Classroom Assessment Techniques (CATs)


Advantages:

- Learner-centered
- Teacher-directed
- Mutually beneficial
- Formative
- Context-specific
- Ongoing
- Rooted in good teaching practice

Assumptions:

- Student learning depends in part on quality teaching.
- To make teaching more effective, goals and objectives must be specific and explicit.
- Students require feedback early and often, and they need to know how to assess their own learning.
- Assessments most likely to improve teaching are those developed by teachers themselves to address questions or issues they themselves pose and formulated around their own teaching.
- Systematic inquiry and challenge are powerful sources of motivation, growth, and renewal for teachers; classroom assessment techniques provide such challenge.
- Classroom assessment does not require special training. Any teacher in any discipline can do it.
- Collaborating with fellow teachers and directly involving students in the assessment process enhances student learning and personal satisfaction.

How to start:

So as not to disrupt normal teaching routine, start with one or two of the simplest CATs. This involves only 5-10 minutes of class time and only about 1 hour of out-of-class time to review the results. Based on success and value, move to try some other techniques.

Follow these steps:

1. **Plan.** Select one and only one class in which to try out classroom assessment. Decide on the class meeting. Then decide on the technique, choosing a simple and quick one.

2. **Implement.** Make sure students know what you are doing and that they clearly understand the procedure. Collect responses and analyze them as soon as possible.

3. **Respond.** To capitalize on the time spent assessing and to motivate students to become actively involved, “close the feedback loop” by letting the students know what you learned from the assessments and what difference the information will make.
Classifying CATs...

Assessing prior knowledge, recall, and understanding:
- Background Knowledge Probe
- Focused Listing
- Misconception/Preconception Check
- Empty Outlines
- Memory Matrix
- Minute Paper
- Muddiest Point

Assessing skill in analysis and critical thinking:
- Categorizing Grid
- Defining Features Matrix
- Pro and Con Grid
- Content, Form, and Function Outlines
- Analytic Memos

Assessing skill in synthesis and creative thinking:
- One-Sentence Summary
- Word Journal
- Approximate Analogies
- Concept Maps
- Invented Dialogues (not included here)
- Annotated Portfolios (not included here)

Assessing skill in problem solving
- Problem Recognition Tasks
- What’s the Principle?
- Documented Problem Solutions
- Audio- and Videotaped Protocols

Assessing skill in application and performance
- Directed Paraphrasing
- Applications Cards
- Student-Generated Test Questions
- Human Tableau or Class Modeling (not included here)
- Paper or Project Prospectus (not included here)

CATs follow, in alphabetical order. Included are descriptions and steps. For examples, pros/cons, caveats, and extensions of the method, see Angelo and Cross (1993).
Applications Cards

Description:

After students have heard or read about an important principle, generalization, theory, or procedure, the instructor hands out an index card and asks them to write down at least one possible, real-world application for what they have just learned. In a nutshell, that is the Application Card technique.

Step-by-Step Procedure:

1. Identify an important – and clearly applicable – principle, theory, generalization, or procedure that you students are studying or have just studied.

2. Decide how many applications you will ask for and how much time you will allow for the assessment. One is often enough, and we suggest asking for no more than three applications. Three to five minutes is usually enough time. Before class starts, figure out exactly how you will word the assessment prompt.

3. Announce what you are going to do; then hand out small index cards or slips of paper. Remind students that the point is to come up with their own “fresh” applications, not to repeat applications they have heard in class or read in the text.

4. Collect the Application Cards and let students know when they will get feedback.
Analytic Memos

Description:

The Analytic Memo is basically a simulation exercise. It requires students to write a one- or two-page analysis of a specific problem or issue. The person for whom the memo is being written is usually identified as an employer, a client, or a stakeholder who needs the student’s analysis to inform decision making.

Step-by-Step Procedure:

1. Determine which analytic methods or techniques you wish to assess.
2. Locate or invent an appropriate, well-focused, and typical problem or situation for the students to analyze. Get background information on the problem or invent some plausible information.
3. Specify who is writing the memo and for whom it is being written, as well as its subject and purpose.
Approximate Analogies

Description:

To respond to the *Approximate Analogies* assessment technique, students simply complete the second half of an analogy – A is to B as X is to Y – for which their instructor has supplied the first half (A is to B). Consequently, the student can respond to this CAT in as few as two words. for the purposes of Classroom Assessment, student responses need not always display the rigor required of analogies in formal logic or mathematics; therefore, we call these analogies “approximate.”

Step-by-Step Procedure:

1. Select a key relationship between two facts or concepts that is important for your students to understand well.
2. Create an *Approximate Analogy*, using the two related concepts or facts as the A and B elements in the “A is to B as X is to Y” format.
3. Quickly generate a number of appropriate completions – the “X is to Y” part – each of which results in an *Approximate Analogy*. Try to come up with relationships from everyday life.
4. If you are convinced that the original relationship is worth assessing, and that most of your students will be able to respond, prepare to use it as a prompt. Present one or two sample analogies to the students before asking them to complete an *Approximate Analogy* on their own.
5. When you are ready to carry out the assessment, simply write the prompt on the board, or display it on an overhead, and explain what students are to do. You may wish to hand out small index cards or slips of paper for the responses.
6. In most cases, students will need only a minute of two to complete the *Approximate Analogy*, after which you can collect the feedback.
Audio- and Videotaped Protocols

Description:

*Audio- and Videotaped Protocols* (A/V Protocols) are CATs that edge over into Classroom Research. Indeed, protocols of this sort are commonly used in formal educational and psychological research on problem solving and metacognition. Even the simplest application of this technique is likely to be more time-consuming and complicated than any other in this handbook; however, it can provide a wealth of useful information to teacher and student alike. By studying an audio or video recording of a student talking and working through the process of solving a problem, teachers and students can get very close to an “inside view” of the problem-solving process.

Step-by-Step Procedure:

1. Choose a problem that clearly requires the application of a several-stop solution protocol, which students have already been taught or can be expected to know. Make sure the problem lends itself to “talking through” on audiotape or to “showing and telling” on videotape, and that it can be solved in a few minutes by most students.

2. Determine whether the problem protocol can be audiotaped and transcribed by students or should be videotaped. Videotape is obviously more complex and cannot be usefully transcribed by students without training.

3. Figure out in advance what you will look for in their responses and how you will analyze and respond to the protocols.

4. Make sure that the necessary facilities and equipment are readily available to students.

5. Draw up a problem statement and detailed directions for recording the solution protocol. Give students clear time limits for their recordings and/or length limits for the transcriptions.

6. Let students know what you are looking for in their recordings. Be prepared to give examples and to demonstrate what you would like them to do. Explain also what they are supposed to learn from this assessment exercise.

7. Make clear to students what kind and how much feedback they can expect to receive on their protocols from you and/or from each other.
**Background Knowledge Probe**

Description:

At the first class meeting, many college teachers ask students for general information on their level of preparation, often requesting that students list courses they have already taken in the relevant field. This technique is designed to collect much more specific, and more useful, feedback on students' prior learning. *Background Knowledge Probes* are short, simple questionnaires prepared by instructors for use at the beginning of a course, at the start of a new unit or lesson, or prior to introducing an important new topic. A given *Background Knowledge Probe* may require students to write short answers, to circle the correct response to multiple-choice questions, or both.

Step-by-Step Procedure:

1. Before introducing an important new concept, subject, or topic in the course syllabus, consider what the students may already know about it. Recognizing that their knowledge may be partial, fragmentary, simplistic, or even incorrect, try to find at least one point that most students are likely to know, and use that point to lead into others, less familiar points.

2. Prepare two or three open-ended questions, a handful of short-answer questions, or ten to twenty multiple-choice questions that will probe the students' existing knowledge of that concept, subject, or topic. These questions need to be carefully phrased, since a vocabulary that may not be familiar to the students can obscure your assessment of how well they know the facts or concepts.

3. Write your open-ended questions on the chalkboard, or hand out short questionnaires. Direct student to answer open-ended questions succinctly, in two or three sentences if possible. Make a point of announcing that these *Background Knowledge Probes* are not tests or quizzes and will not be graded. Encourage students to give thoughtful answers that will help you make effective instructional decisions.

4. At the next class meeting, or as soon as possible, let students know the results, and tell them how that information will affect what you do as the teacher and how it should affect what they do as learners.
Categorizing Grid

Description:

The *Categorizing Grid* is the paper-and-pencil equivalent of sorting objects in a warehouse and putting like ones together in the right bins. Students are presented with a grid containing two or three important categories – superordinate concepts they have been studying – along with a scrambled list of subordinate terms, images, equations, or other items that belong in one or another of those categories. Learners are then given a very limited time to sort the subordinate terms into the correct categories on the grid.

Step-by-Step Procedure:

1. Select two or three related categories that are particularly useful for organizing the information presented in class. Make a list of several good examples of items in each category. Review your list to make sure that all items clearly belong only to one category and that all items are ones students can be expected to recognize from class or homework.

2. Make a grid by drawing a large rectangle and dividing it into as many rectangles of equal size as you have categories. You can either hand out copies of the *Categorizing Grid* or draw it and have students copy it themselves. With simple grids, the latter is more economical and probably no more time-consuming than passing out copies.

3. The items that students are to categorize can be listed, in scrambled order, next to the grid on the copies or on the chalkboard, or they can be projected from an overhead transparency. Alternatively, you can use real objects or slides as the examples to be categorized.
Concept Maps

Description:

*Concept Maps* are drawings or diagrams showing the mental connections that students make between a major concept the instructor focuses on and other concepts they have learned. An analogy would be to ask students to draw a map of the area in a twenty-mile radius around Boston, putting in only the features they regard as most important. To prompt students to make *Concept Maps*, we might ask them to sketch the important features of the “geography” around major concepts such as democracy, racism, art, or free trade.

Step-by-Step Procedure:

1. Select the concept you wish to use as the stimulus or starting point for the *Concept Map*. It should be a concept that is both important to understanding the course and relatively rich in conceptual connections.
2. Brainstorm for a few minutes, writing down terms and short phrases closely related to the stimulus.
3. Draw a *Concept Map* based on your brainstorming, placing the stimulus in the center and drawing lines to other concepts. You might make your *Concept Map* closely resemble a wheel with spokes, with the focus concept at the hub. Or it might be based on a model of the solar system, with the stimulus in the sun’s position. A third option is to make the *Concept Map* resemble a geographical map.
4. After you have sketched in the primary associations, move on to add secondary and even tertiary levels of association, if appropriate.
5. Determine the ways in which the various concepts are related to each other and write those types of relations on the lines connecting the concepts.
6. Prepare a simple parallel example to use with the class.
7. Present the example to the students and work through it with them step by step, checking results at each step to make sure the process is clear.
Content, Form, and Function Outlines

Description:

This CAT is also called “What, How, and Why Outlines.” to respond to it, the student carefully analyzes the “what” (content), “how” (form), and “why” (function) of a particular message. that message may be a poem, a newspaper story, a critical essay, a billboard, a magazine advertisement, or a television commercial. The student writes brief notes answering the “what, how, and why” questions in an outline format that can be quickly read and assessed.

Step-by-Step Procedure:

1. Choose a short text, a passage, or a film clip that contains important content and is clearly structured in a form that is common to the genre – for example, a five-paragraph essay.

2. If the structural subsections of the message are not explicitly defined – by subheadings or numbers, for example – you may want to mark them clearly yourself, so that all the students will divide the text into the same subsections.

3. Find a parallel text that you can use as an example and write a Content, Form, and Function Outline for that text.

4. Hand our your outline to the students and take them through your analysis step by step, modeling the process you want them to use. Many students find it difficult to understand and then express the distinction between function and content at first; so give several clear examples. The handout detailing your analysis allows students to review the steps you have demonstrated.

5. You may wish to prepare an outline form for students to use. Such a form can help you read and compare responses more quickly.

6. After you are confident that the students understand the technique, present the message they are to analyze. Go through the directions carefully and give them sufficient time to carry it out. Unless it is a very short text or message, the assessment should probably be completed outside of class.
Defining Features Matrix

Description:

The *Defining Features Matrix* requires students to categorize concepts according to the presence (+) or absence (-) of important defining features, thereby providing data on their analytic reading and thinking skills.

Step-by-Step Procedure:

1. Focus the matrix on two or three important concepts that are similar enough to confuse your students.
2. Determine which features of these concepts are most critical for the students to recognize.
3. Make a list of defining features that each concept either clearly does or does not possess. After drawing up that list, you may want to add a limited number of shared features.
4. Sketch out a matrix with features listed down the left side and concepts across the top, or vice versa.
5. Check to see that each cell in the matrix can be reasonably responded to with a plus or a minus sign or a “yes” or “no.” If you cannot give an either/or response to the cell, that feature probably should be removed from the matrix.
6. Draw up a finished matrix and give copies to your students or, if it is very simple, have them copy it off the chalkboard.
7. Clearly explain the purpose of the matrix and the directions for filling in, as well as the time limit for doing so.
 Directed Paraphrasing

Description:

In many fields, particularly in the professions and the service sector, success depends on one’s ability to translate highly specialized information into language that clients or customers will understand. Directed Paraphrasing is an assessment technique designed to assess and help develop that valuable skill. In this CAT, students are directed to paraphrase part of a lesson for a specific audience and purpose, using their own words.

Step-by-Step Procedure:

1. Select an important theory, concept, or argument that students have studied in some depth. This should be a topic with some implications outside the classroom.

2. Determine who would be a realistic yet challenging audience for a paraphrase of this topic, what the purpose of such a paraphrase should be, and how long – in number of written words or amount of speaking time – the Directed Paraphrase should be. If your students are well prepared in the material and/or experienced in the field, direct them to paraphrase the same topic for two very different audiences.

3. Try responding to the Directed Paraphrase yourself, to see how realistic the assignment is. Can you write an effective paraphrase within the limits given?

4. Direct the students to prepare a paraphrase of the chosen topic. Tell them who the intended audience is, what the purpose is, and what the limits are on speaking time or on number of words or sentences. Let students know how much time they will have to respond to the assessment. (Unless you plan to review video- or audiotapes, have the students write out their Directed Paraphrases, even though in real life many of them would be spoken.)
**Documented Problem Solving**

Description:

To become truly proficient problem solvers, students need to learn to do more than just get correct answers to textbook problems. At some point, they need to become aware of how they solved those problems and how they can adapt their problem-solving routines to deal with messy, real-world problems. The *Documented Problem solutions* technique prompts students to keep track of the steps they take in solving a problem – to “show and tell” how they worked it out. By analyzing these detailed protocols – in which each solution step is briefly explained in writing – teachers can gain valuable information on their students’ problem-solving skills.

Step-by-Step Procedure:

1. Select one, two, or three representative problems from among the problems students have studied during the previous few weeks. If you decide to assign three problems, for example, try to select at least one that all the students can solve, another that most of the class can solve, and a third one that will challenge most of your students.

2. Solve the problem yourself, and write down all the steps you take in solving them. Note how long it takes you and how many steps each problem solution required.

3. If you find any of the problems too time-consuming or too complicated, replace or revise them.

4. Once you have good problems that you can solve and document in less than thirty minutes, write them up for the students. Assume that it will take the students at least twice as long as it took you to document the solutions. Make your directions very explicit.

5. Hand out and explain the assessment problem(s), making clear to the students that it is not a test or a quiz. It is more important for students to explain how they try to solve the problems than to get the right answers. Having well-documented steps is even more important if they fail to get a correct answer, since they can then diagnose where and how they went wrong. If you assign the assessment problem as homework, let students know the maximum amount of time they should spend on it.
Empty Outlines

Description:

The name of this technique is self-explanatory. The instructor provides students with an empty or partially completed outline of an in-class presentation or homework assignment and gives them a limited amount of time to fill in the blank spaces. To help students better organize and learn course content, many instructors already provide outlines of their lectures at the beginning or end of class sessions. In our experience, however, fewer teachers use the outline format to assess students’ learning of that same content.

Step-by-Step Procedure:

1. Create an outline of the lecture, presentation, discussion, or reading you want to focus on.
2. Make conscious decisions about the level on which you will focus the Empty Outline and, thus, the students’ attention. Do you want students to supply the main topics, the main subtopics, or the supporting details? These decisions will determine what information you supply in the form and what you leave out.
3. When students are to complete the form from memory – that is, without any notes or other information – limit the number of items the Empty Outline elicits to fewer than ten.
4. If your Empty Outline focuses on a live presentation or a discussion, make sure that your own notes reflect any important changes that may have occurred between what was scripted and what actually happened.
5. Let students know how much time they will have to complete the outlines and the kinds of responses you prefer – words, short phrases, or brief sentences.
6. Be sure to announce the purpose of the assessment and the time when the students will receive feedback on their responses.
Focused Listing

Description:

As the name implies, this technique focuses students’ attention on a single important term, name, or concept from a particular lesson or class session and directs them to list several ideas that are closely related to that “focus point.”

Step-by-Step Procedure:

1. Select an important topic or concept that the class has just studied or is about to study and describe it in a word or brief phrase.
2. Write that word or phrase at the top of a sheet of paper as the heading for a Focused List of related terms important to understanding that topic,
3. Set a time limit or a limit on the number of items you will write, or set both time and item-number limits. Two or three minutes and five to ten items are usually sufficient.
4. Adhering to your own limits, make a list of important words and phrases you can recall that are related to and subsumed by your heading.
5. Look over your list quickly, adding any important items you may have left out.
6. If you are still convinced that the topic is important and well defined – worth class time to assess and respond to – give your students the same focus topic, tell them the time and/or length limits, and ask them to make Focused Lists. (You will probably need to allow students somewhat more time than you gave yourself to carry out this task.)
Memory Matrix

Description:

The Memory Matrix is simply a two-dimensional diagram, a rectangle divided into rows and columns used to organize information and illustrate relationships. The row and column headings are given, but the cells, the boxes within, are left empty.

Step-by-Step Procedure:

1. Draw a simple Memory Matrix in which row and column headings represent useful categorizing variables for important information covered in the lesson.

2. Fill in the blank cells yourself with the appropriate facts. Use the same vocabulary as that used in the relevant lectures, discussions, readings, or other instructional material.

3. Check to see that there is a good “fit” between row and column headings and the facts in the cells. Revise the Memory Matrix if necessary.

4. When you are satisfied with your matrix, draw a new one with only the row and column headings and spacious but empty cells. To encourage high achievers, provide enough space in the cells for a larger number of items than you expect students to come up with. Duplicate this matrix on scrap paper and hand out copies, or draw it on an overhead transparency or the chalkboard and have students copy it.

5. Direct students to provide the information needed to fill in the cells. Ask them to write only words or brief phrases. Set a realistic lower limit for the number of items you expect them to insert in each cell. Asking students to provide at least three items, for example, can keep them from stalling and blocking in search of the one best answer.

6. Collect the matrices and assess the correctness and completeness of the information given.
Minute Paper

Description:

No other technique has been used more often or by more college teachers than the Minute Paper. This technique -- also known as the One-Minute Paper and the Half-Sheet Response -- provides a quick and extremely simple way to collect written feedback on student learning. To use the Minute Paper, an instructor stops class two or three minutes early and asks students to respond briefly to some variation on the following two questions: "What was the most important thing you learned during this class?" and "What important question remains unanswered?" Students write their responses on index cards or half-sheets of scrap paper and hand them in.

Step-by-Step Procedure:

1. Decide first what you want to focus on and, as a consequence, when to administer the Minute Paper. If you want to focus on students' understanding of a lecture, the last few minutes of class may be the best time. If your focus is on a prior homework assignment, however, the first few minutes may be more appropriate.

2. Using the two basic questions from the "Description" above as starting points, write Minute Paper prompts that fit your course and students. Try out your Minute Paper on a colleague or teaching assistant before using it in class.

3. Plan to set aside five to ten minutes of your next class to use the technique, as well as time later to discuss the results.

4. Before class, write one or, at the most, two Minute Paper questions on the chalkboard or prepare an overhead transparency.

5. At a convenient time, hand out index cards or half-sheets of scrap paper.

6. Unless there is a very good reason to know who wrote what, direct students to leave their names off the papers or cards.

7. Let the students know how much time they will have (two to five minutes per question is usually enough), what kinds of answers you want (words, phrases, or short sentences), and when they can expect your feedback.
**Misconception/Preconception Check**

Description:

*Focused Listing* and *Background Knowledge Probes* are simple techniques for gathering information on what students already know in order to determine effective starting points for instruction. The *Misconception/Preconception Check* also assesses students’ prior knowledge, but with a twist. Its focus is on uncovering prior knowledge or beliefs that may hinder or block further learning.

**Step-by-Step Procedure:**

1. Start by identifying some of the most troublesome common misconceptions or preconceptions students bring to your course. Brainstorming this question with colleagues in your department or field can be a very effective way to generate such a list.

2. Select a handful of these troublesome ideas and beliefs – ones that are likely to interfere most with learning in your course – and focus your *Misconception/Preconception Check* on them.

3. Create a simple questionnaire to elicit information about students’ ideas and beliefs in these areas. You may want to use a multiple-choice format or a short-answer format. Short-answer questions can uncover more useful information, but they compromise anonymity. Multiple-choice questionnaires are therefore safer, and the responses are easier to analyze. If you need to know how strongly held the beliefs or ideas are, consider providing Likert-scale responses.

4. Have another faculty member read your questions to make sure they do not seem patronizing, threatening, or obvious.

5. Before giving the questionnaire to your students, think through how you will respond to several likely outcomes. Strike any questions or topics you do not feel prepared to deal with.

6. Explain your reasons for using this CAT to the students, make sure the anonymity of their responses is ensured, and announce when and how you plan to respond to their feedback.
**Muddiest Point**

**Description:**

The *Muddiest Point* is just about the simplest technique one can use. It is also remarkable efficient, since it provides a high information return for a very low investment of time and energy. The technique consists of asking students to jot down a quick response to one question: "What was the muddiest point in .......?" The focus of the *Muddiest Point* assessment might be a lecture, a discussion, a homework assignment, a play, or a film.

**Step-by-Step Procedure:**

1. Determine what you want feedback on: the entire class session or one self-contained segment? A lecture, a discussion, a presentation?

2. If you are using the technique in class, reserve a few minutes at the end of the class session. Leave enough time to ask the question, to allow students to respond, and to collect their responses by the usual ending time.

3. Let students know beforehand how much time they will have to respond and what use you will make of their responses.

4. Pass out slips of paper or index cards for students to write on.

5. Collect the responses as or before students leave. Stationing yourself at the door and collecting "muddy points" as students file out is one way; leaving a "muddy point" collection box by the exit is another.

6. Respond to the students' feedback during the next class meeting or as soon as possible afterward.
One-Sentence Summary

Description:

This simple technique challenges students to answer the questions "Who does what to whom, when, where, how, and why?" (represented by the letters WDWWWWHW) about a given topic, and then to synthesize those answers into a simple informative, grammatical, and long summary sentence.

Step-by-Step Procedure:

1. Select an important topic or work that your students have recently studied in your course and that you expect them to learn to summarize.
2. Working as quickly as you can, answer the questions "Who Did/Does What to Whom, When, Where, How and Why?" in relation to that topic. Note how long this first step takes you.
3. Next, turn your answers into a grammatical sentence that follows WDWWWWHW pattern. Not how long this second step takes.
4. Allow your students up to twice as much time as it took you to carry out the task and give them clear direction on the One-Sentence Summary technique before you announce the topic to be summarized.
Pro and Con Grid

Description:

At one time or another, most people have jotted down quick lists of pros and cons to help them think more clearly about a pressing decision. The Pro and Con Grid turns that familiar decision-making exercise into a simple Classroom Assessment Technique with many possible applications.

Step-by-Step Procedure:

1. Focus on a decision, a judgment, a dilemma, or an issue that has teaching and learning implications in your discipline and for your students.

2. Write out a prompt that will elicit thoughtful pros and cons in relation to this issue or dilemma. You may wish to indicate a specific point of view that students should adopt in coming up with their lists. Doing so will make the pros and cons more comparable.

3. Let students know how many pros and cons you expect and how they are to be expressed. Are parallel lists of words and phrases adequate, or should the pros and cons be expressed in sentences.
Problem Recognition Tasks

Description:

Problem Recognition Tasks present students with a few examples of common problem types. The students’ task is to recognize and identify the particular type of problem each example presents.

Step-by-Step Procedure:

1. Choose examples of several different but related problem types that students find difficult to distinguish. Make sure that each example illustrates one and only one type of problem.

2. Decide whether you will provide information about the types of problems that students are to recognize, allowing them simply to match type with example, or whether you will ask students to name the problem types as well.

3. Try out your examples on a colleague or an advanced student to see whether he or she agrees with your choice of examples. This run-through also can help you assess the difficulty of the task and the time that it will take to complete.

4. Make up a short Problem Recognition Task form or overhead projector transparency containing a handful of example problems for students to recognize. Allow your students twice or three times the amount of time it took your colleague to respond.
Student-Generated Test Questions

Description:

Most faculty discover early – often as graduate teaching assistants – that one of the best ways to find out how well they themselves understand the material they are teaching is to prepare test questions and model answers. This technique gives students the benefit of that experience – early on and in small doses.

Step-by-Step Procedure:

1. Focus on a test or exam that is at least three weeks to a month away. Decide what types of questions on what specific topics you want students to generate. Imagine that you are writing specifications to yourself about the kinds of questions you want students to create, and write those directions down for your students. If you have already written the test questions, frame your directions so that students will write similar ones.

2. Decide how many questions you want students to generate. One or two questions of any type are usually enough, especially if you want students to supply answers.

3. Explain what you want the students to do, why you want them to do it, how their questions will be used, when they will get feedback, and how writing questions and getting feedback will help them perform better on the test.
What’s the Principle?

Description:

After students figure out what type of problem they are dealing with, they often must then decide what principle or principles to apply in order to solve the problem. This technique focuses on this step in problem solving. It provides students with a few problems and asks them to state the principle that best applies to each problem.

Step-by-Step Procedure:

1. Identify the basic principles that you expect students to learn in your course. Make sure focus only on those that students have been taught.
2. Find or create sample problems or short examples that illustrate each of these principles. Each example should illustrate only one principle.
3. Create a What's the Principle? form that includes a listing of the relevant principles and specific examples or problems for students to match to those principles.
4. Try out your assessment on a graduate student or colleague to make certain it is not too difficult or too time-consuming to use in class.
5. After you have made any necessary revisions to the form, apply the assessment.
Word Journal

Description:

The *Word Journal* prompts a two-part response. First, the student summarizes a short text in a single word. Second, the student writes a paragraph or two explaining why he or she chose that particular word to summarize the text. The completed response to the *Word Journal* is an abstract or a synopsis of the focus text.

Step-by-Step Procedure:

1. Choose one of the short texts that your students will be assigned to read.
2. Decide what aspect of that text – main theme, central conflict or problem, core metaphor – you want students to focus on.
3. To determine whether the exercise is feasible and productive, try following your own directions.
4. If you find the *Word Journal* process thought-provoking, prepare to explain and administer the technique in your course.
5. Tell the students that the choice of a specific word is less important than the quality of the explanation for that choice. Give them some ideas about what their explanations should contain, and inform them that the words they choose must be connected to their interpretations of the text.