

Classroom Assessment Techniques: Checking for Understanding in the Classroom

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*“When we think about evaluating learning, most of us think about examinations. . . But there are other methods of assessment. ”
Try using non-graded “spot checks” that provide feedback to the students and to you. McKeachie, Teaching Tips (1999).*

The following learning “spot checks” have proven to provide invaluable information to both the student and the faculty member **in a very short period of time**. They can be individualized for level of difficulty and limitations in time and resources. Try implementing one or two of these ideas during the next semester. Some of these strategies can be found at <http://maa.org> as part of the Teaching and Learning section.

1. Focused Listing

This helps determine what learners recall about a specific topic, including concepts they associate with a central point. This can be used before, during or after a class. Have students write a key word at top of the page. For 2-3 minutes, have them jot down related terms important to the understanding of that topic. It can be as basic or bazaar as students wish – as long as they can relate it back to the topic. Next, have them pair with a friend to share their lists and explain why they included what they did. This will build their knowledge base and clarify their understanding of the topic.

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

2. Background Knowledge Probe

You can use this technique as early as the first class meeting; it works well in classes of any size. Focus the questions in your probe on specific information or concepts that students will need to know to succeed in subsequent assignments, rather than on their personal histories or general knowledge. Make sure to ask at least one question that you are certain most students will be able to answer correctly and at least one other that you judge to be more difficult. At the next class meeting, individual students can find out how the class as a whole did, and can gauge their level of preparation in relation to that of the group. To assess changes in students’ knowledge, use the same or similar questions at the midpoint and at the end of a lesson, unit, or term. The probe can also be used to introduce important concepts that will subsequently be developed through a number of lessons, or throughout the entire course.

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

3. Think – Pair – Share

Present students with a question and/or problem. Each Thinks individually about the response and records an answer. Then students pair up to share their answers and explain their approach.

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

4. KWL (What do you know, What do you want to learn, What have you learned)

This activity can be used as an organizational structure for lectures, students’ notes, or short quizzes. Normally, a chart features each segment in its own column and students fill in the blanks. See example below.

K	W	L
What do you know?	What do you want to learn?	What have you learned?
<i>This column to be filled in by the students before class begins to check their background knowledge.</i>	<i>This column to also be filled in by the students before class begins to help them determine the direction they want to go with the lesson.</i>	<i>This column to also be filled in by the students at the end of class to check for understanding.</i>

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

5. Online Quizzing

Take advantage of your course management system by creating a self-graded knowledge check with feedback. Most systems allow you to see the statistics regarding who has scored well and where the problems lie. Works very well with “just in time teaching”.

6. Group Quizzes

For a terrific exercise with both individual accountability and collaboration, use group quizzes. Give a short quiz, where students work independently. Group the students to retake the same quiz with just one set of answers. Students must advocate for their “right” answer. Lots of teaching takes place using this modality. The grade is a combined score on the two quizzes.

7. Minute Paper

This is the most common format of a classroom assessment technique. They are probably most useful in lecture or lecture/discussion courses, although the technique can be easily adapted to other settings. For example, the Minute Paper can also be used to assess what students have learned from a lab session, study-group meeting, field trip, homework assignment, videotape, or exam. Minute Papers work well at the end or the beginning of class sessions, serving either as warm-up or wrap-up activities. Minute Papers can be used frequently in courses that regularly present students with a great deal of new information. It is quick to administer and easy to analyze.

Suggestion for a question: What was the most important thing you learned today?

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

8. Punctuated Lectures

EVERY 20 MINUTES, instructors actually STOP the class and have students reflect, fill in notes, or compare notes with another student. Any of the previous “spot checks” can work here to “punctuate” the lecture.

9. Am I on Target?

During a break or at the end of a class period, pass out small post-it notes. Have students write a short comment or question and as they leave the room, place it on a target, indicating how they feel they are understanding the concept.

10. Defining Features Matrix

Gives opportunity for students to identify and make explicit critical distinctions between similar concepts. Column headings are the concepts you want students to compare.

EXTERNAL INFLUENCES	INTERNAL INFLUENCES
<i>This column to be filled in by the students identifying unique characteristics for this concept.</i>	<i>Same directions but for this concept.</i>

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

11. Pro-Con Grid

Help students solidify their understanding of theories and/or readings. This provides an opportunity for a quick overview.

PRO	CON
<i>This column to be filled in by the students identifying pros to an issue.</i>	<i>This column to be filled in by the students identifying cons to an issue.</i>

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

12. Application Cards

After students have read or discussed a concept, principle, or theory, ask them to write down one or more real world application. This can be done at the beginning, mid- or end-of-class. Helps generate robust discussions and helps you determine who is understanding and more importantly, who is not!

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

13. Approximate Analogies

A quick way to promote critical thinking and test for understand. Instructor provides the first half of the analysis and the students fill in the second. This encourages comparisons and strengths thinking skills. (eg. Dickens is to the nineteenth century as _____ is to _____).

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

14. Muddiest Point

This classroom assessment technique is the simplest and remarkably efficient by providing you high information return for a very low investment of time and energy. At the end of the class session, have the students anonymously write down what they don't quite understand from the day's lesson. In other words, what is their muddiest point? They drop their paper in a pile on their way out the door. As an instructor, you are provided quick feedback on what concept still needs to be addressed. It provides a great starting point for the next class session.

Suggestion for a question: What question(s) remain uppermost in your mind as we conclude this class session?

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

15. Sentence Starter

Create a stem of a sentence where students must complete. For example in an introduction to foreign language course, one could ask students to complete this sentence: *It is important for students to use a foreign language both within and beyond the school setting because. . .*

Reference: Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

16. Critical Incident Questionnaire

During last 5 minutes of final class of the week students answer the following questions:

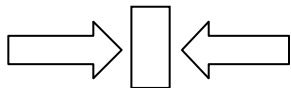
1. Most engaged moment as learner
2. Most distanced moment as learner
3. Most helpful action of professor and/or peer
4. Most puzzling action of professor and/or peer
5. What surprised you most

Teacher summarizes answers at the beginning of the first class of the next week.

Reference: Stephen Brookfield

17. Force Field Analysis

Create graphic that visually shows the push and pull on an issue. Increase the number of arrows as the influences are noted.



18. Process Analysis

Students keep logs of the steps utilized when completing assignments; then draw conclusions about he process. This works well with assignments that are repeated over the course of the semester.

19. Prediction-Anticipation Guide

This guide is used to assess prior knowledge and subsequent learning of concepts.

The left hand side of the worksheet features two columns: before class and after class.

At the beginning of class, the students put a check beside the statement that appears to be true. At the end of the lecture, the students look at the same number of statements and decides if they are still true. See sample below.

Before Lecture	After Lecture
_____	_____ 1. Since 42 is closer to 40 than it is to 50, we round down to 40.

20. Entry/exit slip

These slips are written responses from students .You could present one or two questions or problems at the beginning (entry) or the end (exit) of class. The students should take no more than five minutes and you can tell quickly from these responses whether they are understanding the material.

21. Using Anomalous Information

This activity could be integrated into an entry/exit slip. The students are given one problem with deleted information or information that is irrelevant or contradictory.

This is a great way to check students' understanding of material.

22. Memory Matrix

A two-dimensional diagram, a rectangle divided into rows and columns used to organize information and illustrate relationships. Instructor gives headings, but the cells are left empty. When students fill in the blank cells, they provide feedback that can be quickly scanned and easily analyzed. It is useful for informational content and works particularly well in introductory courses.

Reference: Angelo, T. A., & Cross, K . P. (1993). *Classroom assessment techniques*. San Francisco: Jossey-Bass.

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August 2002; Updated 2010