

Assessment

Test Construction

What to Do and What Not to Do

Completion Tests

Do

1. Use the completion test to measure lower-order mental skills.
2. Limit the length of the response to a single word or short phrase.
3. Use terms that will have the same meaning to all students—ones that all students can define and understand.
4. Explicitly state and qualify the questions so that a single response is correct.
5. Make the sentence structure as simple as possible.
6. Write a comprehensive set of directions.
7. Have all students use a prepared answer sheet—do not have students “make their own.”
8. Construct the answer sheet so that it is easy to score.
9. Give equal weight to all responses.
10. If possible, use questions rather than incomplete statements.
11. For multiple response items, have blanks of equal lengths.
12. Ask only for important information.
13. Tell the students in advance that they will be given a completion test.

Don't

1. Over-mutilate sentences by leaving too many blanks.
2. Have the answers to a multiple-response item interdependent—if you can't give one answer, you can't give any.
3. Ask for non-essentials.
4. Penalize for guessing.
5. Use items that have more than one correct answer.
6. Use questions designed to measure higher-level mental processes.
7. Pull questions verbatim from the textbook or lecture notes.

Examples:

- _____ 1. The first President of the United States was?
1. A President who was ineffective was _____ whose Vice-President was_____.

Multiple Choice Tests

Do

1. Use multiple-choice test to measure some higher-level mental processes.
2. Include enough items to sample the material adequately.
3. Use a Table or Chart of Specifications to ensure adequate sampling.
4. Establish a frame of reference for answering the item in the stem.
5. Express the problem in the stem.
6. Write concise, unambiguous, and grammatically correct items.
7. Include in the stem all the words that would otherwise need to appear in each alternative answer.
8. Adhere to any logical ordering of the alternatives that might exist.
9. Provide about the same number of keyed responses in each choice positions on the total test (the same number of A, B, C, D possibilities).
10. Control the difficulty of the items by the homogeneity of the responses.
11. Make every foil appealing to the student who does not know the correct answer—a foil is also called a distracter.

Don't

1. Use multiple choice tests to measure writing skills, creativity, important synthesis objectives or evaluative objectives.
2. Have conflicting frames of reference embedded in the same item.
3. Have grammatical errors in the item.
4. Be ambiguous.
5. Provide superfluous information in the item.
6. Have long keyed responses (key answer) and short distracters or the reverse.
7. Have definite patterns in the rotation of the responses among the choice positions.
8. Use unnecessary, technical terminology.
9. Include poor foils in an item.
10. Use “none of the above” or “all of the above” in questions for which the directions were to “choose the best answer.”

Example: Choose the Best Answer for each of the following.

- _____ 1. The first President of the United States was
- a. George Bush
 - b. Thomas Jefferson
 - c. Your Teacher
 - d. George Washington, who chopped down a cherry tree
 - e. None of the above

True/False Tests

Do

1. Include enough items to sample the material adequately.
2. Use a table of specifications to ensure adequate sampling.
3. Establish a frame of reference for answering the items.
4. Write concise, unambiguous, and grammatically correct statements.
5. Use questions that are important in the area being tested.
6. Have approximately the same number of *true* and *false* statements.

Don't

1. Use questions that are somewhat true and somewhat false.
2. Use unnecessary words or phrases.
3. Have more than one theme in the question.
4. Have irrelevant clues.
5. Have a pattern in the order of the responses.
6. Use negative statements.
7. Use the qualifying terms, *all*, *some*, *none*, *few*, or *many*.
8. Pull statements directly from the textbook or class notes.

Example: Write the word *true* or *false* in the blank beside each statement.

1. The first President of the United States, George Washington, was always honest and hard working, and he had wooden teeth.

Matching Tests

Do

1. Use a Table or Chart of Specifications to ensure adequate sampling.
2. Establish a frame of reference for answering the item in the premise.
3. Establish general orientation in the introductory statement.
4. Be clear and concise.
5. Use correct grammar.
6. Adhere to a logical ordering of alternatives if one exists.
7. Control the difficulty of the item by homogeneous alternatives.
8. Have homogenous premises and homogeneous alternatives.
9. Inform the students if an alternative may be used more than once.

Don't

1. Expect to measure higher-level metal processes.
2. Have errors of grammar in premises or alternatives.
3. Provide superfluous information.
4. Have a pattern between the order of appearance of the premises and the answers.
5. Use unnecessary, technical terminology.
6. Have more than twelve alternatives.
7. Have an equal number of premises and alternatives.
8. Have students “turn the page” for premises and alternatives.

Essay Tests

Do

1. Use essay tests to measure higher-level thinking only.
2. Relate the questions directly to the objectives or learning outcomes.
 - a. Restricted response calls for strict limits on the answer. The question details the number of reasons or bits of supporting evidence the students should supply.
 - b. Extended response questions have limits of time or number of words. They call for overall ability to organize and integrate ideas.
3. Formulate a clear task.
4. Provide ample time for answering. Suggest a time limit.
5. Provide a rubric for scoring.

Don't

1. Permit students a choice of questions. Exception: If the essay is a test of writing skills—only then are choices acceptable.
2. Write the essay question without writing the acceptable answer.
3. Construct the rubric for scoring after students have answered the essay question.

Essay Test

Scoring

1. Evaluate in terms of learner outcomes.
2. Score restricted response answers by a point method. Use a model answer as a key.
3. Score extended response answers by the rating method. Use a set of criteria (a rubric or checklist).
 - Suggested Criteria:
 - Completeness of plan
 - Clarity and accuracy with which each step is described.
 - Adequacy of support or justification for each step.
 - Degree to which parts are integrated.
4. Evaluate all students' answers to one question before going to the next. This procedure helps offset the halo effect.
5. Evaluate answers without knowing the identity of the student.
6. Try to have two persons grade each paper.

Criterion	Desired Responses
Clarity	The student answers in understandable English without rambling, failing to finish, or confusing thoughts.
Accuracy	The student's answer contains no factual errors and is based on accurate information.
Appropriateness	The student answers the question that was asked.
Specificity	The student clearly identifies who and what.
Support	The student gives reasons, facts, or examples to support statements, or explains the criteria or assumptions on which opinions are based.
Complexity	The student's answer shows awareness that there are multiple ways of understanding the problem which must be considered before a valid judgment can be reached.
Originality	The student draws upon current knowledge and past experiences to create or discover ideas that are new to the student.

Some types of thought questions and sample stems

Comparing	Describe the similarities and differences between— Compare the following two methods of—
Relating cause and effect	What are the major causes of— What would be the most likely effect of—
Justifying	Which of the following alternative would you favor and why? Explain why you agree or disagree with the following statement.
Summarizing	State the main points included in— Briefly summarize the contents of—
Generalizing	Formulate several valid generalizations from the following data. State a set of principles that can explain the following events.
Inferring	In light of the facts presented, what is most likely to happen? When? How would (?) be likely to react to the following issue?
Classifying	Group the following items according to— What do the following items have in common?
Creating	List as many ways as you can think of for— Make up a story describing what would happen if— Write a list of questions that should be answered before—
Applying	Using the principles of (?) as a guide, describe a solution for the following situations. Describe a situation that illustrates the principle of—
Analyzing	Describe the reasoning errors in the following paragraph. List and describe the main characteristics of— Describe the relationship between the following parts of—
Synthesizing	Describe a plan for proving that— Write a well-organized report that shows— Write a set of specifications for building a—
Evaluating	Criticize or defend each of the following statements. Describe the strengths and weaknesses of the following— Using the criteria developed in class, write a critical evaluation of—

Assessment

Authentic Assessment

THINK ABOUT:

What is inspected signals what is expected.

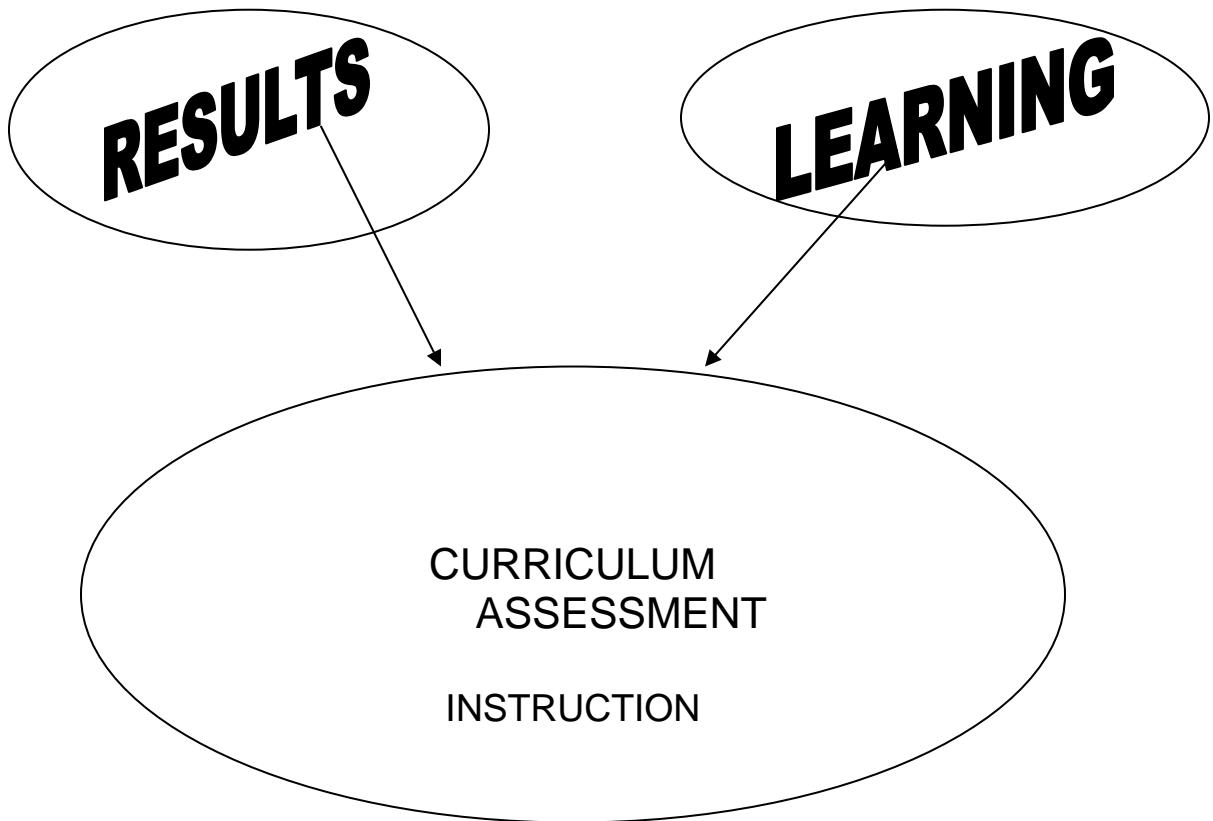
Typical tests, even demanding ones, tend to over-assess student "knowledge" and under-assess student "know-how" with knowledge. Grant Wiggins

Assessment tasks should be . . . redesigned to more closely resemble real learning tasks. Tests should require more complex and challenging mental processes from students. They should acknowledge more than one approach or right answer and should place more emphasis on uncoached explanations and real student products. Lori Shepard

Principles of Good Practice for Assessing Student Learning

1. The assessment of student learning begins with educational values.
2. Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time.
3. Assessment works best when the programs it seeks to improve have clear, explicitly stated purposes.
4. Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes.
5. Assessment works best when it is ongoing, not episodic.
6. Assessment fosters wider improvement when representatives from across the educational community are involved.
7. Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.
8. Assessment is most likely to lead to improvement when it is a part of a larger set of conditions that promote change.
9. Through assessment, educators meet responsibilities to students and to the public.

SCHOOL STRUCTURE



We must focus on results to build the curriculum.
What we know about learning must also define curriculum.

The real power, then, of assessment comes when the curriculum (now defined) is evaluated by results and learning.

How do we do this?

First—understand *results*.

Three types of *results*:

declarative knowledge
procedural knowledge
attitudes

Second—knowledge means “the capacity to apply facts, concepts and skill in new situations in appropriate ways.” Dr. Howard Gardner

Third—curriculum

Think of curriculum in terms of desired “performances of understanding (knowledge).

Plan backwards to identify needed concepts and skills.

An Elementary Example

Your class has been studying a unit on nutrition—an authentic assessment of students understanding could be designed in the following way.

You are having a birthday party. Your friends are expecting tasty treats, but your mother has been reading about good nutrition. She said she will not serve anything that has a lot of sugar, salt, saturated fat, artificial sweeteners, or preservatives. She has agreed to allow you to plan a healthy menu. Here is your assignment:

Plan a menu that will please your friends and meet your mother's demands.
Use the USDA Food Pyramid in your text book to help you plan a menu.

Think about??

What knowledge will students need to complete this task?

Declarative

Procedural

Authentic Assessment Umbrella

TASKS—short activities that provide an opportunity for students to demonstrate knowledge and skills. They can be content specific. They may be used to provide a checkpoint and define further instructional needs. They may be summative assessments for end-of-unit or end-of-year mastery. They do not have a single best answer or one right way to accomplish the task. They must be evaluated on established criteria.

For Example—after reading three fairy tales that have the same general pattern (characters overcoming a confrontation with an animal when the animal's intent is to harm the characters) the teacher might assign the follow task. Your task is to write a story that includes all the characteristics of a fairy tale and also uses the same general pattern. You will then read your story to your kindergarten reading buddy and teach him/her about the characteristics and general pattern of a fairy tale.

Grades 3-4

PROJECTS—longer term activities requiring students to gather and synthesize information, apply their knowledge and skills to new situations, and create tangible products and performances. They are usually more “open-ended” than tasks. Students usually have more choice in topics, freedom in the way they carry out the project, and options in presenting the project. Projects can last several days, weeks, or months. Projects must be evaluated by specifically established criteria.

For Example—You and your partners are to compare advertisements for two supermarkets, then design and complete a research study to determine which of the stores has the best values. For three weeks you will gather, organize, and evaluate the data. Then you and your partners will prepare a display of your findings. Next, you will write an article for the PTA newsletter to summarize the conclusions of your study. Grades 4-5

PROJECTS

Projects usually result in a tangible product or performance. Teachers and parents are able to make inferences about student content understanding and skills. Some examples are listed below:

Audiotape	displays	manuscripts	reports
Artwork	essays	musicals	simulations
Books	experiments	stories	oral presentations
Cartoons	games	pantomimes	surveys
Designs	invention	teaching episodes	plays
Drawings	logs & journals	puppet shows	videotapes

REMEMBER

Evaluations for projects—like tasks—are based on clearly established criteria. This criteria is shared with students and parents at the time the assignment is made.

Getting Started

Authentic assessment tasks and projects sound like fun for both students and teachers. More importantly, they sound like they would challenge students to do more than give a rote answer to a single question. So why don't teachers use these types of assessment more often?

Knowing the Steps

There are several steps in creating, assigning, and evaluating authentic assessments—whether a task or project. Once teachers become familiar and comfortable with these steps—the fun and learning can begin!

Step One

Determine what YOU want students to Know

This can be done through your established curriculum, state or local standards, or through your own desires for your students.

For example, if you want your students to have a basic understanding fairy tale patterns—you must first understand these patterns and provide examples for your students to read and discuss. If you want your students to understand basic nutrition, then, you will need to provide information from the USDA, how to read product information, definition of terms, and how to read a recipe.

Perhaps, however, you want your students to understand time. What would you need to provide to your students?

Step Two

Decide what information students will need.

This step is integrated with step one. Once you have determined what you want students to know—you have to decide what information they will need from you or an expert before they can begin. This may also mean that you will need to supply a materials list.

Usually this information is directly tied to the information in the students' textbooks. My students used the information in their literature text to define attributes of a hero. I need to ensure that I assigned selections that had recognizable attributes—allowed time for students to read and discuss the literature and had ample time to complete the project.

Step Three

Decide on the demonstration.

Decide on the ways students might demonstrate that they have mastered the information.

This is a tricky part. You have to decide what you want students to demonstrate. In the case of a task and some projects, you might decide how the information will be presented. Think about time factors, material constraints, students' abilities, and any other constraint you or your students might encounter. Think about enablers also.

Step Four

Determine the evaluation criteria.

Before writing the assignment for your students, you need to create the check sheet and the rubric for evaluation.

CHECKSHEET

This will be given to students to help guide them as they create the task or project. It is just as the name implies: a list of information the students need to be successful.

RUBRIC

This is how you will evaluate your task or project (most likely). Creating the rubric with the check sheet saves time and ensures that you are comfortable with the evaluation criteria.

Check sheet for Comic Book Hero (short version)

- 5 attributes of an Anglo-Saxon hero
- comic book format
- illustrations integrated with text
- advertisements appropriate for readers (2)
- story elements evident
 - who
 - villain
 - danger
 - where
 - romance
 - happy ending
- revision and editing evident
- professionally formatted

Rubric for Comic Book Hero (short version)

	1	2	3	4	TOTAL
Attributes	Not evident	One or two evident	All evident—not clear	All evident Clearly defined	
Illustrations	Not integrated	Some integration	Integrated but not fully	Fully integrated	
Story	Some elements missing or vague	All elements—not clearly defined	All elements Not interestingly defined	All elements clearly and interestingly defined	
Revise/edit	Needs major editing and revision	Some revision or editing needed	Some editing required	Revision and editing complete	
Reader	Not appropriate for the reader	Not entirely appropriate for the reader	Appropriate but not interesting	Appropriate and interesting for the reader	

X 5 =

Step Five

Write the Assignment

This is the most interesting part of the process. You should not write the assignment, however, until you have completed the first four steps.

Think about how you want to present the assignment to your students and how much time you intend for them to spend on the assignment.

RECAP

Step One

Determine what YOU want students to Know

Step Two

Decide what information students will need.

Step Three

Decide on the demonstration.

Step Four

Determine the evaluation criteria.

Step Five

Write the Assignment