Chapter 6: Constructing and Grading Tests
Effective Instructional Strategies

Chapter 6: Constructing and Grading Tests

Chapter Six Objectives

After completing chapter 6, students should be able to do the following:

1. Given the purpose of the test, correctly determine the best type of test for that purpose.
2. Compare and contrast standardized tests and teacher-made tests.
3. Compare and contrast the different types of teacher-made test items and the advantages and disadvantages associated with each.
4. Construct the different types of items that can be included in teacher-made tests.
5. List the purposes for assigning grades.
6. Assign letter grades for participating students and provide a valid rationale for this assignment.
## Standardized Tests

<table>
<thead>
<tr>
<th>Standardized Tests:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Constructed by Experts w/ Explicit Instructions for Administrations.</td>
</tr>
<tr>
<td>- <strong>Standard</strong> Scoring Procedures.</td>
</tr>
<tr>
<td>- Tables of Norms for Interpretation.</td>
</tr>
<tr>
<td>- Examinees Attempt the Same Questions Under Same Conditions—Directions, Time Limit, and Results are Scored w/Same Detailed Procedure.</td>
</tr>
</tbody>
</table>
Standardized Tests—Continued

- Standardized Tests are Constructed as follows:
  - Experts write a Test for a Subject Field answerable by the average, well-informed student at the targeted grade level.
  - Test is Tried Out on a Representative Sample of Students from all Schools at the Targeted Grade Level.
  - Test is Revised Based on the Feedback from this Test Administration.
  - Test is Administered to a Larger Sample—this becomes the **Norming** Group which subsequent scores will be compared.
  - Test Manual is Written that Provides Clear Directions for Administration, Scoring and Information about Test Characteristics and its Interpretation.
• Purpose of Standardized Tests is to **Compare**:  
  − The Performance of One Individual w/Another.  
  − An Individual Against a Group.  
  − One Group with Another Group.  
• Types of Standardized Tests are:  
  − Test Batteries and Single-Subject Tests.  
  − Personality Assessment.  
  − Specific Subject Tests—English, social studies or chemistry.  
  − Achievement Tests
Types of Standardized Tests—Continued

- Measure Aptitudes for Performing/Potential for Certain Activities
  - **Examples:** Journalism, Mathematics, Law, Teaching/Auto Mechanics.
  - These Tests are Called: General Ability Tests, Intelligence Tests/Scholastic Aptitude Tests.

Standardized Test Results Include:

- Percentile Norm.
- Age Norm.
- Grade Level Norm.
- Combination of Norms.
Standardized Tests are Used to **Make Decisions** about:

- Placement in Differentiated *Tracks*.
- Individualized Instruction.
- Diagnosing Strength and Weakness.
- Determining Effectiveness Curriculums.
- Evaluating the Extent of Student Progress.
- Determining Teaching Emphasis and Effectiveness.
Standardized Tests—Continued

- Limitations of Standardized Tests:
  - Questionable Validity.
  - Social and Cultural Bias.
  - Discriminates Against Certain Social and Cultural Groups.

- Standardized Tests vs. Teacher-Made Tests:
  - Standardized Tests Cover Broader Range of Content Area.
  - Teacher-Made Tests Designed to Measure Achievement of a Particular Unit of Work.
Teacher-Made Tests

• Three Reasons for Teacher-Made Tests:
  1. They are Consistent w/Classroom Goals and Objectives.
  2. They Present Same Questions to All Students Under Nearly Identical Conditions.
  3. They Generate a Product that Can be Evaluated and Stored for Later Use—for example, Parent Conferences.
Teacher-Made Tests—Continued

Three Alternatives/Types of Teacher-Made Tests:

1. Objective Test—alternative, multiple choice, matching, and completion test.
2. Essay Test—brief or extended.
3. Combination of the Two.
Teacher-Made Tests—Continued

• Points to Consider about Testing:
  – Tests should be Written at the **Taxonomical Level** of the Objectives Covered by the Exam.
  – Instructional Objectives Suggest the best Type of Test Item.
  – Purpose of Tests is Check Student Mastery of Stated Objectives.
  – Every Test Item Should Separate those who have Mastered the Objectives from those who have not—prevent Guessing/Offset *test wiseness*. 
1. Alternate-Choice Items are:
   − True/False.
   − Yes/No.
   − Right/Wrong.
   − Agree/Disagree.

• Key Points about Alternative-Choice Items:
  − Use Simple Declarative Sentences.
  − Must be Stated Clearly to Avoid Ambiguity.
  − Have Low Reliability and Validity.
**Guidelines for Creating Alternate-Choice Items:**
- Avoid Using Negative Statement and Double Negatives.
- Ask Something Important and Worth Remembering.
- Don’t Make False Items Longer than True Items.
- Watch for Item Response Patterns.
- Be Clear and Concise.
- Limit Each Statement to Only One Central Idea.
- Avoid using words—all, none, sometimes and usually—that Can Divulge the Correct Response.
- Don’t Use Exact Quotes from Textbooks—can have different meaning when Taken out of Context.
Teacher-Made Tests—Continued

2. Multiple-Choice Items:
   - Can Cover Many Objectives.
   - Measures Different Cognitive Behaviors—factual to the analysis of complex data.
   - Extremely Versatile and Easy to Score.
   - Must be Written in a Straightforward, Clear and Concise way.
   - Can be Modified after being Administered.
   - Relatively Insensitive to Guessing—BUT more sensitive to Guessing than Supply Items.
Teacher-Made Tests—Continued

**Parts of a Multiple-Choice Item:**

1. Who was president of the United States during the Civil War?
   - A. Jefferson Davis
   - B. Abraham Lincoln
   - C. Ulysses S. Grant
   - D. George Washington
Guidelines for Creating Multiple-Choice Items:

- Avoid Providing Grammatical/Contextual Clues to the Correct Answer.
- Utilize Language that Even Most Unskilled Readers will Understand—write concise stems and precise choices.
- Avoid Absolute Terms—always, never, and none—in the Stem and Alternatives.
- Stem should Contain the Central Issue.
- Alternatives Should be Grammatically Correct
Teacher-Made Tests—Continued

- **Guidelines for Creating Multiple-Choice Items, Continued:**
  - Avoid the Use of Negatives.
  - Avoid Giving Structural Clues.
  - Use *all of the above* and *none of the above* with care.
  - Avoid Pulling Statements Directly from the Textbook.
  - Alternatives Should be Plausible to Less Knowledgeable Students.
3. **Matching:**

- Designed to Measure Students’ Ability to Recall a Large Amount of Factual Information—verbal, associative knowledge.
- Two Lines of Items are Presented and Students to Select an Item from One List that Closely Relates to an Item from the Second List.
- Intended for Lower-Level Learning.
• **Guidelines for Creating Matching Columns:**
  - Indicate Basis for Matching the Premises w/the Responses.
  - Matching Columns should be Contained on One Page.
  - Keep the Number of Items to be Matched Short.
  - Put Premises and Responses in Logical Order.
  - Premises and Responses should Fall in the Same General Topic/Category.
  - Make the Length of Statements Consistent.
  - Use Complete Names if Names are to be Matched.
Teacher-Made Tests—Continued

4. Completions:

- Require that Students Write Responses in their Own Handwriting Supplying a Recalled Word/Phrase.
- Difficult to Write.
- Excellent for Subjects that Require the Recall of Unambiguous Facts/Perform Certain Calculations.
Teacher-Made Tests—Continued

• **Guidelines for Creating Completions:**
  - Give Clear Directions.
  - Be Definite Enough so that Only One Correct Answer is Possible.
  - Do Not Utilize Direct Statements from Textbooks—it might Encourage Memorization.
  - Ensure that all Blanks are of Equal Length and Correspond to the Lengths of Desired Responses.
  - Items should be Completed w/a Single Word/Brief Phrase.
Teacher-Made Tests—Continued

5. Essay:

- Permits Students to Formulate Answers to Questions in their Own Words.
- Measure what Students Know because They Utilize their Own Storehouse of Knowledge to answer a Question.
- Determines Students’ ability to: analyze, Synthesize, Evaluate and Solve Problems.
- Two Basic Forms are:
  - Brief—requires a Short Answer Solution of a Problem.
  - Extended—requires several paragraphs of Writing.
Teacher-Made Tests—Continued

**Guidelines for Creating Essays:**

- Make Directions Clear and Specific.
- Allow Ample Time for the Completion of Essays—suggest a time allotment for each question.
- Provide a Choice of Questions.
- The Worth of Each Question should be Identified in the Test Instructions.
- Explain Scoring Technique to Students Before the Exam—it makes Explicit what you are Looking for.
Teacher-Made Tests—Continued

- **Guidelines for Offsetting Low Reliability and Validity of Essays:**
  - Before Exam—write a sample answer and assign points to the various components of the answer.
  - Skim the Exam and Identify a Model Paper—the anchor paper for grading.
  - Grade Each Question for All Students before Proceeding to the Next Question.
  - Grade Papers Blindly.
  - If possible—Read Student Responses Several Times.
Authentic Assessment Requires Students to:

- Demonstrate Skills and Competencies Replicate Real-World Problems/ Situations.
- Integrate Knowledge and Complete Tasks that have Real-Life Applications.
  - **Examples**: exhibitions, oral presentations, role-playing/oral readings recorded and portfolios.
- Portfolios: documented history of learning & Documented and Organized History of Learning Accomplishment.
• **Guidelines for the Development of Authentic Assessment:**

− Design Programs and Tasks that Match Outcomes and Content of Instruction.
− Tasks Should Have Real-Life Applicability.
− Emphasize Process and Product.
− Provide Time for Student Reflection/Self-Evaluation.
− Develop Scoring Procedures and their Application—rubrics can be utilized for this purpose.
Quizzes

• **Quizzes:**
  - Evaluates Student Progress.
  - Check Homework.
  - Measure whether Content from Immediate/Preceding Lessons was Understood.
  - Short in Length—three to five questions.
  - Limited to Material Taught in Immediate/Preceding Lessons.
  - Encourage Students to Keep with their Work.
  - Provide Feedback for Teachers Related to their Effectiveness.
  - Serve as Warning Signal of Teaching/Learning Problems.
Advantages and Disadvantages Associated with Different Types of Test Items

<table>
<thead>
<tr>
<th>Type</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternate Choice</td>
<td>Large sampling of content</td>
<td>Guessing</td>
</tr>
<tr>
<td></td>
<td>Easy to score</td>
<td>Writing clear items difficult</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tends to test memorization</td>
</tr>
<tr>
<td>Multiple Choice</td>
<td>Large sampling of content</td>
<td>Question construction time-consuming</td>
</tr>
<tr>
<td></td>
<td>Scoring simple and fast</td>
<td>Often used to test trivial content</td>
</tr>
<tr>
<td></td>
<td>Measures wide range of cognitive levels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reduces guessing</td>
<td></td>
</tr>
<tr>
<td>Matching</td>
<td>Large sampling of content</td>
<td>Tests for recognition</td>
</tr>
<tr>
<td></td>
<td>Can test associations</td>
<td>Guessing</td>
</tr>
<tr>
<td></td>
<td>Easy to construct and score</td>
<td></td>
</tr>
<tr>
<td>Completion</td>
<td>Large sampling of content</td>
<td>Tests for memorization</td>
</tr>
<tr>
<td></td>
<td>Easy to construct</td>
<td>Writing good items difficult</td>
</tr>
<tr>
<td></td>
<td>Limited guessing</td>
<td>Difficult to score</td>
</tr>
<tr>
<td>Essay</td>
<td>Measures higher cognitive levels</td>
<td>Difficult to score</td>
</tr>
<tr>
<td></td>
<td>Less time needed to construct</td>
<td>Questions sometimes ambiguous</td>
</tr>
</tbody>
</table>
Published Test Banks

• Publishers Provide **Test Banks** for Teachers:
  − Geared to Factual Information.
  − Might Not Cover the Objectives Developed by the Teacher.
  − Test Bank Databases Allow Teachers to Order Customize Tests from a Publisher’s Data Bank.
  − Test Bank Data Bases Require that Teachers Complete Advanced Planning.
## Evaluative Instruments

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized Test</td>
<td>A commercially developed test that samples behavior under uniform procedures</td>
</tr>
<tr>
<td>Teacher-Made Test</td>
<td>An evaluative instrument developed and scored by a teacher for classroom assessment</td>
</tr>
<tr>
<td>Alternate-Choice Item</td>
<td>A statement to which respondents react either positively or negatively</td>
</tr>
<tr>
<td>Multiple-Choice Item</td>
<td>A test question with a stem that poses a problem or asks a question to be answered by one of several alternative responses</td>
</tr>
<tr>
<td>Matching Item</td>
<td>An arranged series of premises, each of which is matched with a specific item from a second list of responses</td>
</tr>
<tr>
<td>Completing Item</td>
<td>A statement with a missing word or phrase, which must be supplied by the respondent</td>
</tr>
<tr>
<td>Brief-Essay Item</td>
<td>A question to which respondents formulate a short-answer response in their own words or solve a problem</td>
</tr>
<tr>
<td>Extended-Essay Item</td>
<td>A question to which respondents formulate responses of several paragraphs in their own words</td>
</tr>
</tbody>
</table>
Grading Systems

- Teachers Collect Relevant Data and then Must Interpret it and Assign Grades.
- There is No Way to Assign Grades that is Fair to All Students.
- There are Two Grading Systems:
  1. **Absolute** Grading Standards.
  2. **Relative** Grading Standards.
Absolute Grading Standards:

- Grades Given Relative to Performance Against an Established Set of Grading Criteria.
- Each Student has the Potential to Achieve any Grade.
- Students Can Achieve High Grades in this System if they Put Forth the Effort—control of test scores is in the hands of students.
- Student Either Does Get an Established Percentage of the Responses Correct/Does Not.
Weaknesses of the Absolute Grading Standard are:

- Establishment of a Standard for each Grade is Difficult.
- Standard Established for Each Grade May Vary from Time to Time Based on Content Emphasized and Changes in Curriculum.
- Level of Examination Difficulty May Vary.
## Table 6.3 Examples of Absolute Standards of Grading

<table>
<thead>
<tr>
<th>Percentage Grade</th>
<th>Correct</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90 to 100</td>
<td>85 to 100</td>
</tr>
<tr>
<td>B</td>
<td>80 to 89</td>
<td>75 to 84</td>
</tr>
<tr>
<td>C</td>
<td>70 to 79 OR 65 to 74</td>
<td>65 to 74</td>
</tr>
<tr>
<td>D</td>
<td>60 to 69</td>
<td>55 to 64</td>
</tr>
<tr>
<td>F</td>
<td>less than 60</td>
<td>less than 55</td>
</tr>
</tbody>
</table>
Relative Grading Standards

- Relative Grading Standards Grade Using Curves.
- There are Two Types of Methods Using Curves:
  1. **Ranking System**—the Teacher Establishes a Fixed Percentage for Each Grade.
  2. **Inspection Method**—the Teacher Sets a Frequency Distribution of Raw Scores on a Vertical/Horizontal Line
     - Grades are Assigned According to Natural Breaks in the Distribution.
- Relative Grading Standard **Does Not** Take into Account Differences in Overall Ability of Students.
The Inspection Method

Figure 6.1
The Inspection Method

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
Examples of Inspection Grade Distributions

![Table: Examples of Inspection Grade Distributions](image-url)

**Figure 6.2**
Examples of Inspection Grade Distributions
Assigning Final Grades

• The **Three Ways** to Assign Grades after Examining Students’ Work are:

  1. **Point Grading System**—the Importance of Each Assignment, Quiz/Test is Reflected in the **Points** Allocated.

  2. **Weighted Grading System**—every Assignment is Given a Letter Grade and All Grades are Then Weighted to Arrive at a Final Grade.

  3. **Percentage Grading System**—relies on the Calculation of the Percentage Correct of the Responses Corrected.

     – Widely Used because of its Simplicity and Familiarity to Most Caregivers.

     – Weakness w/this System is All Exercises Carry the Same Weight.
### Example of a Point Grading System

<table>
<thead>
<tr>
<th>Student Work</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>250 (25 × 10 pts.)</td>
</tr>
<tr>
<td>Quizzes</td>
<td>150 (6 × 25 pts.)</td>
</tr>
<tr>
<td>Tests</td>
<td>300 (3 × 100 pts.)</td>
</tr>
</tbody>
</table>

**Total points possible = 700**

**Grade Range**
- A 650 to 700
- B 600 to 649
- C 550 to 599
- D 500 to 549
- F Less than 499
Example of a Weighted Grading System

<table>
<thead>
<tr>
<th>Student Work</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework assignments</td>
<td>25%</td>
</tr>
<tr>
<td>Quizzes (6)</td>
<td>25%</td>
</tr>
<tr>
<td>Tests (3)</td>
<td>50%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
### Example of a Percentage Grading System

#### Percentage Grading System

<table>
<thead>
<tr>
<th>Test Scores</th>
<th>Grade in Marking Book</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) 20 of 25 H.W.</td>
<td>80</td>
</tr>
<tr>
<td>2) 6 of 8 Quiz</td>
<td>75</td>
</tr>
<tr>
<td>3) 40 of 60 Exam</td>
<td>67</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>74%</strong></td>
</tr>
</tbody>
</table>

Each of these Grades was Averaged

**Parents Like it Because of its Simplicity and their Ability to Understand it.**

**Simple to Use and Understand**
Contracting for Grades

**Contract System:**
- Teacher Promises to Award a Specific Grade for Specified Performance.
- Students Know What they Must Accomplish to Receive a Certain Grade.

**Procedures for a Contract System:**
- Develop Sets of Objectives that Correspond to Specific Letter Grades.
- Decide the Activities and Assignments that are Required at Each Level.
- Students Receive a *Copy* of the Objectives, Corresponding Letter Grades and Requirements.
- Students Study this *Copy* and Decide on the Contract Grade.
### Assigning Grades

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute Grading Standard</td>
<td>Performance compared with established set of criteria</td>
</tr>
<tr>
<td>Relative Grading Standard</td>
<td>Students’ performance compared with that of classmates, including grading on the curve</td>
</tr>
<tr>
<td>Point Grading System</td>
<td>Student work is allocated points, and grades are assigned according to established grade range</td>
</tr>
<tr>
<td>Weighted Grading System</td>
<td>Assignments are given a letter grade, and all grades are weighted to determine final grade</td>
</tr>
<tr>
<td>Percentage Grading System</td>
<td>Percentage correct is recorded for each assignment, and an average is calculated to determine final grade</td>
</tr>
<tr>
<td>Grade Contract</td>
<td>Written agreement between student and teacher as to what students will do to earn a specific grade</td>
</tr>
</tbody>
</table>
Reflection

Student #1 did well on the Test. Based on your reading of Chapter 6, how did the Teacher enable this Child to do well on the Test?
The End!