



## EDPS 340 Item Construction

Dr. Kyung-Hee Kim  
Eastern Michigan University

## Blueprint

Objective 1.	L	M	H	Total %
2.	5mc (10P)	5completion (15P)		20%
3.		2essay (25P)		30%
				50%
Total %	20%	30%	50%	/100

- If an objective is so important, you can have more percentage
- For percentage & level of learning, you have to justify for your CAP 1
  - Level of learning for each objective
    - Why low or high
  - Percentage of each objective
  - Percentage of total low, medium, & high level of learning
    - Why that much or little

## CAP 1

- Cover sheet
- Blueprint
  - you can change
  - Percentage needed
- Justification
  - Cognitive complexity: explain why they are certain levels
    - Why high or low level of learning
  - Talk about how much weight the objectives were given
  - The weight of each low, medium, & high level
    - should talk about if it is appropriate
    - should be somewhat equal

## CAP2

- Cover sheet
- Objective & level of learning
  - 2M
- Test bank: Test bank is a good way to keep good items
  - Add developed items for the particular class
  - Quality of the items
- Test: Format
  - Pull some items from the test bank
  - how many points?
- Key for Test: Points match with what you say on the test
  - Answers are right or not
  - essay questions should be broken down
  - main points you are looking for
  - 2 points for what, 1 point for what
  - 1 point awarded for each fact provided
- Adaptation: Special needs (instead of pre-requisite skills for the CAP3)
  - Define
  - Explain how you would change the test & the test situation
  - What you do, why you do
  - See the Handout (P94-96)

## Test Development Process

1. Statement of Goals & Objectives
2. Content Outline
3. Table of Specifications
4. Item Selection
5. Item Construction
6. Composition of Instructions
7. Development of Answer Sheets
8. Construction of Answer Keys
9. Test Administration
10. Test Revision

## Two Important Characteristics of Tests

- Reliability
  - consistency
    - free from extraneous sources of error
- Validity
  - how well a test measures what it is supposed to measure

## Formative vs. Summative Tests

- Formative
  - monitor progress toward goals within a course of study
- Summative
  - assess overall achievement of course goals



## Table of Specifications

- Blueprint for test
- Purpose
  - ensure proper emphasis given to all elements of a course of study
  - content validity
- Guide for writing items



## Need to Consider & Decide for Blueprint

- Length of Test
- Weight to be given to each objective
- Weight to be given to each level of taxonomy
- Estimate number of items in each cell



## Item Selection

- Types of Items
  - Objectively Scored (closed-ended)
    - true/false
    - completion
    - matching
    - multiple choice
  - Subjectively Scored (open-ended)
    - essay
    - interpretive exercises



## Essential Characteristics of Item Writers

- Knowledge & Understanding of the Material Being Tested
- Continuous Awareness of Objectives
- Continuous Awareness of Instructional Model (norm- or criterion-referenced?)
- Understanding of the Students for Whom the Items are Intended
- Skill in Written Communication



## Guidelines for Writing Items

- Construct at appropriate level of difficulty for examinees
- Include Items at appropriate level of difficulty for purpose of test
- Test significant elements of a course
- Provide one correct answer



### Guidelines for Writing Items --Continued

- Express Items as Precisely, Clearly & Simply as Possible
- Include all Qualifications Necessary to Provide a Reasonable Basis for Responding
- Emphasize General Tasks Rather than Small Details
  - Poor: The product-moment coefficient of correlation was developed by
    - John Gosset
    - Sir Ronald Fisher
    - Karl Pearson
  - **Better:** The product-moment coefficient of correlation is used to determine the degree of relationship between
    - two dichotomous variables.
    - a dichotomous variable & a continuous variable.
    - two continuous variables.



### Guidelines for Writing Items--Continued

- Avoid Jargon & Textbook Language
  - In the correct alternatives, paraphrase statements from the text.
  - Poor: A test is valid when it
    - produces consistent scores over time.
    - measures what it purports to measure.
    - can be objectively scored.
  - **Better:** The validity of a test may be determined by
    - measuring the consistency of its scores.
    - correlating its scores with a criterion measure.
    - inspecting the system of scoring.



### Guidelines for Writing Items--Continued

- Locate & Delete Irrelevant Clues
  - Poor: Dr. Kim is an \_\_\_\_\_ professor.
    - Caucasian
    - Hispanic
    - Asian



### Guidelines for Writing Items--Continued

- Eliminate Irrelevant Sources of Difficulty
  - Students may misunderstand the test directions if the test format is complex &/or the students are not familiar with it.
  - If a set of items using a common key extends to a second page, the key should be repeated on the second page.
- Place all Items of a Given Type Together in the Test
- Prepare Keys in Advance of Test Administration

