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The Texas Center for Learning Disabilities (TCLD) investigates the classification, early intervention, and remediation of learning disabilities.



Texas Center *for* Learning Disabilities

# Identifying Learning Disabilities in an RTI System

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Funded by NICHD P50  
HD052117





# Learning Disabilities is a Hypothetical Construct

- Essential aspect of construct is “unexpected underachievement” - what makes LD unexpected?
- Constructs do not exist independently of how they are measured; all measures are imperfect indicators of constructs (latent variables)
- Measurement depends on definition
- Definitions and identification criteria derive from classifications
- All classifications are hypotheses that must be tested



## Federal Definition of LD (1968)

The term "specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, **which may manifest itself in an imperfect ability to listen, speak, read, write, spell, or to do mathematical calculations.** The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning disabilities which are primarily the result of visual, hearing, or motor handicaps, or mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage (USOE, 1968).



## Federal Regulatory Definition (1977): IQ- Discrepancy as Inclusionary Criterion

A severe discrepancy between achievement and intellectual ability in one or more of the areas: (1) oral expression; (2) listening comprehension; (3) written expression; (4) basic reading skill; (5) reading comprehension; (6) mathematics calculation; or (7) mathematic reasoning. The child may not be identified as having a specific learning disability if the discrepancy between ability and achievement is primarily the result of: (1) a visual, hearing, or motor handicap; (2) mental retardation; (3) emotional disturbance; or (4) environmental, cultural, or economic disadvantage (USOE, 1977).



## IDEA 2004: What kind of Inclusionary Criteria?

- (2)(i) The child does not make sufficient progress to meet age or State-approved grade-level standards in one or more of the [8 domains of achievement] when using a process based on the child's response to scientific, research-based intervention; **or**
- (ii) The child exhibits a pattern of strengths and weaknesses in performance, achievement, or both, relative to age, State-approved grade-level standards, or intellectual development, that is determined by the group to be relevant to the identification of a specific learning disability, using appropriate assessments, consistent with §§300.304 and 300.305;

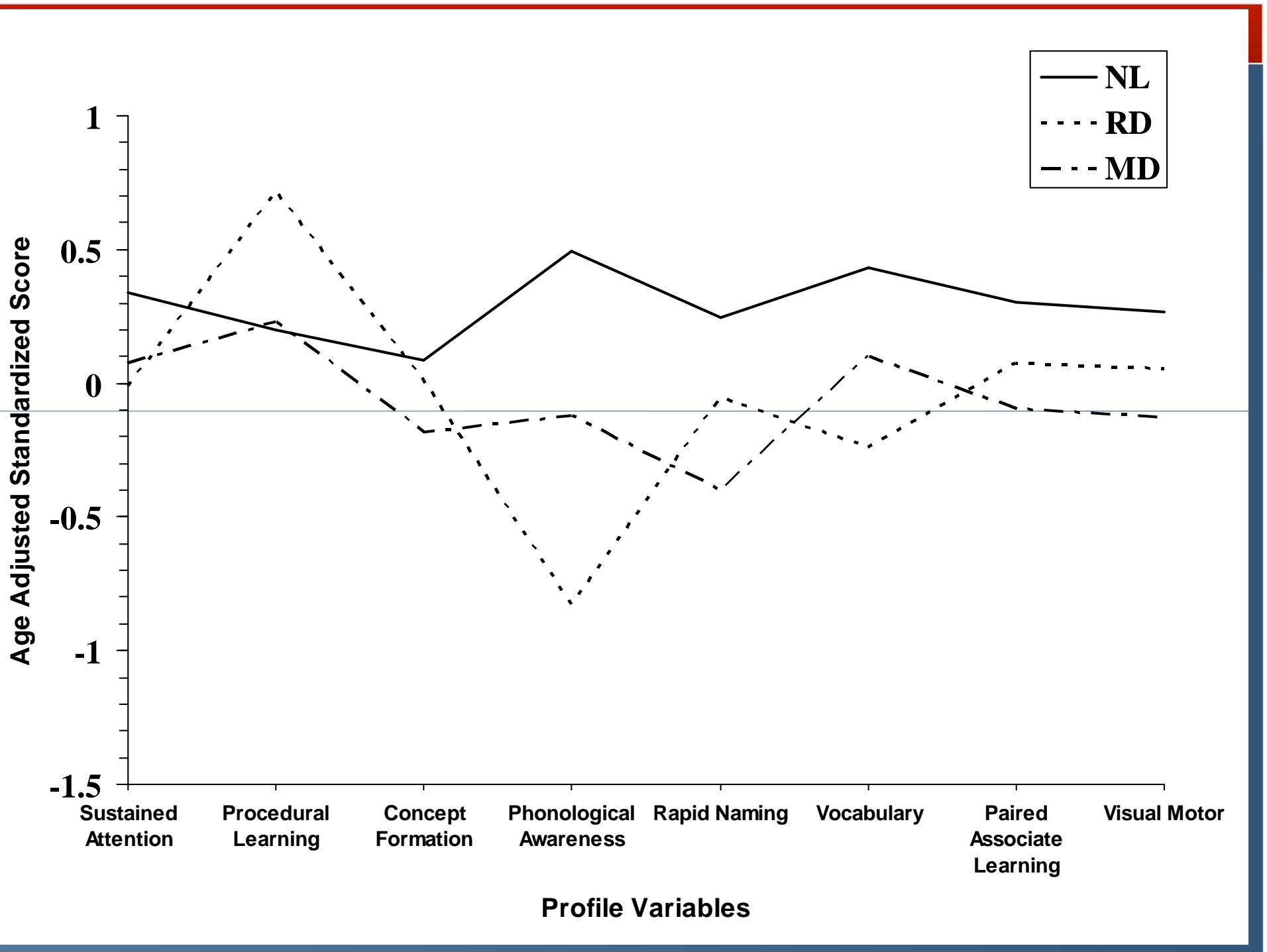


# LD is a Valid Classification

*Learning disabilities are real! Stands up across definitional variation (doesn't help identify individuals)*

Children and adults with different forms of LD can be reliably and validly differentiated from each other, typical achievers, and other disabilities on cognitive correlates, response to intervention, and neural correlates

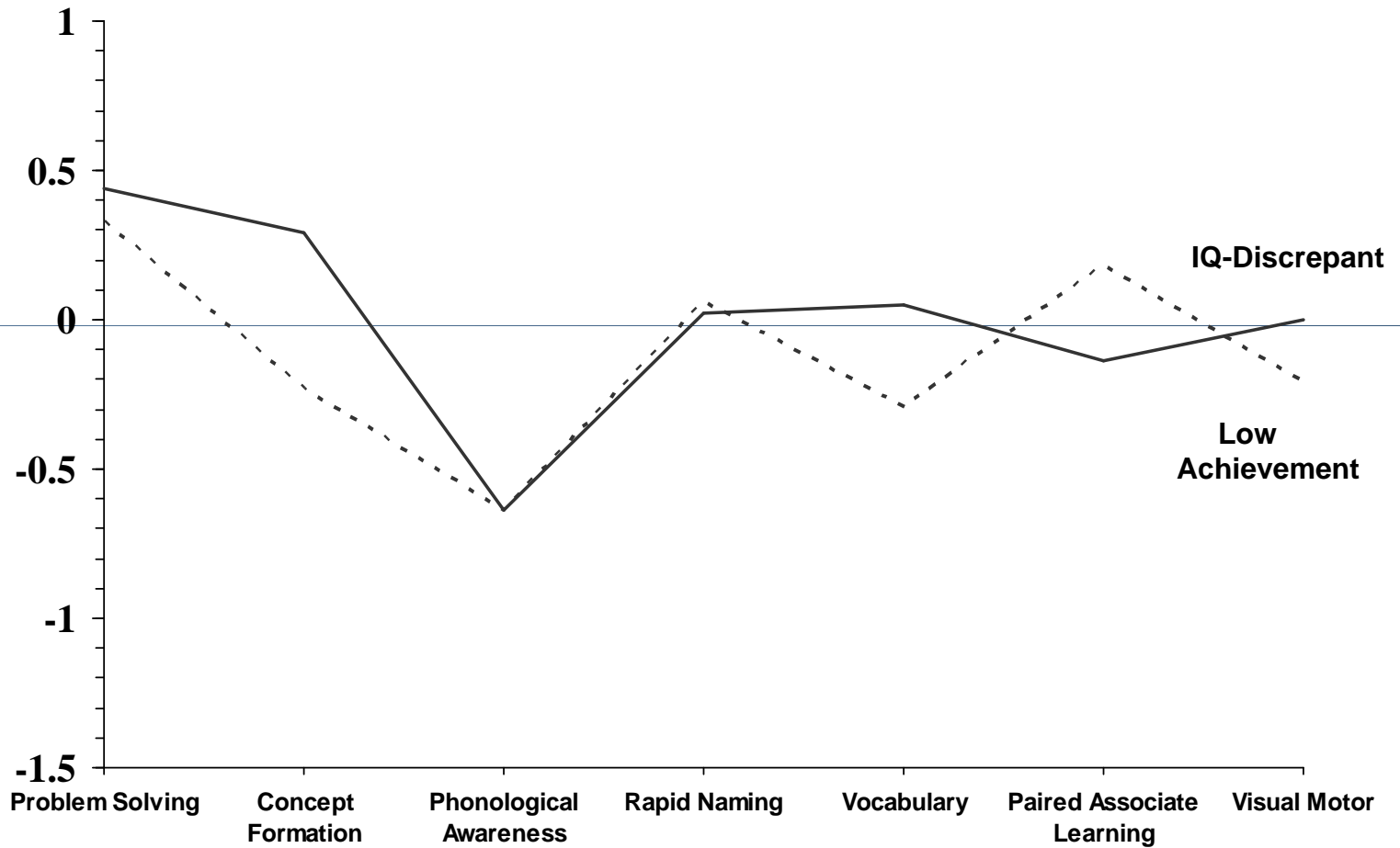
*What happens when we apply these criteria to different classifications?*





Age Adjusted Standardized Score

## RD Groups







## Low Achievement Model

- Designate a cut point on the achievement dimension
- Strengths: Strong validity, linked to intervention, easy to implement
- Weaknesses: Cut point, does not measure the underlying construct (can't differentiate subgroups of poor readers when the cause is known to be related to emotional difficulty, economic disadvantage, and inadequate instruction)
- Necessary but not sufficient: *Status models based on a single assessment will never be reliable*



# What do cognitive assessments add?

- Processing subtypes weakly related to intervention outcomes; NO evidence that knowledge of cognitive strengths and weaknesses facilitates intervention
- No additional information not found in achievement profiles; It's not that cognitive processes aren't important and don't "cause" LD. There is no value-added information in measuring the correlates if we measure the manifestation (achievement).



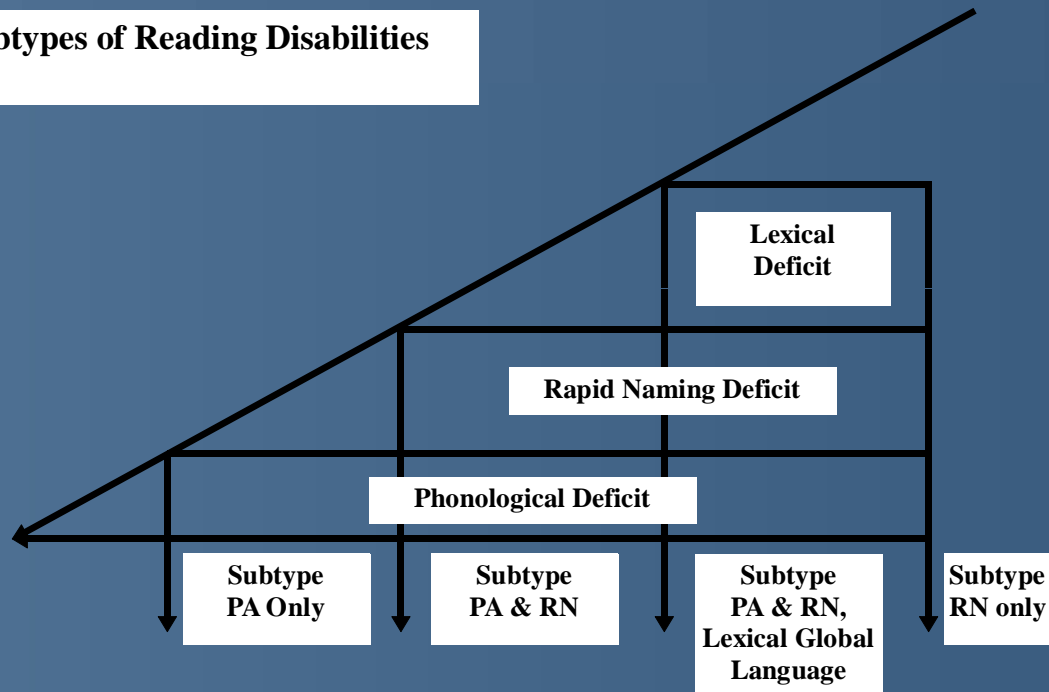
# More Context

- ATI models- interactions of cognitive processes and outcomes that predict differential intervention (little evidence in cognitive domain)
- Hale, Flanagan, Kaufman, and others: Evaluate cognitive processes in inadequate responders to Tier 2 intervention (no data)
- Vellutino et al: Differences in adequate and inadequate responders are quantitative, not qualitative: *a continuum of severity*



# Morris et al., JEP, 1998

## Subtypes of Reading Disabilities



Morris et al. (in press): no evidence that subtypes, SES, ethnicity, IQ predict intervention response



## Connor: ATI Models are Viable in the Achievement Domain

- **Code vs. meaning-focused instruction interacts with child characteristics:** providing more code- focused instruction for students weak in word reading and more meaning-focused instruction to students weak in vocabulary/comprehension resulted in significantly higher reading comprehension scores compared to controls

Connor et al., *Science*, 2007, 315, 464-5.



## New Alternatives: Identify in the Context of RTI

- Universal screening and serial curriculum-based assessments of learning in relation to instruction
- Identification is more reliable than when based on a single assessment
- As one criterion, student may be LD if they do not respond to instruction that works with most students (i.e., unexpected underachievement)
- May identify a unique subgroup of underachievers that reflects an underlying classification that can be validated (Al- Otaiba & Fuchs, 2002; Vellutino et al., 2003)
- School-wide change- not just enhanced pre-referral services



# IDEA 2004: Inadequate instruction is Inclusionary

To ensure that underachievement...is not due to lack of appropriate instruction in reading or math, the group must consider...

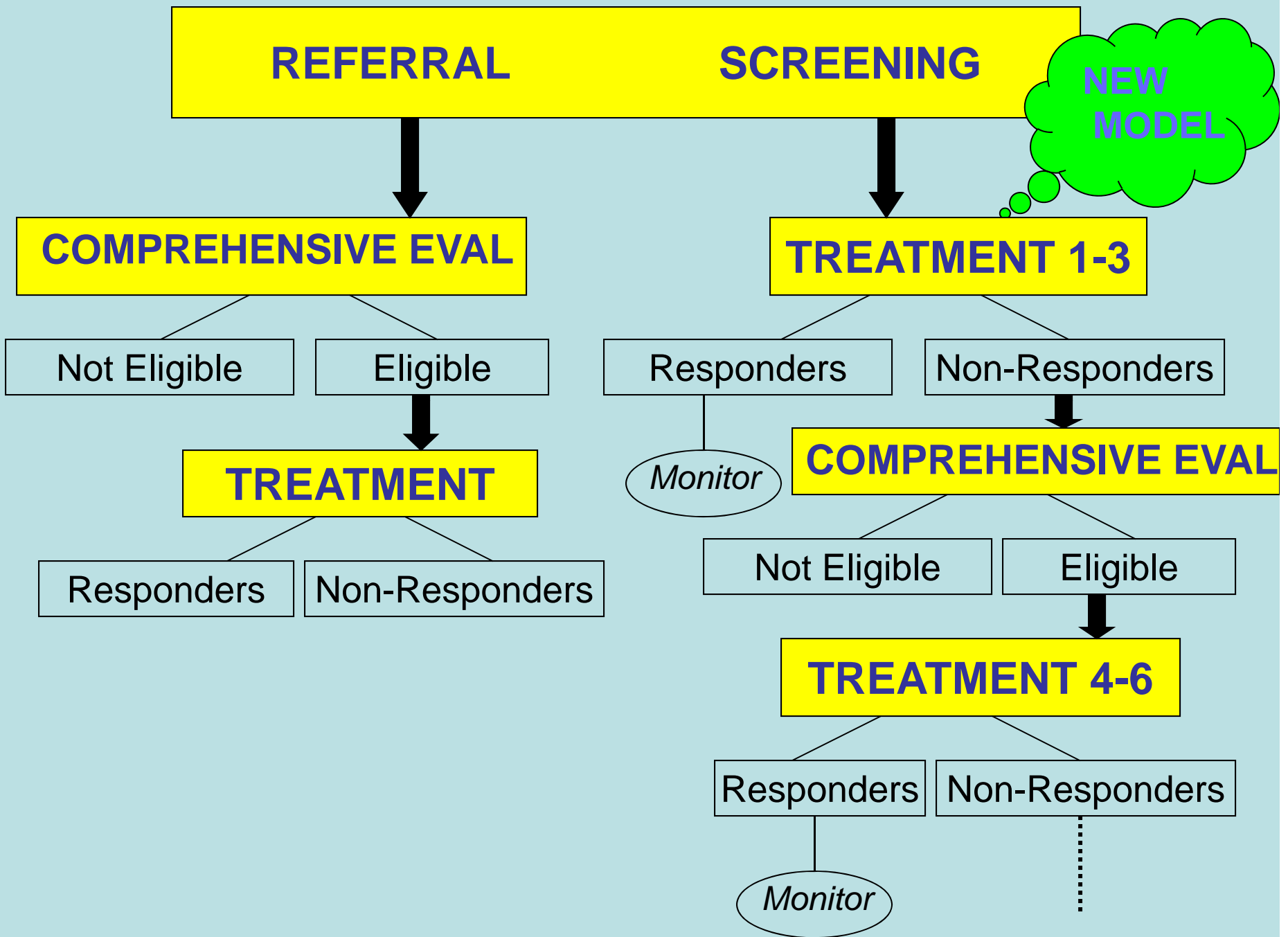
- (1) Data that demonstrate that prior to, or as a part of, the referral process, the child was provided appropriate instruction in regular education settings, delivered by qualified personnel; and
- (2) Data-based documentation of repeated assessments of achievement at reasonable intervals, reflecting formal assessment of student progress during instruction, which was provided to the child's parents.



# Comprehensive Evaluation

- IDEA 2004 requires a comprehensive evaluation regardless of the identification model
- Allows more flexibility- little evidence supporting extensive assessments of IQ, cognitive skills, and processes: focus on academic and behavioral strengths and weaknesses
- In a RTI model, student comes to interdisciplinary team with data that is one necessary part of the evaluation- goal is determine if special ed is best **intervention**
- More emphasis on writing an effective IEP
- Progress monitoring continues







# LD Summit: Hybrid Model for Identification

- 1. Evaluate Response to Instruction
- 2. Establish Low Achievement
- 3. Apply the Exclusions

(Demonstrate that the difficulty is a disability and that special education is the best intervention)

- [www.air.org/ldsummit](http://www.air.org/ldsummit)



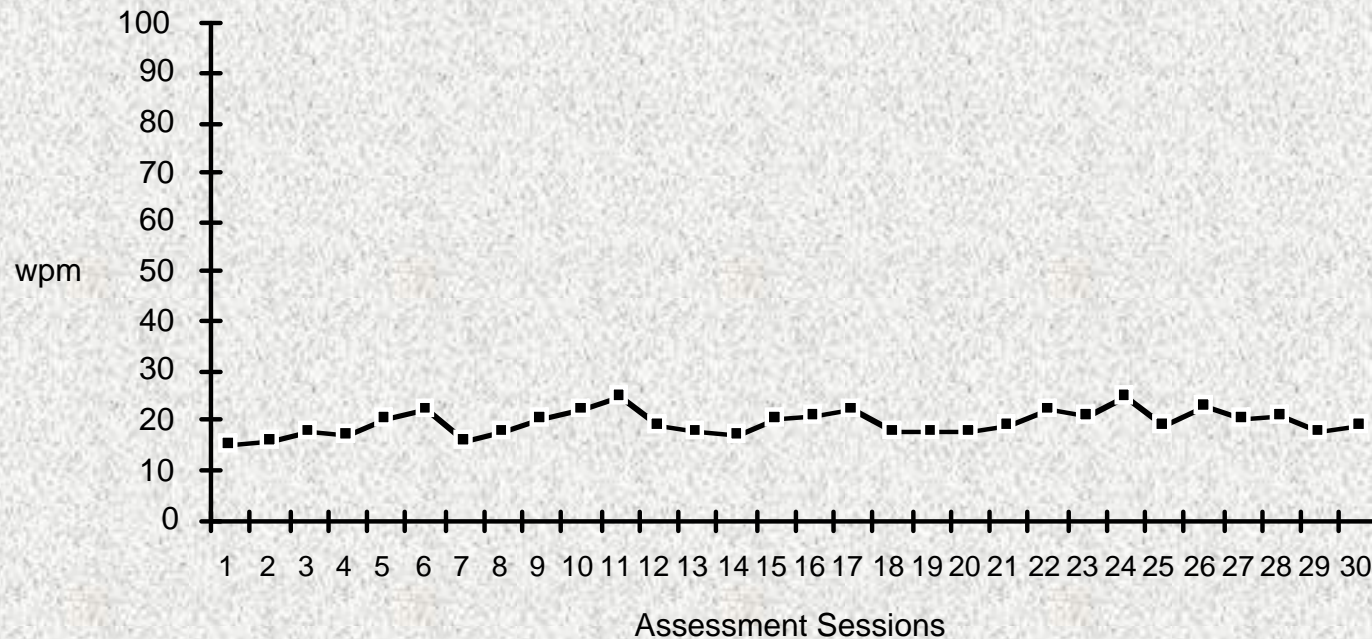
# 1. Assessing Response to Instruction

- Universal screening of all students for reading (and behavior) problems
- Monitor progress of at-risk students: establish a surveillance system
- Introduce multi- tiered intervention programs that begin in the classroom
- Evaluate the fidelity (and quality) of different instructional programs (fidelity- done in any significant research study; should be at least 80%)
- Increase intensity for those who show inadequate response



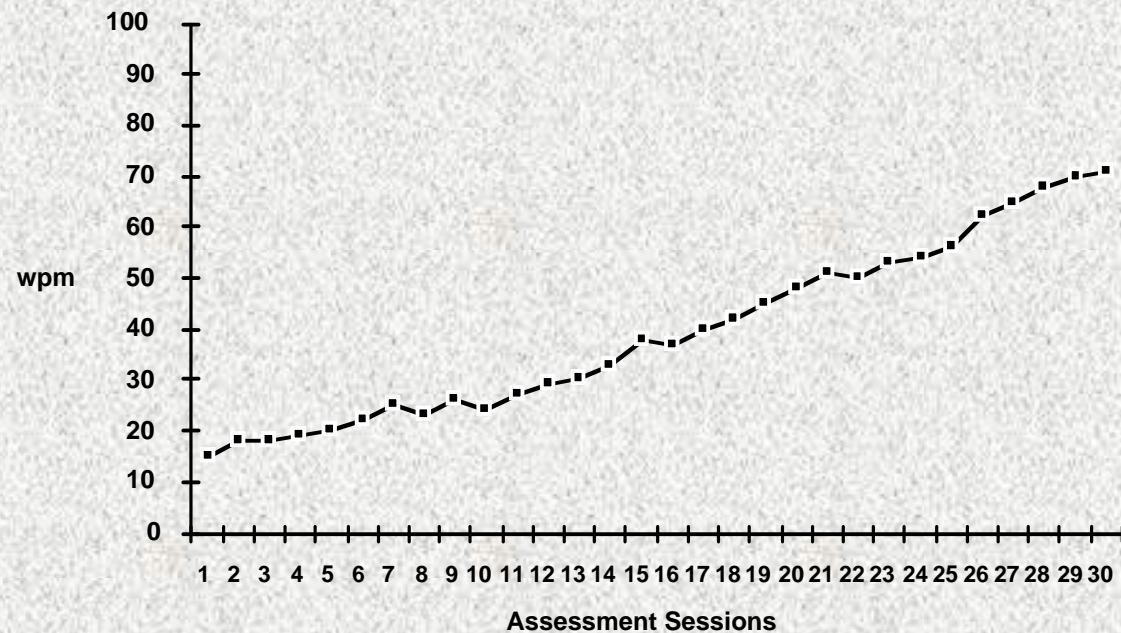
# Criteria for Inadequate Response

- Can be norm- referenced or criterion-referenced benchmark
- Benchmarks can be “national” or local
- End point, slope, or both?
- Key for intervention is to account for change-treatment response gets confused with identification
- May be resource driven
- Operates to move students through tiers and as a data source for identification



**Description:**      **Inadequate response to quality instruction.**

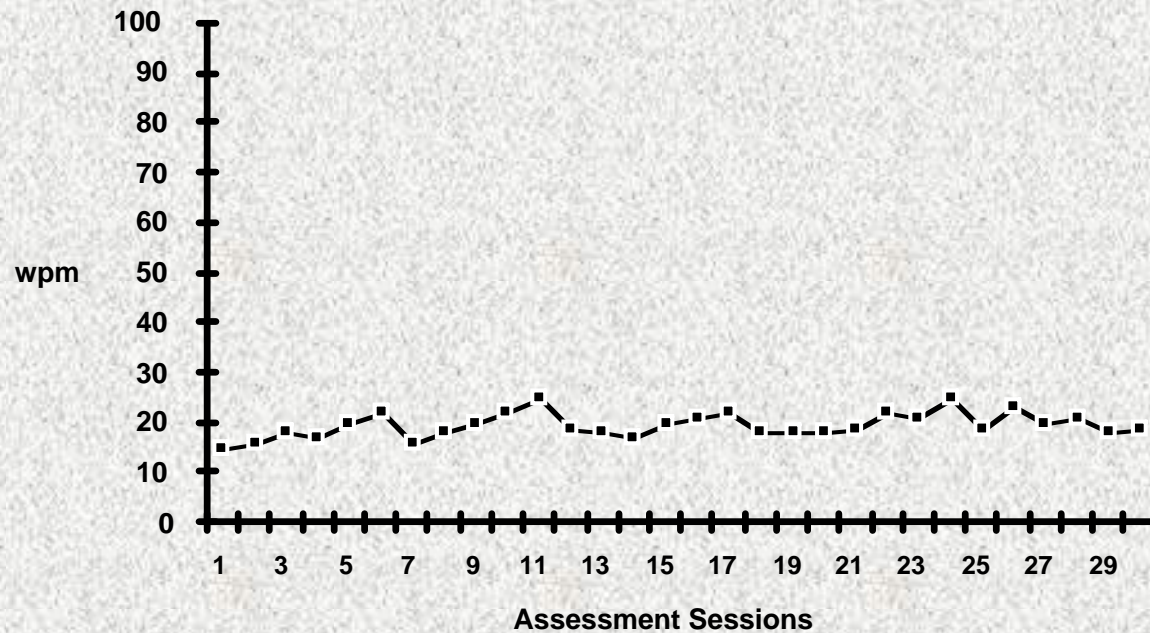
This student has responded poorly to the intervention strategy. After an initial adaptation period of five days, the teacher implemented the strategy as designed for the duration of the intervention period. In spite of this assistance, the student's rate of learning throughout the period has been slow. This response-to-instruction pattern indicates that the student's lack of progress is more likely the result of learning difficulties than a lack of effective instruction. Specially designed instruction is likely needed for this student to acquire and retain new information (courtesy Joe Kovalesski)



**Description:**      **Student responds well to quality instruction.**

This student responded well to the intervention strategy. After an initial adaptation period of six days, the teacher implemented the strategy as designed for the duration of the intervention period. With this assistance, the student's rate of learning throughout the period was steady and in a positive direction. This response-to-instruction pattern indicates that the student's difficulties are more likely the result of a lack of effective instruction than a disability. This student does not display a high degree of need for special education because he can demonstrate acquisition and retention with adapted instruction in the regular classroom (courtesy Joe Kovalski).





**Description:** Response to instruction cannot be determined.

This student has responded poorly during the intervention strategy. However, in spite of support, the intervention was not implemented as planned throughout the intervention period. Consequently, it cannot be determined whether the student's lack of progress are more likely the result of learning difficulties or a lack of effective instruction. Another period of support is needed to assist the teacher to implement the strategy as designed in order to make a conclusion about this issue (courtesy Joe Kovalski).



Barth, A.E., Stuebing, K.S., Anthony, J.A., Denton, C., Fletcher, J.M., & Francis, D.J. (2008). The stability and overlap of response to intervention criteria. *Learning and Individual Differences*.

- Which operationalizations of instructional response overlap and agree in identifying adequate and inadequate responders?
- 399 G1 students evaluated in relation to cut-points, measures, and methods for the identification of inadequate responders
- Computed 543 2 X 2 measures of association (808 total comparisons).
- Agreement generally poor; different methods identify different students as inadequate responders; agreement for adequate responders is higher.
- Determination of responder status should use multiple criteria and avoid formulaic decision making (true for any identification model).





## 2. Establish Low Achievement: IDEA 2004 Domains of SLD

- (1) The child does not achieve commensurate with the child's age in one or more of the following areas, when provided with learning experiences appropriate for the child's age:
  - (i) Oral expression.
  - (ii) Listening comprehension.
  - (iii) Written expression.
  - (iv) Basic reading skill.
  - (v) Reading fluency skills.
  - (vi) Reading comprehension.
  - (vii) Mathematics calculation.
  - (viii) Mathematics problem solving.



# Achievement Constructs (Depend on the Child)

Word Recognition: Basic Reading

- Real Words
- Pseudowords

Reading Comprehension

Reading Fluency

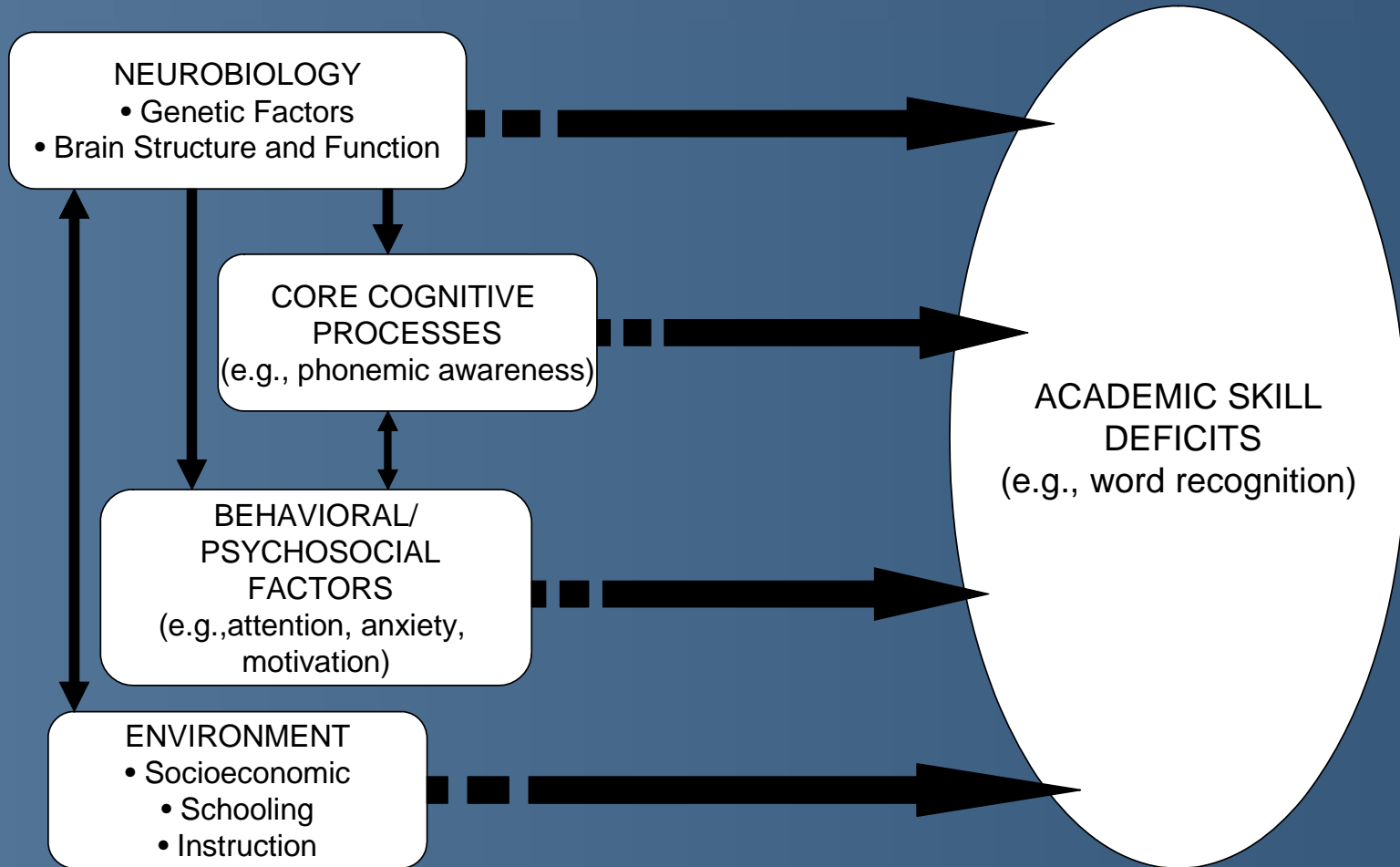
Math Computations/Problem Solving

Written Expression: Spelling Dictation,  
Handwriting, Composition

Remember the issues with Low Achievement  
models: Necessary, but not sufficient and  
cannot be sole criterion



# A Classification of LD (Fletcher et al., 2007)





### 3. Exclusions: Evaluate Contextual Factors and Related Disorders

- General principle: assess in the same way that the factors and conditions would be assessed in the absence of concerns about LDs
- Assessments depend on the question
- Routine use of behavior rating scales (home and school)
- Consider oral language and limited English proficiency



## Identification Issues for RTI

- Progress monitoring assessments not adequate as sole criterion for identifying SLD
- Not clear what assessments of growth add to end point assessments for identification (intervention is a different issue)
- Different assessments and models identify different students as SLD (so what's new? Rigid cut points inherently unreliable in identifying individual students)
- Need multiple criteria
- **Improve instruction and these issues will not be difficult**



## Issues with RTI

- Key issue is enhancing instruction- in some domains, it's a scaling problem
- Resources must be redeployed
- Linking general and special education- is it a continuum?
- Need more research on core instruction in math and written expression and tier 2/3 in math
- Knowledge base on inadequate responders is weak
- Identifying inadequate responders- still a continuum with potential cut point issues

Research is Evolving!!



## Who is LD?

- The student who does not respond to quality instruction: **hard to teach, not unable to learn**
- Low achievement **and** inadequate instructional response
- Often preventable with early intervention
- Heritable, but neural systems are malleable
- Regardless of the identification model, instructional response should be measured, not presumed (as required by IDEA)



## More Information?

- [www.nasdse.org](http://www.nasdse.org)
- [www.centeroninstruction.org](http://www.centeroninstruction.org)
- [www.rtinetwork.org](http://www.rtinetwork.org)
- [www.iris.peabody.vanderbilt.edu/](http://www.iris.peabody.vanderbilt.edu/)
- [www4.scoe.net/rti/programs.cfm](http://www4.scoe.net/rti/programs.cfm)

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Funded by NICHD P50 HD052117