

Teaching from a Distance

Assessing Student Learning

The Learning Innovations Team

Today's Objectives

You will

- Identify effective approaches for assessment in an online environment.
- Discuss the importance of using measurable learning outcomes as the foundation of assessment.
- Identify ways to organize students for self and peer assessment.
- Discuss the use of formative assessment to support student's learning.
- Locate, adapt and use rubrics for outcomes based assessment



Key Components at a Glance

- Objectives
- Rubrics
- Alignment

Assessment

What is it?

“Assessment is the systematic collection and analysis of information to improve student learning.”

-Martha Stassen, *Course Based Review and Assessment: Methods for Understanding Student Learning*, 2001, pg. 5

How is it useful?

- Informs decisions about curriculum and instruction
- Links student performance to specific learning objectives
- Ultimate aim is to improve student learning



Learning Objectives

What is it?

Statements identifying concrete and measurable actions that students **will be able to do** as a result of taking the course.

How is it useful?

- The alignment of instruction and assessment
- Shared expectations among students and faculty
- Students in monitoring their own progress

Learning Objective (examples)

You will be able to:

- Evaluate evidence provided by a data set to investigate the role of natural selection in evolution
- Assess the credibility of primary and secondary sources and make judgments about their usefulness and limitations as evidence about the past.
- Use derivatives to analyze properties of a function.
- Explain how different beliefs about the federal government's role in U.S. social and economic life have affected political debates.



What are your learning objectives?

Identify an important learning objective for your course and post it into the chat space.

Rubrics

What is it?

“Explains to students the criteria against which their work will be judged. More importantly, it makes public key criteria that students can use in developing, revising, and judging their own work.”

-Mary Huba and Jan Freed, *Learner Centered Assessment on College Campuses*, pg.155, Allyn and Bacon

How is it useful?

- Provides a reference point for students to consult repeatedly as they monitor their own learning and develop the skills of self- and peer-assessment.
- Develops a sense of shared expectations among students and faculty.
- Provides evaluators and those whose work is being evaluated with detailed descriptions of what is being learned and what is not.

-Mary Huba and Jan Freed, *Learner Centered Assessment on College Campuses*, pg.155, Allyn and Bacon



Misalignment

Learning Objectives

- Explain
- Relate
- Prove
- Apply



Student Activity

- Memorize
- Describe



Assessment

- Memorize
- Describe

Alignment

Learning Objectives

- Explain
- Relate
- Prove
- Apply



Student Activity

- Explain
- Relate
- Prove
- Apply

Assessment

- Explain
- Relate
- Prove
- Apply



Two Forms of Student Assessment

Summative Assessment

What is it?

Assessment *of* Learning

- At the end of the course of study
- Does not provide opportunity for student reflection and adjustment for future improvement.

Formative Assessment: Why?

Assessment *for* Learning

“Students receive feedback that

- Identifies strengths, weaknesses
- Can be applied to future assignments
- Promotes instructor to student engagement
- Promotes student to student engagement
- Provides opportunity for self reflection
- Identifies areas for growth and development

-Brown, Sally, and Peter Knight. *Assessing Learners in Higher Education*



Formative Assessment: Purpose

How is it useful?

According to the Harvard Assessment Seminars, students are convinced that their best learning takes place with formative assessment.

Formative assessment allows for:

- 1) Creating and submitting an early draft
- 2) Receiving feedback and further guidance
- 3) Revising and resubmitting a final version

-Richard Light, Walter H. Gale Professor of Education at Harvard University's Kennedy School of Government, Harvard Assessment Seminars



Formative Assessment

"The Big point-- it comes up over and over again as crucial-- is the importance of quick and detailed feedback. Students overwhelmingly report that the single most important ingredient for making a course effective is getting rapid response on assignments and quizzes."

-Richard Light, Walter H. Gale Professor of Education at Harvard University's Kennedy School of Government, Harvard Assessment Seminars

Poll: Methods of Assessment

Questions to Ask With any Assessment

- Are the expectations and learning objectives clear?
- Are models provided, exemplary and otherwise?
- Are the skills and abilities that are being evaluated aligned with the learning objectives?
- How will the results be used to improve student learning?

Self Assessment

What is it?

Students assess the process and product of their learning. By doing this they take more ownership of the learning process and practice the meta-cognitive skills necessary to monitor their own progress.

Examples

- Portfolio
- Reflection logs
- Instructor-student interviews
- Learner diaries, journals, etc.
- Students attach a self-assessment to each assignment submitted (Alverno)



Peer Assessment: What is it?

What is it?

Peer assessment is a type of [collaborative learning technique](#) where students evaluate the work of their peers and have their own evaluated by peers. This dimension of assessment is significantly grounded in theoretical approaches to [active learning](#) and [adult learning](#).

Source: <https://cft.vanderbilt.edu/student-assessment-in-teaching-and-learning/>

Peer Assessment

- “...when students were asked what they considered ‘the most effective, important course they had taken in their four years at college,’ student after student spoke of classes structured such that writing for fellow students was an integral part of the course.”
 - Richard Light, Walter H. Gale Professor of Education at Harvard University’s Kennedy School of Government, Harvard Assessment Seminars

Peer Assessment: Examples & Collaborative Tools

Examples

- Peer review of writing
- Feedback in discussion
- Think Pair Share/ Peer instruction
- Group Work

Collaborative Tools

- Perusall
- Threaded Discussion
- VoiceThread
- Zoom

Performance Assessment

What is it?

- Designed to closely reflect the performance of interest
- Allow students to construct or perform an original response
- Close similarity between the performance that is assessed and the performance of interest

Performance Assessment (cont.)

Examples

A performance assessment is open-ended and without a single, correct answer.

- Conduct a scientific investigation
- Construct an original product or response
- Creation of a news magazine
- Debate
- Performance or recital
- Portfolio
- Written explanation of one's solution to a mathematics problem
- Application principles or procedures to real world problems



Classroom Assessment Techniques: CATS

Are quick and easy formative evaluation methods that help you **check student understanding in “real time”**. These formative evaluations provide information that can be used to modify/improve course content, adjust teaching methods, and, ultimately improve student learning. Formative evaluations are most effective when they are done frequently and the **information is used to effect immediate adjustments in the day-to-day operations of the course.**

Source: <https://www.celt.iastate.edu/teaching/assessment-and-evaluation/classroom-assessment-techniques-quick-strategies-to-check-student-learning-in-class/>

Classroom Assessment Techniques: CATs

Are quick and easy formative evaluation methods that help you **check student understanding in “real time”**.

- provide day-to-day feedback that can be applied immediately
 - Insights gained can be used to modify/improve course content, adjust teaching methods,
- provide useful information about what students have learned without the amount of time required for preparing tests, reading papers, etc.
- allow you to address student misconceptions or lack of understanding in a timely way
- help to foster good working relationships with students and encourage them to understand that teaching and learning are on-going processes that require full participation

Source: <https://www.celt.iastate.edu/teaching/assessment-and-evaluation/classroom-assessment-techniques-quick-strategies-to-check-student-learning-in-class/>



Classroom Assessment Techniques (CATS)

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Classroom Assessment Techniques:

For Students

- Help develop self-assessment and learning management skills
- Reduce feelings of isolation, especially in large classes
- Increase understanding and ability to think critically about the course content
- Foster an attitude that values understanding and long-term retention
- Show your interest and support of their success in your classroom.

Source: <https://www.celt.iastate.edu/teaching/assessment-and-evaluation/classroom-assessment-techniques-quick-strategies-to-check-student-learning-in-class/>

CATs Examples

The *Background Knowledge Probe* is a short, simple questionnaire given to students at the start of a course, or before the introduction of a new unit, lesson or topic. It is designed to uncover students' pre-conceptions.

The *Minute Paper* tests how students are gaining knowledge, or not. The instructor ends class by asking students to write a brief response to the following questions: "What was the most important thing you learned during this class?" and "What important question remains unanswered?"

The *Muddiest Point* is one of the simplest CATs to help assess where students are having difficulties. The technique consists of asking students to jot down a quick response to one question: "What was the muddiest point in [the lecture, discussion, homework assignment, film, etc.]" The term "muddiest" means "most unclear" or "most confusing."

The *What's the Principle?* CAT is useful in courses requiring problem-solving. After students figure out what type of problem they are dealing with, they often must decide what principle(s) to apply in order to solve the problem. This CAT provides students with a few problems and asks them to state the principle that best applies to each problem.

Source: <https://cft.vanderbilt.edu/guides-sub-pages/cats/>



Two Stage Exams

What is it?

Students first turn in the exam individually then work in small groups to answer the exam questions again. Students receive immediate, targeted feedback on their solutions from fellow students and see alternative approaches to the problems. This makes the exam a valuable learning experience.”

1. Students first complete the exam individually.
2. Students then work in small groups and answer the exam questions again.
3. Instructor listens to group discussions to understand misconceptions
4. Instructor has wrap up discussion afterward to address misconceptions or confusion heard during the group conversations.



ePortfolio

- A purposeful collection of sample student work, demonstrations, and artifacts that showcase student's learning progression.
- A learning tool for students to clarify their educational goals and integrate and solidify learning through reflection.
- By reflecting on what they learned and how they learned it, students start to take control of their own learning.

Questions?

Your Turn

- Short write identify an important learning objective for your course.
- Draft an assessment of this outcome.
- Share with us.

Resources: Assessment, Objectives & Rubrics

Assessment

- [Course Based Review and Assessment: Methods for Understanding Student Learning](#)
- [Johns Hopkins- Assessing Learning Online](#)
- [Measuring Student's Learning](#)
- [Assessing Student Learning- Indiana University](#)

Learning Objectives

- [Setting Learning Objectives](#)
- [Bloom's Taxonomy Revised with Key Words and Model Questions.](#)
- [Backward Design- Harvard Bok](#)
- [Backward Design](#)

Rubrics

- [AACU Value Rubrics](#)
- [Using rubrics to provide feedback to students](#)
- [Setting expectations with rubrics](#)
- [Grading and Performance Rubric Examples](#)
- [Berkeley: What is a Rubric](#)



Resources: Formative Assessment & ePortfolios

Formative Assessment

- [Low Stakes Formative Assessments](#)
- [Strengthening Colleges and Universities: the Harvard Assessment Seminars](#)
- [Assessment in Teaching and Learning - Vanderbilt](#)
- [Making the Most of College: Students Speak Their Minds](#), Richard Light
- [Low-Stakes Writing Assignments](#)

ePortfolio

- [Tufts University: IDEA About the Learning Portfolio](#)
- [Stanford Engineering Electronic Portfolios](#)
- [Michelle Grau: STEM ePortfolio](#)
- [Michelle Warner: STEM ePortfolio](#)
- [Loyola University: Learning portfolio examples](#)
- [Berkeley- ePortfolio](#)



Resources: ePortfolios (cont)

ePortfolio (cont.)

- [Auburn digital portfolio](#)
- [Ball State University Portfolio Support | Reflection vs. Rationale](#)
- [Scaffolding Reflection with Adolescent and Adult Learners](#)
- [Facilitating Reflection: A Manual for Leaders and Educators. University of Vermont](#)
- [Learning and Assessing through Reflection \(PDF\)](#)
- [Instrumental and Ontological Reflection by Roy Williams](#)
- [Reflective Framework and Template](#)

Guides for Student Portfolios

- [Clemson University](#)
- [Penn State University](#)
- [Salt Lake Community College portfolios](#)



Resources: Performance & Peer Assessment

Performance Assessment

- [Performance Assessment: State of the Art](#)
- [Authentic Ways to Develop Performance-Based Activities](#)
- [What is Performance Based Assessment](#)

Peer Assessment

- [Peer instruction strategies](#)
- [Iowa State: Peer Assessment](#)
- [Peer review as a strategy for improving students' writing process. McGill University's Teaching and Learning Services Peer Assessment webpage](#)
- [Designing Peer Assessment Assignments: A Resource Document for Instructors \(PDF\)](#)
- [Collaborative assignments](#)
- [Structured team collaboration](#)
- [Types of feedback](#)
- [Creating discussion prompts](#)



Resources: Two Stage Exams & CATs

Two Stage Exams

- [Two Stage Exams](#)
- [Collaborative Testing: Evidence of Learning in a Controlled In-Class Study of Undergraduate Student](#)
- [Video: Two Stage Midterm Exam](#)
- [Examinations That Support Collaborative Learning: The Students' Perspective](#)

Classroom Assessment Techniques

- [Muddiest Point Surveys](#) and other classroom assessment techniques
- [Indiana University: CATS](#)
- [Vanderbilt: CATS](#)





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LEARNING INNOVATIONS

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Let's explore the possibilities together!