Identifying Learning Disabilities: The Importance of Instructional Response

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IDEA 2004 is Here

Four related changes

1. States cannot require districts to use IQ tests to identify students as LD
2. States are encouraged to implement Response to Intervention models *as a component of LD identification*
3. Students cannot be identified for special education without documentation that low achievement is not due to lack of appropriate instruction
4. *Prevent disabilities whenever possible*

Consensus Reports: Special Education

- Fordham Foundation/ Progressive Policy Institute: Rethinking Special Education (2001)
  www.edexcellence.net/library/special_ed/index.html
- OSEP: Learning Disabilities Summit (2001)
  www.air.org/ldsummit
- National Research Council: Minority Over-Representation in Special Ed (2002)
  http://www.nap.edu/catalog/10128.html
- President's Commission on Excellence in Special Ed (2002)

www.ed.gov/inits/commissionsboards/whspecialeducation/index.html

LD is a Valid Classification

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

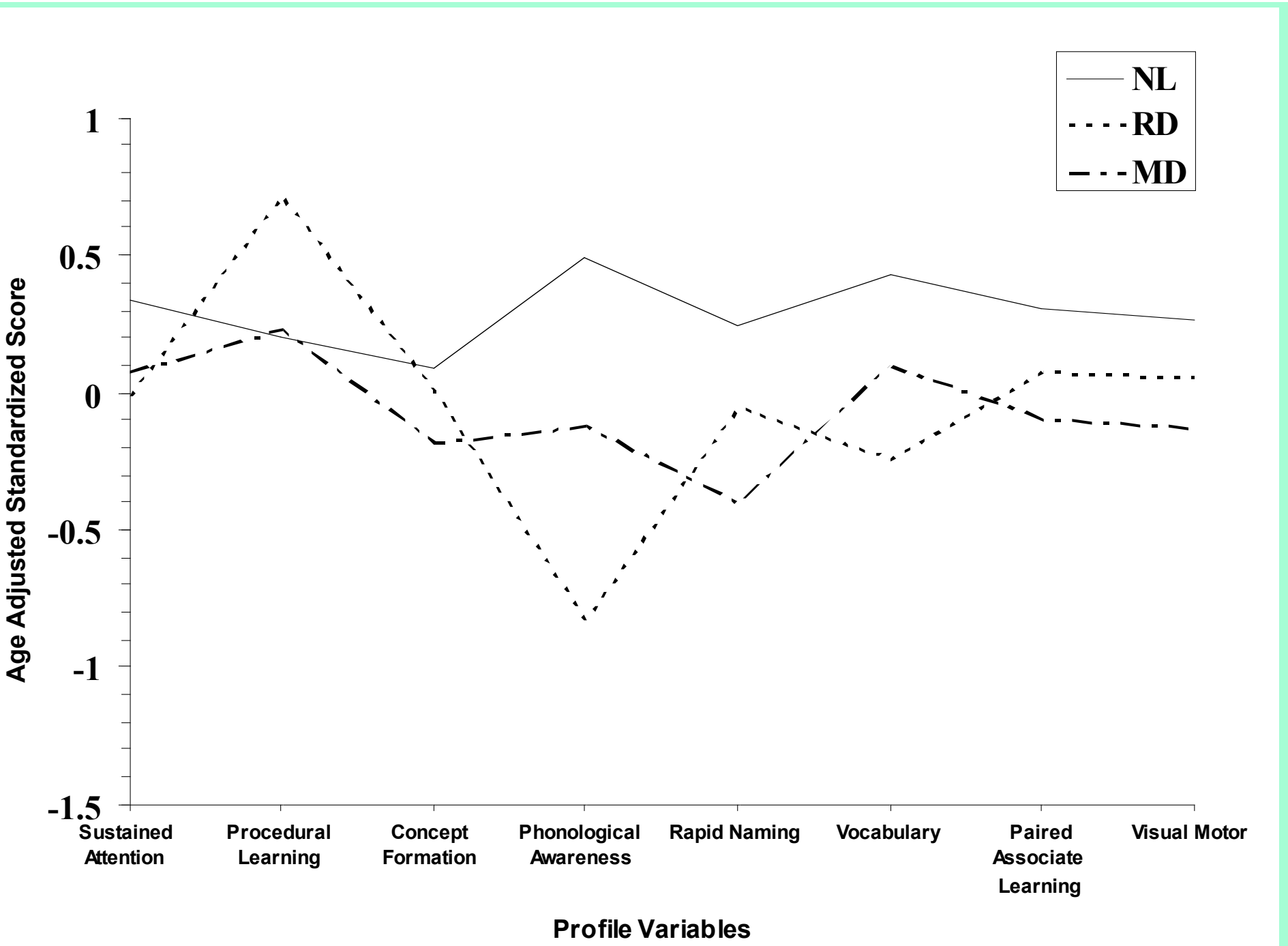
Children and adults with different forms of LD can be reliably and validly differentiated from each other, typical achievers, and other disabilities on cognitive correlates, response to intervention, and neural correlates

What happens when we apply these criteria to different classifications?

Levels of Classification for LD

- **LD vs. typically achieving**
- **LD vs. mentally deficient**
- **Reading vs. math disabled**
- **IQ-discrepant vs. low achieving**

***Each level represents an implicit classification hypothesis that can be evaluated:** *LD is real!*


NL
RD
MD
1
0.5
0
-0.5
-1
-1.5
Age Adjusted Standardized Score
Sustained Attention
Procedural Learning
Concept Formation
Phonological Awareness
Rapid Naming
Vocabulary
Paired Associate Learning
Visual Motor
Profile Variables

The US Federal Definition of LD (1968) is Outdated

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).

US Federal Regulatory Definition of LD (1977) is Not Aligned with Research

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).

NJCLD Definition of LD (1988)

Learning disabilities is a general term that refers to a heterogeneous group of disorders manifested by significant difficulty in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction, and may occur across the life span. Problems in self-regulatory behavior, social perception, and social interaction may exist with learning disabilities but do not by themselves constitute a learning disability. Although learning disabilities may occur concomitantly with other handicapping conditions (for example, sensory impairment, mental retardation, social and emotional disturbance) or with extrinsic influences (such as cultural differences, insufficient or inappropriate instruction, they are not the result of these conditions or influences. (p. 1)

DSM-IV Criteria

A. Reading achievement, as measured by individually administered standardized achievement tests of reading accuracy or comprehension, is substantially below that expected given the person's chronological age, IQ, and age- appropriate education

B. The disturbance in criterion a substantially interferes with academic skills or activities of daily living that require reading

C. If a sensory deficit is apparent, the reading difficulties are in excess of those usually associated with it

ICD- 10 Criteria

A. (1) a score on reading accuracy and/or comprehension that is at least 2 standard errors of prediction below the level expected on the basis of the child's chronological age and general intelligence

(2) a history of serious reading difficulties, or test scores that met criterion A (1) at an earlier age, plus a score on a spelling test that is at least 2 standard errors of prediction below the level expected on the basis of the child's chronological age and IQ.

ICD- 10 Criteria

- B. The disturbance in criterion A significantly interferes with academic achievement or activities of daily living that require reading skills.
- C. The disorder is not the direct result of a defect in visual or hearing acuity, or of a neurological disorder.
- D. School experiences are within the average expectable range (i.e., there have been no extreme inadequacies in education experiences).
- E. Most *commonly used exclusion clause.* IQ is below 70 on an individually administered standardized test.

IDEA 2004: RTI or Discrepancy?

- (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;

What's Wrong With IQ-Discrepancy?

- IQ- discrepant and non- discrepant low achievers do not differ significantly/ practically in behavior, achievement, cognitive skills, response to instruction, and neurobiological correlates once definitional variability accounted (Stuebing et al., AERJ, 2002)
- Status models cannot be reliable based on a single assessment (Francis et al., JLD, 2005)

Research Bases

Discrepancy

Stuebing et al. (2002) Meta Analysis

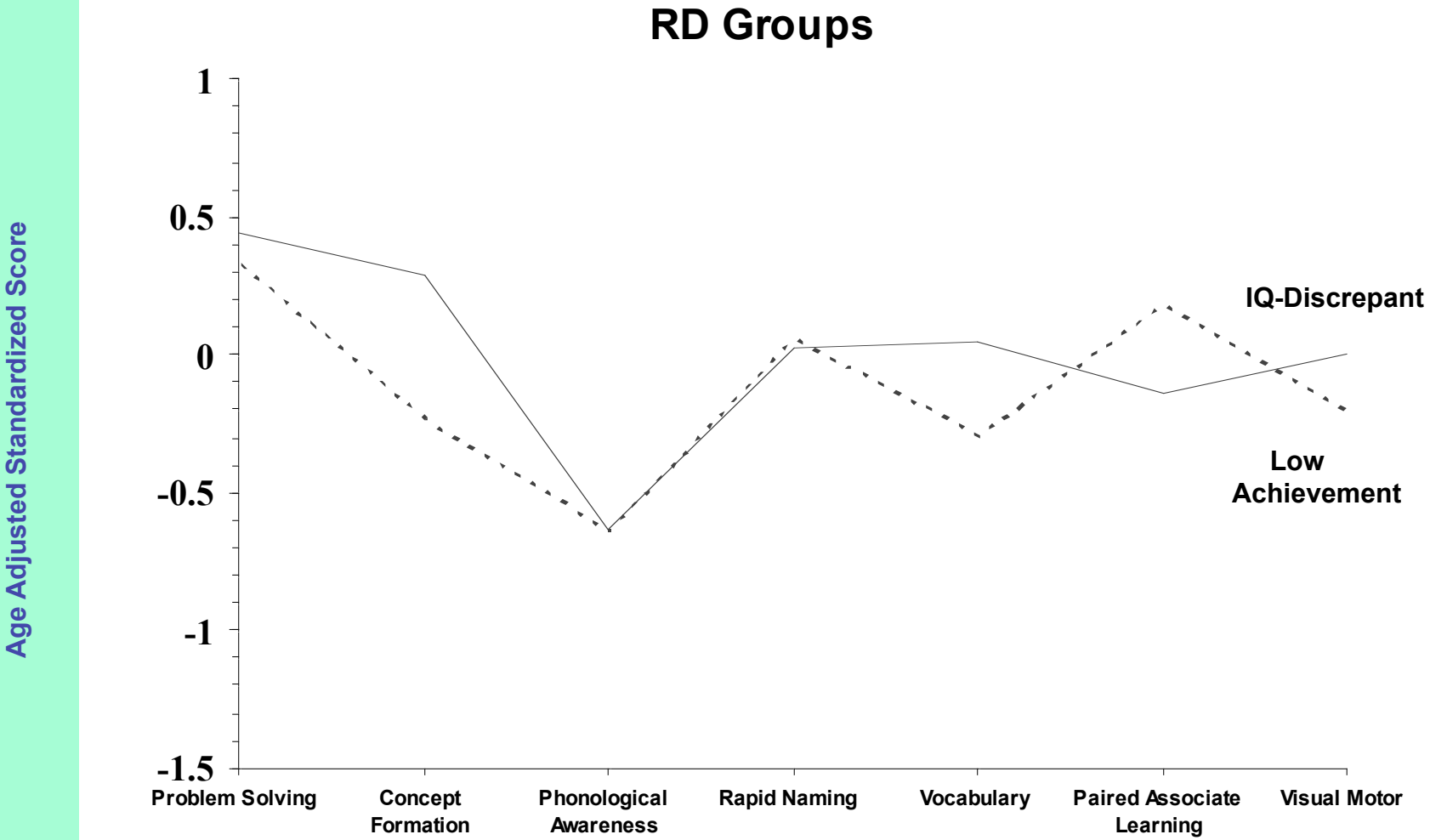
Behavior:	-.05	(-.14, .05)	Negligible
Achievement:	-.12	(-.16, -.07)	Negligible
Pseudo Word reading	-.23	(-.34, -.12)	Small
Real Word reading	-.25	(-.39, -.11)	Small
Reading comprehension	-.04	(-.17, .08)	Negligible
Cognitive Ability:	.30	(.27, .34)	Small
Phonological awareness	-.13	(-.23, -.02)	Negligible
Rapid naming	-.12	(-.30, .07)	Negligible
Verbal memory	.10	(-.01, -.19)	Negligible
Vocabulary	.10	(-.02, .22)	Negligible

Discrepancy

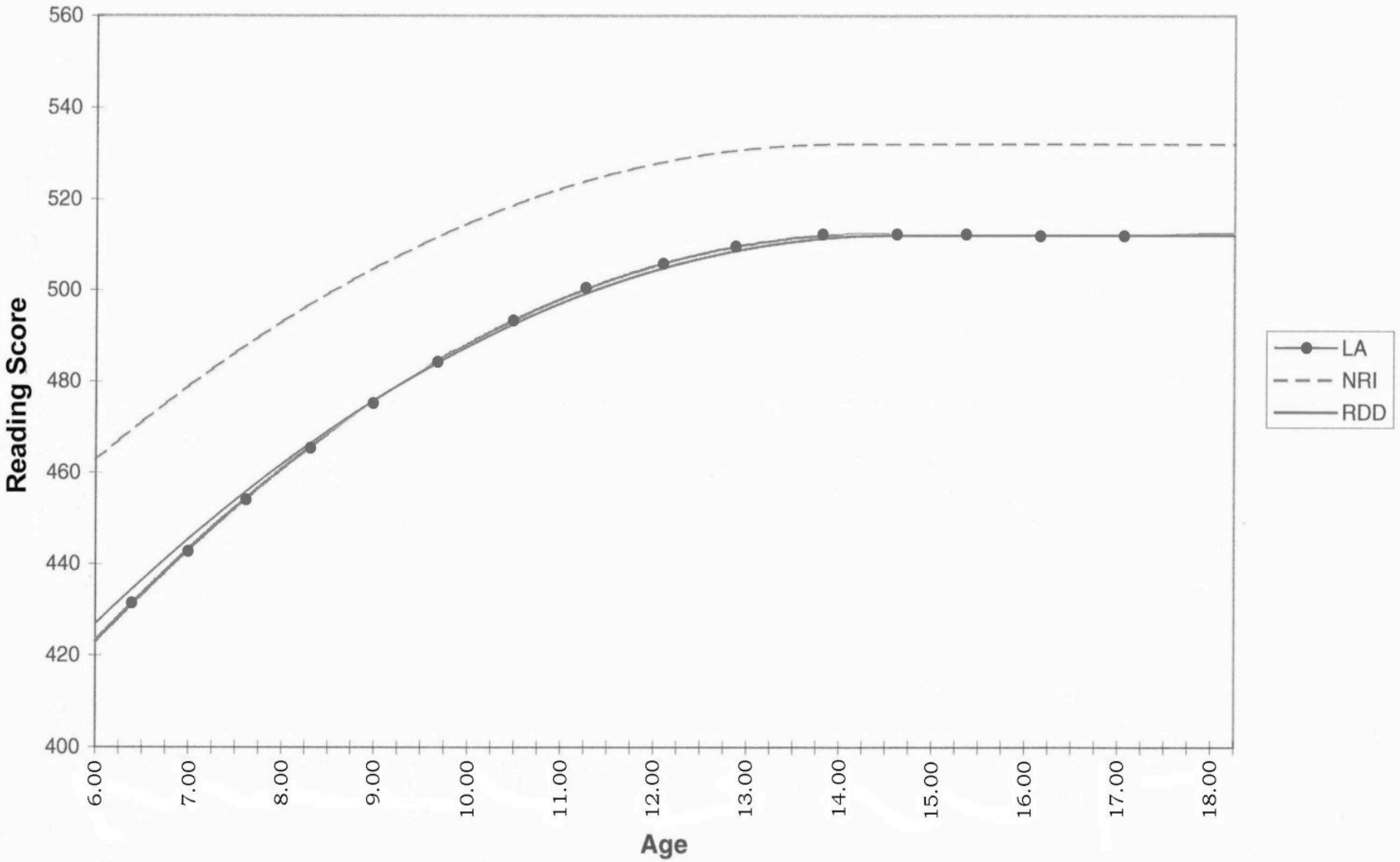
Overall difference in cognitive ability: 3/10 standard deviation

- Substantial overlap of IQ-discrepant and low achievement groups
- Effect size variation across studies can be predicted by scores on group formation variables (definitional variation)

Discrepancy



Discrepancy - Francis et al. (1996)



Intervention Studies Addressing the Discrepancy Hypothesis

Strong relation with Word Recognition Outcomes?

Study	IQ	IQ- Discrepancy
1. Foorman et al., 1998	No	--
2. Hatcher & Hulme, 1999	No	--
3. Torgesen et al., 2000	No	--
4. Torgesen et al., 2001	No	--
5. Vellutino et al., 2000	No	No
6. Wise et al., 1999	Yes*	--

*Only 1 of 3 outcome measures

Stuebing et al. (under review): overall R2 of .023

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*

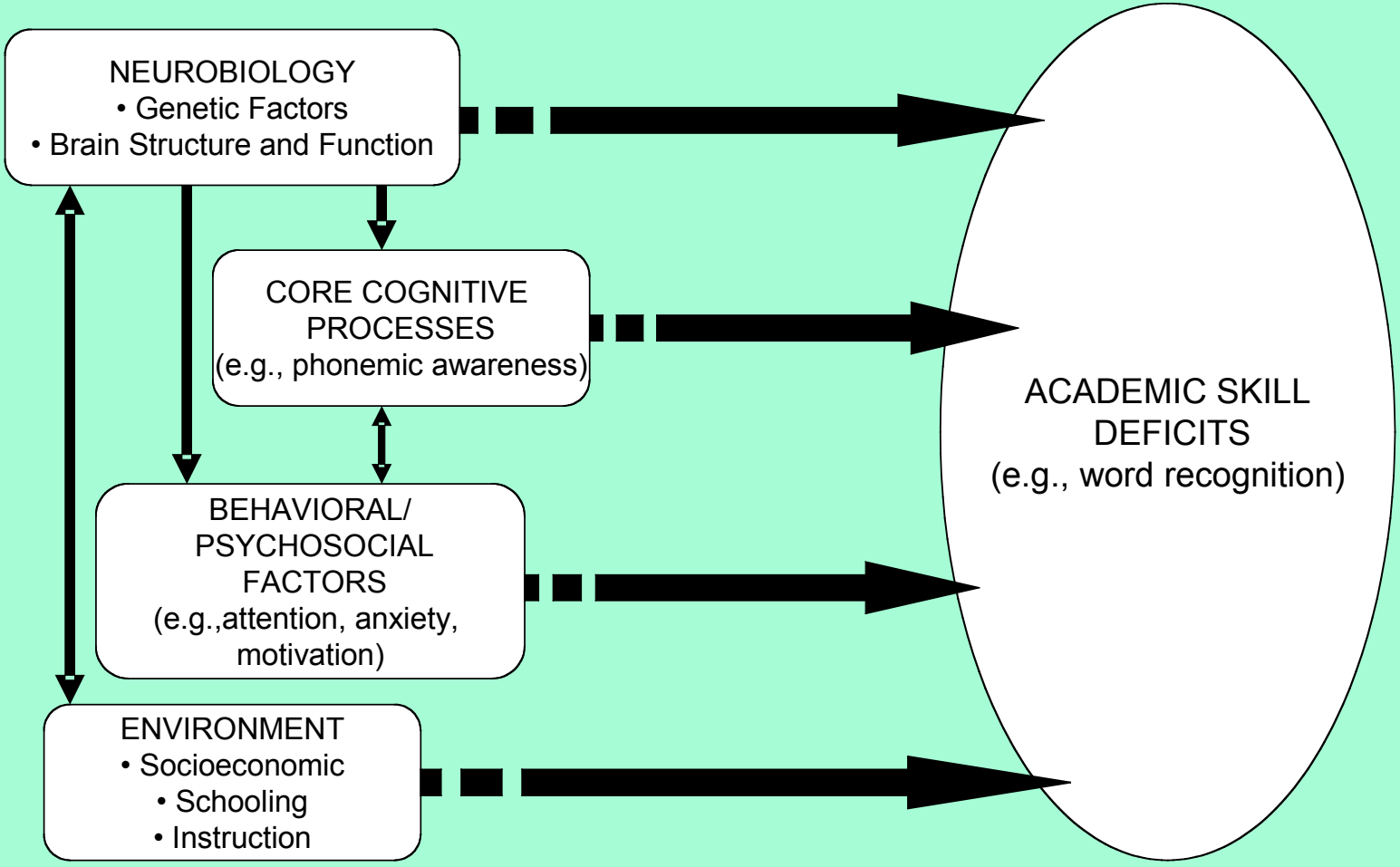
Why focus on achievement?

The most important markers of learning disabilities are achievement related

Classification hypotheses are validated only at the level of achievement

Achievement, adaptive behavior, and behavior differentiate children with high incidence disabilities

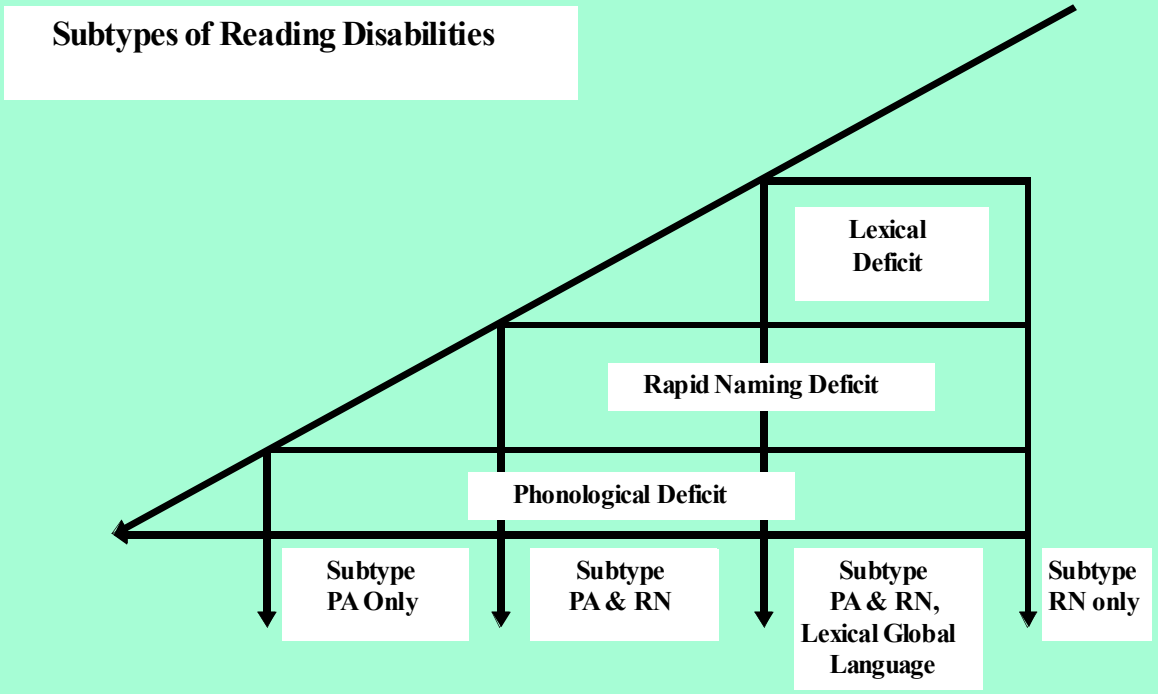
A Model of LD (Fletcher et al., 2007)



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; Connor: academic profiles differentially predict intervention outcomes
- Not sure of what cognitive processes to measure outside word recognition
- Cognitive deficits DO NOT reliably indicate biological causation; LD is an interaction of biological and environmental factors

Morris et al., JEP, 1998



Connor: ATI studies

- Code vs. meaning-focused instruction *interacts* with child characteristics: providing more code- focused instruction for students weak in word reading and mode 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

Do Cognitive Assessment Models Reliably Indicate LD?

- Cognitive assessment models are not reliable indicators of unexpected underachievement, constitutional origins, or neurobiological factors
- LDs and low achievement result from the interaction of biological and environmental factors
- Current approaches do not identify or differentiate putative causes
- We don't propose functional imaging studies for every child even though the brain (and genes) are involved in LD
- Exception: Early intervention?

What are the alternatives to status models?

- Fundamental question is not who is LD, but what to do about it: intervene, then assess (Fuchs & Fuchs, 1998)
- Current models for classification assume that remediation is the solution, but this approach does not close the gap
- Many reading and behavior problems are preventable with early intervention
- Unexpected underachievement should be measured

Quality instruction is Directly Linked to Learning Problems and Learning Disabilities

Instructional factors are underestimated as a cause of LD (Fletcher et al., 2006)

- **Skills that prevent LD can be taught--they must be taught early in school**
- **Some children placed in special education may be instructional casualties because they did not get adequate instruction when it would be most effective**

Research Bases

IDEA 2004: Inadequate instruction is an exclusion

To ensure that underachievement…is not due to lack of appropriate instruction in reading or math, the group must consider, as part of the evaluation described in §§300.304 through 300.306—

(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.

A new IDEA?

Traditional Definition of Dyslexia

A disorder manifested by difficulties in learning to read despite conventional instruction, adequate intelligence, and socio-economic opportunity. It is dependent upon fundamental cognitive disabilities which are frequently of constitutional origin.

Critchley, 1970, p.11

IDA DEFINITION OF DYSLEXIA

Dyslexia is a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge.

Adopted by the Board of Directors: November 12, 2002

New Alternatives: Response to Intervention

- 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)
- Implemented with a multi- tiered intervention model that integrates general and special ed
- School-wide change- not just enhanced pre-referral services

Linking Prevention and Remediation: A 3-Tier Model

If progress is inadequate, move to next level.

Tier 1: Primary Intervention

Enhanced general education classroom instruction for all students.

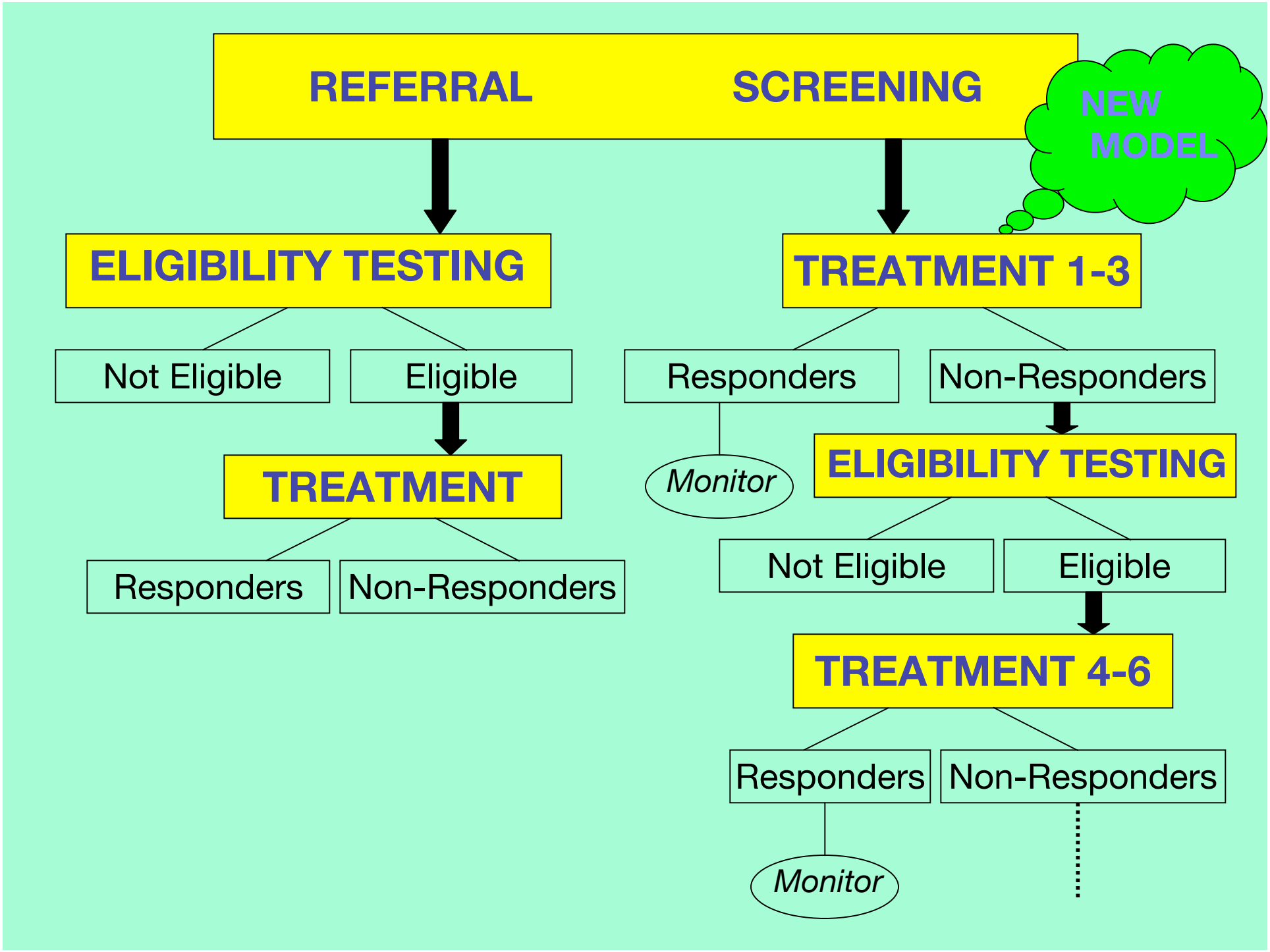
Tier 2: Secondary Intervention

More intense intervention in general education, usually in small groups.

Tier 3: Tertiary Intervention .

Intervention increases in intensity and duration. Child could be considered for special education

http://www.texasreading.org/3tier/


REFERRAL
SCREENING
NEW MODEL
ELIGIBILITY TESTING
TREATMENT 1-3
Not Eligible
Eligible
Responders
Non-Responders
TREATMENT
Monitor
ELIGIBILITY TESTING
Responders
Non-Responders
Not Eligible
Eligible
TREATMENT 4-6
Responders
Non-Responders
Monitor

Comprehensive Evaluation

- IDEA 2004 requires a comprehensive evaluation
- Allows more flexibility
- In a RTI model, student comes to interdisciplinary team with data- goal is determine if special education is best intervention
- Less emphasis on standard protocols for assessment
- More emphasis on writing an effective IEP

LD Summit: Hybrid model

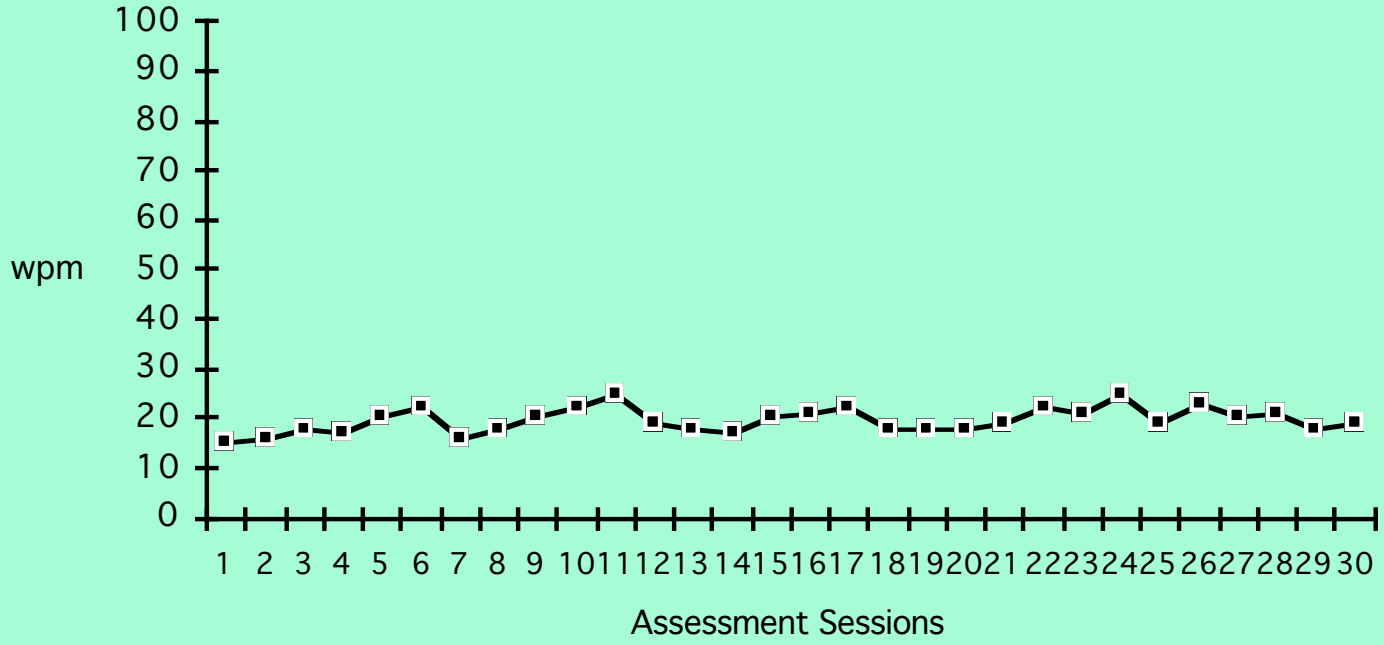
- 1. Evaluate Response to Instruction
- 2. Establish Low Achievement
- 3. Apply the Exclusions

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

- www.air.org/ldsummit

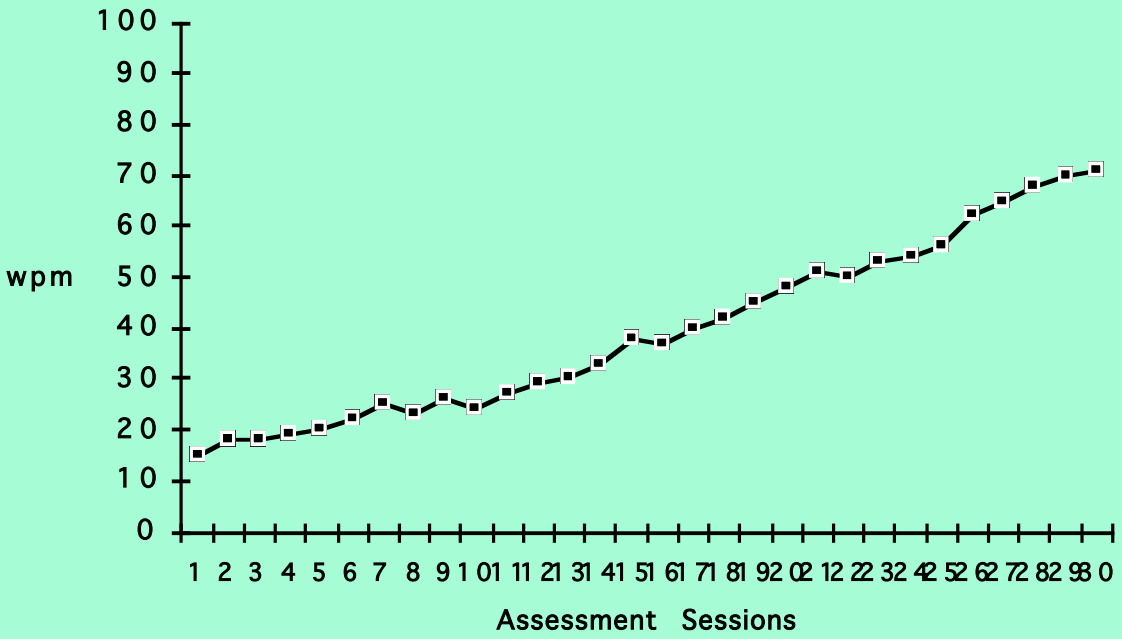
1. Assessing Response to Instruction

- Mass screening of all students for reading (and behavior) problems
- Introduce multi- tiered intervention programs that begin in the classroom
- Monitor progress
- Evaluate the quality of different instructional programs
- Increase intensity for those who show inadequate response



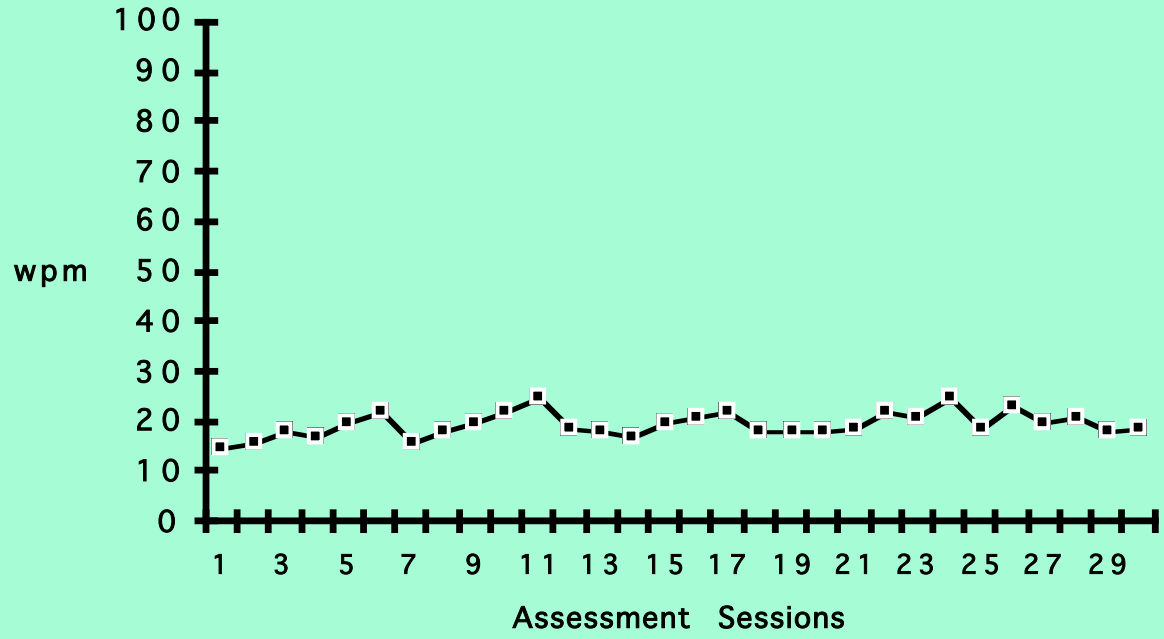
Description: Inadequate response to quality instruction.

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 Kovaleski)



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 Kovaleski).



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 Kovaleski).

Criteria for Inadequate Response

- Can be norm referenced cut point or criterion referenced benchmark
- Benchmarks can be “national” or local
- Slope, intercept, or both (dual discrepancy model): students may be LD if rate of progress is 1.5 SD below peers on slope and intercept). Key is to account for change.
- RTI is just one component of LD identification, but operationalizes the adequate instruction component of IDEA

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

Word Recognition: Basic Reading
- Real Words
- Pseudowords

Reading Comprehension

Reading Fluency

Math Computations/Problem Solving

Written Expression: Spelling Dictation, Handwriting, Composition

Core Tests: WJ III

Construct	WJ III subtest
Word Recognition	Word Identification Word Attack
Reading Fluency	Reading Fluency
Reading Comprehension	Passage Comprehension
Math Computations	Calculation
Written Expression	Spelling
	Supplemental Tests
Math Fluency	Math Fluency
Writing Fluency	Writing Fluency
Math Concepts	Quantitative Concepts
Written Expression	Writing Samples

Core Tests: WIAT II

Construct	**WIAT subtest**
Word Recognition	Word Reading Pseudoword Decoding
Reading Fluency	--
Reading Comprehension	Reading Comprehension*
Math Computations	Numerical Operations
Written Expression	Spelling
	Supplemental Tests
Math Fluency	--
Writing Fluency	--
Math Concepts	--
Written Expression	Written Expression*

*Also assesses fluency

3. 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

Who is LD/Dyslexic?

- The student who does not respond adequately to quality instruction
- Poor reading AND inadequate instructional response
- Discrepancy relative to the expectation that ALL children can learn
- Requires closer integration of general education and special education
- *One system, not two- all students are general education students first!*
- *LD exists on a learning and neural continuum that is malleable*

Conclusions

- Multi- tier instructional models have great promise for preventing most common cause of identification for special education
- Promote joint responsibility of general education and special education for all children
- No child should be placed in special education without documentation of failure to respond adequately to scientifically- based instruction

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