

## Item Writing & Embedded Items



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## Topics

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

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## Multiple choice: parts of

- Who is the most constructivist professor in the INST department?
  - a) Andrew Walker
  - b) Brett Shelton
  - c) Doug Holton\*
  - d) Mimi Recker
  - e) Sheri Haderlie

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## 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?

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## Multiple Choice

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

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## 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 not use negatives
- Avoid examinee opinion
- Paraphrased (not from the textbook)
- Separate items

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### 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 leaves
- Avoid true/false leaves
- Avoid "none of the above/all of the above"
- Overly plausible distractors

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### Multiple choice examples

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

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### Multiple choice examples

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

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### Multiple choice examples

- Which of the following is the best fruit?
  - a) Apple
  - b) Orange
  - c) Pumpkin
  - d) Banana
  - e) Kiwi\*
  - f) Squash

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### 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

<ul style="list-style-type: none"> <li>___ 1. First president of the United States</li> <li>___ 2. Discoverer of America</li> <li>___ 3. Year America was discovered</li> <li>___ 4. Beginning of the Revolutionary War</li> <li>___ 5. Present capital of the United States</li> </ul>	<ul style="list-style-type: none"> <li>A. Columbus</li> <li>B. George Washington</li> <li>C. Washington, D.C.</li> <li>D. 1492</li> <li>E. 1776</li> </ul>
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### Matching

- The good:
  - Efficient
  - Variety of learning targets
- The bad:
  - Promotes rote memorization
  - Most difficult to write

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## 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

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## Matching examples

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              |

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## 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)

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## 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.

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