Van Blerkom Chapter 9: True-False and Other Alternate-Choice Items

With alternate-choice items, one is presented with two positions, situations, or answers from which to choose between. If more options are given, then the item no longer represents an alternate-choice but, rather, a multiple-choice. Usually the two options represent opposite positions regarding the item query.

1. Advantages and Limitations of True-False Items

1a. Advantages of True-False Items

* Because true-false items are typically brief, **they allow for a larger sampling of content** from the domain than is possible with essay, brief-response essay, multiple-choice, and short-answer formats. Note that true-false items do allow for the measurement of high-level cognitive skills, although this is usually difficult to achieve.
* **Usually easier to construct** than multiple-choice and essay items.
* **Easily and efficiently scored**.
* **Scoring of true-false items is objective**, more so than essay and short-answer items. Recall that the more objective and easier to score an item, the greater will be reliability of assigning scores.

1b. Limitations of True-False Items

* Like multiple-choice items, **guessing poses a problem for true-false items**, but true-false items are more susceptible to guessing than are well designed multiple-choice items since true-false items are limited to two choices. Guessing is a problem because it affects both reliability and therefore validity. However, as the number of true-false items included on a test increases, it is less likely that guessing will produce high scores (i.e., scores much greater than 50%).
* **True-false items cannot be used if the answer is not simply yes/no, true/false, correct/incorrect, or some other similar dichotomous outcome**. In short, if the answer requires qualification, then true-false format is probably not sufficient.
* **True-false items usually measure higher cognitive skills indirectly**. Since one cannot readily ask students to analyze, synthesize, or evaluate with true-false or yes-no responses, the measurement of these higher-level activities requires several true-false questions that can only indirectly determine or measure students’ ability to perform higher-level activities.

2. Qualities Desired in True-False Items

1. **Does this item measure the specified skill**? If item is based upon a table of specifications or list of performance objectives, then the answer is probably yes.
2. **Will content experts agree with the selected correct answer**? **Will they agree the correct answer is unequivocally true or false**? There must be one correct answer that is not based upon qualifications, otherwise the item will not be suitable for alternate-choice item format.
3. **Is the item double-barreled**? If the item presents more than one proposition, it will be ambiguous and therefore elicit responses for inappropriate reasons.
4. The **item should be at a reading level that is below the students’ ability**. This ensures that reading ability does not interfere with measurement of content understanding.
5. **State item as simply as possible**. The more convoluted an item, the more likely reading ability will interfere with measurement of content understanding or achieved skill.
6. **Emphasize words (adjectives or adverbs) that alter the meaning of the item.** The most common word that significantly changes the meaning of an item is “not.” This word should be underlined when used in a fashion that alters the meaning of an item. However, it is recommended by measurement experts that the word “NOT” not be included in true-false items.
7. **Avoid words that indicate ambiguous or indefinite degrees**, such as some, sometimes, often, etc. True-false items should be as clear and unambiguous as possible. Such words may affect the clarity of items, and therefore affect the unequivocal nature of true-false items.
8. In general, **avoid words with absolute meanings**, such as all, always, never, etc. Such words are typically associated with false items, and therefore serve as indicators of correct choices.
9. **Present novel, new situations in items that supposedly measure capabilities beyond recall**. This should be clear from the discussion of Bloom’s and Gagne’s classification schemes.
10. **Is the incorrect response plausible**? Items in which the correct answer is obvious to all students are not likely to contribute to assessing students’ skill levels or achievement. Further, to assist in the control of guessing, all items in which choices are listed should have plausible choices for those who lack an understanding of the content. In short, the incorrect choice should be just as believable as the correct choice.

3. Variations of Alternative-Choice Items

3a. True-False Items Requiring Corrections

This approach requires that students provide corrections for false items. Requiring this provides more information concerning student’s knowledge of the subject. Drawbacks include fewer items per test and less objective scoring.

3b. Embedded Items

Typically associated with text-based tests in which one wishes students to evaluate certain portions of an essay or paragraph.

3c. Multiple True-False Items

When a series of items share a common stem, the items are referred to as multiple true-false.

3d. Sequential True-False Items

Again, a series of items is presented, but each item makes a comparison to a preceding item, or the correct response to one item depends upon the condition established in the preceding item.

3e. Focused Alternate-Choice Items

These items are not based upon traditional true-false, yes-no, or correct-incorrect alternatives, rather, one is presented with two alternative choices that best fit a given situation. For example:

When heated, air (a. retracts, b. expands).

Self-Test: True-False and Alternate-Choice Items

Items 1 through 7 propose some characteristics one might see in true-false test items. Indicate whether each characteristic is

(A) desired

(B) undesired

1. To measure more complex skills, each true-false item should ask students to evaluate a proposition that is partially true and partially false.

2. To measure more complex skills, each true-false item should ask student to evaluate more than just one proposition.

3. The word NOT should be absent from true-false items.

4. It is better to use the word always when the true-false item is true rather than when it is false.

5. Important sentences from a textbook make good true-false items.

6. The wrong answer should sound believable to the unknowledgeable student.

7. The word NORMALLY should be absent from true-false items.

Indicate whether each of the following statements is true or false.

8. Checklists are more similar to multiple-choice than true-false items.

9. Multiple true-false items are more similar to multiple-choice than true-false items.

10. Alternate-choice items tell the student what it is within a proposition that is to be evaluated.

11. Items 1 through 7 in this self-test are examples of embedded true-false items.