

Implementation and Examples of CATs

While quizzes are often the first low-stakes assessment technique that comes to mind, there are many other classroom assessment techniques that can give insight to students' understanding of concepts and allow teachers to adjust instruction before students face high-stakes assessments.

There are 50 tested assessment techniques from Angelo and Cross (1993). The table below describes eight techniques that can be easily adapted for and implemented in a classroom setting. For information on remaining techniques, please consult the Angelo and Cross book. Many of these techniques are easily adapted to online environments or may make use of technology to streamline their usage.

Tips on implementation

- Start off simple by choosing a technique that easily fits your teaching style and classroom time limits.
- Conduct at least one CAT before the first major assignment, so that you can intercept any problems or questions before the fact.
- Don't feel obligated to do a CAT every day or every week. You'll create information overload for yourself and "survey overload" for your students.
- When you do any CAT, explain its purpose and your goal clearly to students.
- Report your findings to your students and let them know what you plan to do in terms of their feedback.

<i>Name</i>	<i>Description</i>	<i>What to do with the data</i>	<i>Time required</i>	<i>Online adaptation</i>
Minute paper	During the last few minutes of the class period, ask students to answer on a half-sheet of paper: "What is the most important point you learned today?"; and, "What point remains least clear to you?". The purpose is to elicit data about students' comprehension of a particular class session.	Review responses and note any useful comments. During the next class periods emphasize the issues illuminated by your students' comments.	Prep: Low In class: Low Analysis: Low	Use a short-answer or essay single-item quiz in Canvas.
Chain Notes	Students pass around an envelope on which the teacher has written one question about the class. When the envelope reaches a student he/she spends a moment to respond to the question and then places the response in the envelope.	Go through the student responses and determine the best criteria for categorizing the data with the goal of detecting response patterns. Discussing the patterns of responses with students can lead to better teaching and learning.	Prep: Low In class: Low Analysis: Low	Use a short-answer or essay single-item quiz in Canvas.
Memory matrix	Students fill in cells of a two-dimensional diagram for which instructor has provided labels. For example, in a music course, labels might consist of periods (Baroque, Classical) by countries (Germany, France, Britain); students enter composers in cells to demonstrate their ability to remember and classify key concepts.	Tally the numbers of correct and incorrect responses in each cell. Analyze differences both between and among the cells. Look for patterns among the incorrect responses and decide what might be the cause(s).	Prep: Med In class: Med Analysis: Med	Have fill this out in a Word document using a table and turn it in as a Canvas assignment.
Directed paraphrasing	Ask students to write a layman's "translation" of something they have just learned -- geared to a specified individual or audience -- to assess their ability to comprehend and transfer concepts.	Categorize student responses according to characteristics you feel are important. Analyze the responses both within and across categories, noting ways you could address student needs.	Prep: Low In class: Med Analysis: Med	

One-sentence summary	Students summarize knowledge of a topic by constructing a single sentence that answers the questions "Who does what to whom, when, where, how, and why?" The purpose is to require students to select only the defining features of an idea.	Evaluate the quality of each summary quickly and holistically. Note whether students have identified the essential concepts of the class topic and their interrelationships. Share your observations with your students.	Prep: Low In class: Med Analysis: Med	Canvas quiz or assignment submission
Exam Evaluations	Select a type of test that you are likely to give more than once or that has a significant impact on student performance. Create a few questions that evaluate the quality of the test. Add these questions to the exam or administer a separate, follow-up evaluation.	Try to distinguish student comments that address the fairness of your grading from those that address the fairness of the test as an assessment instrument. Respond to the general ideas represented by student comments.	Prep: Low In class: Low Analysis: Med	Canvas quiz or exam, or Google form
Application cards	After teaching about an important theory, principle, or procedure, ask students to write down at least one real-world application for what they have just learned to determine how well they can transfer their learning.	Quickly read once through the applications and categorize them according to their quality. Pick out a broad range of examples and present them to the class.	Prep: Low In class: Low Analysis: Med	Canvas quiz or assignment or Google Form
Student-generated test questions	Allow students to write test questions and model answers for specified topics, in a format consistent with course exams. This will give students the opportunity to evaluate the course topics, reflect on what they understand, and what are good test items.	Make a rough tally of the questions your students propose and the topics that they cover. Evaluate the questions and use the good ones as prompts for discussion. You may also want to revise the questions and use them on the upcoming exam.	Prep: Med In class: High Analysis: High (may be homework)	

For many of the online adaptations, instructors may use Canvas assignments or quizzes or a Google form.

Canvas has the advantage of being easy to include as a grade, but may not be quite as easy to reformat for reuse in some way. In contrast, data entered via a Google form is stored in a spreadsheet and spreadsheet data can be quickly used in a variety of ways from using a merge technique to yield nicely formatted documents to sorting, ranking, and grouping techniques using additional columns. For assistance and ideas for using and managing data as well as implementing these techniques in your course, please contact the instructional designer assigned to your college (teaching.unl.edu).

Angelo, T. A., & Cross, P. K. (1993). *Classroom Assessment Techniques: A Handbook for College Teachers* (2nd ed.). San Francisco, CA: Jossey-Bass.