classification of educational goals (1956)

“One of the most widely cited, yet least read books in American education”
- B. Bloom

• Three domains of educational outcomes
  1. **Cognitive**: knowledge recall and intellectual skill
  2. **Affective**: dispositions toward people, ideas, places, and objects
  3. **Psychomotor**: classify movement patterns and behaviors
Six Facets of the Cognitive Domain

1. **Knowledge**: ability to observe and remember previously learned information, facts
2. **Comprehension**: ability to understand and grasp material, moving knowledge around
3. **Application**: the use of information, problem solving
4. **Analysis**: break down material and recognize organization
5. **Evaluation**: ability to judge theories and make arguments
6. **Synthesis**: create new knowledge from previous experience
Multimodal Learning Styles

The VARK Model

- **Visual**: charts, diagrams, illustrations, handouts, and videos
- **Aural**: lectures and discussions
- **Reading** and **Writing**: text-based learning materials
- **Kinesthetic**: hands-on experience

➤ What’s your style?
Working with Students

Assessment rests on the assumption that it can facilitate improved learning

and that instructors actually care about student learning
Who’s the Audience of Your Teaching?

• **Summative** assessment: is a benchmark that monitors and records student achievement for school accountability (ex. Tests)

• **Formative** assessment: is a set of activities that a teacher employs to provide feedback of students’ instructional needs in reaching learning objectives (ex.?)
Targeted Questions for Group Work

- **Directed**
  - What are three different units of length?
  - What type of bacteria is found on this plate?

- **Convergent**
  - What is the mathematical relationship represented by the data points on the graph?
  - What evidence do you have to support your conclusion?

- **Divergent**
  - How might scientists experimentally determine the mass of a proton?
  - Why are the questions in this activity ordered the way they are?
Classroom Assessment Techniques (CATs)

- One-Minute Paper
- Muddiest Point
- Chain Notes
- Student-generated Test Questions

http://www.celt.iastate.edu/teaching/cat.html
Classroom Assessment Techniques (CATs)

• One-Minute Paper
  ✓ Using learning objectives to guide question design
  × Bloom’s Taxonomy and Targeted Questions

• Muddiest Point
  × Test applications of Bloom’s Taxonomy and Targeted Questions
  × Definition of Targeted Questions

• Chain Notes
  – At least a fifth of the students were comfortable

• Student-generated Test Questions (experiential)
Interpreting the Results

My Learning Objective: create an assessment plan that evaluates students’ ability to transition between levels of understanding.

- **Validity**: assessment supports intended interpretation
- **Reliability**: assessment is dependable and consistent
- **Fairness**: assessment limits biasing factors that are not within learning objectives
Designing a Portfolio

Revised Learning Objective: create a lesson plan that evaluates participants’ ability to apply theoretical models towards teaching techniques for future student assessment.

A course portfolio

• Incorporates representative student work
• Judges the results of an assessment plan
• Uses that information to modify pedagogy
A Feedback Cycle of Teaching

Formative

ASSESSMENT

During

Teaching

Learning Objectives

Before

EVALUATION

After

Summative

Improvement

Accountability

Inform
References


