Writing Effective Multiple Choice Questions
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What it is
Writing test questions is a daunting task for many instructors. It can be challenging to correctly assess students on the comprehension of course objectives. Multiple choice questions are no exception; despite being very popular, instructors often struggle to create well-constructed questions.

Why does it matter
Multiple choice questions have several advantages. They lend themselves to covering a broad range of content and assessing a wide variety of learning objectives. They are very useful when testing a student's lower level knowledge of a topic, such as factual recall and definitions, but if written correctly, they can be used to assess at the higher levels of analysis, evaluation, and critical thinking skills. Multiple choice questions are scored efficiently (even automatically, if an electronic test is used), therefore, they are frequently the evaluation method preferred by instructors of large courses.

There are some disadvantages, including the fact that this type of question can be time-consuming to construct. Multiple choice questions are made up of two parts: the stem, which identifies the question, and the alternative responses which include the correct answer as well as incorrect alternatives, known as distractors. Coming up with plausible distractors for each question can be a difficult task. And, while some higher level thinking skills can be addressed, multiple choice questions cannot measure a student's ability to organize and express ideas. Another thing to consider is that student success when answering multiple choice questions can be influenced by factors unrelated to the subject matter, such as reading ability, deductive reasoning, and the use of context clues.

How to use it
The following guidelines are offered to help streamline the process of creating multiple choice questions as well as minimize the disadvantages of using them.

I. Writing question stems

A. When possible, prepare the stem as a clearly written question rather than an incomplete statement.

Poor example: Psychoanalysis is…
Better example: What is the definition of psychoanalysis?

B. Eliminate excessive or irrelevant information from the stem.

Poor example: Jane recently started a new job and can finally afford her own car, a Honda Civic, but is surprised at the high cost of gasoline. Gasoline prices are affected by:
Better example: Which of the following are factors that affect the consumer price of gasoline?
II. Writing alternative responses

A. Make sure there is only one correct answer.

B. Create distractors that are plausible to avoid students guessing the correct answer.

C. Make sure alternative responses are grammatically parallel to each other.

D. When possible, list the alternative responses in a logical order (numerical, alphabetical, etc.)

E. Avoid using ‘All of the above’ or ‘None of the above’ to prevent students from using partial knowledge to arrive at the correct answer.

F. Use at least four alternative responses to enhance the reliability of the test.

Other thoughts

If you are interested in using technology to create a test in an online environment, there are several programs available to help with this task. Blackboard, the university’s course management system, has a robust test creation tool, which includes automatically graded multiple choice questions, as well as sixteen other types of questions to choose from. Respondus is an exam authoring program that allows you to create tests that can be imported into Blackboard or printed out on paper. Panopto, the university’s video presentation and hosting platform, has recently introduced an interactive quizzing feature which includes multiple choice and other types of questions. CTEI staff are available to discuss the test creation process and/or help with any of these tools.

Additional Resources

- “Multiple Choice Questions.” The University of Texas at Austin Faculty Innovation Center, 14 Dec. 2016, https://facultyinnovate.utexas.edu/teaching/check-learning/question-types/multiple-choice

Author’s Background

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Amy Brusini works at the Center for Teaching Excellence and Innovation (CTEI), a teaching and learning center for Homewood faculty. Amy provides support and training for Homewood faculty on Blackboard, the university’s current course management system, as well as instructional design support. Amy has a Master’s Degree in Education from Johns Hopkins University.