Basics of Question Design

Multiple Choice

Elements of a well-designed item: be conscious of response patterns – balance correct responses (A, B, C, D); avoid absolutes ("all of the above"); avoid using universal descriptors such as "never", "always", and "all"; distractors should be organized by length or numerically (called pyramiding).

Pitfalls to Avoid When Writing MC Alternatives

1. Cueing – from stem to alternatives or within a question set
2. 3-1 Split – one alternative is unlike the other three
3. Length Imbalance – alternatives are of different lengths, or keyed response stands out because it is too detailed, too wordy or too brief
4. Grammatical Imbalance – alternatives are not grammatically matched to others and/or to the stem
5. Double Key – the key and another alternative are the same in value or the same in meaning
6. Implausible/Irrational Alternatives – alternatives that are meaningless or have no rational basis
7. Repetition – words or phrases that are repeated in each alternative

Matching Questions

Elements of a well-designed item: indicate whether the same response can be used more than once; maintain grammatical consistency within and between columns; ensure that any matching question appears entirely on one page; provide an unequal number of premises and responses; provide space for letter or number answers; make sure lists are homogeneous; wording of the premises longer than the wording of the responses; identify the items in one list with numbers and those in the second list with letters.

Fill-in-the-blank

Elements of a well-designed item: questions must be carefully worded so that all students understand the specific nature of the question asked and the answer required; instructions and teacher's expectations about filling in blanks should be made clear - indicate whether each blank of equal length represents one word or several words, whether long blanks require sentences or phrases, and whether synonymous terms are accepted; when an answer is to be expressed in numerical units, the unit should be stated; one blank per statement; indicate whether the same response can be used more than once (if there is a list of possible answers).

Points to consider: offer a list of possible responses (more responses than needed as distractors); be clear about whether spelling is important and if synonyms are acceptable where then there is no list of possible answers.

True/False

Elements of a well-designed item: avoid trick questions – statements must be entirely true or entirely false; avoid using universal descriptors such as "never", "none", "always", and "all"; avoid negative words, as they are often overlooked; do not include two ideas in one statement unless you are evaluating student's understanding of cause and effect relationships; provide a "T" and "F" beside each statement and ask students to circle correct answer; consider including more false than true statements and vary the number of false statements from test to test.

Constructed Response

Elements of a well-designed item: question should be specific (avoid broad and/or vague questions); clear instructions on how to use source information (if needed); provide marking criteria for how response will be assessed - perhaps a rubric or clear instructions from teacher about what is expected; provide enough space for students to write (or offer extra paper).

Other Considerations

Effective questions ...

- arise naturally through exploration of a context
- are based upon real or true data
- are able to be completed in 2 minutes or less
- are restricted to one or two steps in order to obtain the answer
- have instructional validity
- vary in focus, nature and type
- have curricular validity and test something worth asking

Use of Context Boxes/Contexts

If the stem of a question is longer than 3 lines, put the information in a context box and the main question as the stem. All graphs or artwork go in a context box.

An item is **technically sound** when...

- the item is free of cues to the answer
- the item uses source material that is familiar but new to the student
- the source material is an appropriate length and at an appropriate reading level
- the source material is properly cited
- the items cannot be answered without the source material
- the items are at the applied taxonomy level or above
- the item has correct spelling and grammar
- the items meet the technically sound checklist for mulitple choice items
- the item has clear instructions

An item is **equitable** when the item...

- is free from cultural and sexual bias
- is free of irrelevant material
- is stated in appropriate and clear language
- is free fron cultural references that would not be familiair to all students

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