



TEST PREPARATION, MULTIPLE CHOICE QUESTIONS, AND CRITICAL THINKING

GOALS

1. Create effective multiple-choice (MC) tests.
2. Create significant questions that elicit Recall and Application/Critical Thinking (CT) responses.
3. Apply the use of tests in varied educational and facility/organizational situations.
4. Evaluate testing outcomes to increase the validity and reliability of existing questions.

KEYWORDS FOR APPLICATION

1. Theory of Multiple-Choice (MC) Questions
2. Recall Questions
3. Application/Critical Thinking (CT) Questions
4. Introductory Statement
5. Distractors
6. Options

**NOTE: HEREAFTER IN THIS DOCUMENT, "MC" IS USED FOR THE WORDS MULTIPLE CHOICE
AND "CT" IS USED FOR THE WORDS CRITICAL THINKING**

Regardless of a person's profession, there is a body of knowledge related to expected leadership behaviors. Out of necessity, there is a process to determine the understanding of principles and concepts that provide expertise and ability to perform everyday leadership actions. Testing and validation of this required information and related principles (in some way) should occur almost daily.

The following information and concepts of testing for all leaders in any field of endeavor:

1. Determining the understanding of policies/rules
2. Comparing of test pre-lecture with post-lecture understanding
3. Understanding and application of presented information

METHODS OF WRITING AND TEACHING

MC questions:

Recall questions require an answer that involves the completion of a sentence.

Application/CT questions require answers that involve identifying the degree of correctness or wrongness of each option.

For MC questions (Recall or Application/CT), there are three categories used when writing a question:

1. An Introductory statement requiring the selection of the best/correct/right answer from the options.
2. Distractors—the possible answers provided in the list of choices that are *not* correct.
3. Options—the total available answers.

Two of the most viable means of testing using MC questions are:

1. Testing *Recall*, either verbally or in writing, is a relatively quick way to determine understanding. It reinforces acquired information.
2. Testing the *ability to apply* by using Application/CT (not a simple recall question) is a relatively active dynamic process that encourages problem-solving through exchanging and comparing ideas. It is especially beneficial when working with groups.

For example, it is fun to have students come to class prepared after receiving verbal information, doing assigned reading, and having prepared their own MC questions. This encourages Application/CT by the group as they consider each question option as to correctness or wrongness—and why. The active involvement in deciding, defending, and presenting the rationale for their responses to any question and its options is mentally challenging for students.

WRITING MULTIPLE CHOICE (MC) QUESTIONS

The general rules for writing MC questions—Recall or CT questions:

1. Use simple, specific language to help thwart misinterpretation.
2. Use simple sentence structure and precise wording—no trick questions.
3. Place the majority of the words in the question/beginning introductory statement.
4. Make the distractors plausible but not wholly accurate, according to the question.
5. Make the length of the options approximately the same size **or** make one-half of the answers short and the other one-half of the answers long.
6. Do not use negative words, such as not, nor, un (as a prefix), etc.

7. Mix up the correct answers so that there is no consistent placement of answers in the questions list.
8. Make the number of options 4 or 5 in number for each question.
9. Do not use one of the options the statement “all of the above” or “none of the above.”
10. The tester/instructor should know the correct answer and understand WHY the answer is the right answer.

The general rules for answering MC questions--- (Recall questions)

1. Inform the test-taker that there is a correct/best option for each question.
2. Inform the test-taker to identify the correct/best answer.

The general rules for answering MC questions---(Application/CT questions)

1. Inform the test-taker that there is a correct/best option for each question.
2. Inform the test-taker that there is a correct/best option for each question; however, there is a degree or reason each option (choice) is correct/best or wrong.
3. Inform the test-taker to justify the degree of correctness or wrongness of each option (choice), why, and to explain their answer.

EXAMPLES & NON-EXAMPLES

MC EXAMPLES (Two question types—Recall and Application/CT)

MC—A *Recall question is a part of a sentence that requires the completion of a sentence:*

Directions: Select the BEST answer from the four options.

Bread is *mostly* made of:

- A. Salt
- B. Water
- C. Flour
- D. Yeast

There are four options. The answer is C—all other answers are “distractors.” (This Recall question can be made into an Application/CT question if you require the student to present the rationale for why they did or did not use each option.)

MC—An Application/ CT question is a sentence that is a question and ends in a question mark. Thereby, the need to use application principles are required to answer the question:

Directions: Select the BEST answer and EXPLAIN your reasoning regarding each option's correctness/incorrectness verbally.

How do you make bread?

- A. Use salt, mix it with the water and then stir to a paste—Bake at 450 degrees.
- B. Use water, butter, salt, flour, and yeast and mix well. Let rise—Bake at 400 degrees.
- C. Use milk, yogurt, salt, and rye flour and cook on a stove burner for 2 minutes. Let cool.
- D. Use tea water, oatmeal, and yogurt to make a thick paste. Knead. Do not bake.

There are four options. The answer is B---all other answers are “distractors.” (This Application/CT question can be made into a Recall question if you require the student to identify the correct/best option.)

NON-MC EXAMPLES (Questions with no MC options)

Directions: Write your answer to the following:

I have been making bread for 21 years. I still have different outcomes. Sometimes the bread is flat, sometimes full of holes, and sometimes it doesn't rise. What do you think the problem might be with my process of making my bread? (This is an essay question. There are no options or distractors.)

CRITICAL THINKING QUESTIONS

1. What is an MC Recall question?
2. What is an MC Application/CT question?
3. What is a non-MC question?
4. What kind of questioning best suits your needs in your situation? Why?
5. What are the ten (10) general rules for writing MC questions?
6. What are the advantages of using Application/CT questions?

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