

Achievement Testing

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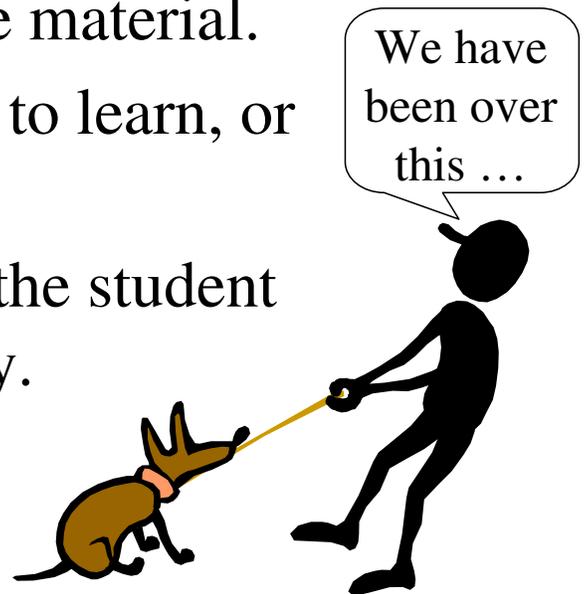
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What is an achievement test?

- **Skills children learn through direct intervention or instruction**
- **Educational assessment or achievement is a method of testing these skills**

What is an achievement test?

- It is a measure of student acquisition of skills or knowledge following appropriate exposure to the material.
- Not a measure of potential to learn, or ability to learn.
- Not a measure of whether the student is performing appropriately.



Why is it important to measure achievement??

We conceptualize specific learning disabilities as a disorder in one or more of the basic psychological processes involved in understanding or in using written or spoken language which can manifest in an imperfect ability to listen, think, speak, read, write, spell or complete mathematical calculations.

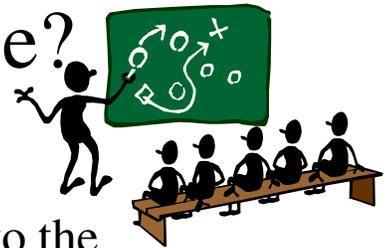
Achievement tests capture these manifestations

- **Specific learning disabilities are defined as:**
 - **a severe discrepancy between achievement and intellectual ability**
 - **A constant 2-year discrepancy between grade level and achievement**

Severe Discrepancy

- **A discrepancy of at least 1 SD between standard scores for IQ and achievement**
 - **This is one of the most common methods of testing for a learning disability**

What are the two basic types of achievement tests in use?

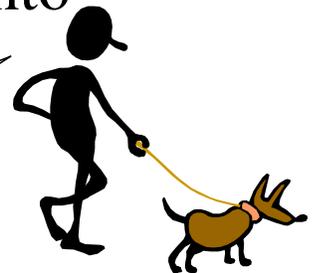


- Norm referenced (Stanford)
 - Generally compares student performance to the performance of other students on same material. Scores are often reported in percentiles, and standard scores.
- Mastery Learning (DACs)
 - Generally compares performance to an established criterion or expected performance level on material, independent of other student performance. Scores are generally reported in relation to whether the student has met the pre-established standards.

What are the assumptions of achievement tests?

- The type of material taught in the class was the same as the type of material covered on the test.
- The student was given the opportunity to learn the material.
- The student's ability level is taken into consideration.

About time.





Achievement Test Quiz

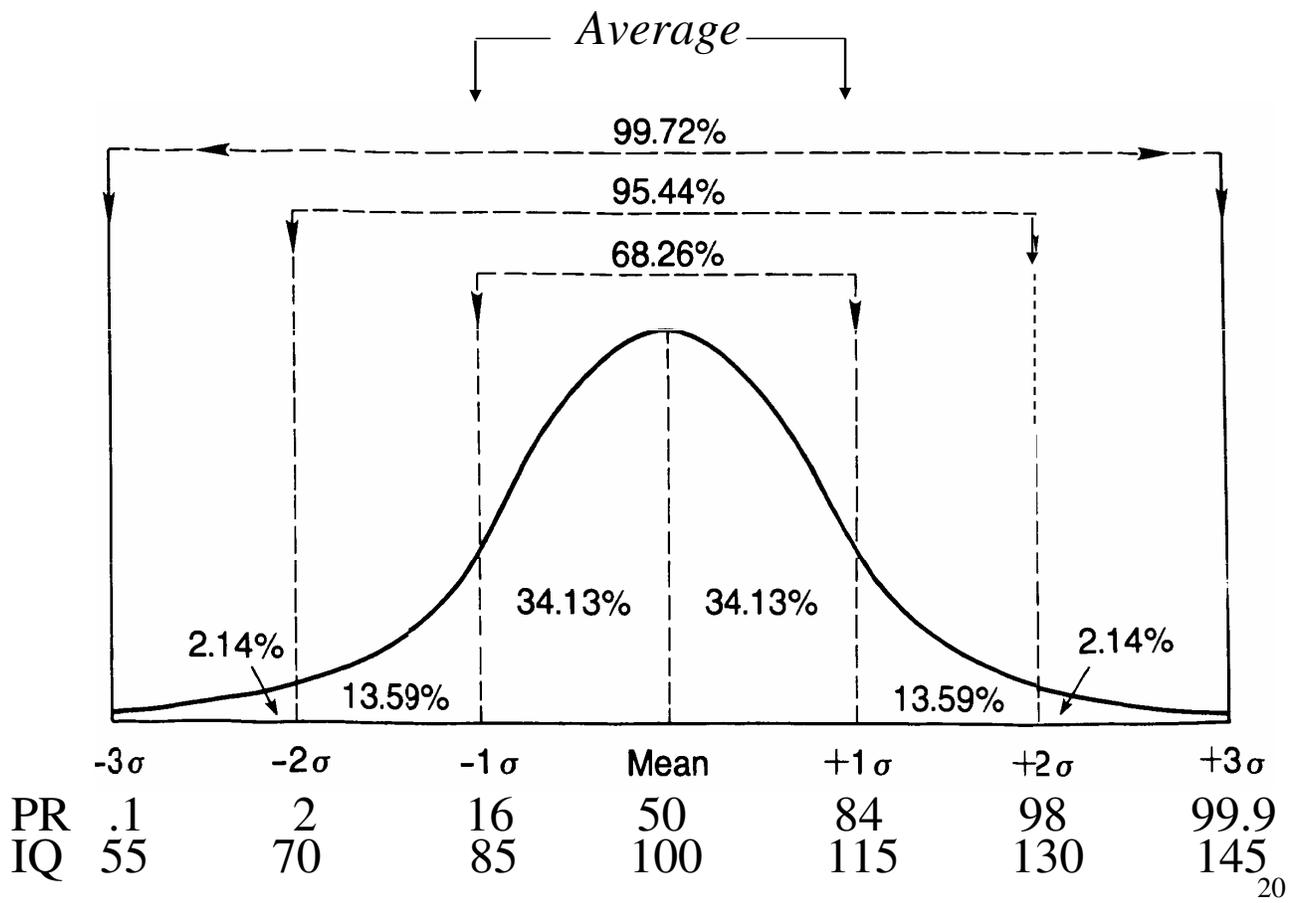
1. Most students can improve their achievement levels.
2. You can evaluate a teacher based on class achievement test performance.
3. You can evaluate a school based on school achievement test performance.
4. You can evaluate if a student should have been able to improve their achievement test performance.
5. Achievement tests can be accurately interpreted in isolation from other measures and information.



1.) Most students can substantially improve their achievement levels.

- *Generally false.*
 - On average, students achieve at their ability level (given errors of measurement). Only when the ability level of the student is taken into account can a determination of whether the student is under achieving, or over achieving be made.
 - Regression towards the mean indicates that students with high ability are likely to find it harder to improve their scores, while those with low ability may not have the requisite potential to learn the conceptual level of the material.

Normal Distribution



***Doesn't the use of mastery based testing
eliminate this concern?***

- ***No.***

- It assumes that the expected level of performance is attainable by those tested. Unless the criterion were set with low ability students in mind the cut-off effectively will report badly on the low ability student with no chance to meet the criterion. No matter what the cut-off it will effectively report badly on all who have less ability than the criterion set.
- Mild approximately 6th grade material by late teens. Generally unable to learn many high school level subjects. (~2%). Those in the 70 to 80 range often will have difficulty with academics and will not be able to master many of the high school courses (~14% more). Those in the 80 to 85 range often find learning difficult, and generally in the low average area. (~16% more). So about 32% of students will not reach average performance on norm based measures of achievement.

2.) You can evaluate a teacher based on class achievement test performance.

- *False.*

- An achievement test measures what a child has acquired, given exposure, ability and motivation. The teacher does control some aspects of exposure, but not all. The teacher does have some influence on motivation, but not all. The teacher has no control or influence on student ability. Only when other criterion on teacher performance are considered can teacher effectiveness be examined.



3.) You can evaluate a school based on school achievement test performance.

- *False.*

- An achievement test measures what a child has acquired, given exposure, ability and motivation. The school does control some aspects of exposure, but not all. The school does have some influence on motivation, but not all. The school has no control or influence on student ability. Only when other criterion on school performance are considered can teacher effectiveness be examined.



4.) You can evaluate if a student should have been able to improve his/her achievement test performance by looking at their achievement scores alone.

- ***False.***

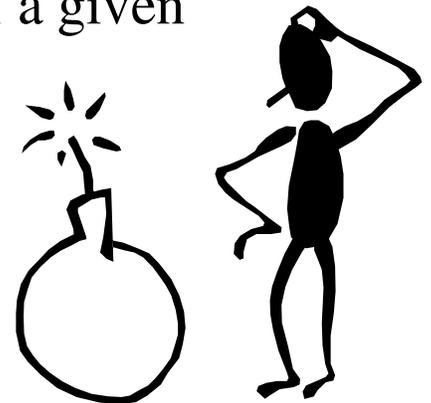
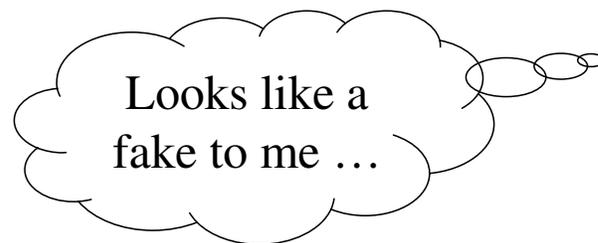
- You must look at the discrepancy between ability and achievement to look at the potential to improve. Any other means will in some way be systematically biased towards some ability group of students.
- This is widely recognized, and used by nearly all schools in special education, but is inappropriately ignored otherwise. The ability-achievement discrepancy is the primary basis for determining an LD designation.



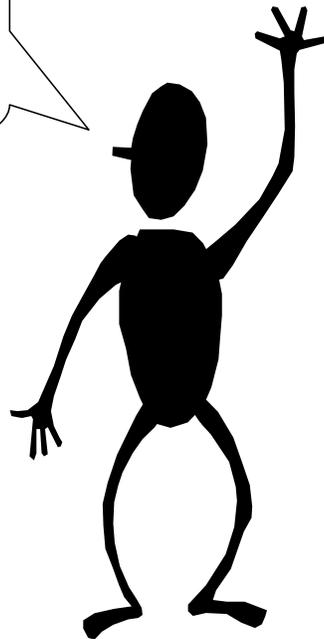
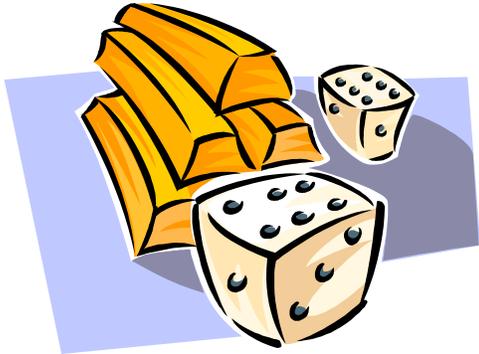
5.) Achievement tests can be accurately interpreted in isolation from other measures and information.

- ***False.***

- Again, achievement test performance is a result of ability, exposure and motivation. Without considering these aspects one cannot tell much of anything about the meaning of a given student, teacher or school score.



*But, why do I REALLY
need to know that numbers
stuff?*



Common Scores & Concepts

- Reliability
- Standard Error of Measurement
 - Related to reliability
- Content Validity
- Percentile
- Standard Scores
- Age Scores
- Grade Scores



How would you go about trying to improve a schools achievement test performance?

- I would locate the students with achievement scores which are below their level of ability and work with them to improve their performance.

