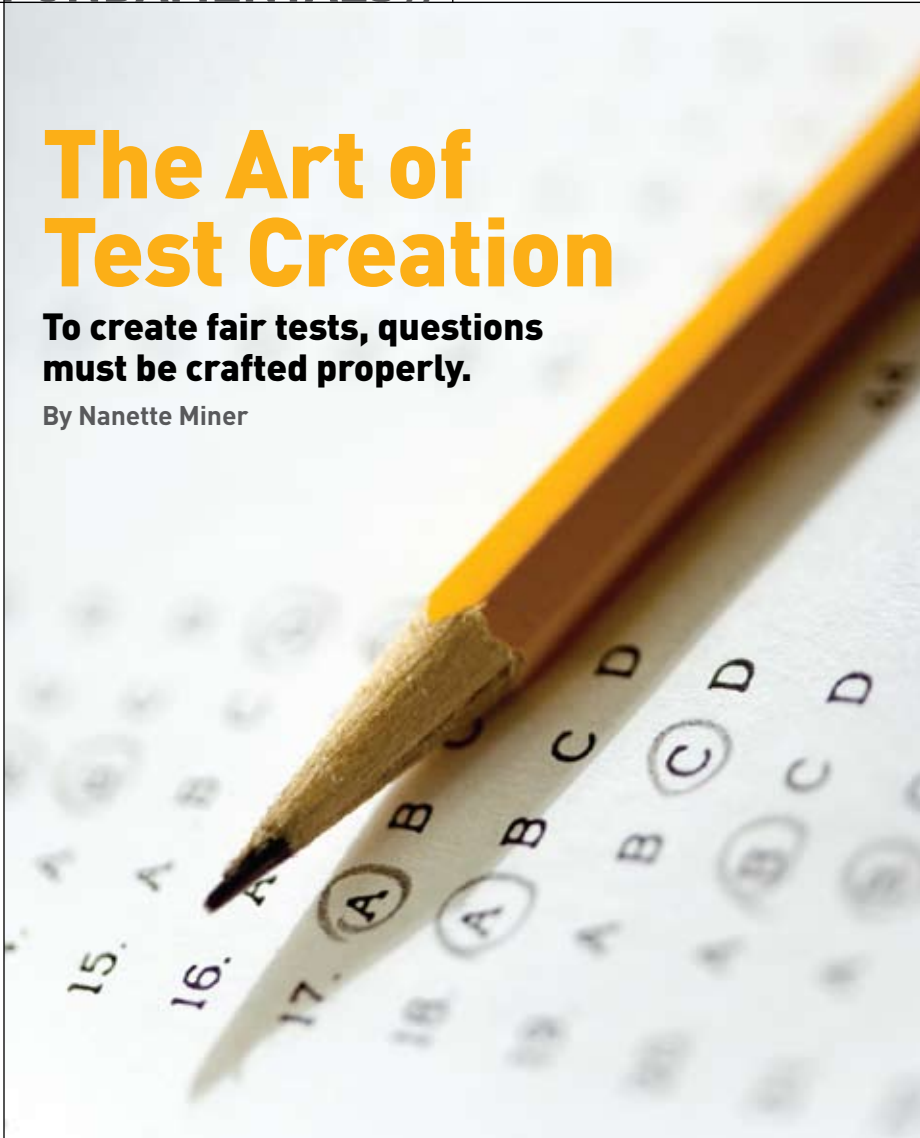


# The Art of Test Creation

To create fair tests, questions must be crafted properly.

By Nanette Miner



Whether it is students taking finals or law graduates wrestling with the bar exam, most aptitude tests are designed to discourage test takers from answering correctly.

Unlike their counterparts in other fields, trainers should not follow the path of writing tests that are difficult even for devoted students. If the object of a training session is for participants to learn and use new knowledge, test answers should be easy for individuals who absorbed the material. Test trickery for its own sake is entirely unnecessary.

When writing test questions for Level 2 evaluations, trainers should strike a balance between an overly difficult exam and one that yields obvious clues to the right answer.

To create tests that are fair to both the individual and the organization, there are five general rules and specific strategies that you need to craft questions properly.

### Five tenets of test creation

The first rule of thumb is: If a particular concept was not taught in the training, it should not be on the test. Also, test questions should be stated in the same manner they were taught in the class. For example, if the session defined the three characteristics of steel, don't ask: "Which one of these is

not a characteristic of steel?" It's hard for most people to have success with "null" answers, and more importantly, why reinforce what you don't want them to remember?

A second general rule places importance on the test instructions. Do everything you can to ensure that test takers know what to do, and when and how to do it. If there is a time requirement, inform test takers by saying, "You must finish this section in 30 minutes."

If a tool or resource is allowed, tell test takers they may use it for certain questions. When considering whether to allow use of test aids, such as calculators, procedure manuals, or other job aids, a general rule applies: If they are allowed to use it on the job, they should be allowed to use it when taking the test as well. Why make trainees memorize something they will never need to commit to memory other than to pass your test?

Tell participants exactly how they should answer each question if it varies from standard multiple choice options. One example is, "For each item in column A, there is only one correct answer in column B."

It can be helpful to read the instructions out loud at the start even when they are clearly written on the test itself. This will ensure that everyone hears, sees, and interprets the directions the same way and allows for questions before anyone begins.

When preparing the test, it is best not to include trivial information that will confuse the test taker—consider, for example, a question such as: "Bob and Ed left their office on Oak Street in Chicago at 4:45 p.m. to travel to the airport for a 9 p.m. flight. How far is the airport from their office?" The times provided have nothing to do with the correct answer; in fact, Bob and Ed are irrelevant too. A better phrased question would be: "Using a calculator, a map, and an Internet site, calculate the distance between Oak Street in Chicago and the nearest airport."

To assist the test taker in identifying the correct answer, another rule is to

## All choices should begin with similar sentence structure, such as:

### YES

The time to cross the street is

- A. when the light turns red
- B. after you have looked both ways
- C. if the road is clear.

### NO

The best time for fly fishing is

- A. morning
- B. afternoon
- C. April and May, after the ice pack has melted.

## In column "A" identify what type of store layout each named store utilizes. You may use the answers in column "B" more than once.

### A

- 1. \_\_\_\_\_ Home Depot
- 2. \_\_\_\_\_ CVS
- 3. \_\_\_\_\_ JC Penney
- 4. \_\_\_\_\_ Sears
- 5. \_\_\_\_\_ Blockbuster
- 6. \_\_\_\_\_ Publix

### B

- A. grid
- B. racetrack
- C. boutique

use key words. Using suggestive words such as who, what, where, when, or why will encourage them to look for a particular answer.

The final general rule deals with grouping evaluation questions by topic. Back on the job, the work people encounter will not appear in any kind of logical sequence so mixing questions up has merit. On the other hand, keeping questions grouped allows you to identify areas where learners did not comprehend a particular topic.

If all the questions on a similar topic are grouped together and the learner answers all or almost all of them incorrectly, either he needs retraining or the topic itself was poorly presented. If questions related to a single topic are interspersed throughout the exam, it might be harder to spot a problem.

### Types of questions

The most common types of questions used on aptitude tests are multiple choice, true or false, and matching. Each type has its own rules in terms of arrangement or phrasing to make the test fair to test takers.

Multiple choice questions are typically the easiest to write. However, when someone is not skilled at writing multiple choice questions, the correct answer will always be the longest option. You should be aware of this fact, so when writing a multiple choice test, keep all the answers the same length. The list of possible choices doesn't have to be terribly difficult. Keep in mind that you are testing people who have new knowledge and limited experience applying that knowledge. Do not write answers that

are difficult just for the sake of being difficult. The aim is not to stump the participants.

Subtlety is a necessity when drafting test questions because basic grammar can inadvertently lead the test taker to the right answer. The test questions should not reveal potential answers based on grammatical structure.

If the answer begins with a vowel, the preceding question should end with a (n); if it ends with an (without the parentheses), which is grammatically correct, the question itself automatically triggers the learner to choose the answer that begins with the vowel.

For example:

The Interstate also is known as an:

- expressway
- highway
- route.

Ending the question with "an" cues the test taker to choose "expressway." If it is necessary to provide "none of the above" or "all of the above" as one of the choices, include it in all of the multiple choice questions. If only one or two questions include the option of "none of the above," it is a clear signal that the right answer is "none of the above."

Generally, when creating true or false questions, the tendency is to write more true statements than false ones because the former are easier to create. Be aware of this tendency and try to balance the number of each.

Questions should be entirely true or entirely false. Do not offer answers that might be true under certain conditions. For example: "February has 28 days" (false under certain conditions) versus "February is the shortest month of the year" (true under all conditions).

Avoid "specific determiners," which signal the correct answer. The most obvious are "always" and "never." While it is possible that a statement might always be true, the use of either of these words is usually a clue to the test taker to choose the other option.

Matching questions are somewhat easier to create because only one right answer is necessary for the "B" column in contrast to multiple choice questions,

which require the test designer to create three or more plausible answers. As with other types of questions, adherence to a few rules will provide a fair testing experience for the trainee.

Never provide more than 10 matching questions. If you really want to provide more, break them up into chunks of 10 that all deal with the same concept. More than 10 questions can overwhelm the test takers. Soon, all the letters and numbers are just swimming in front of their eyes.

You may choose to provide more "B" column answers than "A" column questions. Three extra "B" column answers make the matching process a bit more difficult, but if the second column contains more than three extra choices, people will be overwhelmed with options.

Alternatively, you may have fewer options in the "B" column and more questions in the "A" column. In this case, instruct the test taker to use the "B" column responses as many times as he thinks appropriate.

If you're going to create a one-of-a-kind question, be sure to provide a logical alternative, even if it doesn't fit any other possibility. For instance, "A compass always points \_\_\_\_\_," should have the options of at least north and south in the "B" column. If only north is supplied, and you only have one question in the "A" column that has to do with direction, the correct answer is obvious to the test taker.

Testing is the final phase of training. Its purpose should be to reinforce what trainees have learned and make them feel successful about the progress

they have achieved. It is not necessary to trick or stump people. If someone attended all the training sessions and successfully completed all of the assignments, they should be successful on the test.

To paraphrase Odin Westgaard, the sage of writing test questions, "Your test should be easy for those who understand what you've taught, difficult for those who don't understand, and a total mystery to the uninitiated."

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