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Formative Assessment

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What this is

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About the CER

The Center for Educational Resources partners with faculty, postdocs, and graduate students to extend instructional impact by connecting innovative teaching strategies and instructional technologies



What it is

Traditionally instructors have used assessments such as midterm exams, final projects or papers, or recitals to measure how much students have learned up to a particular point in time. These are referred to as summative assessments; the goal is to evaluate student learning at the end of an instructional unit. However, many instructors use assessments throughout the semester to help students identify their strengths and weaknesses. These activities are called formative assessments and are generally low stakes, meaning that they have low or no point value. Formative assessments focus on learning and teaching, rather than on evaluation or grading. It has been shown that both students and instructors benefit from regular, ongoing assessment when it is used to “promote and diagnose” learning (Huba and Freed 2000). Students can see which topics that they need to focus on and are motivated to work harder in those areas. Faculty can identify both students who are struggling and topics that the class may be struggling with.

Examples of formative assessment include asking students to

- summarize and reflect on what they have just heard, seen or read.
- organize information through lists.
- produce a visual representation of information through concept maps or posters.
- collaborate and communicate with other students to demonstrate their understanding of a topic.
- turn in a research proposal or draft of a paper for early feedback.

Why does it matter

Formative assessment can be used to monitor student learning, but has the additional role of providing feedback, not only to the student learners, but also to the instructors. Instructors are able to



assess the effectiveness of their teaching methods and to make mid-course corrections to their course delivery. When formative assessment is integrated into the learning process, students begin to differentiate between what they already know and what they need to learn.

Employing frequent formative assessments in class is not meant to punish students but rather, to guide where instruction goes next. Instructors often pause at a point in their class and ask for any questions. After a short silence with no hands going up, they are likely continue to the next topic, and then may be surprised on the midterm exam that students didn't understand the concepts taught. Using formative assessments in class may slow down the pace of instruction as instructors find they need to re-teach material that students did not grasp with the first introduction.

For both students and instructors, the low-stakes aspect of iterative formative assessment sets up a positive feedback process wherein students are made aware of the gaps in their learning and instructors of the gaps in their teaching. Both are motivated to make timely corrections.

How to use it

Here are a few ways to check for understanding:

I. Active learning exercises

Active learning exercises often have a formative assessment component associated with them. For example, using clicker questions after teaching part of a lesson provides immediate feedback to instructors and students as to how well they understand a concept.

II. Short in-class quizzes

Short in-class quizzes with little or no point value.

III. Admit/Exit slips

Use admit/exit slips (written responses to a question or questions an instructor poses at the beginning or end of a class) to ask students to answer a question that targets a main idea of the lesson. The determination of whether to use at the beginning of class or the end should be based on learning objectives and activities planned for the class.

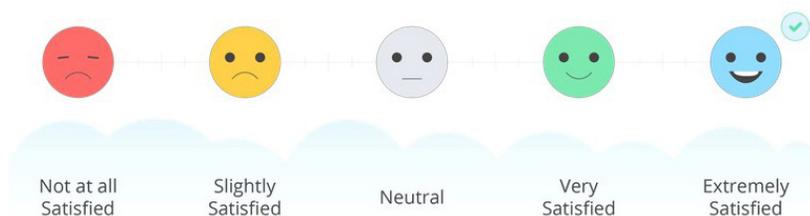
IV. One-Minute or Three-Minute Paper

One-Minute or Three-Minute Paper in which students take out a piece of paper and write for several minutes describing what they learned so far about the topic.

V. Behavioral attitudes

Behavioral attitudes can be assessed through in-class surveys using a Likert scale as shown below. Possible questions and statements:

- Do you like the way I use Clickers in class?
- How is the pacing of the class?
- Class time is being used effectively.
- How satisfied are you with the in-class discussions?



Example of a Likert scale

VI. Open-response Surveys

Open-response Surveys can be written on index cards that students hand-in at the end of class. Questions might include the following:

- What do you like about my teaching?
- What do you not like?
- What would you change?
- What would you keep the same?
- What was the least clear point about today's lecture?

Final thoughts

Formative assessment provides a means towards differentiated instruction where the needs of all students can be addressed (Greenstein, 2010). This is an important consideration in the diverse university classrooms of today. Differentiated instruction allows for a more inclusive classroom environment in which the instructor is responsive to individual needs, plans purposeful instruction, and guides learning in the classroom. These strategies lead to student-focused instruction.

Additional Resources

- Huba, M.E. and J.E. Freed (2000) *Learner-centered assessment on college campuses: Shifting the focus from teaching to learning*. Needham Heights, MA: Allyn & Bacon.
- Greenstein, L. (2010) *What Teachers Really need to know about Formative Assessment*. ASCD, Alexandria VA.

Author's Background

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Richard Shingles is a faculty member in the Biology department and works with the Center for Educational Resources at Johns Hopkins University. He is the Director of the Homewood TA Training Institute and the JHU Teaching Institute. Dr. Shingles provides pedagogical and technological support to instructional faculty, post-docs and graduate students.