Is there a gap between what you’re teaching and what your students are learning?

How can you close that gap?

Even the most dedicated college faculty often discover that their students haven’t learned what they are trying to teach—and that much of what students do learn is quickly forgotten after the final exam.

Our assessment tools tell students what we think is important to learn. The tests commonly used in college science and math courses usually emphasize fact-based knowledge and algorithmic problem solving. Innovative assessment methods emphasize deeper levels of learning and give instructors valuable feedback during a course.

Assessment drives learning

“While I was a graduate teaching assistant in astronomy, students told me that there were two ways of taking college science classes. One was to learn and understand the material, and the other was to get an ‘A’. . . . I realized that what I cared about doing science was DOING science . . . .

Over the years, I have used portfolios and performance assessments to emphasize to students that procedural knowledge and creative problem solving are at least as important as knowing the facts.”

— Timothy F. Butler
Research Assistant Professor
Department of Physics
Montana State University

A few years ago I was preparing for a new semester and found myself bored. Not bored with the idea of teaching General Chemistry so much as bored by the thought of standing in front of a large group of apparently disinterested students and talking. . . .

I resolved to change the class so that class had less lecture and more dialogue.

Reality was cruel. I tried to prompt open discussion by asking a question and asking for anyone to respond. After a long, awkward silence, one person, and no one else, spoke up. This pattern continued for several lectures until the complaints started rolling in: “Why are you wasting our time asking us questions that we don’t want to answer?”

About the same time, I went to a colleague’s class and saw ConceptTests in action. Students voted, they discussed, they ENGAGED. In my next class, I asked a question, supplied possible answers, and asked them to vote for the correct answer. More than a third of the students participated, a 2,000% increase over my previous approach! As I continued the pattern, the student participation grew. The classroom grew lively, interactive, and fun. Since that experience, my old styles have not returned, nor has the boredom.

— Celia Landis
Professor
Department of Chemistry
University of Wisconsin-Madison

WHAT IS THE FLAG?

The FLAG, the Fieldtested Learning Assessment Guide, is an online guidebook filled with proven, innovative assessment techniques specifically designed for courses in science, mathematics, engineering, and technology (SMET). Visit the FLAG to find:

- Classroom Assessment Techniques (CATs)—methods to guide and assess student learning.
- Searchable Assessment Tools that can be downloaded and integrated into SMET courses.
- A Primer on Assessment that explains the strategies and benefits of using alternative assessment in SMET courses.
- Resources in Assessment—a list of assessment experts nationwide, links to related Web sites, an annotated bibliography, and featured articles from respected scientific and teaching journals.

For more innovative examples, visit the FLAG online.

http://www.wcer.wisc.edu/nise/cl1