



MarineNet TTP



Top Ten Tips for Improving Multiple Choice Questions

No trainer/educator would argue that multiple choice questions (MCQ) are always an appropriate means to assess learning.

MCQs tend to focus on low-level learning objectives. They may measure reading or test-taking savvy more than actual knowledge or skill. MCQs certainly can't measure a learner's ability to organize and express ideas.

On the other hand, MCQs do offer some advantages like objective vs. subjective evaluation, efficient scoring, and analysis, of incorrect response patterns.

If you do need to use MCQs, then you want to reduce the errors that occur from poorly written items. The TTPs covered here make tests (and other assessment types) more accurate, so the learner interprets questions as intended and the answer choices are clear and without hints.

First, if you're not familiar with multiple choice terminology, it's explained in the visual below. The difference between a "question" and "question stem" is further addressed in #6.

ANATOMY OF A MULTIPLE CHOICE QUESTION

Question (complete)

1. What are the Marine Corps core values?

--or-- Question Stem (incomplete)

1. The Marine Corps core values are _____.

Answer Choices

- a. physical, mental, and emotional fitness
- b. honesty, hard work, and determination
- c. speed, agility, and flexibility
- d. honor, courage, and commitment ← Correct Answer

Distractors

1: Focus on critical content.

Concentrate on the most important, critical knowledge and skills—don't test for trivia or "nice-to-have" information. Ensure that you compose at least one question at the right level of difficulty for each learning objective; complex objectives may require more than one question to assess mastery.

2. Test comprehension and critical thinking, not just recall.

Too many multiple choice questions test only the superficial recall of knowledge. Unless a learner needs to recall verbatim information, avoid pulling a single sentence from text or audiovisual media and asking the learner to fill in a blank.

Instead, ask learners to recall plus apply, interpret facts, evaluate situations, explain cause and effect, make inferences, or predict results. Use relevant scenario-based questions that present learners with one or more short paragraphs (or alternative media) that describe a situation followed by one or more questions that ask learners to select the best decision from multiple choices.

3. Make all distractors plausible.

All of the wrong answer choices should be reasonable and truly require the learner to discriminate among the options. An obviously wrong distractor only helps the learner guess correctly, making it look like they know something they don't. Try the following suggestions for plausible-but-incorrect distractors:

- Common errors and commonly held myths or misconceptions (Consult your SME!)
- Statements that are true, but do not answer that specific question
- Content that is paraphrased incorrectly

Apply the following top ten tips to improve your MCQs:

Every unit is different; every training plan unique. MarineNet provides flexible solutions.

4. Use simple sentence structure and precise wording.

Question difficulty should come from the content, not the wording. Write test questions in a simple structure that is easy to understand. Beware of questions that actually measure reading (or math) skills rather than content recall or comprehension. If a question or its answer choices can be interpreted in two ways or if the difference between answer choices is too subtle, then find a way to rewrite it.

Avoid these vague terms that tend to confuse learners: all, none, always, never, usually, often, frequently, infrequently, and rarely.

5. Avoid negative phrasing.

Avoid using negatives such as “Which of the following is not an acceptable way to ...” It increases cognitive load and introduces confusion without increasing the value of the question. If you can’t rephrase the question, be sure to underline or italicize the negative word(s) so the learner doesn’t misread the question.

6. Place most of the content in the question stem.

Testing experts recommend using complete questions rather than incomplete question stems (often configured as a “fill in the blank”). If you must use a question stem, ensure that the stem includes any words that would be repeated in each response.

7. Keep all answer choices the same length and grammatically similar.

Expert test-takers can use answer length as a hint to the correct answer. All too often the longest answer is the correct one. If you can’t get all answers to the same length, try using half short and half long.

Also keep answers grammatically similar. If one answer choice needs to be a complete sentence, structure all the choices as complete sentences. If one answer choice begins with a verb, make all choices begin with verbs.

8. Avoid answer choices that combine two or more options.

Avoid answer choices that combine two or more options (“b and c”). This is a clear giveaway for the learner if one of the choices is obviously correct—or

incorrect. On the other hand, it can confuse the learner unnecessarily.

When you run out of distractors, “*All of the Above*” and “*None of the Above*” can come in handy, but they may not promote good instruction. “*All of the Above*” can be an obvious give-away answer when it’s not used consistently and can encourage guessing if the learner thinks one or two answers are correct. The downside to “*None of the Above*” is that you can’t tell if the learner really knew the correct answer.

If a single question really does have multiple correct answers, consider using a “multiple choice/multiple select” question type. Correct answers and distractors are each listed separately, but the learner is directed to “Select all that apply.” Scoring can be more complicated, but the item preserves validity.

9. Offer a reasonable number of answer choices and mix up the order of correct answers.

Research seems to agree on a minimum of 3 answer choices and a maximum of 5 but fails to agree on whether 3 or 4 or 5 options is best for a single-answer MCQ. Keep in mind that the fewer distractors you use, the greater the likelihood that a learner’s guess will be correct. However, the greater the number of distractors, the more difficult it is to keep all the distractors plausible.

Make sure that most of your correct answers aren’t in the “b” and “c” positions, which often happens. Keep correct answers in random positions and don’t let them fall into a pattern that can be detected. If delivering via MarineNet and your test is properly configured, answer choices can be “shuffled” automatically. Correct answer position will then change each time the assessment is delivered.

10. Eliminate “enemy” items.

An enemy item gives away the answer to another item. Go through your test and make sure that the question or answer to one item does not answer or give a clue to the answer of another item. Unlike a paper-based test, MarineNet can display test items one at a time, but the learner is still able to move freely among all items until the test is submitted for scoring.

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