

# Advanced Tests and Measurement

## Achievement Testing



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## What We Will Cover In This Section

- What Achievement tests are.
- Background, types and applications.
- General Batteries
- Diagnostic Batteries.



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## Achievement Test: A Definition

*An assessment of an individual's knowledge, skill or accomplishment in one or more content areas.*

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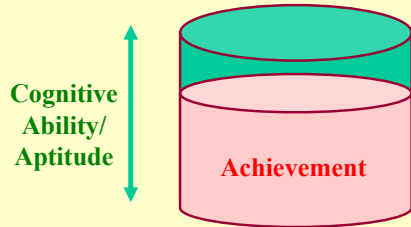
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## Ability vs. Achievement



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## Brief History

- Fisher (1864) First standardized test of handwriting in England.
- Rice (1897) First standardized test of spelling in U.S.
- Thorndike (1909) Handwriting
- Stanford Achievement Test (1923)
- Early issue: Reliability of assessing essay tests.

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## Achievement Tests Use

- Knowledge and skill acquisition.
  - Evaluate students.
  - Evaluate instruction.
  - Evaluate instructors.
- Curriculum planning.
- FORMATIVE and SUMMATIVE evaluation.
- Criterion for assessment.
- National assessment.

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## Types of Achievement Tests

Survey Battery	Typically a group of subject-matter tests designed for particular grade level(s).
Single Survey	Typically focus on achievement in a single area with broad norms.
Diagnostic Test	Focus on identifying specific learning difficulties in a specific area.
Prognostic Test	Focus on predicting achievement in a particular area.

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## Achievement Test Batteries

- *General Educational Development (GED) Tests.*
- Focus on overall development.
- Typically focus on reading, mathematics, language, social studies, science for a particular grade level.
- Norms: Focus on all areas.
- Elementary vs. Secondary School

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## Iowa Tests of Basic Skills

- Tests at 10 levels.
  - Primary battery.
    - Basic battery (listening, work analysis, vocabulary, language, mathematics)
    - Additional tests based on grade level.
  - Multilevel edition (grades 3-9).
    - Basic battery (six tests)
    - Complete battery (eleven tests)
- Takes several hours.
- Last standardized in 1985.

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## Stanford Achievement Test Series

- Consists of three tests.
  - Stanford Early School Achievement Test (2 levels).
  - Stanford Achievement Tests (6 levels).
  - Stanford Test of Academic Skills.
- Cover grades 1-12
- Administration time: 1+ to 5+ hours.
- Standardized on 400,000 children in 1981 and 1982.

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## Specific Area Tests

- Advantages.
  - More items per topic.
  - Broader coverage.
  - Can apply to a broader range of courses and schools.
  - More items yields higher reliability.

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## Reading Tests

- Norm referenced.
  - Focus on overall reading ability.
- Diagnostic.
  - Designed to assess factors that affect reading (motivation, vocabulary, perceptual ability, etc.).
  - High intercorrelations.
- Prognostic.
  - Frequently do better than IQ tests.



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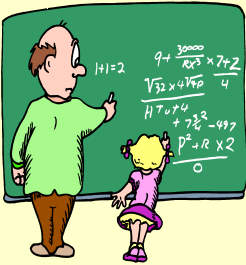
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## Mathematics Tests



- Norm referenced.
  - Focus on understanding of quantitative concepts and operations.
- Diagnostic.
  - Attempt to assess components.
  - Difficult to do.
- Prognostic.
  - Not widely used.

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## Other Secondary School Tests

- Language tests.
  - Focus on verbal and non-verbal communication.
    - Grammar, vocabulary, syntax, spelling.
    - Listening, speaking, and writing.
  - Mostly focus on secondary and college level, not primary levels.

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## Other Secondary School Tests, cont.

- Social Studies Tests.
  - Focus on history, economics, political science.
- Science Tests.
  - Focus on biology, chemistry, physics.
  - Problem: Science knowledge changes very rapidly.

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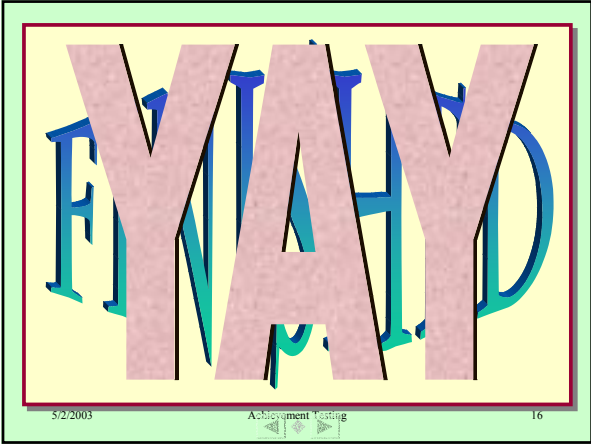
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