Item Writing & Embedded Items

Utah State

Topics

- Item writing
  - Multiple choice
  - Multiple Select (reduced set matching)
- Embedded items

Utah State

Multiple choice: parts of

- Who is the most constructivist professor in the ITLS department?
  - Andrew Walker
  - Brett Shelton
  - Doug Holton*
  - Mimi Recker
  - Sheri Haderlie

Utah State

Multiple choice

- The good
  - Variety of learning targets
  - Minimize the BS response
  - Does not assess writing abilities
  - Guessing is more difficult
  - Diagnostic abilities
  - What's missing from this list?

Multiple Choice

- The bad:
  - Little self-expression
  - Limited to trivia or factual knowledge*
  - Punishes bright students
  - Canonized knowledge
  - Forces drill-and-practice

Multiple choice Recommendations (stem)

- **Write as direct questions**
  - (Haladyna & Downing, 1989a)
- Avoid incomplete sentences
- Keep it simple (non-technical)
- For definitions, place term in stem
- Drop the window dressing
- Do <u>not</u> use negatives
- Avoid examinee opinion
- **Paraphrased (not from the textbook)**
- **Separate items**

Multiple choice Recommendations (leaves)

- 3-5 rule
- Homogenize
- Place repeated words/phrases in stem
- Consistent punctuation & grammar w/ stem
- Arrange in a list that is logical or meaningful
- Distinct leafs
- Avoid true/false leafs
- Avoid "none of the above/all of the above"
- Overly plausible distractors
- 'Joke' response

Multiple choice examples

- Which of the following three-dimensional shapes is best suited to traversing a smooth surface in a linear fashion?
  - cube
  - pyramid
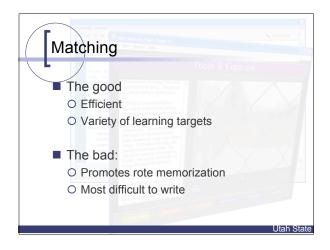 - ruler
  - point
  - cylinder*

Multiple choice examples

- If you want students to perform a calculation in a test the best thing to use is:
  - A fixed-response item.
  - A multiple choice item.
  - A matching item.
  - A fill-in-the blank item.*

Multiple choice examples

- Which of the following is the best fruit?
  - Apple
  - Orange
  - Pumpkin
  - Banana
  - Kiwi*
  - Squash

Matching: parts of

In column A are statements about our history, in column B Names places and dates, match the letter of the appropriate Name, place, or date with the appropriate line next to column A

_____ 1. First president of the United States	A. Columbus
_____ 2. Discoverer of America	B. George Washington
_____ 3. Year America was discovered	C. Washington, D.C.
_____ 4. Beginning of the Revolutionary War	D. 1492
_____ 5. Present capital of the United States	E. 1776

Matching

- The good
  - Efficient
  - Variety of learning targets

- The bad:
  - Promotes rote memorization
  - Most difficult to write

Matching Recommendations

- **Match with learning targets/objectives**
- **Match assessment plan**
- Homogenous sets of premises/responses
- Clear directions
- Every response is a plausible option for every premise
- 5-10 rule
- No perfect matching (# responses > # premises)
- Each premise longer than each response
- Logically arranged responses
- Numbered premises/lettered responses

Matching examples

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____ 1. First president of the United States
____ 2. Discoverer of America
____ 3. Year America was discovered
____ 4. Beginning of the Revolutionary War
____ 5. Present capital of the United States

A. Columbus
B. George Washington
C. Washington, D.C.
D. 1492
E. 1776

Embedded items

- Goal is to check understanding
  - Timing (formative)
- **Do not grade**
- Allow for multiple attempts
- Feedback
  - Correct response (prompt to continue)
  - Recursive corrective feedback (try again)
  - Invalid response (re-prompt)

What we did not cover

- Assessment blueprints and assessment plans
- Validity/reliability of items
  - Content validity
  - Intra-item reliability
  - Item analysis
- Other item types: Short answer, fill in the blank, essay, project-based.