Designing Test Questions

Descriptions follow with uses, advantages, disadvantages, and tips for writing test questions in the following formats.

**True/False**

*Good for:*

- Knowledge level content
- Evaluating student understanding of popular misconceptions
- Concepts with two logical responses

*Advantages:*

- Can test large amounts of content
- Students can answer 3-4 questions per minute

*Disadvantages:*

- They are easy
- It is difficult to discriminate between students that know the material and students who don't
- Students have a 50-50 chance of getting the right answer by guessing
- Need a large number of items for high reliability

*Tips for Writing Good True/False items:*

- Avoid double negatives.
- Avoid long/complex sentences.
- Use specific determinants with caution: never, only, all, none, always, could, might, can, may, sometimes, generally, some, few.
- Use only one central idea in each item.
- Don't emphasize the trivial.
- Use exact quantitative language
- Don't lift items straight from the book.
- Make more false than true (60/40). (Students are more likely to answer true.)

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**Matching**

*Good for:*

- Knowledge level
- Some comprehension level, if appropriately constructed

*Types:*
• terms with definitions
• phrases with other phrases
• causes with effects
• parts with larger units
• problems with solutions

Advantages:

• Maximum coverage at knowledge level in a minimum amount of space/prep time
• Valuable in content areas that have a lot of facts

Disadvantages:

• Time consuming for students
• Not good for higher levels of learning

Tips for Writing Good Matching items:

• Need 15 items or less.
• Give good directions on basis for matching.
• Use items in response column more than once (reduces the effects of guessing).
• Use homogenous material in each exercise.
• Make all responses plausible.
• Put all items on a single page.
• Put response in some logical order (chronological, alphabetical, etc.).
• Responses should be short.

Multiple Choice

Good for:

• application, synthesis, analysis, and evaluation levels

Types:

• Question/Right answer
• Incomplete statement
• Best answer

Advantages:

• Very effective
• Versatile at all levels
• Minimum of writing for student
• Guessing reduced
• Can cover broad range of content
Disadvantages:

- Difficult to construct good test items.
- Difficult to come up with plausible distracters/alternative responses.

Tips for Writing Good Multiple Choice items:

- Stem should present single, clearly formulated problem.
- Stem should be in simple, understood language; delete extraneous words.
- Avoid "all of the above"--can answer based on partial knowledge (if one is incorrect or two are correct, but unsure of the third...).
- Avoid "none of the above."
- Make all distracters plausible/homogenous.
- Don't overlap response alternatives (decreases discrimination between students who know the material and those who don't).
- Don't use double negatives.
- Present alternatives in logical or numerical order.
- Place correct answer at random (An answer is most often).
- Make each item independent of others on test.
- Way to judge a good stem: student's who know the content should be able to answer before reading the alternatives
- List alternatives on separate lines, indent, separate by blank line, and use letters vs. numbers for alternative answers.
- Need more than 3 alternatives, 4 is best.

Short Answer

Good for:

- application, synthesis, analysis, and evaluation levels

Advantages:

- easy to construct
- good for "who," what," where," "when" content
- minimizes guessing
- Encourages more intensive study-student must know the answer vs. recognizing the answer.

Disadvantages:

- May overemphasize memorization of facts
- Take care - questions may have more than one correct answer
- Scoring is laborious

Tips for Writing Good Short Answer Items:

- When using with definitions: supply term, not the definition-for a better judge of student knowledge.
• For numbers, indicate the degree of precision/units expected.
• Use direct questions, not an incomplete statement.
• If you do use incomplete statements, don’t use more than 2 blanks within an item.
• Arrange blanks to make scoring easy.
• Try to phrase question so there is only one answer possible.

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**Essay**

**Good for:**

• application, synthesis and evaluation levels

**Types:**

• Extended response: synthesis and evaluation levels; a lot of freedom in answers
• Restricted response: more consistent scoring, outlines parameters of responses

**Advantages:**

• Students less likely to guess
• Easy to construct
• Stimulates more study
• Allows students to demonstrate ability to organize knowledge, express opinions, show originality.

**Disadvantages:**

• Can limit amount of material tested, therefore has decreased validity.
• Subjective, potentially unreliable scoring.
• Time consuming to score.

**Tips for Writing Good Essay Items:**

• Provide reasonable time limits for thinking and writing.
• Avoid letting them to answer a choice of questions (You won’t get a good idea of the breadth of student achievement when they only answer a set of questions.)
• Give definitive task to student-compare, analyze, evaluate, etc.
• Use checklist point system to score with a model answer: write outline, determine how many points to assign to each part
• Score one question at a time—all at the same time.

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**Oral Exams**
**Good for:**

- knowledge, synthesis, evaluation levels

**Advantages:**

- Useful as an instructional tool-allows students to learn at the same time as testing.
- Allows teacher to give clues to facilitate learning.
- Useful to test speech and foreign language competencies.

**Disadvantages:**

- Time consuming to give and take.
- Could have poor student performance because they haven’t had much practice with it.
- Provides no written record without checklists.

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**Student Portfolios**

**Good for:**

- knowledge, application, synthesis, evaluation levels

**Advantages:**

- Can assess compatible skills: writing, documentation, critical thinking, problem solving
- Can allow student to present totality of learning.
- Students become active participants in the evaluation process.

**Disadvantages:**

- Can be difficult and time consuming to grade.

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**Performance**

**Good for:**

- application of knowledge, skills, abilities

**Advantages:**

- measures some skills and abilities not possible to measure in other ways

**Disadvantages:**
- Can not be used in some fields of study
- Difficult to construct
- Difficult to grade
- Time-consuming to give and take