



Linking Classroom Assessment with Student Learning



*Listening.
Learning.
Leading.*

Classroom assessment is among an instructor's most essential educational tools. When properly developed and interpreted, assessments can help teachers better understand what their students are learning.



By providing the means to gather evidence about what students know and can do, classroom assessment can help teachers

- Identify students' strengths and weaknesses
- Monitor student learning and progress
- Plan and conduct instruction

Ongoing informal and formal classroom assessment

- Is the bond that holds teaching and learning together
- Allows educators to monitor teaching effectiveness and student learning
- Can motivate and shape learning and instruction
- Can help teachers gauge student mastery of required skills
- Can help teachers determine whether students are prepared for tests that are used for high-stakes decisions
- Can help students improve their own performances

Linking assessment and instruction is critical to effective learning.

Classroom assessments do more than just measure learning. What we assess, how we assess, and how we communicate the results send a clear message to students about what is worth learning, how it should be learned, and how well we expect them to perform.

Good evidence improves instruction.

KEY ASSESSMENT TERMS

In this publication,

- *Selected-response* refers to multiple-choice, matching, true-false, and similar questions in which a choice of answers is provided.
- *Validity* reflects the extent to which test scores actually measure what they were meant to measure. It is the single most important characteristic of good assessment. Valid assessment information can help teachers make good educational decisions. Without validity, an assessment is useless.
- *Reliability* refers to an assessment's consistency. It is the extent to which a person repeating the assessment or taking an alternate form of it would tend to get the same score, assuming that practice makes no difference.

Designing informative assessments requires strategic planning and a clear understanding of one's assessment goals. What needs to be assessed and why? When planning instructional strategies, teachers need to

- Keep learning goals in mind
- Consider assessment strategies
- Determine what would constitute evidence that students have reached the learning goals

All of this needs to be considered within the context of instruction, rather than as an isolated step in the instruction cycle. To get the most out of assessments, you need to know how to choose the right one for each situation, and how to make that test as effective as possible. A poorly chosen or poorly developed assessment will fail to provide useful evidence about student learning. It could even provide misleading information. Only with good, properly chosen assessments will teachers gather evidence of what their students have learned.

You can begin to create a process for developing and using classroom assessments by asking the following basic but essential questions:

- What am I trying to find out about my students' learning? What learning goals or outcomes do I want to measure?
- What kind of evidence do I need to show that my students have achieved the goals that I'm trying to measure?
- What kind of assessment will give me that evidence?

Make it accurate and appropriate.

- Most importantly, an assessment must provide the evidence it was meant to provide.
- The assessment must measure the knowledge, skills, and/or abilities the teacher believes are important.
- If the goal is to test for retention of facts, then a factual test (e.g., a multiple-choice or fill-in-the-blank assessment) may be the best choice.
- Measuring students' conceptual understanding or ability to perform tasks usually requires more complex forms of assessment, such as performance assessments.

Make it relevant.

Before administering an assessment to measure what students have learned in class, it is useful for instructors to ask themselves: Based on what I've taught in class, can my students be expected to answer this?

For example, asking English language learners to carry on a discussion in English about a class trip they took or a book that they all read would be very appropriate. It would not be appropriate or effective, however, to ask the same students to carry on a conversation in English about highway construction, if that topic has nothing to do with what they learned in class.

The goal is to discover what students know and can do, not to create tricky questions.

An assessment should also reflect real-world ways that knowledge and understanding are used. Assessments based on situations relevant to students' own experiences can motivate them to give their best performances.

Use multiple sources of evidence.

Using many sources of evidence helps teachers accurately interpret what each student really knows and can do.

- Informal, day-to-day measures of student progress include:
 - observation and questioning strategies
 - traditional paper-and-pencil tests (e.g., multiple-choice and short-answer)

- More elaborate forms of assessment include:
 - essays
 - speeches
 - demonstrations
 - problem-solving activities

No single form of assessment works well in all situations and for all purposes. Some assessments will fit certain assessment goals and situations better than others. Reasons for using a variety of assessments include the following:

- Each type of assessment has its own strengths and weaknesses.
- Each form of assessment provides a different type of evidence about what students know and can do.
- Taking advantage of more than one or two assessment methods increases your ability to fully understand the range of student knowledge and skills.
- Some students will perform better on one type of assessment than another. For example, some students will excel in a performance situation. Others are strongest when responding to multiple-choice questions. Similarly, what teachers can learn from an oral presentation about how students communicate may be very different from what they can find out when asking students to write an essay.

This concept — the need to use different sources of evidence — is true of all assessment types. Even multiple-choice assessments yield better information if several different questions are used to assess each concept.

Which way to go?

The assessment method a teacher chooses to use depends on the following:

- The nature of the information being taught
- The purpose of the instruction
- What the instructor wants to learn from the assessment

Knowing which assessment to use can save valuable time. For example, performance assessments, which ask students to perform a task rather than select an answer from a list, can be used to assess many different types of knowledge and skills at once. They can also be easily incorporated into a curriculum without interrupting teaching and learning. In fact, they can be part of teaching and learning. Some examples of performance assessments include having students give a speech; carry on a conversation about a specific topic; draft, review, and revise a poem; or conduct a survey and explain the results.

But, if you simply want to assess recognition, or if all you want to know is whether students can identify a correct vocabulary usage, you probably don't want to use a performance assessment. It would be simpler, quicker, cheaper, and more revealing to give students a series of sentences with blank spaces in which to insert vocabulary from a list of words.



TIPS FOR PLANNING GOOD ASSESSMENTS

1. Have the purpose of the test clearly in mind.
2. Determine what type of assessment would be most appropriate for the situation based on the nature of what you are teaching, the purpose of the instruction, and what you want to measure. (You can use the chart on pages 8-9 to help you with this step.)
3. If the purpose of the assessment is to determine how well students have mastered a particular unit of study, make sure the test parallels the work covered in class.
4. If the assessment is a selected-response or fill-in-the-blank test that will be used to diagnose basic skills, it should contain at least 10 questions — preferably more — for each skill area. The questions pertaining to each skill area should be considered a subtest, and those subtests should yield separate scores.
5. If the major purpose of the test is to rank a selected group of students in order of their achievement, the questions should cover critical points of learning. Questions on critical points often require understanding implications, applying information, and reorganizing data. The questions should challenge students to do more than memorize and recall facts.
6. Focus on assessing the most important and meaningful information rather than small, irrelevant facts. For example, after students read a passage about nutrition, rather than asking a comprehension question such as, “How many vitamins are essential for humans? A. 7; B. 13; C. 15; D. 23,” consider asking, “Name at least seven vitamins that are essential for humans and explain why they are essential.”
7. Never use questions on inconsequential details just to trick students.

Use your professional judgment to weigh the benefits and drawbacks associated with each assessment strategy before deciding which one to use.

Traditional selected-response or fill-in-the-blank test

- Advantages — They are easy to administer and score, and they can test a broad range of knowledge and skills quickly.
- Disadvantages — Developing such tests to accurately measure more complex, higher-level thinking skills is difficult and time consuming.

Performance assessment

- Advantages — They evaluate student understanding, reasoning, and communication, and they can be used to determine how well students can apply their knowledge.

- Disadvantages — They are time consuming and costly to design, administer, and score. Also, designing complex assessments that are truly informative can be difficult.

Don't forget the students.

Assessment integrated with instruction is an extremely powerful teaching tool. Using assessment as part of the learning process instead of in a summative role at the end of a teaching unit ensures that students understand

- The relevance of what they are learning
- How that learning will be assessed

Research shows that helping students understand what is expected of them, and why, gives students an opportunity to become active participants in their own education. It also helps them take responsibility for their own learning and judge the quality of their work.

Students benefit when they

- Understand learning goals
- Know what kind of assessment(s) will be used to evaluate their achievement of those goals
- Understand what criteria will be used to evaluate their work and what an ideal response looks like

Before the test

- Develop scoring guidelines for performance assessments that
 - define what constitutes an acceptable response
 - establish clearly defined levels of performance
- Share the scoring guidelines with your students before they take the assessment.
- Discuss the guidelines with your students to ensure that they understand the kind of work expected at each performance level.
- Consider making student-suggested changes to the scoring guide, if those changes make sense. This often results in a higher level of student engagement.



After the test

- Conduct a post-test discussion with your students. This will give you the opportunity to
 - Correct misconceptions
 - Discuss issues raised by the assessment
 - Help students gain a more complete understanding of the material the assessment covered
- Discuss the different ways students responded to the task, and the strengths and weaknesses of each approach.
- Give students the opportunity to revise their responses or describe how they would like to revise them. This experience helps students learn there is often more than one correct response to a performance-based assessment. It also helps them learn how to evaluate their own work.
- Be generous with feedback. A score alone doesn't give students sufficient information about their performance on the assessment. Tell students
 - Their areas of strength and weakness
 - What they did correctly and incorrectly
 - What they can do differently next time to improve their performance

Guidelines to good assessment

Be Fair.

To be valid, classroom assessments need to be fair. Assessments should give all students an equal chance to show what they know and can do. In addition, assessments should only measure knowledge and skills related to their objectives.

Weighing Assessment Options

Characteristics	Selected-response assessments ¹	Constructed-response assessments ²
Skills and knowledge assessed	Memory, recognition, comprehension. Careful development permits assessment of higher-level cognitive skills.	Memory, recall, comprehension, and thinking and reasoning skills, including ability to organize ideas and integrate points.
Strengths	<ul style="list-style-type: none"> • Can be administered and scored quickly. • Allow teachers to efficiently assess students' grasp of factual information, concepts, and principles, as well as their ability to apply and perform basic skills. • Can sample a broad range of knowledge and skills in a limited amount of time. • Do not favor students with stronger writing skills. • Do not require special equipment or setup time. • Can be administered to students individually or as a group. 	<ul style="list-style-type: none"> • Student responses more closely reflect skills needed in real life. • Relatively easy to construct. • Can be administered relatively quickly. • Test skills such as ability to organize and communicate ideas, which cannot be assessed by selected-response assessments. • More difficult to guess the correct answers.
Potential Weaknesses	<ul style="list-style-type: none"> • Cannot be used to measure certain learning outcomes, such as creativity, oral communication, and social skills. • May penalize students who do not read well. • Susceptible to guessing. • May communicate the inaccurate message that recognizing the "right answer" is the primary goal of education. • May encourage teaching that focuses on learning facts rather than on understanding concepts and on thoughtful application of knowledge. 	<ul style="list-style-type: none"> • Time consuming to score. • Limited in their ability to assess complex thinking. • Scoring may be subjective and susceptible to evaluator bias, which can affect fairness and validity. • May penalize students who do not read or write well.

¹multiple-choice, true/false, matching, etc.

²short-answer, labeling diagrams, "show your work," etc.

Weighing Assessment Options

Characteristics	Essay assessments	Complex forms of assessments ³
Skills and knowledge assessed	Memory, recall, comprehension, and use of information in the demonstration of higher-level learning outcomes, including synthesis.	Higher-level cognitive skills, such as problem-solving; real-life application of skills and knowledge; and ability to defend positions.
Strengths	<ul style="list-style-type: none"> • Can require students to use their reasoning and writing skills. • Can assess complex and higher-level instructional outcomes (analysis, synthesis, evaluation, problem-solving, and cognitive strategies). • Can reflect real-world tasks. • Allow for active student involvement through self- and peer assessment, which make them useful instructional tools. • Encourage students to move beyond the “one correct answer” way of thinking. • Can provide evidence of students’ in-depth understanding of a topic. 	<ul style="list-style-type: none"> • Can assess complex and higher-level instructional outcomes (analysis, synthesis, evaluation, problem-solving, motor skills, and cognitive strategies). • More reflective of real-world tasks. • Can be integrated into the curriculum. • Allow for active student involvement through self- and peer assessment, which make them useful instructional tools. • Encourages students to move beyond the “one correct answer” way of thinking. • Can provide evidence of students’ in-depth understanding of a topic.
Weaknesses	<ul style="list-style-type: none"> • Time consuming to score. • Require the creation of a model answer and/or list of desired characteristics (rubric). • Scoring can be subjective and susceptible to evaluator bias, which can affect fairness and validity. • Favor students who have strong writing, spelling, and grammar skills. • Fewer items can be answered in a given length of time. As a result, they tend to be less content-valid than selected-response assessments for assessing a broad base of topics. 	<ul style="list-style-type: none"> • Time consuming to construct, administer, and score. • Require the creation of a model answer and a scoring rubric. • Scoring may be subjective and susceptible to evaluator bias, which can affect fairness and validity. • Not an effective or efficient way to assess factual knowledge. • Are time intensive, so they yield a smaller sample of student behavior.

³also called authentic, alternative, and direct assessments; include performance and portfolio assessments

Let students excel.

Give your students a chance to demonstrate their best performance. To do this, the task needs to be something that

- The students will find engaging
- Is accessible to the students
- Permits the students to demonstrate what they know or can do

Don't assume students understand the instructions.

Wording in assessment is critical. Unclear directions can

- Confuse test takers
- Affect responses
- Lead to inaccurate information about what students actually know and can do

After an assessment has been administered, you can ask your students how they interpreted the questions, particularly if the questions elicited unexpected results.

Keep time limits in mind.

A test should be designed so that students can complete it in the time available. The amount of time given for an assessment is significant and affects test results.

- A test that has more questions than most students can complete in the allotted time measures knowledge and ability to perform rapidly and under time pressure.
- Results from such an assessment are difficult to interpret. It is impossible to tell whether students who performed poorly did so because they did not master the knowledge or skill being tested, or because they were unable to demonstrate their ability in the allotted time.
- When a test cannot be completed in the time available, questions at the end will probably be left unanswered — not because the students didn't know the answers or couldn't perform the task, but because they did not have enough time to address the questions. The result? Students who may have a good grasp of the material may not perform to their fullest potential. Consequently, the information concerning their overall performance will be incomplete, which will impair your understanding of what these students know and can do.



Assessing the assessment

Suggestions for improving classroom assessments

- Review it before administering it. If possible, wait at least one day after writing the assessment before performing the review.
- After reviewing the assessment, ask a colleague to review it. As part of this review process, have someone who did not write the task or question (a colleague or even a family member) respond to it.
- During the review, check to see that
 - Directions are clear and content is accurate
 - Questions or tasks represent the topics or skills emphasized during instruction and that knowledge or skills that were not covered in class are not being unintentionally evaluated
 - The type of assessment used is compatible with the method of instruction used in the classroom and the skill being measured
 - The assessment will contribute to the instructor's understanding of what the students know and can do
 - The question-writing guidelines and/or assessment-development guidelines listed on pages I2-I4 were followed
 - The assessment can be completed in the allotted time
 - The assessment is fair and that all instances of offensive language, elitism, and bias have been eliminated



TIPS FOR DEVELOPING PERFORMANCE ASSESSMENTS

1. Before developing a performance task, determine what skills and/or knowledge need to be assessed.
2. Specify what decisions will be made with the information obtained from the assessment.
3. Decide whether to measure the process, the product, or both.
4. Decide what the ideal response should look like, then write a task or prompt that clearly defines those expectations.
5. Make sure the task or prompt is clearly defined and not too broadly stated. Too broad: "Discuss the effect of oil spills on the environment." Better: "Discuss the environmental impact of oil spills on coastal communities."
6. Clearly state time limits, length expectations, and the value of each task.
7. A well-written performance task will have a well-written set of evaluation criteria (often called a "rubric") that is clearly understood by the students. At the same time you're writing the task, develop a model response and an unambiguous scoring guide. For example, if the task is an essay, do you expect examples and/or supporting details? How many? Do you expect an interesting introduction? Include these requirements in the task. Developing the rubric will help you make sure the task is clearly defined.
8. Discuss the rubric and scoring guide with students **before** administering the assessment, and make sure the students clearly understand them.
9. Consider asking students to participate in developing the rubric and scoring guide. Doing so will help students think about what kind of performance is expected of them.
10. Limit the number of criteria in the rubric; lists of more than 10 tend to become unmanageable.
11. If possible, arrange criteria in the order in which they are likely to be observed.
12. After the task or prompt has been written, try responding to it yourself — or have a colleague try it — to find out whether it will really get the kind of results you desire.
13. After the assessment has been administered, analyze the kind of responses it produced. If it didn't elicit what you consider valuable outcomes, you might need to rewrite the task before using it again — don't automatically assume the students did not learn or that the performance assessment is useless.
14. Provide feedback! This feedback needs to be more than just a number. It needs to provide descriptive, constructive information that can help students do better the next time.

TIPS FOR WRITING BETTER SELECTED-RESPONSE ASSESSMENTS

1. Write clearly and simply.
 - Use vocabulary suitable for the students taking the assessment. Questions using difficult language may overpower what the item was intended to assess.
 - Avoid ambiguous or confusing words. It is a good idea to reread each item from the perspective of the students. Ask another teacher to take the test. Or, keep questions short and specific. Long, complicated questions slow students down and tend to test reading skill instead of content knowledge.
2. Do not provide unintended clues to the correct answer. Clues can help students answer items correctly, even if the students have not mastered the content being tested.
3. Avoid grammatical inconsistencies between the question and answer choices. One of the most common examples of this problem occurs when an incomplete statement ending with “a” or “an” is followed by a set of answer choices in which only the correct answer completes the statement in a grammatically correct way.

EXAMPLE:

The emblem on the sign was a

- A. angel
 - B. elf
 - C. ship
 - D. owl
- Incorrect answer choices should be clearly wrong but **plausible**. Students will quickly dismiss an incorrect answer choice that is obviously wrong. Try using common misconceptions students have or common errors students make as possible choices.
 - Answer choices should be as consistent in length, complexity, and grammatical construction as possible. If it is impossible to keep all the answer choices consistent, try to have at least two of similar length and structure. For example, in a five-answer question, you can provide two short answers and three long answers, or vice versa.
 - Avoid using the words **always**, **never**, **all**, and **none** in the answer choices. Students who have become familiar with tests may learn to recognize choices with these words as wrong answers.
 - Questions should have only one correct answer.
 - Avoid using **all of the above** or **none of the above**, particularly when the question calls for students to choose “the best answer.” Why? If “all of the above” is correct, then all of the options are correct, and you have to count any answer the students mark as correct. Conversely, recognition of one wrong answer eliminates the “all of the above” answer, and recognition of one right answer eliminates the “none of the above” answer.

This type of question can also hurt students who are very quick and know their subject matter. They may read the first answer choice, recognize it as correct, and mark it, then move on to the next question without reading the other answer choices.

- Avoid repeating informational wording from the question in the correct answer choice. This is a sure giveaway to students who otherwise would not know the correct answer.

4. Eliminate irrelevant sources of difficulty.

- If possible, use questions rather than incomplete sentences. Questions let students know right away what kind of information is being sought. Plus, using the question format rather than the incomplete sentence format eliminates the possibility of inadvertently providing grammatical clues.
- Avoid using negatives in the question. Negative wording can confuse students, who are accustomed to looking for true statements and may not notice the “not,” making the question more difficult than intended.
- If there’s a compelling reason for using a negative in the question, be sure to emphasize it by using a bold font, capping the word, or underlining it.
- Place answer choices in a logical, systematic order (e.g., chronological, ascending, descending, or alphabetical). Answers arranged in a haphazard manner force students who know the correct answer to waste time searching for it.

CONFUSING:

The cassette tape was invented in
A. 1971
B. 1959
C. 1963
D. 1968

BETTER:

The cassette tape was invented in
A. 1959
B. 1963
C. 1968
D. 1971

5. In true-false or alternative-response questions:

- Make sure the question tests only one idea.
- To reduce guessing, for false questions, ask students to explain why the false answers are incorrect.

After the test is over

The assessment process shouldn't stop after the final paper has been scored and the last oral presentation has been evaluated. It is important for instructors to evaluate each assessment after it has been administered. Doing so can help instructors interpret the assessment results more accurately and use those results more effectively in their instruction.

An analysis of instructor-made assessments can also help screen out items or tasks that did not perform as intended. Rather than assuming that all the questions in an assessment are completely valid or fair, analyze the assessment to determine how good the items really are.

When you begin to analyze assessment results, you should do two things:

ACKNOWLEDGE THAT TESTS CAN HAVE FLAWS.

When assessments give unexpected results — for example, the entire class does poorly on an assessment, or the students' responses are not consistent with the type of work the teacher was looking for — it is important to take a close look at the assessment to determine whether it is flawed in some way.

- Did all the students do poorly on the same question or set of questions?
- Did students who are more able, based on other evidence, do well on the assessment?
- Did students answer the assessment appropriately but fail to give the answers you were looking for?
- Was the task well defined and clearly written?

If the entire class failed the test, it might indicate that the material was not taught adequately, or the assessment was so poorly written that the students were unable to apply their knowledge appropriately. Having students explain why they answered a question in a certain way can help the teacher determine whether the problem is in the question (or task), or in the students' understanding of the concept being assessed.



IDENTIFY EACH STUDENT'S STRENGTHS AND WEAKNESSES.

Take a look at each student's strengths and weaknesses, based on his or her patterns of performance. This information can help you arrange for the next set of instructions to either remedy problems or build on strengths. For example, if a particular group of students has difficulty with one set of items that measures a similar set of skills, then these students might need extra instruction or a different kind of instruction. Or, if everybody in the class had difficulty with a particular issue that you thought was emphasized in class, then you need to determine if there was a problem with the instruction, the material, or both.

For learning's sake

Teaching has always been a demanding and strenuous job. There is often little time or energy at the end of a day for studying textbooks and technical reports about assessment. Yet, to take full advantage of an assessment's power to inform and direct instruction, it must become as much a part of instruction and learning as the textbooks and other materials used in a class. It must become as much a part of teaching as discussions and class management.

We hope this resource helps you think about assessment and make assessment an integral part of your teaching, and that you will use it to inform and enhance the instruction and learning that goes on every day in your classroom.

