The entire report in which the following Appendix (Appendix B) can be found is:

Appendix B

Multiple Choice Item-writing Guidelines

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Multiple-choice items are items in which a question (stem) and a set of possible answers (responses) are presented and the student is expected to choose the correct one. Incorrect responses are called distractors.

Two principles of assessment item design:

Students who know the content should be able to complete the item successfully. The language and format of the question should not mislead them.

Students who don’t know the content should not be able to complete the item successfully (except for a slight possibility of guessing correctly).

Question wording

The most important and most obvious consideration in writing an assessment item is to make sure that the item measures the student’s content knowledge and not some irrelevant skill. Science and math items, for example, should not require exceptional reading ability.

Information should be presented as clearly and concisely as possible so that students are not confused by what is being asked. At the same time, it should not be possible for students who do not know the content to get the item correct based on language cues.

Instructions should accompany each question or set of questions; for example:

Multiple Choice Item Instructions:
Circle the picture that shows six birds.
-OR-
Fill in the oval next to the correct answer.

Instructions in an item should be placed before graphics or other text.

Guidelines for multiple choice items

GUIDELINE 1
Avoid unusual or difficult vocabulary (unless that vocabulary is the focus of the item). Eliminate unnecessary wordiness, and avoid overly complex sentence structures.

- **Problematic Item:**
  Which of the following materials is known for having the property of combustibility, and in addition to possessing that property is one that will ignite in the least laborious fashion?
  a. coal
  b. gasoline
  c. rubber
  d. steel

**GUIDELINE 2**

In general, avoid fill-in-the-blank and sentence completion formats. It is preferable to write questions.

- **Problematic Item:**
  Sacramento is the ________________ city of California.
  a. largest
  b. westernmost
  c. richest
  d. capital

**GUIDELINE 3**

Make sure there is only one correct or best answer. The correct answer should be one that subject-area experts would agree is clearly the best.

- **Problematic Item:**
  Who is the best writer?
  a. J. K. Rowling
  b. C. S. Lewis
  c. E. B. White
  d. F. L. Baum
GUIDELINE 4

Avoid negative sentence structures, which tend to be confusing. Use “none of the above” and “all of the above” sparingly, especially in items for younger students.

- **Problematic Item:**
  Which statement about the set of whole numbers \{1, 2, 3, \ldots 20\} is not true?
  a. half are not even numbers.
  b. more than 50% are not prime numbers.
  c. 70% are not multiples of 3.
  d. none of the above

GUIDELINE 5

Use plausible distractors. Watch for unintentional clues that make it possible to identify the correct response or to exclude incorrect response options.

- **Problematic Item:**
  What is the largest mammal?
  a. huge blue whale
  b. ant
  c. redwood tree
  d. small rock

GUIDELINE 6

Avoid absolute terms (e.g. always and never) and vague qualifiers (e.g. usually and generally).

- **Problematic Item:**
  Which of the following is true?
  a. Cotton is never white.
  b. Cotton is always white.
  c. Cotton is usually white.
  d. Cotton is generally used to make clothes.

GUIDELINE 7

In multiple choice questions, use 3 response options for kindergarten and first grade students, 4 for students in Grades 2-12.
GUIDELINE 8

Avoid repetitious language in response options.

- **Problematic Item:**
  How did Isaac Newton learn algebra?
  a. Isaac Newton learned algebra by taking classes at Oxford University.
  b. Isaac Newton learned algebra by studying algebra.
  c. Isaac Newton learned algebra by taking classes at Cambridge University.
  d. Isaac Newton learned algebra by inventing it.

Usually it is not necessary to use articles at the beginning of short responses; e.g., just use “boat” instead of “a boat” or “the boat” (where the question is, say, “Which of these is best for traveling across water?”).

GUIDELINE 9

Avoid intentionally deceptive or “trick” questions.

- **Problematic Item:**
  Where did George Bush send his diplomats to negotiate with Napoleon?
  a. Paris
  b. London
  c. Berlin
  d. Nowhere

GUIDELINE 10

In general, there should only be one correct response to a multiple choice item.

GUIDELINE 11

Whenever possible, put measurement units in the stem rather than repeating them in the responses, e.g., “What is the length of this line in centimeters?”

GUIDELINE 12

Avoid using “you,” e.g., “What should you use to measure volume?”

GUIDELINE 13

Randomize the order of response options, except for numbers, which can be arranged in ascending order.
GUIDELINE 14

These are guidelines, not laws. Item writers and reviewers will have to use judgment to determine (a) how to apply the guidelines in specific cases and (b) whether the two principles of assessment design have been observed or not.