



Ask the CTLT Staff...

What Are Those Students Thinking?



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Q: *How do I assess my students' prior knowledge, recall and understanding of course contents in order to improve the quality of their learning during the semester?*

A: Every faculty member's dream is to help students learn more effectively and efficiently. In most cases, final grades at the semester's end let us know how much our students have learned; however, at this point it is too late to take any action to help them learn more. Certainly, our students will have also provided us an assessment of our teaching performance via end-of-the-semester student evaluations. From my personal experiences, some of these comments can be really disappointing, sometimes embarrassing, and often frustrating. I have read through evaluations in the past and wondered what I did wrong and

what did I need to do differently.

Remember that you are not alone! Many faculty members have had similar experiences and persist in improving their teaching and students' learning along with their own professional satisfaction. Numerous articles and books have been published to address these issues. One of my favorite books is *Classroom Assessment Techniques: A Handbook for College Teachers* (2nd Ed.) by Thomas Angelo and Patricia Cross. According to these authors, instructors need continuous and accurate feedback on students' learning in order to determine what, how much, and how well the students are learning to facilitate the changes that will improve the quality of learning before it is too late (Angelo and Cross, 1993).

I would like to share four quick and simple formative assessment techniques for accessing students' knowledge and skills during the semester as suggested by the authors.

Minute Paper (also known as One-Minute paper and Half-Sheet Response) — This technique will provide you with a quick and simple way to collect written feedback on your students' learning. Stop your class two or three minutes early. Ask students to write on a piece of paper or on index cards their responses to two questions: (1) "*What was the most important thing you learned during this class?*" and, (2) "*What important questions remain unanswered?*" The feedback you receive should help you decide on appropriate instructional adjustments. Try this technique if you want students to develop the ability and skills that help them pay attention, concentrate, or study. This method is also recommended for lecture, discussion, lab, and study-group sessions as well as field trip and video viewing experiences. This technique is equally applicable to both large and small classes.

Muddiest Point — This is another useful technique used to identify what is least clear or most confusing about a particular topic. The technique requires students to jot down a quick response

to just one question: “*What was the muddiest point in ____?*” with regard to the lecture, discussion, film, assignment, or the presentation. The question can be asked at the end of a lecture, presentation or discussion or immediately following a reading assignment. The technique works well for courses where a lot of new information is presented at each class period such as mathematics, statistics, economics, health science and natural sciences. Please, don’t forget to respond to the students’ feedback during the next class meeting or as soon as possible.

Background Knowledge Probe — By using this strategy, you can determine the most effective starting point and appropriate level to begin instruction. You should determine the one area, issue or topic that most students would be familiar with and use that to lead into other less familiar areas, issues, or topics. Side benefits of this technique are that it focuses students’ attention on the most important concepts, serves as a preview of what should be expected, and provides a review of their prior knowledge. You can prepare two or three open-ended questions, short-answer questions, or ten or more multiple-choice questions that will probe students’ existing knowledge. Let your students know that this is not a quiz or test and that their responses should be brief. Students’ responses can be classified into erroneous background knowledge, no relevant background knowledge, some relevant background knowledge and significant background knowledge. For faster analysis, you can also sort out responses into “prepared” and “not prepared”.

Misconception/Preconception Check — You can uncover prior knowledge or beliefs that may hinder or block students’ learning. I always remind myself that a “mind is a terrible thing to waste.” Also it is more difficult to unlearn incorrect or incomplete knowledge than it is to master new knowledge in an unfamiliar field (Angelo and Cross, 1993). The technique will help you to uncover specific instances of incorrect or incomplete knowledge and help you assess attitudes or values that may hinder new learning. You must carefully select a few controversial ideas and beliefs and then create a questionnaire to seek additional information. You may use a [Likert](#) scaled response if you prefer to know how strongly held these beliefs or ideas are.

The analysis of the students’ responses would provide you some specific student misconceptions or preconceptions that might interfere with their learning. It would also help you assess how many of your students have them, and how deeply embedded these “problematic” ideas or beliefs might be.

Caution! Before you give the questionnaire to students, think about how you would deal with any predictable or unforeseen circumstances and eliminate any questions or topics that you do not feel ready or comfortable to handle.

And remember support is available at CTLT. If you would like to talk to someone about formative assessment strategies, we’re always available for individual Instructional Strategy Consultation. Just give us a call at 438-2542 or [send us an email](#).

If you’d like to try one of these strategies but you are not sure what to do, please feel free to contact us by e-mail (CTLT@IllinoisState.edu) or by calling 438-2542.

We’ll be happy to hear from you!