

### Specific Classroom Assessment Techniques (CATs)

Following is a partial chart of CAT exercises, indicating the kind of evaluation for which each is intended, what each is called, how each is conducted, what to do with the information you collect, and an approximation of the relative amount of time each requires. In large classes, you may want to review a sample of responses and use peer groups to assess and/or synthesize data.

Kind of Assessment	Name	How It's Done	How to Use	Time Needs																
Course Knowledge and Skills	One-Minute Paper	During last few minutes of class period, ask students to use a half-sheet of paper and write "Most important thing I learned today and what I understood least."	Review before next class meeting and use to clarify, correct, or elaborate	Low																
	Muddiest Point	Similar to One-Minute Paper but only ask students to describe what they didn't understand and what they think might help.	Same as One-Minute Paper. If many had the same problem, try another approach.	Low																
	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 components of the idea and interrelationships.	Medium																
	Memory Matrix	<div>Students fill in cells of a two-dimensional diagram for which the instructor has provided labels subsequent to some learning experience.</div> <table><tr><td></td><td>Structure</td><td>Function</td><td>Enzymes</td></tr><tr><td>Mouth</td><td></td><td></td><td></td></tr><tr><td>Esophagus</td><td></td><td></td><td></td></tr><tr><td>Etc.</td><td></td><td></td><td></td></tr></table>		Structure	Function	Enzymes	Mouth				Esophagus				Etc.				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).	Medium
		Structure	Function	Enzymes																
	Mouth																			
	Esophagus																			
	Etc.																			
	Background Knowledge Probe	Complete a pre-learning checklist or concept test indicating what is known and what is unfamiliar. Includes a few focused questions about concepts that students will need to know to succeed in the course/new unit/etc.	Tally the responses and identify patterns in student background knowledge.	Medium																
Misconception/preconception Check	Variant of above; focuses on those kinds of prior knowledge(or beliefs) that may actually hinder learning; create questions that will tease these out; administer as paper test, polling in class, dyad or small group work	If use as pre-test, tally responses and design learning experiences to address (discover misconceptions and build new concepts); also can deal with as arise if poll or do in-class activity around	Medium																	
Poll for Understanding, Misconceptions	Ask students specific multiple choice questions during class to determine their knowledge and/or identify misconceptions; use iClickers or colored cards for each selection (a, b, c, d)	Can quickly determine where students knowledge and skills are and do some in-the-moment teaching.	Low																	

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Kind of Assessment	Name	How It's Done	How to Use	Time Needs
Application and Performance       Analysis, Critical Thinking, Problem Solving	Application Article	During last 15 minutes of class, ask students to write a short news article about how a major point applies to a real-world situation/to major; shorter alternative to have students write down on a file-card at least one real-world application for what they have just learned.	Sort articles/cards and pick several to read at next class, illustrating range of applications, depth of understanding, and creativity.	Medium
	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 to address student needs.	Medium
	Student-Generated Test Questions	Divide the class into groups and assign each group a topic on which they are each to write a question and answer for the next test. Use the questions for in-class test preparation.	Use as many of the questions as possible, combining those that are similar.	Medium
	Peer Engagement/ Feedback**	Peers comment on first drafts of papers or other assignments and contribution of team members to process of team, engage in role-playing, poster sessions, etc. (provide checklists/criteria for ease of peer assessment) - all can give an idea of how well students are applying the knowledge and skills of the class	Set up feedback system so peer data can be available to students	Medium to High
	Categorizing Grid	This also can be a higher order thinking activity if students need to make judgments in order to categorize concepts correctly, etc.	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).	Medium
	Pro and Con Grid	Ask students to create a grid of the pros and cons for a given decision	Review grid to see patterns in analysis and identify where need to support students' thinking	Medium
	Documented Problems; Journal	Ask students to show their work and the reasoning behind their analysis or problem solution. This uncovers conceptual difficulties, lingering misconceptions, and issues in problem solving strategies they may be using. Students may need support with this process. Have students reflect on experiences over time to identify where thinking has changed and why.	Identify where patterns of difficulty occur or readiness to be pushed to think more deeply and use to focus learning experiences. Also, can give students direct feedback.	Medium to High

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Synthesis and Creative Thinking	Problem Recognition Tasks/Grid	Give students a few examples of common problem types and ask to identify the type of problem they represent and the principle behind each.	Review the Grids and identify the patterns in responses. Post instruction or reading.	Medium
	One-Sentence Summary	Students summarize concepts, ideas, or components and their relationships in a reading, situation, lecture, problem set, etc. by constructing a single sentence on a file card	Evaluate the quality of each summary quickly and holistically. Note whether students have identified the essential concepts of the class topic and their interrelationships.	Medium
	Annotated Portfolios	Students provide a sampling of their work along with brief analyses of how each demonstrates a grasp of a given concept or several concepts	Review portfolios over time. Notice areas that need further emphasis.	Medium to High
Attitudes, Motivation, Values, Self-awareness as Learner	Journals	Ask students to keep journals that detail their thoughts about the class. May ask them to be specific, recording only attitudes, values, or self-awareness	Have students turn in the journals several times during the semester so you can chart changes and development.	Medium
	Opinion Polls	Ask students specific multiple choice questions during class to determine their attitudes about course related material; have hold up colored cards with selection (a,b,c,d) - use clickers	Can quickly determine students' attitudes and do some in-the-moment teaching.	Low
	MSLQ, other attitude/motivation surveys	Administer as pre-/post-test	Review results and identify where might need to support motivation.	Low
	Course specific self-confidence surveys	Students indicate in a survey form how confident they feel about their grasp of each of a list of concepts that have been addressed or how confident they feel about their ability to learn upcoming concepts. Can use a 5 point scale anchored at the ends by very confident and not at all confident.	Review results and identify areas that may need to readdress or give more attention. May want to follow-up with one minute paper on target areas so understand more fully.	Low; Medium

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Learning Strategies	Exam/ assignment wrappers	Focused assessments of specific learning approaches used to prepare for an exam, to complete an assignment. Have students identify what worked and what needs improvement and develop a plan for impacting on the latter. Helpful to talk with a peer(s) and get some other perspectives on what can do to improve and to be involved in commitment to action. Refer students back to plan before next exam or assignment.	Identify patterns and then structure learning activities that help students focus on less well used and potentially helpful strategies for subsequent exams/ assignments; over semester look at patterns of change that might reflect in-class focus on this aspect of learning.	Medium
	Punctuated Lectures	Periodically during a class, the faculty member pauses to allow students to reflect and write on their own attention and behavior during the class in order to identify how actively they are listening or participating.	Used for self-awareness	Low
	Learning Polls	Do the assessment of how students prepared for an exam or completed an assignment as a polling process; might not get accurate data as is not anonymous; can follow with self-reflection and planning with peer.	Can use the responses to guide in-the-moment discussion of effective strategies for learning	Low
	Study-Time Logs	Students keep a log of when they study/strategy(ies) used and assess for each study time how productive it was. Periodically they reflect on the log and look for patterns	Used for self-awareness	Low
	MAI other learning/ metacognitive surveys	Have students take as pre- and post-test and integrate some items on periodic assessments.	Tally up results and identify patterns that help focus course approach to teaching learning strategies	Low

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