

Guidelines and Methods for Assessing Student Learning

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Session Goals

- **Provide context for classroom assessment.**
- **Reflect on the nature and value of classroom assessment as it applies to your courses.**
- **Start to develop or refine an assessment plan for your course.**
- **Share ideas and assessment practices with colleagues.**

Applications Card

Purpose: Recall ideas, techniques and list applications without evaluating.

Interesting ideas and techniques from this session

Some possible applications of those ideas or techniques to my course

Background Knowledge Probe

On sheet of paper, write your thoughts:

- **What comes to your mind when you hear the term “assessment?”**
- **What assessment methods do you routinely use in your course to measure student learning? (Think of a particular course or project).**

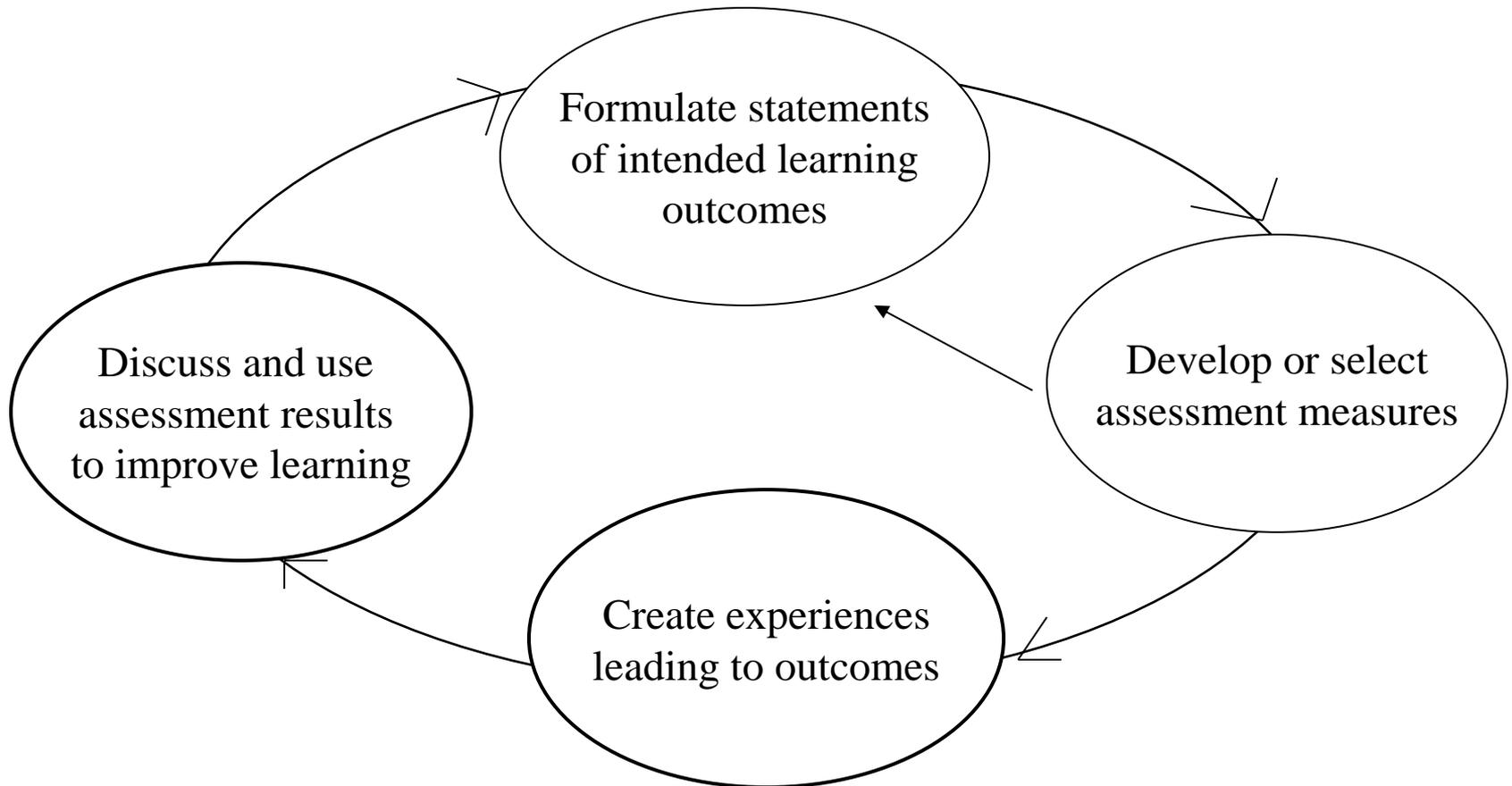
Characteristics of Effective Assessment in Higher Education (Angelo & Cross, 1993)

- **Focuses on the processes as well as on the products of instruction.**
- **Assesses what we teach – and what we expect students to learn.**
- **Actively involves both teachers and students.**
- **Uses multiple and varied measures.**
- **Provides information for improving learning.**

Effective Assessment (cont.)

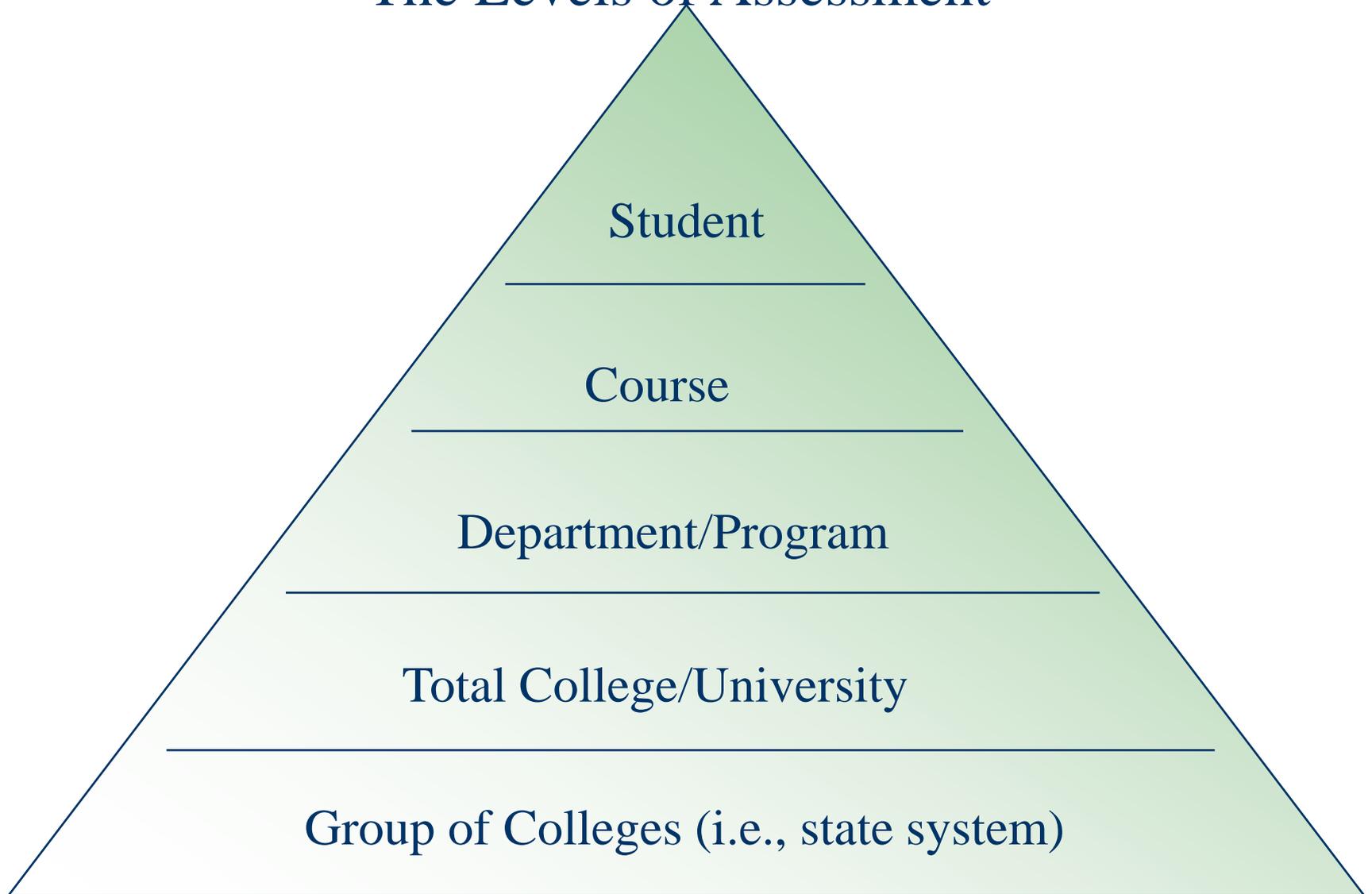
- **Is carried out at various key points.**
- **Provides useful, timely feedback to those being assessed and those most affected.**
- **Is an intrinsically educational activity – one that reinforces and furthers the teaching and learning goals on which it focuses.**

The Assessment Process (Huba & Freed, 2000)



Classroom Assessment within a context:

The Levels of Assessment



Think about the purpose of the assessment:



Formative (for improvement)

- learning measures
- decentralized
- most student centered
- direct measures
- soundest evidence
- least public

Summative (for accountability)

- performance measures
- centralized
- least student centered
- indirect measures
- weakest evidence
- most public

Data Collection Strategies

Direct Measures

- Projects
- Papers
- Theses
- Exhibitions
- Performances
- Case studies
- Clinical Evaluations

Indirect Measures

- Paper/pencil, web surveys
- Database information
- Existing Reports
- Info from graduates
- Info from employers

Data Collection Strategies- term depends on your definition

Short Term

- One week
- One month
- One semester

Long Term

- Beginning to end of term
- One year
- Frosh to senior year

Design backward,
Deliver forward

How do we 'know' that students are learning??

- We all learn to construct knowledge
- Important to build connections between learner's prior knowledge/experience and new information or skill
- Important to make connections between discipline-based knowledge and general skills

Important Processes that Facilitate Learning

- **Learner attention**
- **Reflection**
- **Encoding or deep cognitive processing**
- **Metacognition**

Working Definition of Classroom Assessment

- **Some student activity that gives the instructor and/or student information about change in student learning.**
- **The learning can be in the cognitive (stuff in heads), affective (feelings and emotions), psychomotor (physical skills) domain.**

Guiding Questions

- **What is the purpose? What do you hope to learn from this assessment?**
- **What will be assessed? (learning objective)**
- **Who will be assessed?**
- **How will it be assessed?**
- **In what setting will the assessment be conducted?**
- **How will the results be analyzed?**
- **How will the results be used? How will the results be helpful to you and your students?**
- **To whom will the results be communicated?**

Classroom Assessment Techniques (CATs)

An approach designed to help teachers find out what students are learning in class and how well they are learning it. Both teaching tool and assessment device.

Two Levels of CATs

- ***Feedback to Students***
 - monitor comprehension
 - enhance learning
- ***Feedback to Faculty***
 - effectiveness of teaching approaches – adjust instruction

CATs are:

Learner-Centered
Teacher-Directed
Preventive and/or Formative
Anonymous (usually)
Ongoing
Context-Specific
Rooted in Good Teaching Practice
(feedback informs the teaching process)



Field-tested Learning Assessment Guide

for science, math, engineering, and technology instructors

FLAG Home

- Search
- Site map
- Who we are
- CL-1 Home

- intro
- primer
- goals
- CATs**
- tools
- resources

Classroom Assessment Techniques (CATs)

- Overview**
- Attitude survey
- ConcepTests
- Concept mapping
- Conceptual diagnostic tests
- Interviews
- Mathematical thinking

Classroom Assessment Techniques (CATs) - Overview

The Classroom Assessment Techniques -- CATs (Angelo and Cross, 1993) within the FLAG are succinct, self-contained, self-instructional, web-based modules that introduce a broadly applicable technique for use in college or university SMET courses. Each CAT has been written by a college or university instructor who currently uses the technique, and has been reviewed by the FLAG [Editorial Board](#) for accuracy and consistency with current professional standards of assessment. In most cases, the technique has an extensive history of research to support claims of reliability and validity. The CATs are linked to a set of discipline-specific "tools" that can be downloaded for immediate use.

Each CAT is composed of a set of common features:

- **Focus Questions:** Overview of strategy; general requirements and

Potential Impact of CATs

- **Learn what and how your students are thinking.**
- **Clarify your session/course goals.**
- **Get feedback to make mid-course adjustments.**
- **Change classroom norms re: student involvement.**
- **Help students become self-aware of their learning.**
- **Collect data for post-course improvement.**

Considerations for using CATs

- Explain why you use this method.
- Use as an ongoing process.
- Adapt the CAT to fit your course.
- Provide feedback re CAT to students – make feedback data public, close the loop.
- Discuss how you and the students can best use the data.
- Keep data collection and summary simple.
- *What will the students and I learn from this CAT?*

Developing Rubrics (Huba & Freed, 2000)

Question

- What criteria or essential elements must be present in the student's work to ensure high quality?
- How many levels of achievement do I want to illustrate?
- For each criterion, what is a clear description of performance at each achievement level?

Action

- Include these as rows in rubric.
- Include these as columns and label them.
- Include descriptions in the appropriate cells of the rubric.

Developing Rubrics, cont.

Question

- What are consequences of performing at each level?
- What rating scheme will I use?
- When I use the rubric, what aspects work well and what aspects need improvement?
- Is process as important as outcome?

Action

- Add description of consequences to commentaries in the rubric.
- Add this to the rubric in a way that fits with your grading philosophy.
- Revise rubric accordingly
- Include & describe criteria to reflect aspects of the process.

Rubric Template

(Describe here the task or performance that this rubric is designed to evaluate.)

	Beginning 1	Developing 2	Accomplished 3	Exemplary 4	Score
Stated Objective or Performance	Description of identifiable performance characteristics reflecting a beginning level of performance.	Description of identifiable performance characteristics reflecting development and movement toward mastery of performance.	Description of identifiable performance characteristics reflecting mastery of performance.	Description of identifiable performance characteristics reflecting the highest level of performance.	
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Refine your assessment plan

- **Review your initial assessment plan based on your answers to the set of guiding questions. Then, reflecting on today's session, refine your plan. Choose one CAT, CECAT, rubric or other formative assessment measure you can use to help you gauge student learning.**
- **In your group, discuss your assessment plan.**



Assessment and Evaluation

[Doing Assessment as if Learning Matters Most](#) by Thomas Angelo, 1999.

[Designing Multiple Choice Questions](#)

This site provides guidelines, tips, and examples for constructing effective multiple choice questions that measure different levels of student learning. Questions are constructed at various levels of *Blooms Taxonomy*:

- Knowledge: Recognize, recall facts, principles, theories
- Comprehension: Describe in one own's words, provide examples
- Application: Use material in new ways, apply concepts in practical situations to solve problems
- Analysis: Breaking material into its components, drawing comparisons
- Synthesis: Combining parts into a *new* whole
- Evaluation: Judge or make a decision based on appropriate criteria

[End of Course Ratings: Course Evaluation Item Pool](#)

In addition to your required departmental course rating form, you may want to use the items we have selected from the

Reflect on What You've Developed

Question

- What's the one point of greatest challenge/
biggest obstacle for you?
- Greatest challenge/
biggest obstacle for
students?

Answer

-
-

References

- Anderson, R., & Speck, B. (eds.). (1998). *Changing the way we grade student performance: Classroom assessment and the new learning paradigm*. New directions for teaching and learning, no. 74. San Francisco, CA: Jossey-Bass.
- Angelo, T. (ed.) (1998). *Classroom assessment and research: An update on uses, approaches, and research findings*. New directions for teaching and learning, no. 75. San Francisco: Jossey-Bass
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- Cross, P., & Angelo, T. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd ed.). San Francisco: Jossey-Bass.
- Huba, M., & Freed, J. ((2000). *Learner-centered assessment on college campuses*. Needham Heights, MA: Allyn & Bacon.

Closing Comments

- Complete CAT Application task to reflect on what you have learned.
- Helpful hints for successful start:
 - Don't make classroom assessment into self-inflicted chore or burden.
 - Don't ask students to use a CAT that you haven't tried on yourself.
 - Allow necessary time to carry out and respond to the assessment.
 - Make sure to 'close the loop.' Let students know what you learned from their feedback and how you can use that info to improve learning.



Thank you!