



Good Question Design for Blackboard Assessment

Although there are a variety of methods via which Instructors can integrate assessment questions into their course(s), the context of the learning material being used will often dictate the best process and medium for the tests. Whether you choose a multiple choice format or essay style questions, it is still useful to be aware of sound pedagogic techniques for constructing a useful assessment.

A few important questions should be considered when planning quizzes and exams for online delivery: these include:

- How many questions will this assessment contain?
- What instructions, if any, need to be included with this assessment?
- What types of questions will this assessment contain?
- What is the point value associated with each question?
- Will images need to be posted for any questions in the quiz/test?

Listed below are some suggestions for creating question types in Blackboard. You should soon become aware of which type or format suits your students and their subject the best and practice integrating these into the functions that Blackboard offers.

There are two general categories of test items: (1) objective items which require students to select the correct response from several alternatives or to supply a word or short phrase to answer a question or complete a statement; and (2) subjective or essay items which permit the student to organise and present an original answer. Objective items include multiple-choice, true-false, matching and completion, while subjective items include short-answer essay, extended-response essay, problem solving and performance test items. For some instructional purposes one or the other item types may prove more efficient and appropriate.

WHEN TO USE ESSAY OR OBJECTIVE TESTS

Essay tests are especially appropriate when:

- the group to be tested is small and the test is not to be reused.
- you wish to encourage and reward the development of student skill in writing.
- you are more interested in exploring the student's attitudes than in measuring his/her achievement.
- you are more confident of your ability as a critical and fair reader than as an imaginative writer of good objective test items.






Objective tests are especially appropriate when:

- ▶ [Index](#)
- ▶ [Communication](#)
- ▶ [Content](#)
- ▶ [Assessment](#)
- ▶ [Management](#)

« [Prev](#)

Navigation Guide

Click item for info

-  [Local Link](#)
-  [Further Information](#)
-  [Worked Example](#)
-  [Pedagogic Information](#)
-  [Notes](#)

- ▶ [Search Guide](#)
- ▶ [Blackboard Login](#)

- the group to be tested is large and the test may be reused.
- highly reliable test scores must be obtained as efficiently as possible.
- impartiality of evaluation, absolute fairness, and freedom from possible test scoring influences (e.g., fatigue, lack of anonymity) are essential.
- you are more confident of your ability to express objective test items clearly than of your ability to judge essay test answers correctly.
- there is more pressure for speedy reporting of scores than for speedy test preparation.

Either essay or objective tests can be used to:

- measure almost any important educational achievement a written test can measure.
- test understanding and ability to apply principles.
- test ability to think critically.
- test ability to solve problems.
- test ability to select relevant facts and principles and to integrate them toward the solution of complex problems.

In addition to the preceding suggestions, it is important to realise that certain item types are better suited than others for measuring particular learning objectives. For example, learning objectives requiring the student to demonstrate or to show, may be better measured by performance test items, whereas objectives requiring the student to explain or to describe may be better measured by essay test items.

II. MULTIPLE-CHOICE TEST ITEMS

The multiple-choice item consists of two parts: (a) the stem, which identifies the question or problem and (b) the response alternatives. Students are asked to select the one alternative that best completes the statement or answers the question. For example,

Sample Multiple-Choice Item

(a) Item Stem: Which of the following is a chemical change?

(b) Response Alternatives:

- a. Evaporation of alcohol
- b. Freezing of water
- *c. Burning of oil
- d. Melting of wax

*correct response

Advantages in Using Multiple-Choice Items

- versatility in measuring all levels of cognitive ability.
- highly reliable test scores.
- scoring efficiency and accuracy.
- objective measurement of student achievement or ability.
- a wide sampling of content or objectives.
- a reduced guessing factor when compared to true-false items.
- different response alternatives which can provide diagnostic feedback.

Limitations in Using Multiple-Choice Items

- are difficult and time consuming to construct.
- lead an instructor to favour simple recall of facts.
- place a high degree of dependence on the student's reading ability and instructor's writing ability.

SUGGESTIONS FOR WRITING MULTIPLE-CHOICE TEST ITEMS

The Stem

1. When possible, state the stem as a direct question rather than as an incomplete statement.

Undesirable: Alloys are ordinarily produced by ...

Desirable: How are alloys ordinarily produced?

2. Present a definite, explicit and singular question or problem in the stem.

Undesirable: Psychology ...

Desirable: The science of mind and behaviour is called ...

3. Eliminate excessive verbiage or irrelevant information from the stem.

Undesirable: While ironing her work uniform, Jane burned her hand accidentally on the hot iron. This was due to a transfer of heat be ...

Desirable: Which of the following ways of heat transfer explains why Jane's hand was burned after she touched a hot iron?

4. Use negatively stated stems sparingly. When used, underline and/or capitalise the negative word.

Undesirable: Which of the following is not cited as an accomplishment of the Thatcher government?

Desirable: Which of the following is **NOT** cited as an accomplishment of the Thatcher government?

5. Make all alternatives plausible and attractive to the less knowledgeable or skillful student.

TRUE-FALSE TEST ITEMS

A true-false item can be written in one of three forms: **simple**, **complex**, or **compound**.

Answers can consist of only two choices (simple), more than two choices (complex), or two choices plus a conditional completion response (compound).

An example of each type of true-false item follows:

Sample True-False Item: Simple

The acquisition of morality is a developmental process.

True False

Sample True-False Item: Complex

The acquisition of morality is a developmental process.

True False Opinion

Sample True-False Item: Compound

The acquisition of morality is a developmental process.
If this statement is false, what makes it false?

True False

Advantages in Using True-False Items

- the widest sampling of content or objectives per unit of testing time.
- scoring efficiency and accuracy.
- versatility in measuring all levels of cognitive ability.
- highly reliable test scores.
- an objective measurement of student achievement or ability.

Limitations in Using True-False Items

- incorporate an extremely high guessing factor. For simple true-false items, each student has a 50/50 chance of correctly answering the item without any knowledge of the item's content.
- can often lead an instructor to write ambiguous statements due to the difficulty of writing statements which are unequivocally true or false.
- do not discriminate between students of varying ability as well as other item types.
- can often include more irrelevant clues than do other item types.
- can often lead an instructor to favour testing of trivial knowledge.

SUGGESTIONS FOR WRITING TRUE-FALSE TEST ITEMS

1. Base true-false items upon statements that are absolutely true or false, without qualifications or exceptions.

Undesirable: Nearsightedness is hereditary in origin.

Desirable: Geneticists and eye specialists believe that the predisposition to nearsightedness is hereditary.

3. Express a single idea in each test item.

Undesirable: Water will boil at a higher temperature if the atmospheric pressure on its surface is increased and more heat is applied to the container.

Desirable: Water will boil at a higher temperature if the atmospheric pressure on its surface is increased. and/or Water will boil at a higher temperature if more heat is applied to the container.

4. Include enough background information and qualifications so that the ability to respond correctly to the item does not depend on some special, uncommon knowledge.

Undesirable: The second principle of education is that the individual gathers knowledge.

Desirable: According to John Dewey, the second principle of education is that the individual gathers knowledge.

MATCHING TEST ITEMS

In general, matching items consist of a column of stimuli presented on the left side of

the exam page and a column of responses placed on the right side of the page. Students are required to match the response associated with a given stimulus. For example,

Advantages in Using Matching Items

- require short periods of reading and response time, allowing you to cover more content.
- provide objective measurement of student achievement or ability.
- provide highly reliable test scores.
- provide scoring efficiency and accuracy.

Limitations in Using Matching Items

- have difficulty measuring learning objectives requiring more than simple recall of information.
- are difficult to construct due to the problem of selecting a common set of stimuli and responses.

COMPLETION TEST ITEMS

The completion item requires the student to answer a question or to finish an incomplete statement by filling in a blank with the correct word or phrase. For example,

According to Freud, personality is made up of three major systems, the _____, the _____ and the _____.

Advantages in Using Completion Items

- can provide a wide sampling of content.
- can efficiently measure lower levels of cognitive ability.
- can minimize guessing as compared to multiple-choice or true-false items.
- can usually provide an objective measure of student achievement or ability.

Limitations in Using Completion Items

- are difficult to construct so that the desired response is clearly indicated.
- have difficulty measuring learning objectives requiring more than simple recall of information.
- can often include more irrelevant clues than do other item types.
- are more time consuming to score when compared to multiple-choice or true-false items.
- are more difficult to score since more than one answer may have to be considered correct if the item was not properly prepared.

SUGGESTIONS FOR WRITING COMPLETION TEST ITEMS

1. Omit only significant words from the statement.

Undesirable: Every atom has a central (core) called a nucleus.

Desirable: Every atom has a central core called a(n) (nucleus) .

2. Do not omit so many words from the statement that the intended meaning is lost.

Undesirable: The _____ were to Egypt as the _____ were to Persia and as _____ were to the early tribes of Israel.

Desirable: The Pharaohs were to Egypt as the _____ were to Persia and as _____ were to the early tribes of Israel.

3. Avoid grammatical or other clues to the correct response.

Undesirable: Most libraries are organised according to the (Dewey) decimal system.

Desirable: Which organisational system is used by most libraries? (Dewey decimal)

ESSAY TEST ITEMS

The essay test is probably the most popular of all types of teacher-made tests. In general, a classroom essay test consists of a small number of questions to which the student is expected to demonstrate his/her ability to (a) recall factual knowledge, (b) organise this knowledge and (c) present the knowledge in a logical, integrated answer to the question. An essay test item can be classified as either an extended-response essay item or a short-answer essay item. The latter calls for a more restricted or limited answer in terms of form or scope. An example of each type of essay item follows.

Sample Extended-Response Essay Item

Explain the difference between the S-R (Stimulus-Response) and the S-O-R (Stimulus-Organism-Response) theories of personality. Include in your answer (a) brief descriptions of both theories, (b) supporters of both theories and (c) research methods used to study each of the two theories. (10 pts. 20 minutes)

Sample Short-Answer Essay Item

Identify research methods used to study the S-R (Stimulus-Response) and S-O-R (Stimulus-Organism-Response) theories of personality. (5 pts. 10 minutes)

Advantages in Using Essay Items

- are easier and less time consuming to construct than are most other item types.
- provide a means for testing student's ability to compose an answer and present it in a logical manner.
- can efficiently measure higher order cognitive objectives (e.g., analysis, synthesis, evaluation).

Limitations in Using Essay Items

- cannot measure a large amount of content or objectives.
- generally provide low test and test scorer reliability.
- require an extensive amount of instructor's time to read and grade.
- generally do not provide an objective measure of student achievement or ability

SUGGESTIONS FOR WRITING ESSAY TEST ITEMS

1. Prepare essay items that elicit the type of behaviour you want to measure.

Learning Objective: The student will be able to explain how the normal curve serves as a statistical model.

Undesirable: Describe a normal curve in terms of: symmetry, modality, kurtosis and skewness.

Desirable: Briefly explain how the normal curve serves as a statistical model for estimation and hypothesis testing.

2. Phrase each item so that the student's task is clearly indicated.

Undesirable: Discuss economic factors which led to the stock crash of 1929.

Desirable: Identify the 3 economic conditions which led to the stock crash of 1929. Discuss briefly each condition in correct chronological sequence and in one paragraph indicate how the three factors were inter-related.

3. Indicate for each item a point value or weight and an estimated time limit for answering.

Undesirable: Compare the writings of Bret Harte and Mark Twain in terms of settings, depth of characterization, and dialogue styles of their main characters.

Desirable: Compare the writings of Bret Harte and Mark Twain in terms of settings, depth of characterisation, and dialogue styles of their main characters. (10 points 20 minutes)

4. Ask questions that will elicit responses on which experts could agree that one answer is better than another.

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Related items: [Writing Multiple Choice Questions](#) - This link provides valuable advice on assessment construction in an environment such as Blackboard.

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Comments: None

[Top](#) |

[« Prev](#) | [Index](#) [»](#)
