Selected-Response Items – MULTIPLE CHOICE
Multiple-Choice Items

- One of the most popular selected-response items
- Can be used in a variety of content areas and can assess both simple and complex learning outcomes
- Has several elements: The stem; correct answer; and distracters
- The stem generally takes the format of a question or incomplete statement with a set of possible answers
- Requires skill and knowledge of the subject matter and students
Parts and Formats of a Multiple-Choice Item

• Stem = The part of the item that is the question or incomplete statement
  • Direct-question format = When the stem is presented as a question
  • Incomplete-sentence format = When the stem is presented as an incomplete statement; it is suggested that the omission occurs near the end of the stem
• Alternatives = The possible answers
• Distracters = The incorrect alternatives

These items can have two major types of format:
• Correct-answer format = Only one answer is objectively correct
• Best-answer format = Multiple answers may be “correct,” one is the “best answer”
Guidelines for Developing Multiple-Choice Items

• Use a format that makes the item as clear as possible
  • Provide brief but clear directions
  • The item stem should be numbered, while alternatives should be lettered
  • Use either a capital or lowercase letter followed by a parenthesis or period for alternatives
  • You do not have to capitalize alternatives unless they begin with a proper name
  • When the stem is an incomplete sentence, there should be a period after each alternative
  • Keep alternatives in a vertical list
  • Use correct grammar and formal language
  • All items should be written so that the entire question appears on one page
Guidelines for Developing Multiple-Choice Items

• Have the item stem contain all the information necessary to understand the problem or question (this allows students to predict the answer)
  • Use complete sentences
  • A knowledgeable individual should be able to answer the question with relative ease
  • Do not include irrelevant information in the stem
• Provide between three and five alternatives
  • Four is most commonly used, but the use of five can decrease the chance of correctly guessing
Guidelines for Developing Multiple-Choice Items

- Keep the alternatives brief and arrange them in an order that promotes efficient scanning
  - Arrange numbers in ascending/descending order, dates in temporal sequence, and nouns and names alphabetically
- Avoid negatively stated stems in most situations
  - Limit the use of terms such as *except, least, never, and not*
  - This can be avoided by rephrasing the stem
  - In certain situations, having a negatively stated stem may be desirable
  - In such situations, make sure you capitalize, bold, or underline the negative phrase (i.e. **NOT**)
- Avoid double negatives
Guidelines for Developing Multiple-Choice Items

• Make sure only one alternative is correct or represents the best answer
  • If you want to have a single question with multiple answers, a multiple true-false item should be used rather than having students circle every correct answer

• Avoid cues that inadvertently identify the correct answer
  • Cue= Something in the stem that provides a clue to the answer that is not based on knowledge (e.g., land surrounded by water on all sides is called an: -- “an” should be changed to “a/an”
  • Make sure all alternatives are of equal length, specificity, and complexity (typically longer alternatives suggest that they may be the correct answer)
Guidelines for Developing Multiple-Choice Items

• Make sure all alternatives are grammatically correct relative to the stem
  • A stem asking for a plural response should have all plural alternatives
  • Use a(n) when some alternatives begin with consonants and some begin with vowels
• Make sure no item reveals the answer to another item
• Have all distractors appear plausible
Guidelines for Developing Multiple-Choice Items

- Use alternative positions in a random manner for the correct answer
  - Teachers tend to overuse B and C as correct alternatives
  - Also ensure that there is no pattern to correct responses (i.e. A, B, C, D, A...)
- Minimize the use of “none of the above” and avoid using “all of the above”
  - Students who feel rushed may not see all of the options
- Avoid artificially inflating the reading level (be concise)
Guidelines for Developing Multiple-Choice Items

- Limit the use of *always* and *never* in the alternatives
- Avoid using the exact phrasing from the text
- Organize the test in a logical manner (i.e. group stems by topic)
- Give careful consideration to the number of items on your test
  - Take into account the time you have to administer the test and how adequate you want the reliability and validity to be
- Be flexible when applying these guidelines
- Proof-read!
Strengths and Weaknesses of Multiple-Choice Items

• Strengths
  • Versatility
  • Can be scored objectively
  • Provides some degree of protection against guessing
  • Not significantly influenced by response sets
    • Response set= A tendency for an individual to respond in a specific manner
  • Efficient for sampling the content domain (i.e., can ask a lot of questions)
  • Easy to improve using item analysis
  • Provide information about the type of errors that students are making
Strengths and Weaknesses of Multiple-Choice Items

- Weaknesses
  - Not effective for measuring all learning objectives
  - Not easy to write – vulnerable to clues, grammatical errors, difficult to find good distractors
  - Time consuming to develop