

How to Write Good Test Questions



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OVERVIEW

The evolution of assessment practice in the United States has led to the belief that school improvement requires clear academic standards measured by rigorous assessments and that educators will be held accountable for student achievement as reflected in student test scores. Test scores tell parents, and communities, as well as educators and students, how much students have learned, whether standards are being met, and if educators are doing the job they were hired to do.

Tests or assessments generally fall into three categories: **Summative**, **Benchmark**, and **Formative**. The information teachers and other educators gain from these various kinds of tests or assessments has long been the power that drives the numerous adjustments educators make to teaching and learning activities. Thus, effective teachers use test results to advance student learning as well as report student progress. They make testing a valuable teaching and learning tool by:

- 1) Articulating to their students the achievement targets their students are expected to achieve.
- 2) Transforming those expectations into testing exercises and scoring procedures that accurately reflect student achievement.
- 3) Using test results as source of information for adjusting curriculum and instruction.
- 4) Using test results to communicate to students and parents areas of strength and weakness and ways to improve.

Read further to learn how to build standards-based test questions.

Steps for Building Standards-based Test Questions

Whether you're writing items for a formative, summative or benchmark assessments, the process for writing test items is the same and falls into five basic steps:

Step One: Define Your Learning Targets

Decide what it is you want your students to know. For most of educators, the answer lies within Common Core or state standards, which are in place throughout the country. When defining your learning targets, you need to have whatever standards you want your students to learn close at hand. It's also a good idea to review state test data for your school to determine standards that are "key," based on difficulty and number of test items, as well as to identify areas where students' have historically scored low.

The process for writing test items falls in to five basic steps:

1. Define your leaning targets
2. Identify an assessment format
3. Develop test items
4. Pilot the test
5. Analyze the results

If you are using Common Core or state standards, you probably won't be able to make each standard a learning target. Rather you will bundle some of the standards together because they seem similar, while you will unpack others into separate targets because of the complexity of the standard.

By aligning your local formative, benchmark and summative assessments or tests to learning targets and standards, you will be able to gather test data that will create a comprehensive picture of your students' progress toward learning targets. Summative and benchmark assessments will focus on several learning targets, will be used for grade, and usually take the form of a unit test, quarterly assessment or end of course exam. These tests are summative in that they record achievement of learning targets and standards at a particular point in time. However, they are formative in the sense that they can predict results on high-stakes state tests.

Formative assessments will be shorter tests and probably be aligned with only one or two learning targets. You will use these tests to give yourself and your students feedback regarding their progress toward targets and to guide your reteaching efforts.

Step Two: Identify an Assessment Format

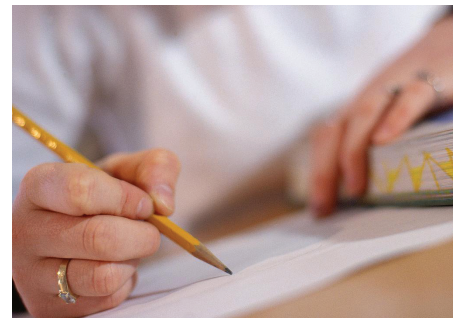
After standards-based learning targets are established, identify one or more formats for either the formative, benchmark or summative criterion-referenced test (CRT) you plan to create to assess student progress toward one or more standards-based targets or standards.

You will consider whether the assessment or test will be formative, benchmark or summative and whether it will be an essay, a speech, a project, a lab or a multiple-choice, short answer or true false test.

Common test formats include multiple choice questions and true or false questions. These formats are helpful for a quick measure of knowledge, application and comprehension of facts and simple concepts. Fill in the blank questions and open-ended questions work better for comparing and contrasting issues and measuring analysis and evaluation of more complex concepts.

Essays, speeches and projects are performance assessments, which assess students' knowledge and skills by requiring students to construct a product, such as a written report or a project, or a performance, such as a speech or laboratory experiment. These assessments do not have one correct answer, but are judged upon known criteria, which usually are included in a rubric that defines both the content and the quality of the performance.

As with multiple-choice and short answer tests, rubric scored assessments also may be used as benchmark or summative assessments to track student progress over time, such as a grading period or a semester, and formatively to predict how students will perform on high-stakes state or college entrance tests. When using scoring rubrics, the teacher reads the written project or listens to the speech or performance, and then fills in the rubric, which has been aligned with the standards-based learning targets. Standards-based rubrics encourage teachers to communicate clear expectations for projects and provide students with clear goals for their work, while the performance criteria and scoring guides contained in well-crafted rubrics give students the opportunity to self-assess and improve their work along the way.



In addition to considering the type of format that best fits the assessment of a particular learning target or targets, another factor to consider when selecting a test format is how much time the students will have to take the test and how much time you will have to score

the tests. Essays, projects, speeches and open-ended question formats are more time consuming for the student and the teacher. So, take into consideration both the learning targets of the assessment and the overall time available for taking and scoring the tests when selecting the best format. Once you have selected the test format, you will write test questions to use within the given format.

Step Three: Develop test items

When the type of assessment has been determined, you or you and your team need to agree on test items or the criteria for the project and the associated common rubric. Test questions and rubrics for projects and essays may come from textbooks, be gathered from online sources or created by individual teachers or teacher teams. It is important, however, that test questions and rubrics are aligned to specific standards and learning targets.

Multiple Choice Questions

Multiple choice questions work well to measure students' comprehension of factual information, but they are difficult and time consuming for the teacher to construct. They are comprised of a test question stem and several options for the student to select from as their answer. The following are guidelines to consider when constructing multiple choice test questions:

- Be clear and concise in your wording when creating the test question stem.
- Make sure that there is only one clearly correct answer from the options given to the student.
- Minimize the use of "all of the above" or "none of the above" as possible answers.
- Randomly distribute the correct answer options, i.e. A, B, C, D etc., so that there is not a clear pattern that becomes obvious to the student .
- Avoid absolutes, such as always, never, etc.
- Avoid the tendency to make the correct answer longer than the distractors.
- Beware of grammatical giveaways. For example, if the stem ends with the word "an" and only one or two options begin with a vowel, then the student can easily eliminate the distractors.

True or False Questions

True and false questions are best used to test students' ability to recall specific facts or knowledge.

Consider the following when writing true or false test questions:

- Make sure that the answer is clear and that it could not be either or.
- Try not to use negative questions such as "This story was not written by...." but instead use "This story was written by...."
- Use a random order of true and false responses to avoid creating a pattern.
- Make the questions as brief as possible.
- Eliminate giveaways:
 - Keep true and false statements approximately equal in length.
 - Make half the statements true and half false.
 - Try to avoid such words as "all," "always," "never," "only," "nothing," and "alone." Students know these words usually signify false statements.

Fill-in-the-Blank Questions

Consider the following suggestions when writing fill-in-the-blank test questions:

- Ensure that there is only one possible correct answer to avoid confusion and difficulty grading.
- Place blanks at the end or as close to the end of the question or statement as possible.
- Limit the number of blanks to one or two per item. Statements with too many blanks are confusing to students.
- Write questions that recall important information aligned to learning targets.
- If a numerical answer is called for, indicate the units in which it is to be expressed.
- Eliminate giveaways.
 - Make all the blanks an equal length.
 - Avoid grammatical clues such as "an."

Fill-in-the-blank questions require the student to know the correct answer rather than having the ability to guess from a list of possible answers.

Open-Ended Questions

Open-ended or essay format questions are excellent for measuring higher level learning and overall comprehension of a subject. They allow the student to select content for their response, to organize their thoughts in a logical manner and to present their ideas on a given subject matter.

Consider the following when writing open-ended questions:

Be sure that the test question clearly states the answer that you are seeking from the student. For example, "Discuss the Depression" is a poor test question. But, worded as "Describe the economic impact of the Depression" is a better test question as it gives the student a clearer focus for their answer.

Don't give students the option to pick 2 or 3 questions from among 5. This is confusing for students and creates complexity for the teacher when grading. It's difficult for a teacher to accurately score an answer when students have answered different test questions.

Essay questions

Essay questions ask students to supply written answers to questions. Judgments about the accuracy and quality of answers should be made using a rubric, which defines the quality and content of an excellent, good, fair and poor answer. Each category on a rubric should be aligned with a specific learning target. Trait rubrics divide students' writing into essential traits so that traits can be judged separately. A separate score is provided for each trait, providing a profile of strengths and weaknesses in a piece of work.

Consider the following suggestions when developing essay questions:

- Provide students with model essays that are aligned with the scoring rubric prior to the assessment.
- Provide students with the rubric when assigning the essay. Explain the rubric so that students understand the criteria for excellence and have the opportunity to verify that they have met the specific criteria for an assignment.

Performance Assessments

Performance assessments, such as essays, projects, and speeches are used to assess a variety of complex learning targets. Consider the following suggestions when developing performance assessments:

- Provide students with models of the performance that are aligned with the scoring rubric prior to the assessment.
- Provide students with the rubric when assigning the performance. Explain the rubric so that students understand the criteria for excellence. When students are given the rubric in advance of the assignment, they have the opportunity to verify that they have met the specific criteria for an assignment.

Step Four: Pilot the test.

It is helpful to “pilot” a new test with a class or group of students to maximize alignment with the standards-based learning targets and check for poorly written items. Once a small group of students has “piloted” the test, the piloted test can be scored, analyzed and weak items eliminated or replaced. Rubrics used for performance assessments need to be checked for “interrater reliability,” which determines that performances are rated consistently by different teachers (raters) over time. Interrater reliability is strengthened by training teachers or raters using models of performance assessments that produce high, medium and low scores based upon defined criteria.

Step Five: Analyze the results of the test

Modern assessment software allows teachers to analyze students’ answers by learning target or standard, and data analysis reports can be provided to teachers and teacher teams, as well as students, in a timely manner. By reviewing an item analysis by standard or learning target, teachers are able to determine how an individual student, a class or a group of classes performed on a specific learning target. These reports provide teachers, students and administrators with valuable information regarding what a student knows and what a student doesn’t know and serve an important role in determining next steps for instruction, changes in the curriculum and/or student self-help activities. It also is helpful for individual teachers or teacher teams need to meet to study assessment results and identify action plans for curricular revision and areas for reteaching and individual student remediation.

CONCLUSION

Testing alone does little to enhance learning or advance student achievement. It is the use of test results that informs teaching, monitors students' progress toward meeting standards and learning targets, and provides meaningful feedback to students and parents. For our students to learn and meet or exceed state or Common Core standards, a relationship between the local curriculum, instructional and assessment practices and the standards must be established, and data from both classroom tests and state mandated tests must be used to inform our teaching, change our curriculum and accelerate the learning of students. Using assessment software, we can easily use data from our classroom assessments to measure our students' learning and adjust our daily teaching practices to increase student learning and achievement in our classrooms.



ABOUT THE AUTHOR



Nancy works with schools and teachers to use test results to improve teaching and learning and nurture successful teacher teams and PLCs to reach measurable goals they, themselves, set. These teams align their local curriculum and classroom assessments with state or common core standards and then use analyzed test data to implement a variety of interventions to make certain all students meet or exceed standards and achieve their full potential. Using this process, she helped a culturally and economically diverse high school in southern Illinois move from the state's academic watch list to being the most improved school in the state, based on state test scores.

Her career path has proceeded from teacher, to department chair, to dean of instruction, to director of educational programs, to assistant superintendent for curriculum, instruction and assessment, to a national consultant and university professor. This journey has allowed Nancy to understand the challenges and responsibilities of each of these positions and their impact on instruction. She's sensitive to teachers' attitudes toward testing and their needs for using test results effectively in the classroom and has created practical, cost-effective workshops that are based on professional experience as well as research.

Author of:

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