

### Classroom Assessment Techniques (CATs) Overview

<b>Title</b>	<b>Purpose</b>	<b>Description</b>	<b>Pros/Cons</b>	<b>Turning the CAT into Data</b>
<b>One Minute Paper</b>	To assess recall of important concepts and self-assess understanding.	Questions at end of class or before a break; students write brief responses; responses can be turned in anonymously, addressed next meeting, or online.	Handy to use to focus the class at the start or end; useful as a reflective “quiz”.	Make note of any useful responses and respond to them in class.
<b>Word Journal</b>	To assess deep understanding and creativity in summarizing reading.	First students summarize a short text in a single word. Second the students write a paragraph or two explaining why he or she chose that particular word to summarize the text.	Requires students to read deeply and pull meaning; helps students make personal connections to material; encourages summarizing and communicating; Takes time, energy to prepare, analyze, & discuss. Needs discussion and comparison.	Come up with your own words; then keep track of the words the students used. Then, keep track of types of responses, and choose a few to share with the class.
<b>Muddiest Point</b>	To self-assess understanding.	Ask students to write a quick response to the question, “What was the muddiest point in _____?” The focus may be a lecture, a discussion a homework assignment, a play, a film, a reading, etc.	Quick & simple; minimal prep; “safe”; can promote self-reflection; can be difficult for students to explain.	Make note of any useful responses and respond to them in class.
<b>One-sentence Summary</b>	To assess skill at concisely summarizing information.	Have questions answer the questions: “who?”, “does what?”, “to what or whom?”, “when?”, “where?”, “how?”, “why?”, and then write the answer in the form of one sentence.	Quick & easy to assess summarizing ability, technique for helping students grasp complex concept; not great for all information.	Draw slash marks between elements in the sentences, separating the responses into the original questions (i.e. “who?”, “does what?”, etc.). Place a check-plus, check, or check-minus above each element, then keep a tally of great, correct, and incorrect responses and patterns.
<b>Directed Paraphrasing</b>	To assess understanding of an important concept and ability to recall and restate it.	Give the students a question which asks them to paraphrase an important idea or concept from the course.	Builds on and builds up skills in comprehending and communicating information; can be used for direction of instruction; can take time and effort to assess; sometimes difficult to establish criteria.	Divide responses into “confused”, “minimal”, “adequate”, and “excellent”.
<b>Student-Generated Test Questions</b>	To assess what is considered as the most important material and expectations.	Ask students to make a quiz or test questions on material covered in the course.	Students can learn what they do and don’t understand; serves as study tool; initial efforts might be quite poor; if not used, may seem useless.	Looks at the types of questions students pose and the range of topics. Look for relevance and clarity.

<b>Instructor Mistake</b>	To assess critical thinking, understanding.	Present a drawing or statement and ask, "What is wrong with what I just wrote?"	Effective once or twice a term. Can help you understand problems in process.	Check for patterns in misinterpretation, prior-knowledge interference.
<b>Next Step</b>	To assess understanding of process.	Ask for the next step in a procedure or derivation.	For students with limited understanding could confuse; could seem too linear; could put students on spot; helps identify problems in process.	Check for patterns in next step, limited understanding of certain steps. Ask for more detail.
<b>Variations/ Applications/ Examples</b>	To assess deep thinking of concept, transferability of knowledge.	Ask for real world examples, variations or applications of the material.	Works very well online, can help students transfer knowledge, understand more deeply.	Identify problems in comparison or application. Assess ease or difficulty by simplifying or complicating.
<b>Problem Recognition Tasks</b>	To assess recognition of problem types.	Give students a few examples of common problem types. The students' task is to recognize and identify the particular problem each example represents.	Quick and simply way to see if students can identify problems, real-life problems won't fit easily into single category, just because can identify doesn't mean can solve.	Tally correct and incorrect responses.
<b>What's the Principle?</b>	To assess ability to apply principles to solve problems.	Identify the principle used to solve the problem.	Simple, quick way to get useful information on complex skill; students get quick feedback on level of skill; encourages transfer and problem-solving skills.	Forms should be easy and quick to score. Tally number of right and wrong answers and note patterns in wrong answers.
<b>Focused Listing</b>	To assess prior knowledge or recall of a particular concept.	Select a word or phrase that is the focus of a particular lesson. Tell the students to make a list of related terms important to understanding the topic. Time limit or number of items.	Simple, quick, and flexible; Clear idea for concepts recalled; can "prime the pump"; lower level cognitive skills; doesn't get at understanding or connecting.	To tally the results, group the students' answers into "related" / "unrelated" OR "appropriate" / "inappropriate".
<b>Double-entry Journal</b>	To assess attitudes about a text.	Ask students to note several passages or some important points from a reading on the left side of the page; then on the right side, respond to the text.	Can help teacher understand how student reads, what is focused on and why; encourages personal connection and self-reflection; students may write for the teacher; can be difficult.	Look for commonalities among passages/ideas chosen and responses.
<b>Incomplete Table</b>	To assess understanding of elements of concept or pieces of process.	Prepare a table that summarizes and organizes information, but leave some cells blank; have students collectively complete the table.	May give students more or less information than they need; can seem rigid; not all tables can fit into one place; can help students "see" thinking.	Identify common areas of difficulty, readdress.
<b>Memory Matrix</b>	To assess recall and understanding.	Make a two-dimensional diagram in which row and column headings are general categories or concepts, and the cells within are left empty for the students to list particular examples.	Can show recall, categorization, and connections; can be assessed quickly, good for visual learners; best for basic information, lower order thinking.	Tally the correct and incorrect items, then look for patterns of correct and incorrect answers.

<b>Categorizing Grid</b>	To assess recall and understanding.	Come up with a few categories and some examples from the class. Then have students group examples in the categories. Make sure the examples clearly fit into one of the categories.	Quick and simple to assess analytic & organizing skill; good skill for students to use independently; may only assess rote memory.	Tally correct and incorrect answers and look for patterns among correct and incorrect answers.
<b>Defining Features Matrix</b>	To assess recall and understanding of important concepts.	Take two important concepts and list the defining features of these concepts. Then have the students use "+" or "-" notation to denote what characteristics the concepts have and don't have.	Quick way to assess areas of confusion among concepts; helps break down complex ideas; requires careful preparation; can be time consuming; not all info can be expressed with only plus or minus.	Tally correct and incorrect answers and look for patterns among correct and incorrect answers.
<b>Pro-Con Grid</b>	To assess skill at analyzing pros and cons, costs and benefits, or advantages and disadvantages of some issue.	Take a controversial issue from a reading or class discussion, and ask students to list the pros and cons of the issue. You might want to limit the number of pros and cons, and then ask them to make a decision.	Can assess whether students can see both sides of an issue; can help determine class focus; most appropriate for binary topics; may be difficult for ethical or moral issues.	List students' answers and do a frequency count. Which points are most often mentioned? Have they omitted some important points? Do you agree with their responses? Report to the class.
<b>Content, Form, and Function Outlines</b>	To assess skill at analyzing information.	Have students make a grid (or provide a grid) with column headings "content (what is it?)", "Form (How do you use it?)", and "Function (Why would you use it?)"? Then have them analyze the content, form, function of concepts.	Can promote careful listening & note-taking, good scaffolding tool, helps organize, not best for all information, lower order thinking (students don't create their own).	Keep a running tally of trouble spots; alternatively, have students create their own and see where confusion exists.
<b>Approximate Analogies</b>	To assess understanding of relationship between two items.	A is to B as.....Can students "capture" the relationship? Provide students with an example, and ask them to provide part or the full analogy.	Encourages transfer, application, and creativity; connects new knowledge to old; can be fun; can be difficult; maybe more difficult in some fields,	Sort into piles of "good", "questionable", "poor or wrong". Pick out some as examples, explain to class reasoning.
<b>Concept Maps</b>	To assess conceptual schema.	Students construct drawings or diagrams showing mental connections they make between a major concept and other concepts. Can give students confidence that they are able to think complexly about ideas.	May not be helpful for all learning styles – but helpful for visual learners; can clarify for some students, complicate for others; can become too tangential; without closure some students can be distressed.	Look for patterns in comparing to other students; identify areas of difference to complicate understanding; look for areas of confusion.
<b>Invented Dialogues</b>	To assess skill in synthesis and creative thinking.	Students synthesize their knowledge of issues, personalities, and historical periods into the form of a carefully structured illustrative conversation. Can be written or enacted (live or recorded).	Forces students to internalize and process course material drawing on higher-order thinking skills; gives students choice; can be time demanding; may be difficult for some students.	Count number of important points that are adequately addressed; rate quality of reasoning on scale; grade literary qualities or presentation; creativity.

<b>Background Knowledge Probe</b>	To assess accumulation of knowledge into already established structures.	Collect specific and useful information on students' prior learning, focusing on specific information or concepts that must be known to succeed in subsequent assignments. This can be done in dialogue with the students or in writing.	Helps identify knowledge and skills in communicating, can "prime the pump" for recall, can be difficult for underprepared students.	Divide into 3-4 piles, according to degree of knowledge, count which piles have the most, prepare from those piles.
<b>Misperceptions/ Preconceptions</b>	To assess accumulation of knowledge into already established structures.	Learn students' prior knowledge or beliefs that may hinder or block further learning. Ask for the information in dialogue or in writing.	"Safe" because anonymous, quick and simple, not best for issues students find threatening.	Pile for quick knowledge about mis/preconceptions, look for patterns, put on scale to see where most students fall.
<b>Annotated Portfolios</b>	To assess skill in explaining their creative work in relation to course goals and content.	Have students choose a few examples of their work during the semester. Then, they write about how these examples show their development in applying class concepts, solving problems, and increasing their skill.	Allows students to express concepts; requires interpretation; gives students choice; can be difficult to present and structure, may be time consuming.	Try to come up with a rubric as to how you will rank the responses. Then, read the responses, rank them, and take notes about common problems/difficulties you found.
<b>Punctuated Lectures</b>	To assess on-the-spot learning, student attention, processing, distractions.	Intentionally stop the lecture; useful in classes where lecture or lecture-demonstrations are the primary methods of instruction/presentation; useful with introducing new concepts or complex theories/procedures.	This one requires some practice with your students, asking students to recall, at the moment, can be intimidating, may seem frustrating; improves listening skills and active learning; re-captures attention.	Analyze comments to identify if students compiled main points, look at specificity. Look for points in the listening process to identify attention.
<b>Productive Study-Time Logs</b>	To assess and let students assess how they spend their time and how much time is required to study.	Prepare a log form and ask students to use it for a few days. Let students know exactly what to include and what not to include in their study logs.	Students gain information on their study habits; instructors get picture of level and quality of investment; comparing to other students can encourage students to change behaviors; can be easy to forget or generalize; can be time consuming for student and instructor.	Calculate the averages—per category and total.
<b>Self-Confidence Surveys</b>	To assess attitudes about their own skills.	Come up with a survey that lists several skills important to the course; ask students to rate their self-confidence in accomplishing the tasks.	Provides information on self-confidence; can be a relief; can impact students' self-confidence.	Tally and average the answers to get an idea of students' self-confidence as a group.

Adapted from:

- Angelo, T., & Cross, P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2<sup>nd</sup> ed.). San Francisco, CA: Jossey-Bass.
- Dolye, T. (2009). *Classroom assessment techniques*, GIFTS Workshop ([tdoyle@shastacollege.edu](mailto:tdoyle@shastacollege.edu))
- Office for Academic Excellence and Assessment (2005). *Classroom assessment techniques*.
- Gupta, N. (2011). *Classroom assessment techniques*. Provided for GTA Academy Workshop. University of Louisville, Louisville, KY