

# Oral language Development and its Influence on Literacy

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Florida Center for Reading Research  
And Florida State University  
National Reading First Research 2008

# Thanks and Acknowledgments

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- Teachers and students
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- National Institute of Child Health and Human Development
- World Class Schools
- James Campbell & Associates



Picture of a young girl reading a book.

# Overview

- Typical language development
- Atypical language development
- Links between language and literacy
- Multiple sources of influence
- Instruction, Language and Reading

# Basic terms

- Speech/articulation – phonemes
- Morphemes
- Syntax
- Semantics
- Pragmatics
- Metalinguistic awareness
  - Phonological
  - Morpho-syntactic
  - Pragmatic

# Language Development

- Predictable
- Universal
- Highly robust
- Is there a language instinct?

# Birth through 6 months

- Vocalization with intonation
- Responds to his or her name
- Responds to human voices without visual cues by turning his or her head and eyes
- Responds appropriately to friendly and angry tones

[http://www.childdevelopmentinfo.com/development/language\\_development.shtml](http://www.childdevelopmentinfo.com/development/language_development.shtml)

<http://www.nidcd.nih.gov/health/voice/speechandlanguage.asp#mychild>

# By 12 Months

- Recognizes name
- Says 2-3 words besides "mama" and "dada"
- Imitates familiar words
- Understands simple instructions
- Recognizes words as symbols for objects:  
Car - points to garage, cat - meows

# 18 Months

- Has vocabulary of approximately 5-20 words
- Vocabulary made up chiefly of nouns
- Some echolalia (repeating a word or phrase over and over)
- Much jargon with emotional content
- Is able to follow simple commands

# Between 1 & 2 years

- Understands "no"
- Uses 10 to 20 words, including names
- Combines two words such as "daddy bye-bye"
- Waves good-bye and plays pat-a-cake
- Makes the "sounds" of familiar animals
- Gives a toy when asked
- Uses words such as "more" to make wants known
- Points to his or her toes, eyes, and nose
- Brings object from another room when asked

# 24 Months

- Combines words into a short sentence-largely noun-verb
  - Mean length of sentences is about 2 words
- Can name a number of objects common to his or her surroundings
- Is able to use at least two prepositions, usually chosen from the following: in, on, under
- Approximately 2/3 of what child says should be intelligible
- Vocabulary of approximately 150-300 words
- Rhythm and fluency often poor
- Volume and pitch of voice not yet well-controlled
- Can use two pronouns correctly: I, me, you, although me and I are often confused
- My and mine are beginning to emerge
- Responds to such commands as "show me your eyes (nose, mouth, hair)"

# Between 2 & 3 years

- Identifies body parts
- Carries on 'conversation' with self and dolls
- Asks "what's that?" And "where's my?"
- Uses 2-word negative phrases such as "no want".
- Forms some plurals by adding "s"; book, books
- Has a 450 word vocabulary
- Gives first name, holds up fingers to tell age
- Combines nouns and verbs "mommy go"
- Understands simple time concepts: "last night", "tomorrow"
- Refers to self as "me" rather than by name
- Tries to get adult attention: "watch me"
- Likes to hear same story repeated
- May say "no" when means "yes"
- Talks to other children as well as adults
- Solves problems by talking instead of hitting or crying
- Answers "where" questions
- Names common pictures and things
- Uses short sentences like "me want more" or "me want cookie"
- Matches 3-4 colors, knows big and little

# 36 Months

- Handles three word sentences easily
- Has in the neighborhood of 900-1000 words
- About 90% of what child says should be intelligible
- Use pronouns I, you, me correctly
- Is using some plurals and past tenses
- Knows at least three prepositions, usually in, on, under
- Knows chief parts of body and should be able to indicate these if not name
- Understands most simple questions dealing with his or her environment and activities
- Relates his or her experiences so that they can be followed with reason
- Able to reason out such questions as "what must you do when you are sleepy, hungry, cool, or thirsty?"
- Should not be expected to answer all questions even though he understands what is expected

# Between 3 & 4 years

- Can tell a story
- Has a sentence length of 4-5 words
- Has a vocabulary of nearly 1000 words
- Names at least one color
- Understands "yesterday," "summer", "lunchtime", "tonight", "little-big"
- Begins to obey requests like "put the block under the chair"
- Knows his or her last name, name of street on which he/she lives and several nursery rhymes

# 48 Months

- Has most vowels and diphthongs and the consonants p, b, m, w, n
- Sentences are about 4 words long
- Knows names of familiar animals
- Can use at least four prepositions or can demonstrate his understanding of their meaning when given commands
- Names common objects in picture books or magazines
- Knows one or more colors
- Often indulges in make-believe
- Extensive verbalization as he or she carries out activities
- Understands such concepts as longer, larger, when a contrast is presented
- Readily follows simple commands even though the stimulus objects are not in sight
- Much repetition of words, phrases, syllables, and even sounds

# Between 4 & 5 years

- Has sentence length of 4-5 words
- Uses past tense correctly
- Has a vocabulary of nearly 1500 words
- Points to colors red, blue, yellow and green
- Identifies triangles, circles and squares
- Understands "In the morning" , "next", "noontime"
- Can speak of imaginary conditions such as "I hope"
- Asks many questions, asks "who?" And "why?"

# Between 5 & 6 years

- Uses sentences that are about 5-6 words
- Has a vocabulary of around 2000 words
- Defines objects by their use (you eat with a fork) and can tell what objects are made of
- Knows spatial relations like "on top", "behind", "far" and "near"
- Knows her or his address
- Identifies a penny, nickel and dime
- Knows common opposites like "big/little"
- Understands "same" and "different"
- Counts ten objects
- Asks questions for information
- Distinguished left and right hand in herself
- Uses all types of sentences, for example "let's go to the store after we eat"

# A Language Instinct?

- Universal across cultures (Pinker, 1994)
- Highly robust & develops even in the face of extreme challenges
- Children are language learning machines (Bates, 1999)
- Early and ongoing neural plasticity
- Language develops throughout our lifetime – e.g., internet, blog, google
- Social and cultural development (Locke, 1993)
  - Theory of mind

# This is in contrast to reading

- Not universal across cultures
- Development is easily disrupted
  - Must be explicitly taught
  - Can create a reading disability by failing to provide adequate instruction (Torgesen)

# Atypical Language Development

- Specific Language Impairment
- Autism
- Environmental deprivation
- Deafness
- Severe motor impairment (CP)
- Neurological impairment
  - Stroke

# A little more foreshadowing

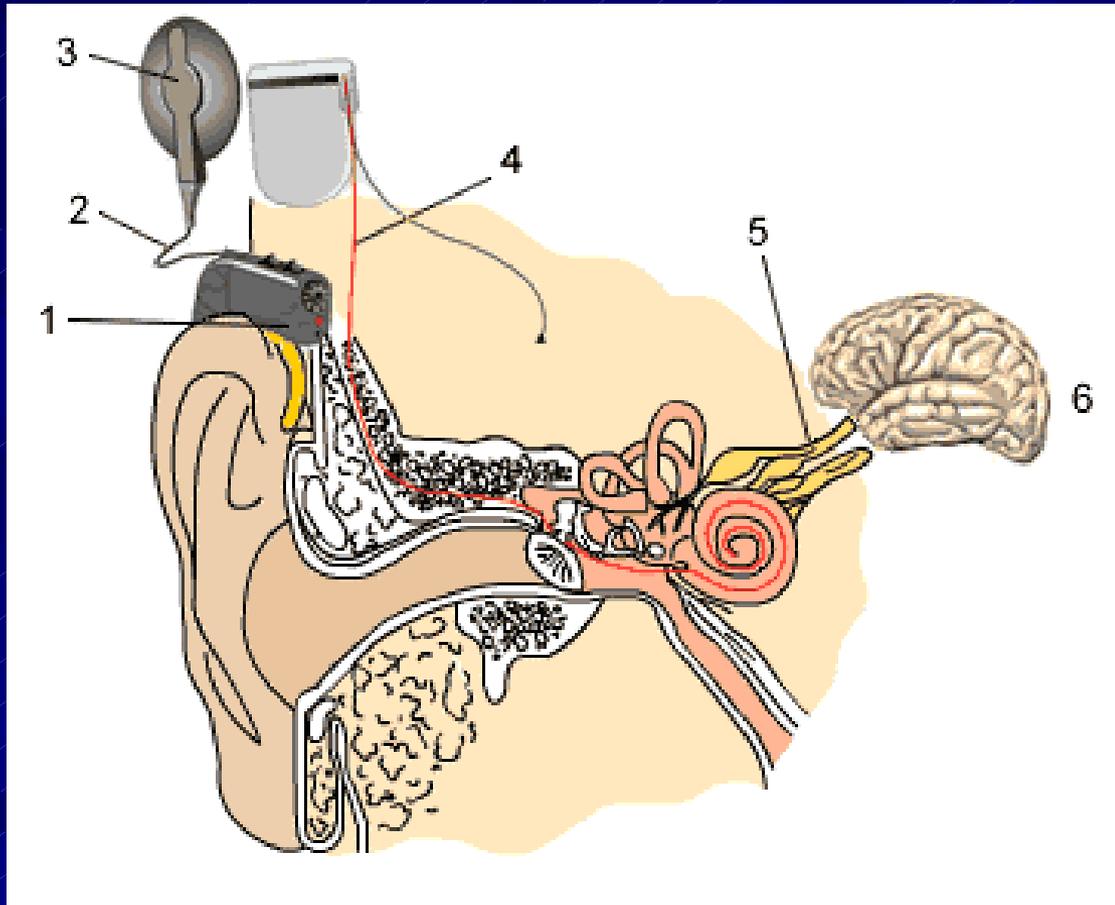
- Children with language delays are also more likely to have difficulty learning to read

# Language and Literacy Development of Deaf Children

# How the Cochlear Implant Works



# How Children Hear with the Implant





DIVISION OF AUDIOLOGY  
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HEARING AID EVALUATION

DATE

9-10-92

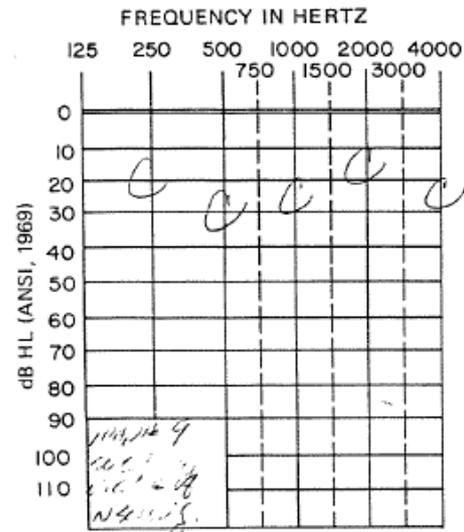
SERVICE

SYJLONG,  
 M 08 29 83 EAST LANSING  
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AIDED = A    UNAIDED = S    PURE-TONE UCL = U

	SFT dB	Intelligibility				
		%	% IN NOISE	HL	UCL	MCL
S.F.						
AIDED MONAURAL						
AIDED BINAURAL						
CL RIGHT	0					
LEFT						

081093



RECOMMENDED HEARING AID \_\_\_\_\_

SETTINGS \_\_\_\_\_

EAR \_\_\_\_\_ MCL \_\_\_\_\_ UCL \_\_\_\_\_

EARMOLD \_\_\_\_\_

COMMENTS:

*54/100  
 post-aud*

# DVD

## A Young Cochlear Implant Pioneer

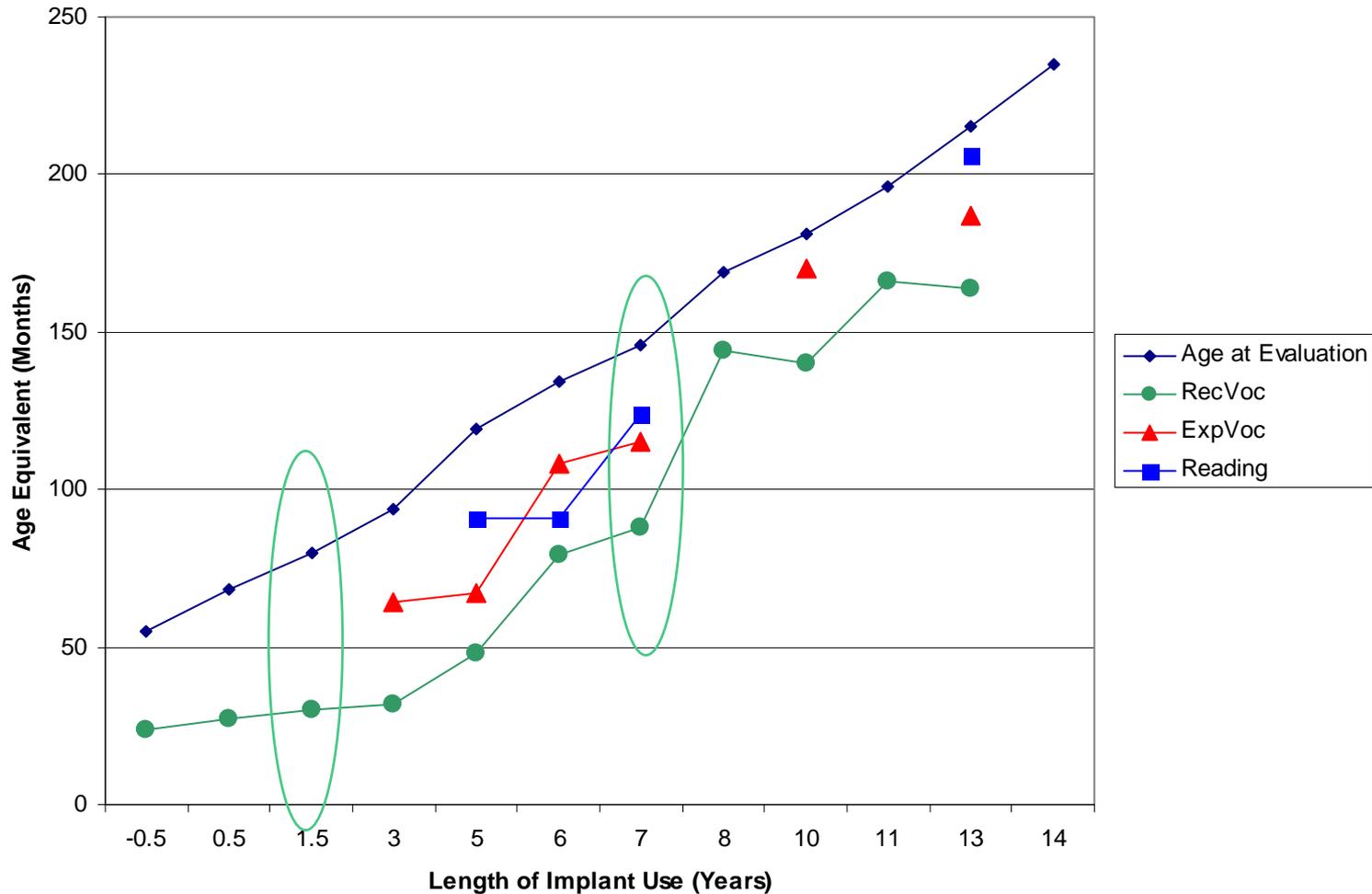
Connor, C. M. (2006). Examining the communication skills of a young cochlear implant pioneer. *Journal of Deaf Studies and Deaf Education*, 11(4), 449-460.

# Christopher's language use

## 6 yrs; 18 Months Post-CI

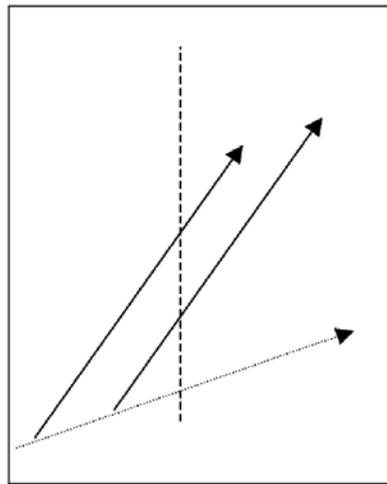
- \*CHI: I uh (Mc)dona(lds) uh duh bo(x).
- %sig: I McDonald box.
- \*ADU: you got the box uhhuh.
- \*MOT: the box.
- \*CHI: on a (t)a?de.
- \*CHI: on a (t)able.
- \*CHI: french+f(r)y pop.
- %sig: french+fries pop me.
- \*CHI: pop.
- %sig: pop/soda.
- \*CHI: pop.
- %sig: pop.
- \*CHI: g(r)een pop..
- %sig: white green.

# Christopher's Language and Literacy Development (5 years at CI)

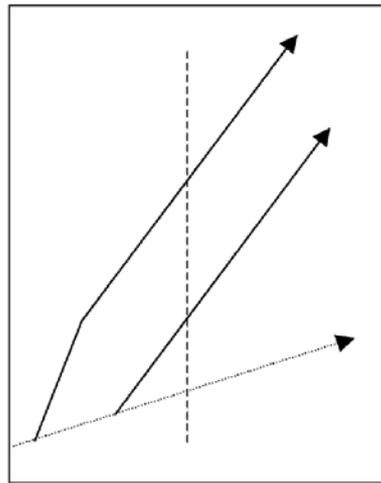


Early sensitive phase for  
vocabulary development?

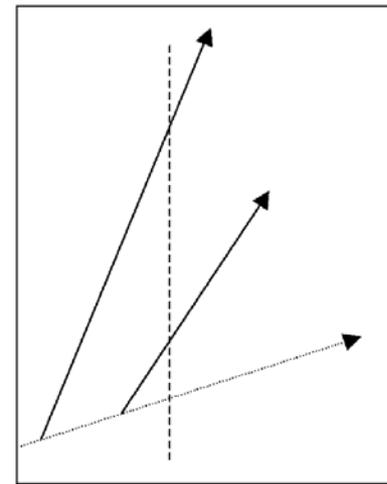
# Vocabulary and early CI use



Length of use



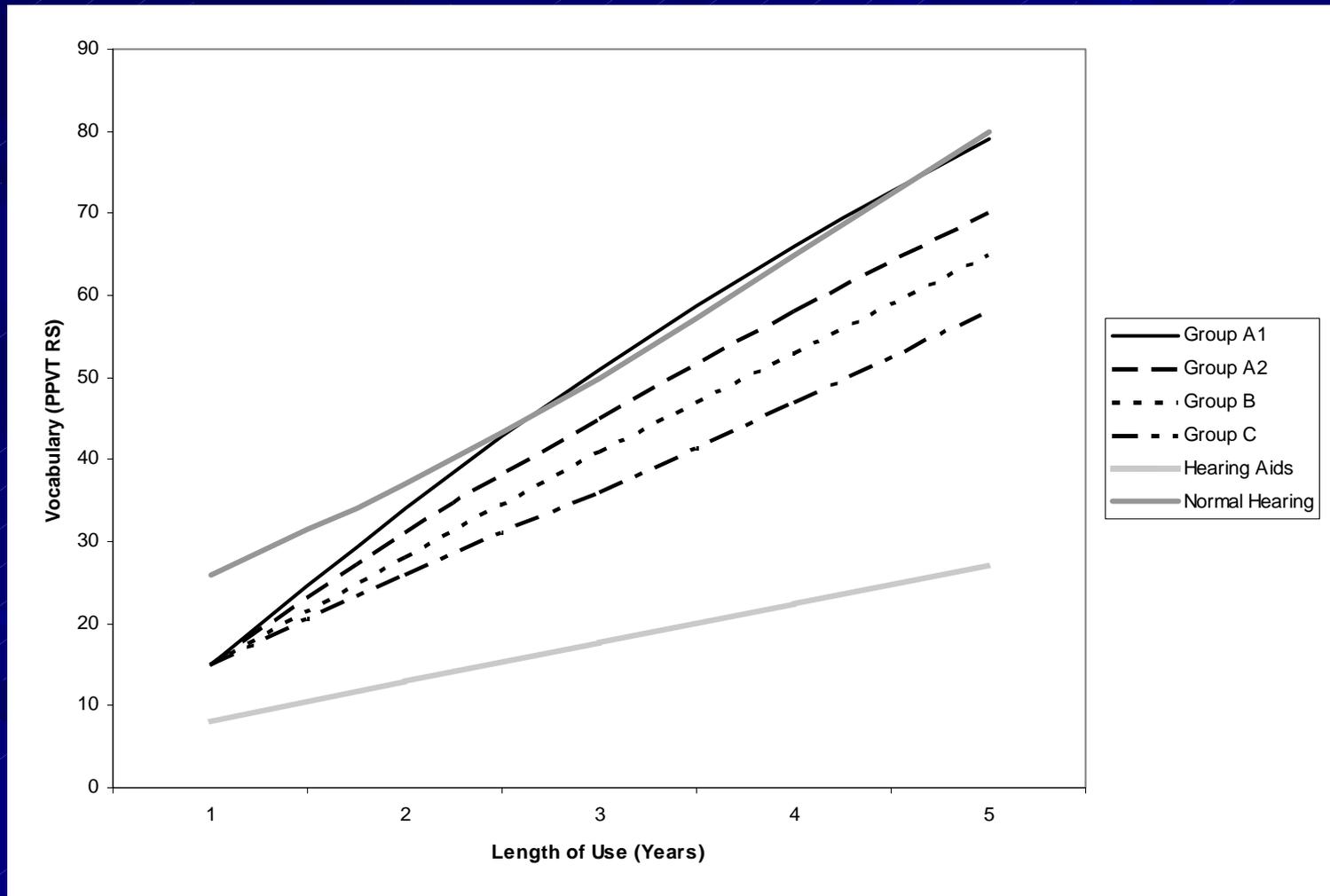
Burst

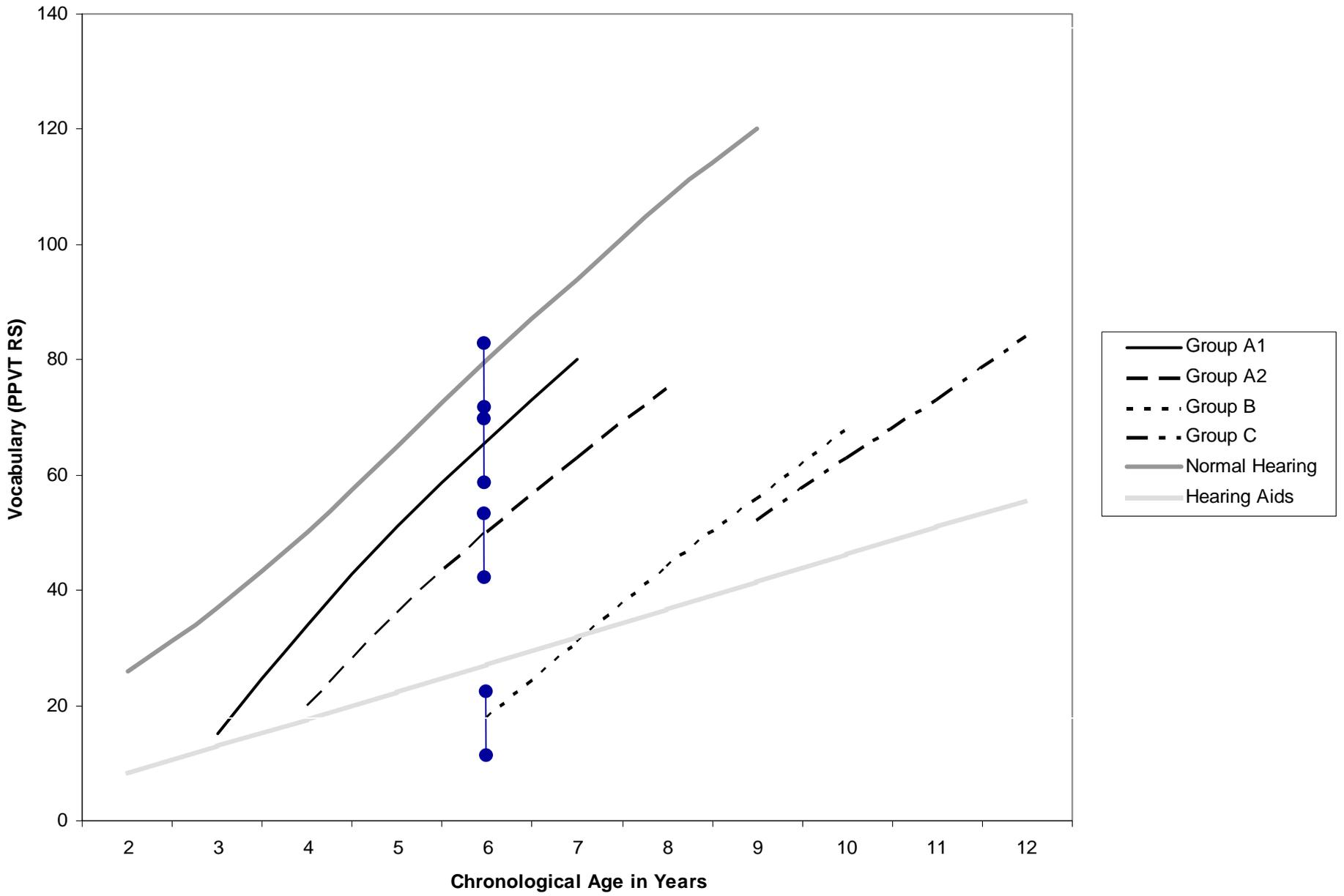


Trajectory change

Connor et al., (2006) in *Ear and Hearing*

# Vocabulary Growth Curves



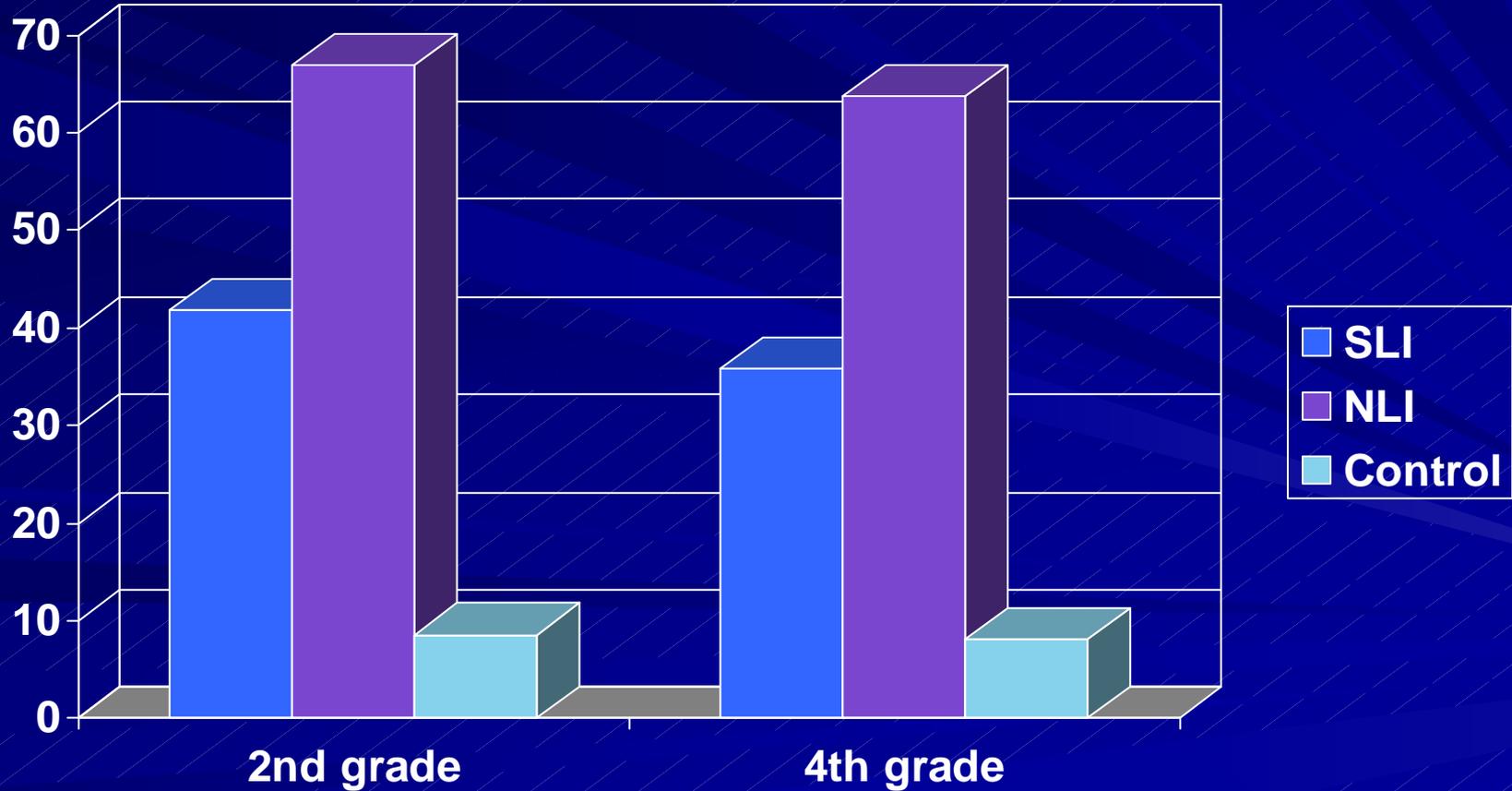


# Intricate Links between Language and Literacy Development

# Language Impairments

Catts, Fey, Tomblin, & Zhang, 2002

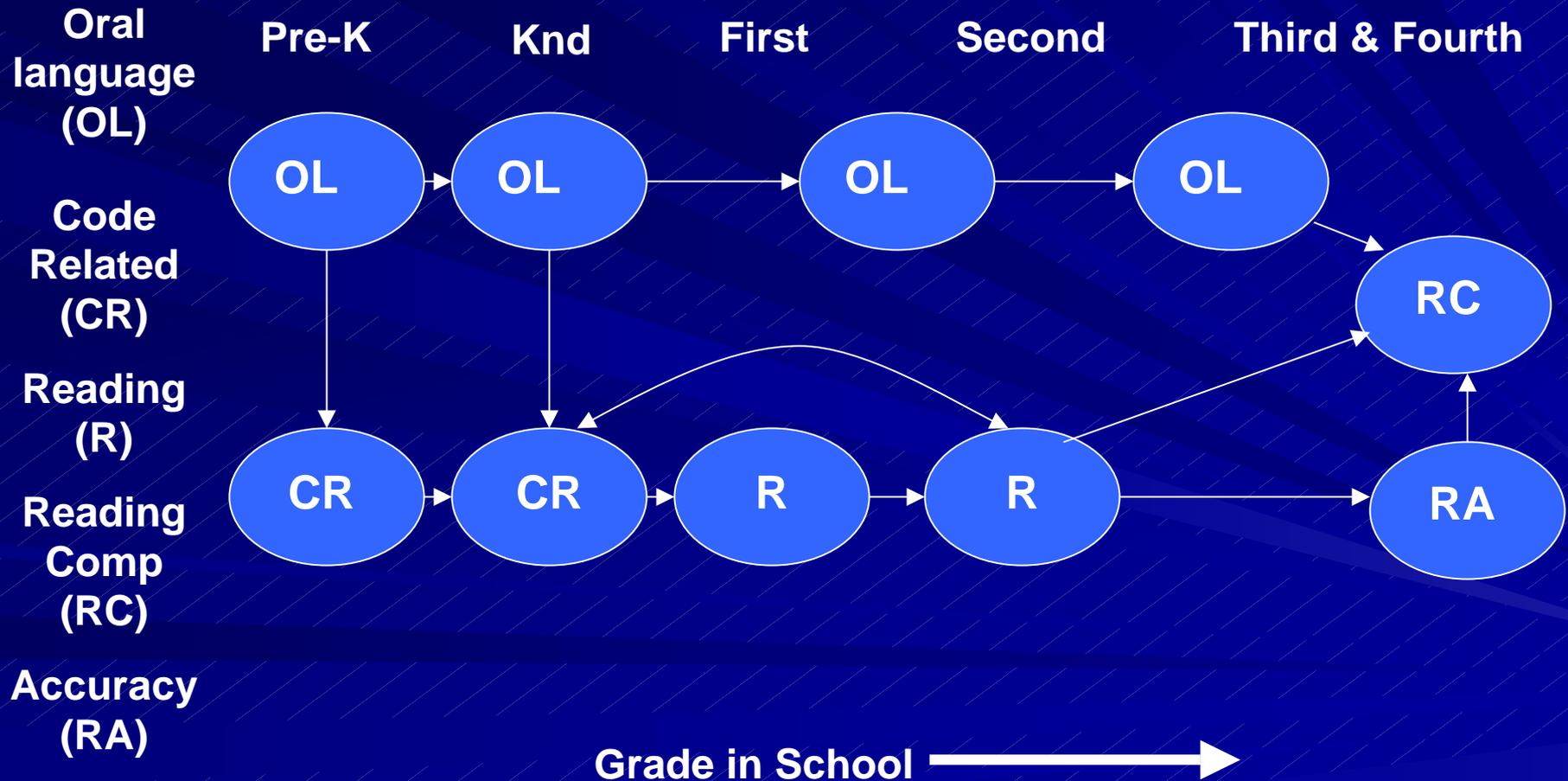
Chart representing 2<sup>nd</sup> grade vs. 4<sup>th</sup> grade in the areas of SLI, NLI, and control



# Complex Links

■ Storch & Whitehurst, 2002  
Graph representing

the chain references. Storch & Whitehurst, 2002 and depicts a progression from pre-K to fourth grade and illustrates at which grade level the following items appear and their relative connections: Oral Language (OL), Code Related (CR), Reading (R), Reading Comp (RC), Accuracy (RA).



# The Many Strands that are Woven into Skilled Reading

(Scarborough, 2001)

## LANGUAGE

BACKGROUND KNOWLEDGE

VOCABULARY KNOWLEDGE

LANGUAGE STRUCTURES

VERBAL REASONING

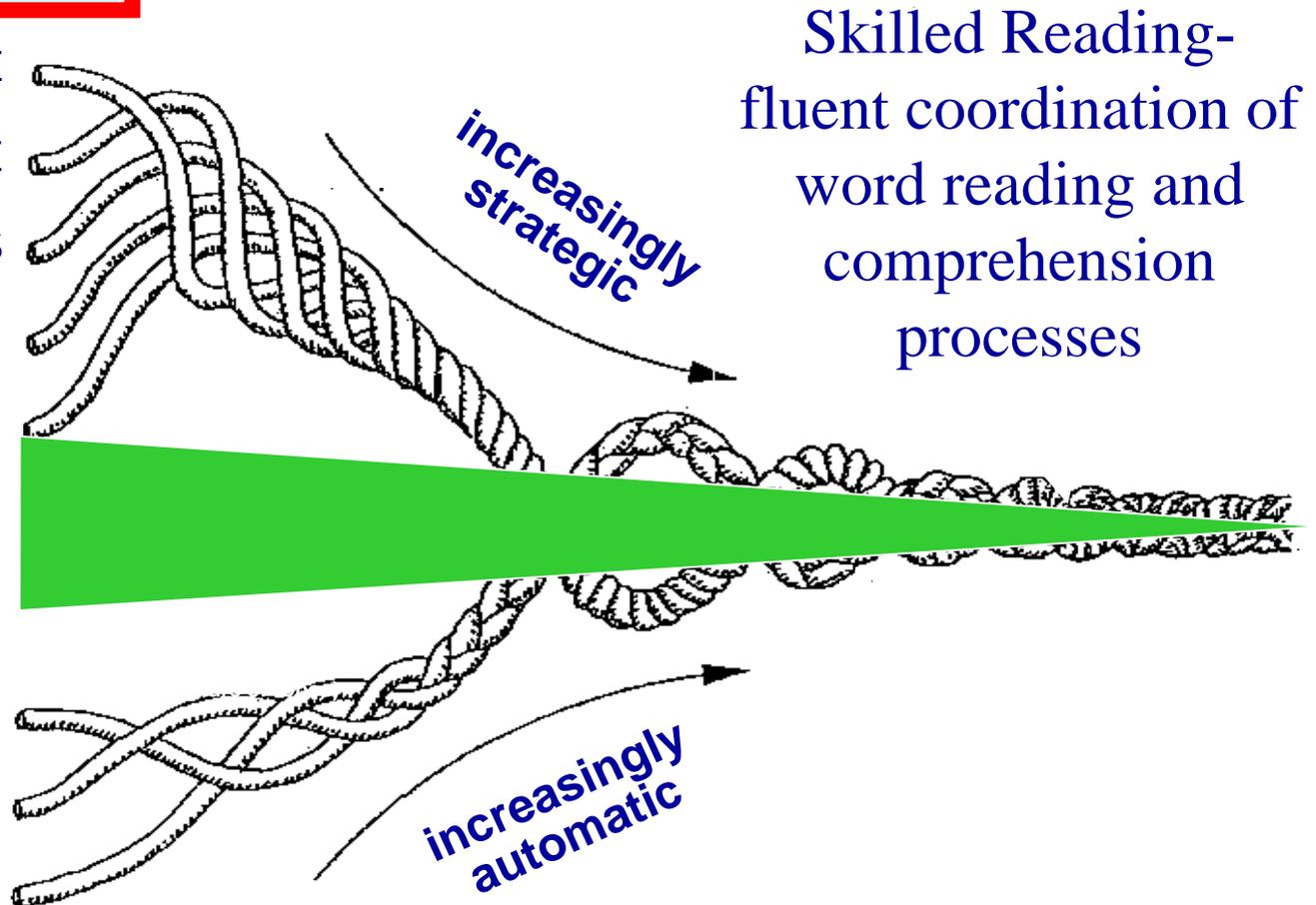
LITERACY KNOWLEDGE

## WORD RECOGNITION

PHON. AWARENESS

DECODING (and SPELLING)

SIGHT RECOGNITION



Reading is a multifaceted skill, gradually acquired over years of instruction and practice.

# Multiple Sources of Influence

- Home
- Preschool
- School
  - Teacher quality
  - Classroom instruction
- Community
  - SES

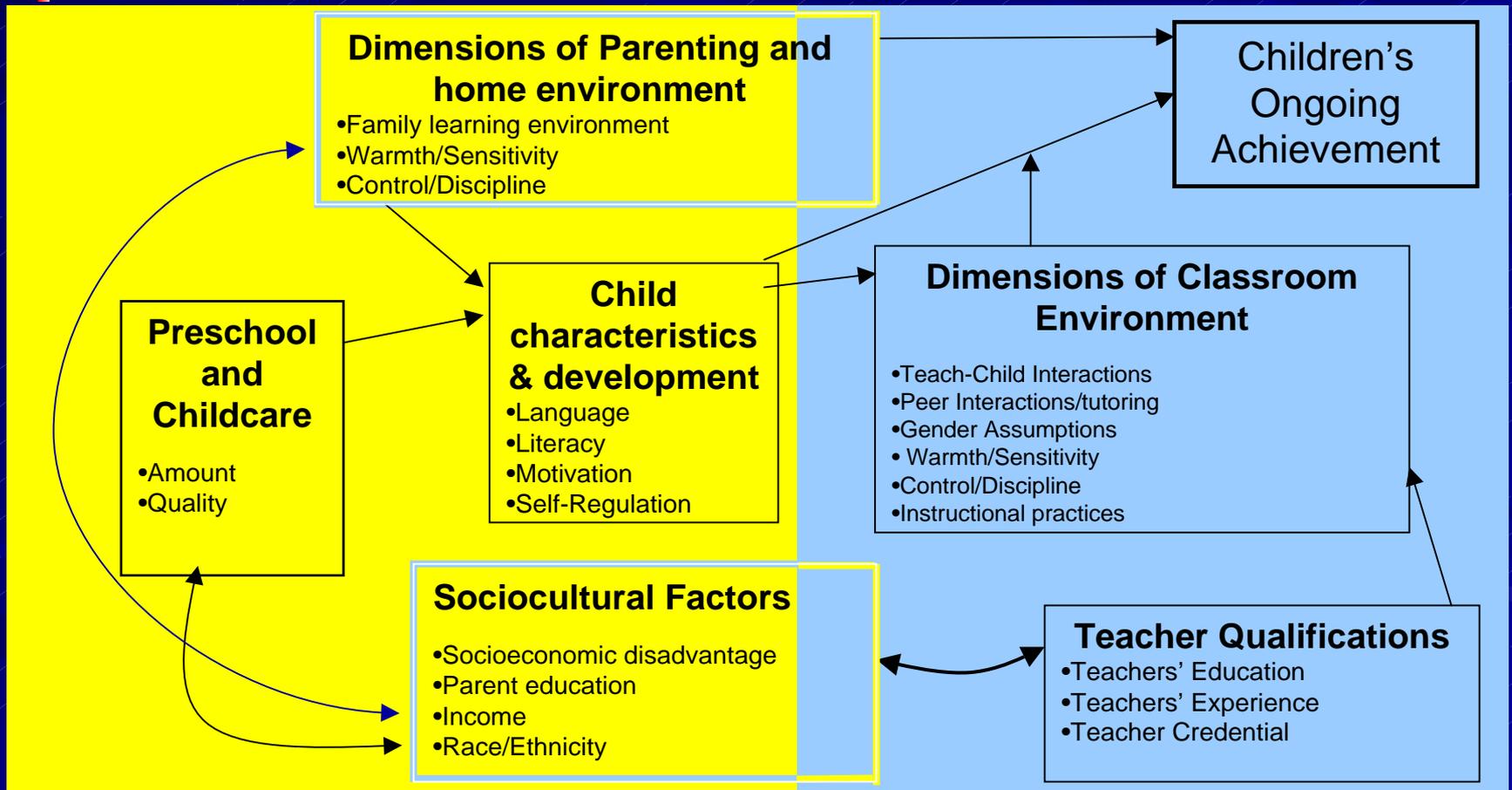


Picture of boy and teacher with his family

# Sources of Influence on Student Achievement

Before Children Get to School

Once Children Start School

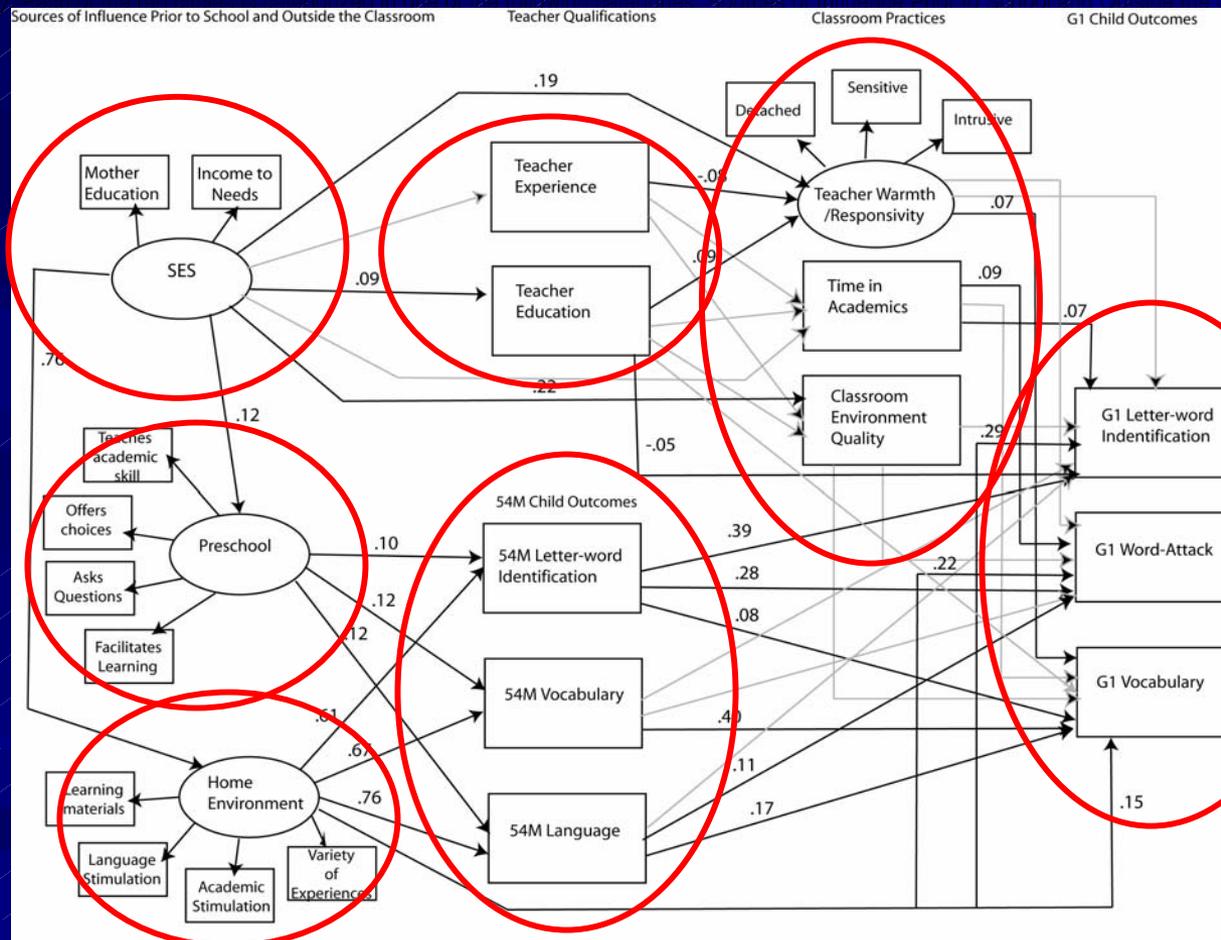


(All of the categories are related in a complex web of arrows pointing to each other.)

Bronfenbrenner, 1986

# Multiple Sources of Influence on Children's Development

(A complex chart depicting numerous elements of childhood development in boxes and oval shapes. The relationships between the elements of childhood development are illustrated by connective lines with arrows. The elements of childhood development are grouped and enclosed in seven different red circles indicating their relationship to a particular category. Each element is categorized in one of the following categories: Sources of Influence Prior to School and Outside the Classroom, Teacher Qualifications, Classroom Practices, and G1 Child Outcomes.)



Connor, C. M., Son, S., Hindman, A., & Morrison, F. J. (2005). Teacher qualifications, classroom practices, family characteristics and preschool experience: Complex effects on first graders' vocabulary and early reading outcomes. *Journal of School Psychology, 43*, 343-375.

# African American English

## ■ Mismatch hypothesis

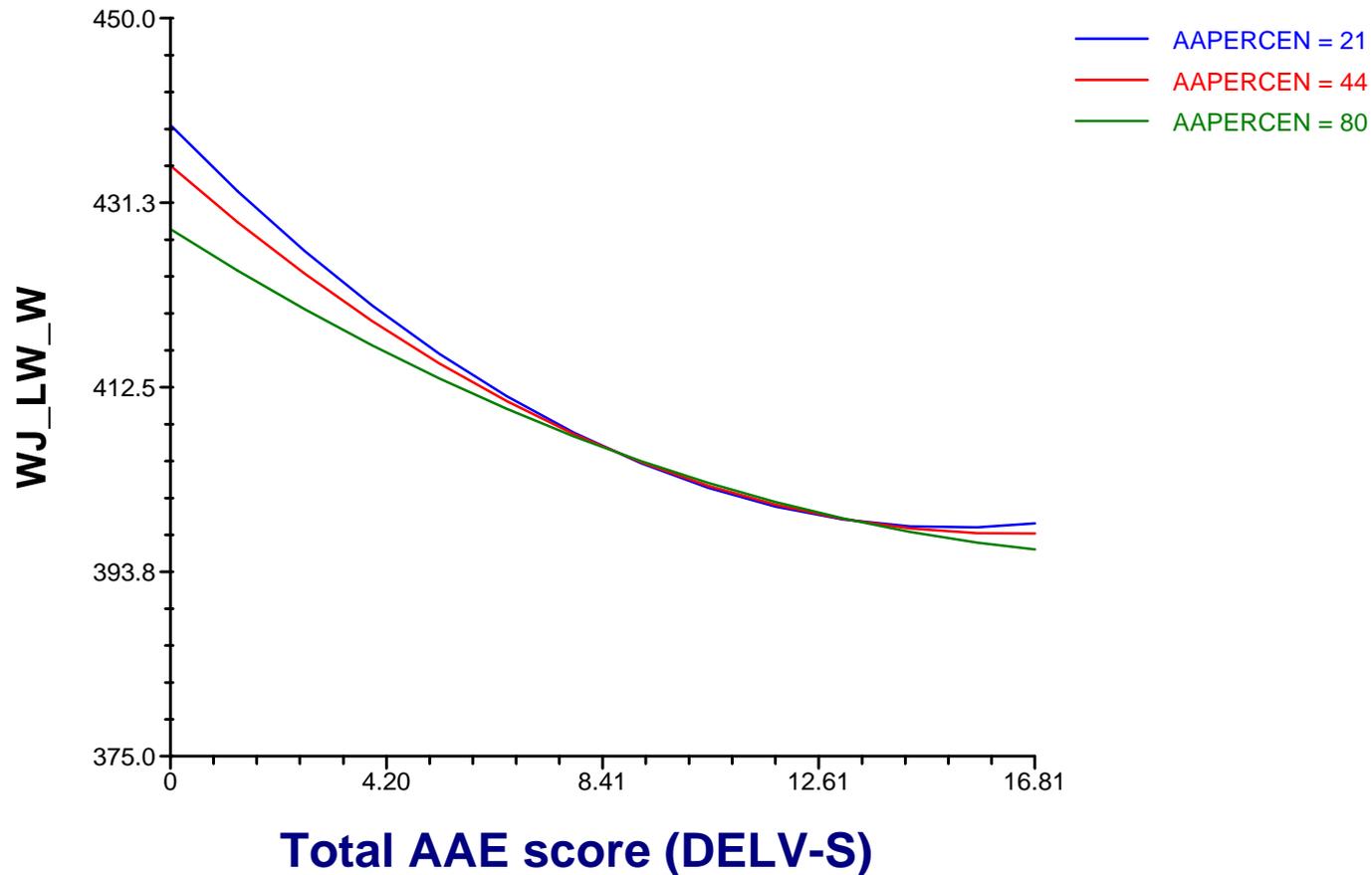
- The mismatch between children's spoken language and written language interferes with the development of fluent reading
- Greater use of AAE negatively associated with reading skills

## ■ Linguistic awareness/flexibility hypothesis

- Greater use of AAE associated with stronger language skills
- Hence a non-linear or U-shaped relation between AAE use and reading

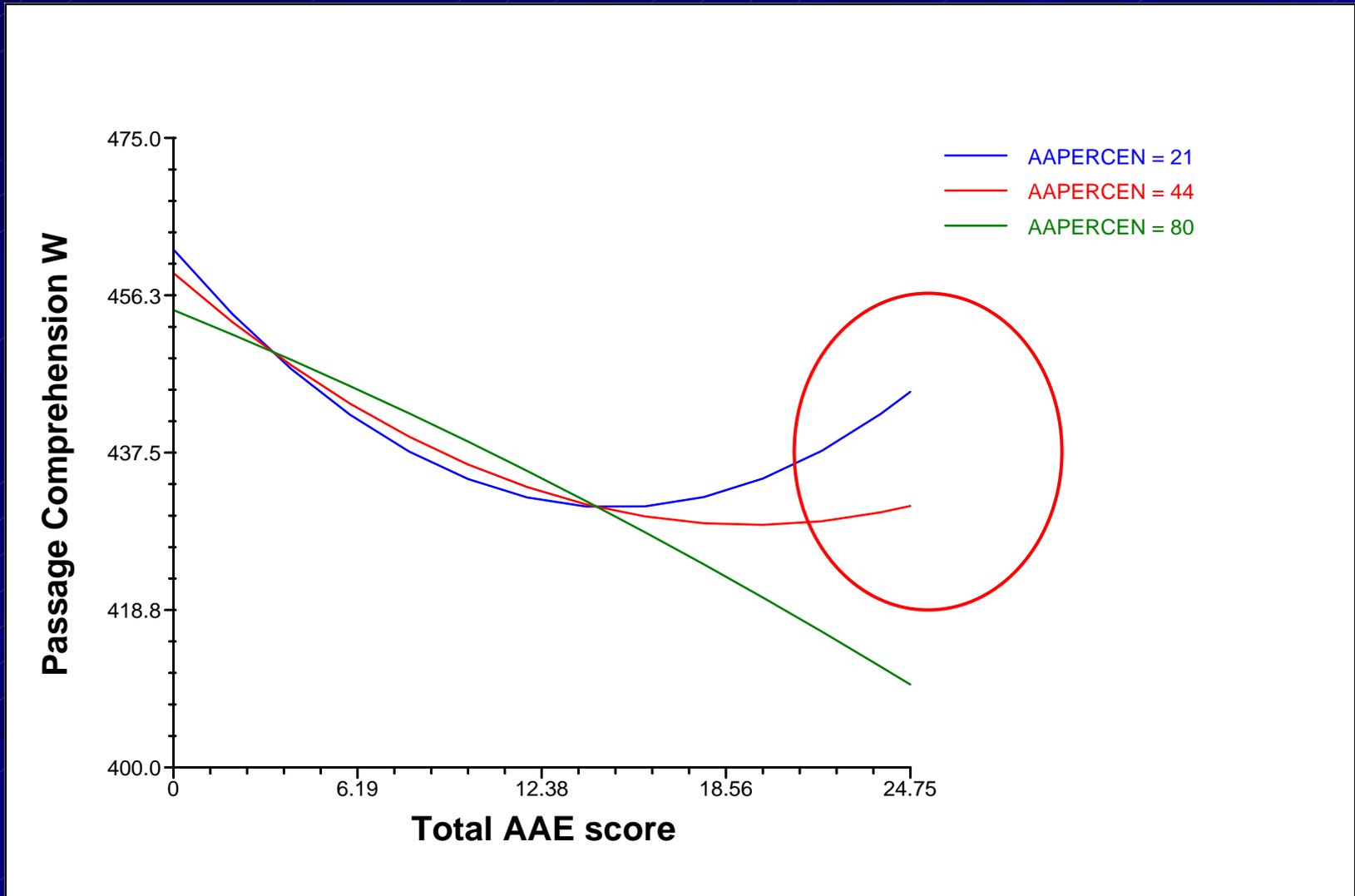
# Word Reading

(A chart graphing the trend lines for AAPERCEN = 21, AAPERCEN = 44, and AAPERCEN = 80. The Vertical and Horizontal axis are listed as WJ\_LW\_W and Total AAE score



# Reading Comprehension

(A chart graphing the trend lines for AAPERCEN = 21, AAPERCEN = 44, and AAPERCEN = 80. The Vertical and Horizontal axis are listed as Passage Comprehension W and Total AAE score. There is a red circle around the AAPERCEN = 21 and AAPERCEN = 44 trend-lines at the end of the Total AAE score axis where both line trend much higher than the line for AAPERCEN = 80 which continues to trend downward.)



# Instruction, Language, & Reading

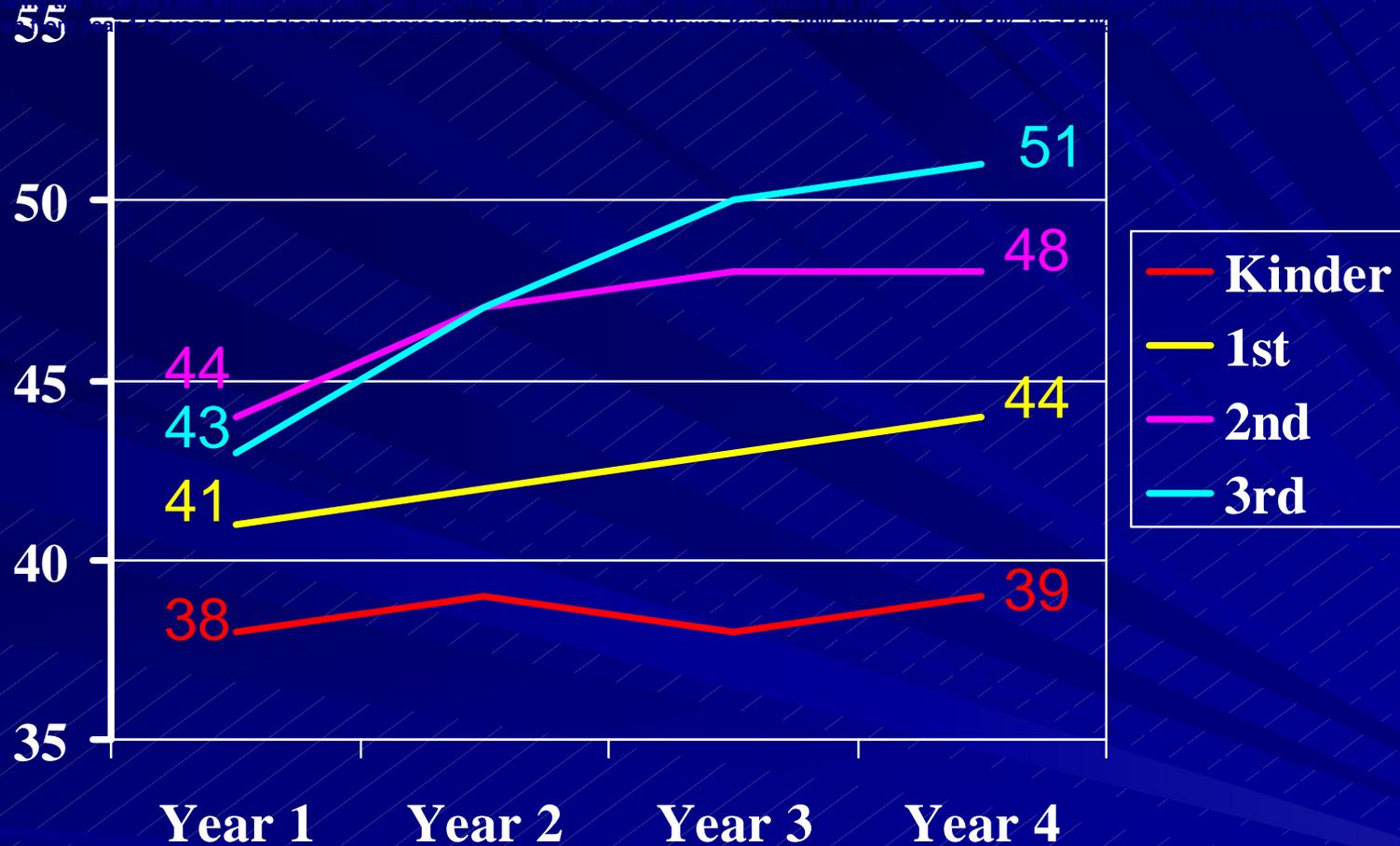
- Reading can enhance vocabulary growth
  - Florida Reading First
- Instruction can enhance language growth
- The effect of instruction may depend on students language skills
  - Individualizing instruction

# Learning to Read Proficiently

- May be associated with stronger vocabulary growth
  - And language skills generally
- Florida Reading First
  - Cohort 1
  - Vocabulary assessed using the PPVT
  - Standard scores
    - Mean = 100
    - Standard deviation = 15

# Cohort 1 FL RF

(A graph showing the Year to Year improvement in % of students at "grade level" in oral vocabulary in grades Kindergarten through Third. The graph spans 4 years. The year 1 and chart lines representing each grade are: Kinder 38%, 1st 41%, 2nd 43%, and 3rd 43%.



Dr. Torgesen: Year to Year improvement in % of students at "grade level" in oral vocabulary in grades Kindergarten through Third

# The effect of instruction depends on children's language skills



# Conceptualizing Classroom Instruction

- Multiple Dimensions of Instruction
  - Teacher Warmth/sensitivity
  - Organization
  - Instruction
    - Teacher-managed versus Child-managed
    - Meaning versus Code focused
    - Change across the school year
    - Whole class, small group, or individual
    - Explicit versus implicit

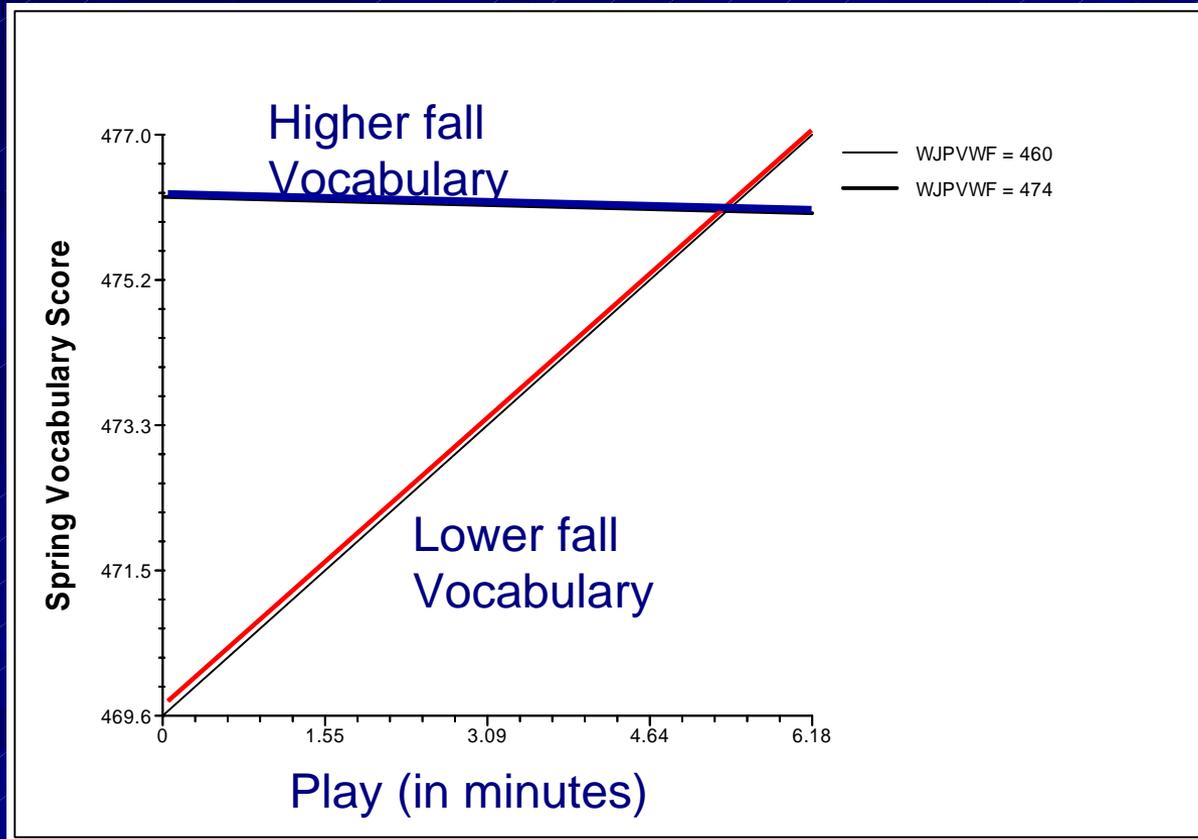
# Multiple Dimensions of Instruction

	Teacher Managed	Child Managed
Code Focused	<b>Alphabet activities</b> <b>Letter Sight-Sound</b> <b>Phonological Awareness</b> <b>Onset-rime, blending and segmenting</b> <b>Word Segmentation</b>	<b>Spelling</b> <b>phonics worksheets,</b> <b>handwriting activities</b> <b>decoding activities</b>
Meaning Focused	<b>Vocabulary</b> <b>Teacher Read Aloud</b> <b>Student Read Aloud, Choral</b> <b>Group Writing, Writing</b> <b>Instruction, Model Writing</b> <b>Listening Comprehension</b> <b>Discussion</b>	<b>Student Buddy Reading</b> <b>Sustained Silent Reading</b> <b>Reading Comprehension</b> <b>worksheets</b> <b>Student Individual Writing</b> <b>Pair writing</b>

# Preschool Instruction can enhance language growth

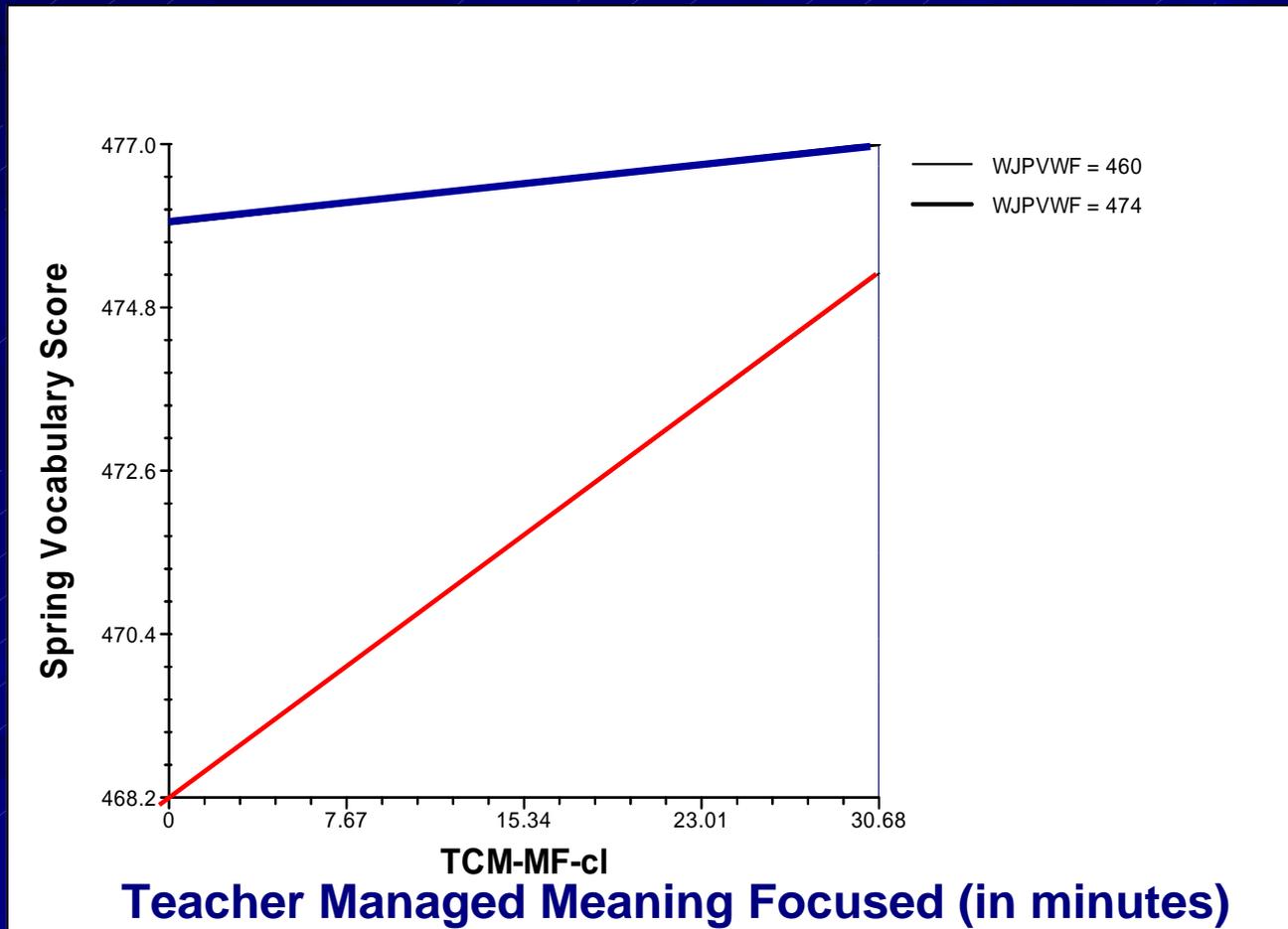
## Teacher Facilitated Play

(The graph features a vertical axis for Vocabulary and Lower fa



# Preschool Instruction can enhance language growth

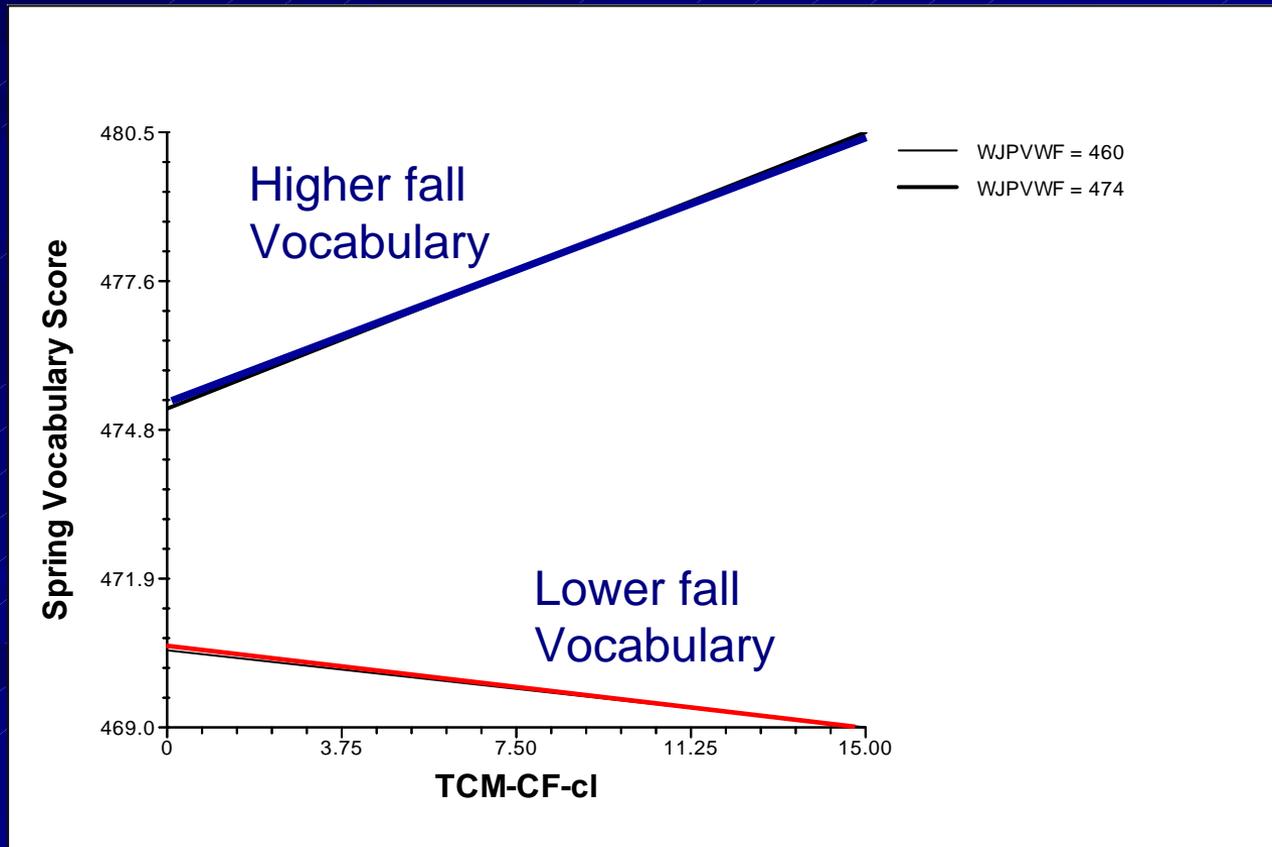
## ■ Teacher managed meaning focused



# Preschool Instruction can enhance language growth

## ■ Teacher managed code focused instruction

(The graph features a vertical axis of Spring Vocabulary Score and a horizontal axis of Teacher Managed-Code Focused Instruction (TCM-CF-cl). The graph illustrates the trend lines of Higher fall Vocabulary and Lower fall Vocabulary.)



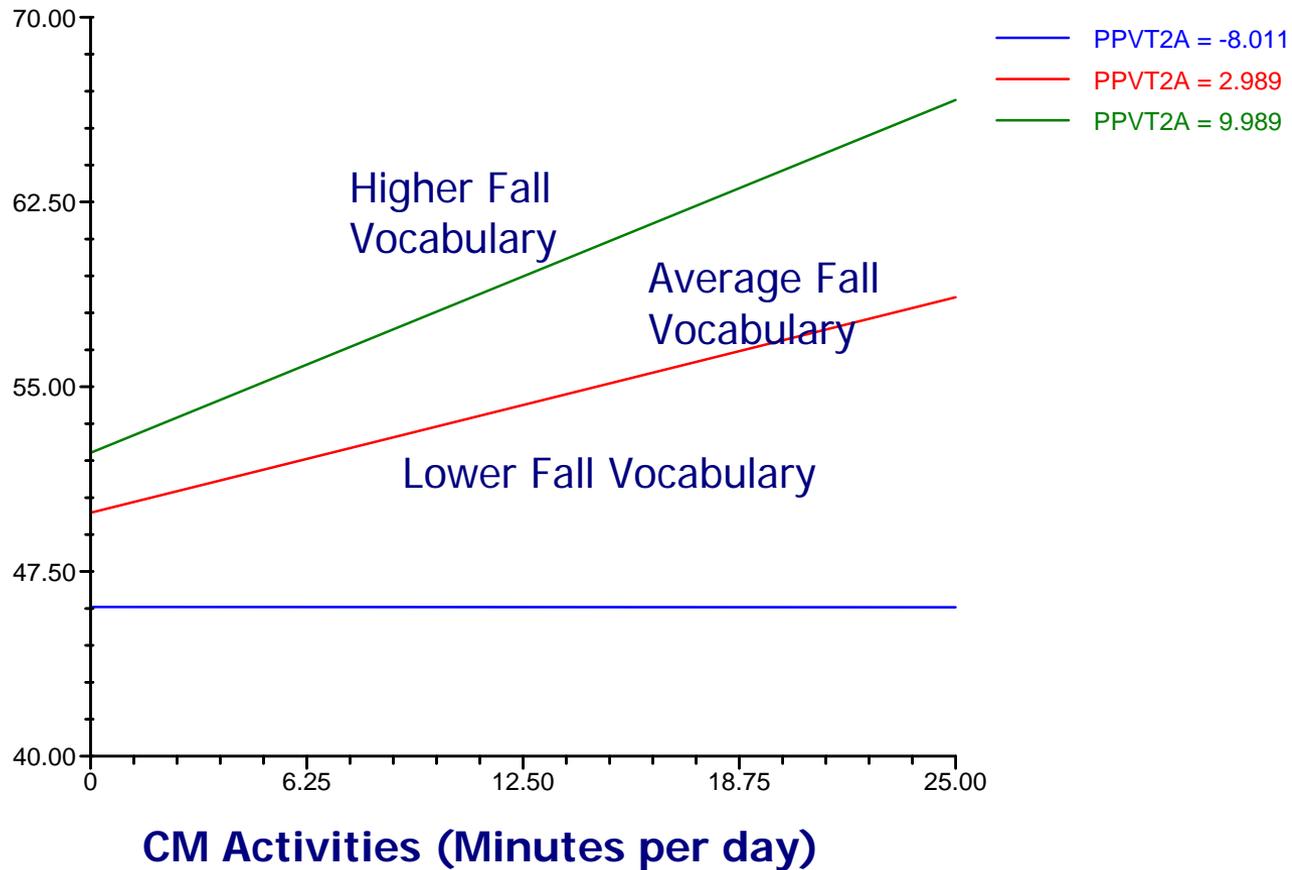
# Science Instruction in 2<sup>nd</sup> Grade

Science Activity	Word Reading	Vocabulary	Background Knowledge
TM-Instruction	-1.50 BKxTM-Inst, -.16	0.26	
TCM-Discussion/Activities		0.35	
CM- Activities	.09 BKxCM-Act, -.02		0.28 VocxCM-Act, .03
Language Arts		-.06	

# Science

Edge

Spring Background Knowledge Raw Score



# Beyond the Reading Wars

## ■ 108 First Grade Children

- 44% girls
- 62% were European American; 38% were African American
- IQ (Stanford-Binet)
  - Mean = 101 (15.0)

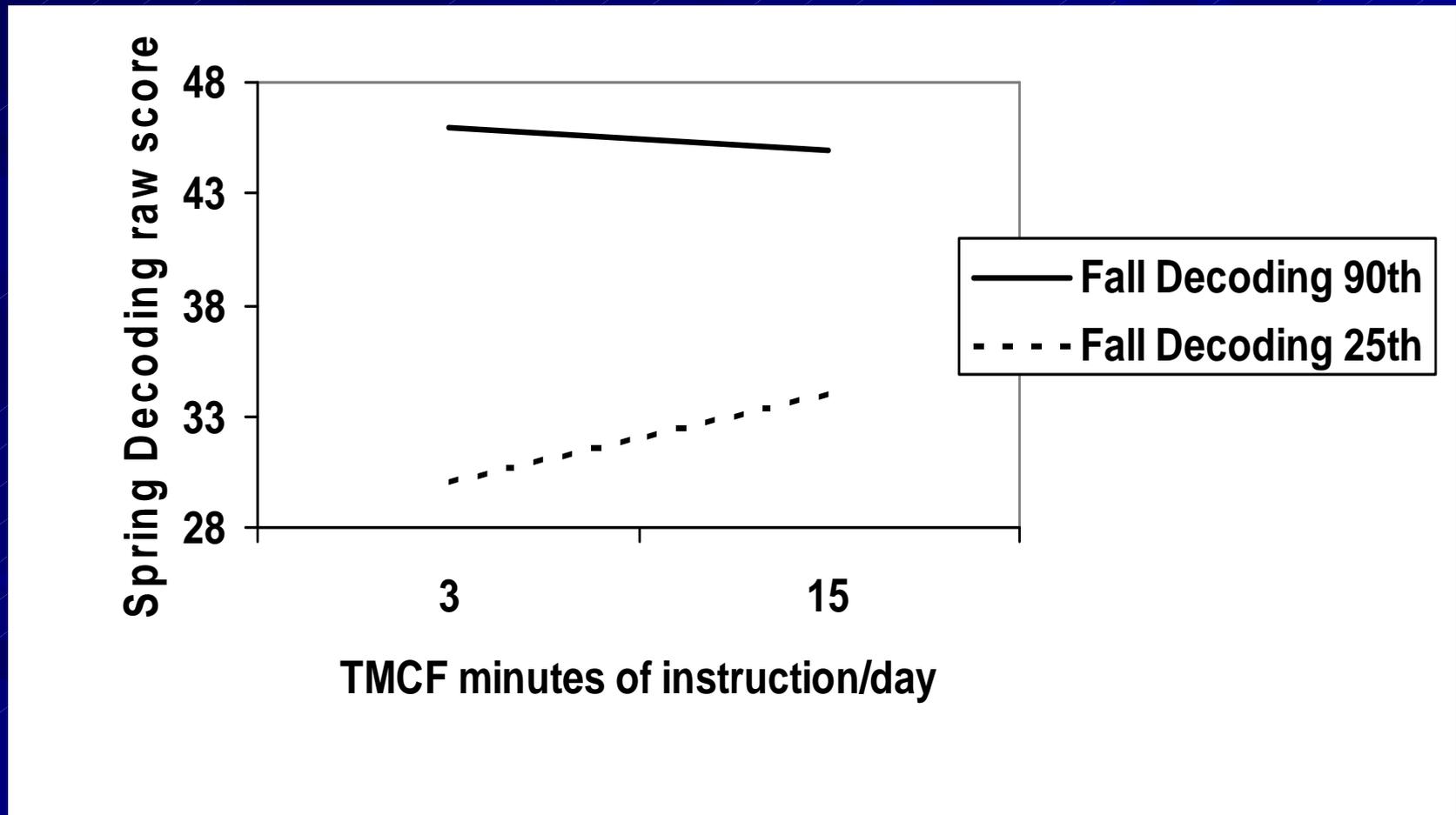
## ■ 44 Teachers

- Schools located in mid-sized city
- Whole Language

# HLM Results

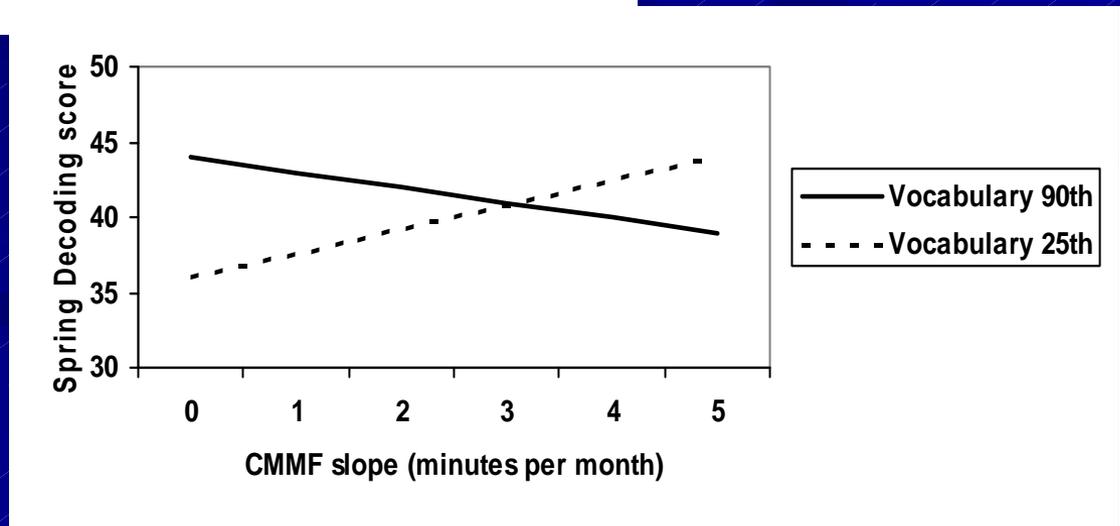
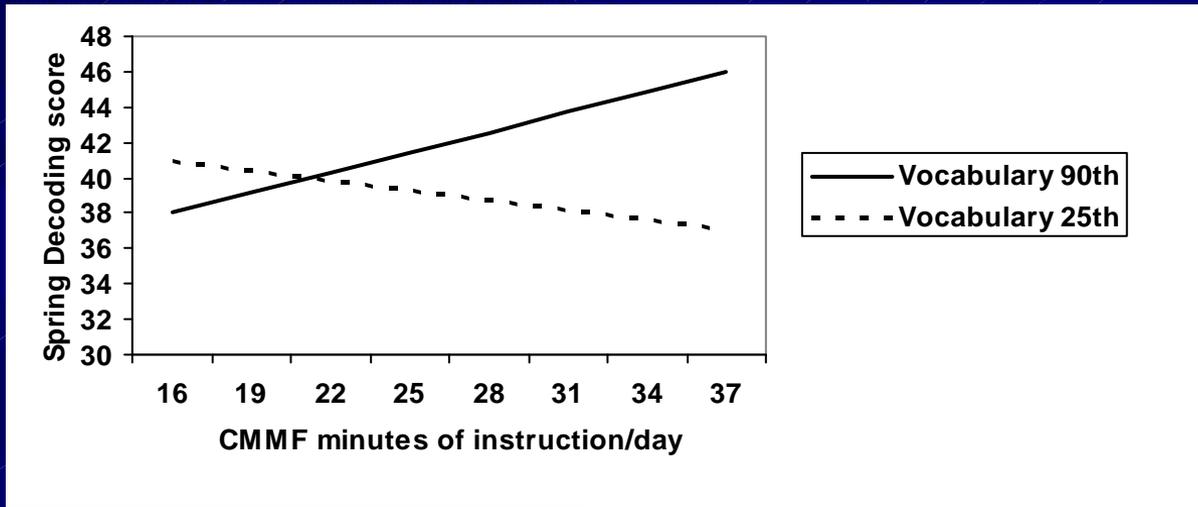
- Children with stronger fall letter-word reading and vocabulary scores achieved higher spring letter-word scores on average
  - Controlling for parent education and home literacy environment
- There were child by instruction interactions

# HLM Results: Child-Instruction Interactions – Fall Decoding by TCMF amount



Percentiles from Norm Tables    Grade Equivalent 1.9 = Raw Score 34.5

# Child-Instruction Interactions – Fall Vocabulary by CMMF amount and slope



# Reading First

- Cohort 1
- Site visits completed in April
- Reading Comprehension
  - SAT-10 in spring
- Vocabulary
  - PPVT standard score

# Grade 2 Results

## ■ Main effects

### – Teacher managed code focused

- Students who spent more time in TMCF instruction exhibited stronger RC than did students who spent less time in TMCF

- Coefficient = 1.75,  $t(535) = 2.26^*$

### – Engagement

- Students in classrooms with higher engagement demonstrated weaker RC scores than did students in classrooms with lower engagement

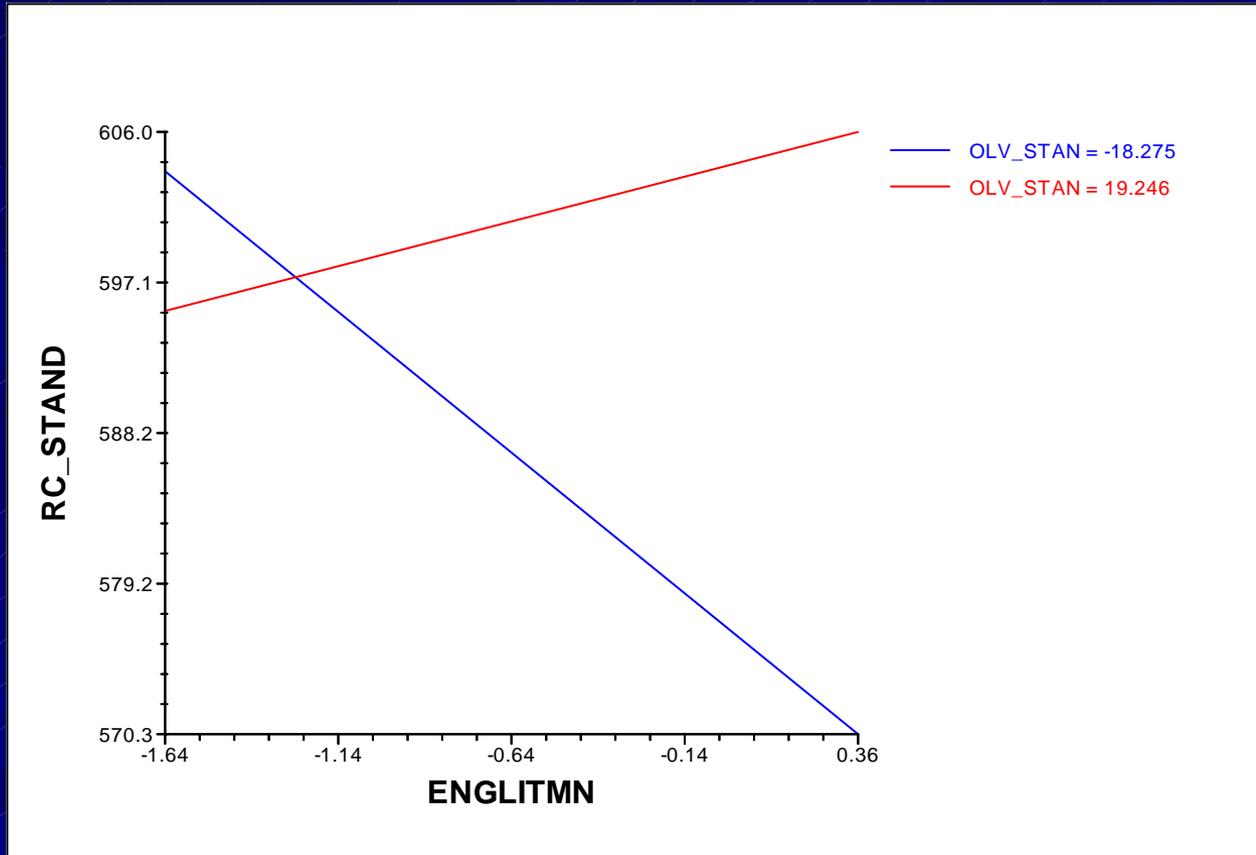
- Coefficient = -4.11,  $t(535) = -2.52^*$

# Grade 2 Results

- Child X Instruction Interactions
  - Vocabulary x Engagement (see slide)

# Vocabulary x Engagement Grade 2

(A graph with a vertical axis labeled RC\_STAND and a horizontal axis labeled ENGLITMN. The two trend lines represented are labeled OLV\_STAN = -18.275 and OLV\_STAN = 19.246. The graph is illustrating the relationship between vocabulary scores, earned higher



# Grade 3 Results

## ■ Child x instruction interactions

### – ORF x CMMF

- Students with weaker fall ORF scores demonstrated weaker RC scores than did students with stronger fall ORF scores

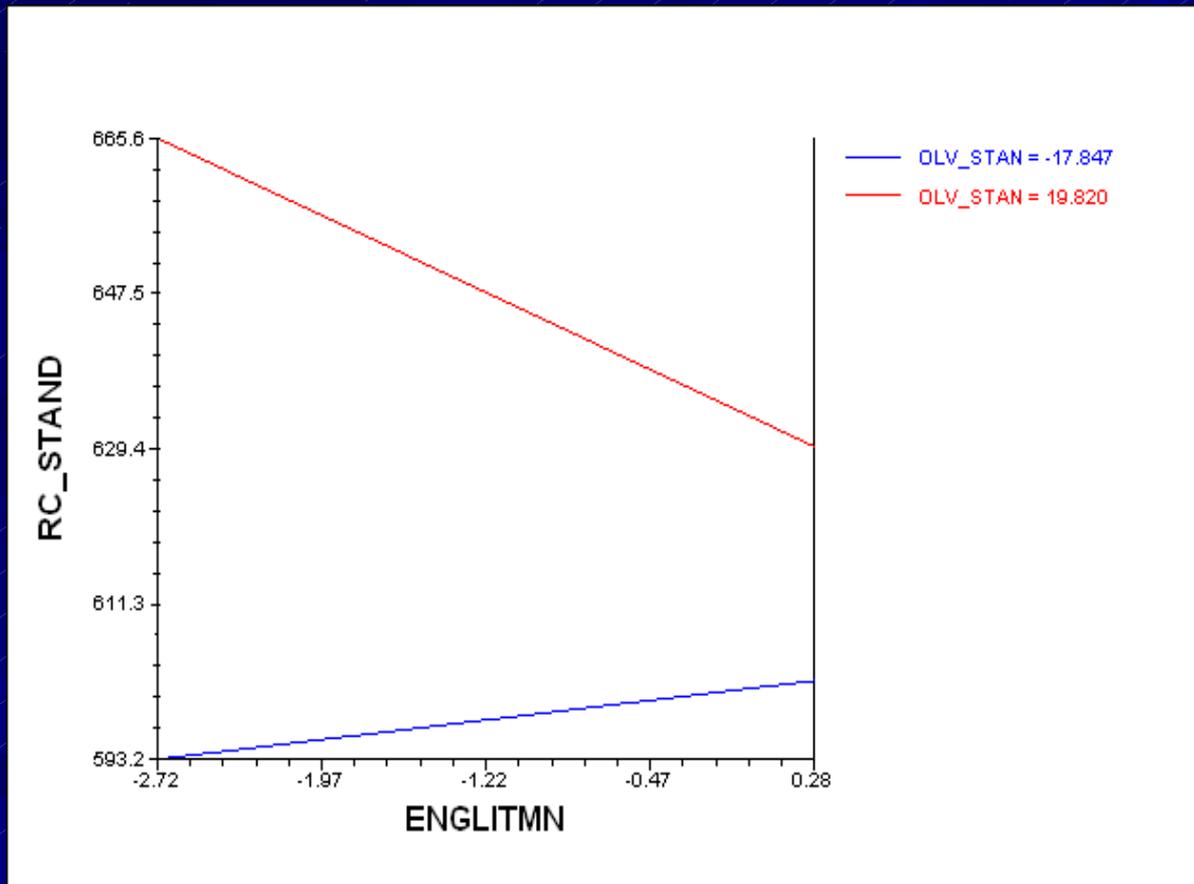
### – VOC x TMCF

- Students with stronger fall VOC scores demonstrated stronger RC scores than did students with weaker fall VOC falls

### – Vocabulary x Engagement (see slide)

# Vocabulary x Engagement Grade 3

(A graph illustrating that students low in vocabulary, grow more in RC in high engagement classrooms while students high in vocabulary grow less in RC in high engagement classrooms. For every minute spent in classrooms below mean in engagement, Reading Comprehension scores generally went down .04 pts



# Child-Instruction Interactions in Early Reading: Examining Causal Effects of Individualized Instruction

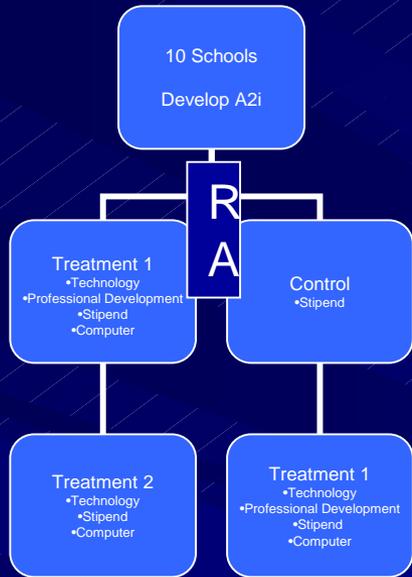
## The Individualizing Student Instruction Project

IES, NICHD, World Class Schools

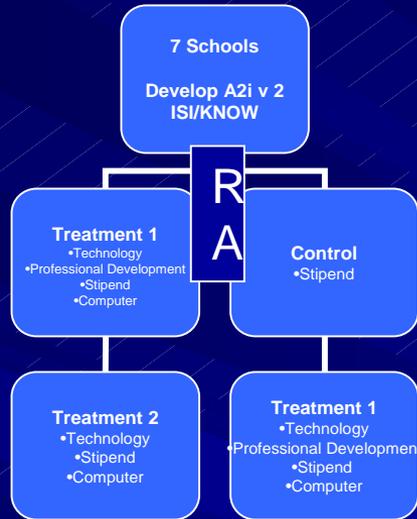


# Research Questions

- How well are teachers able to individualize instruction using research recommended amounts and types of instruction?
  - Individualized instruction
- Does individualizing student instruction predict stronger student reading outcomes?
- Is there a dosage effect? Does teaching the recommended amounts more precisely predict stronger student outcomes?



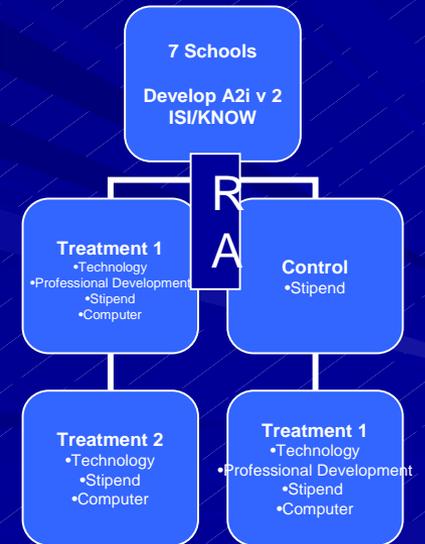
2004-2005



2005-2006

2006-2007

2007-2008



2008-2009

2009-2010

# Schools

Table representing schools with treatment teachers and control teachers, and their total number of classrooms. Core Curriculum is A when reading is first, and B otherwise. % of students on FARL decreases when reading isn't first.

<i>School</i>	<i>Treatment School?</i>	<i>Reading First?</i>	<i>Total number first grade classrooms</i>	<i>Core Curriculum</i>	<i>% of students on FARL</i>
A	No	Yes	3	A	93
B	Yes	Yes	6	B	96
C	No	Yes	6	B	88
D	Yes	Yes	5	A	82
E	No	Yes	5	B	57
F	Yes	No	4	B	69
G	Yes	No	5	B	67
H	No	No	7	B	37
I	No	No	6	B	24
J	Yes	No	5	B	29

**22 treatment teacher and 25 control teachers**

**616 children**

# Procedures

- Pre-post assessment
  - Students assessed 3 times during the school year – fall, winter, and spring
- Classroom observation
  - 3 times per year – fall, winter, and spring
  - Video-taped
- Compare results of treatment and control groups
  - Instruction
  - Student outcomes
  - Dosage

# Assessments

## ■ Fall

- Woodcock Johnson III
  - Letter-word identification
  - Picture Vocabulary
  - Passage Comprehension
  - Academic Knowledge
  - Writing fluency
- DELV
- Head to toes

## ■ Winter

- Letter-word identification
- Picture Vocabulary

## ■ Spring

- Repeat Fall



*(picture of boy using writing)*

# The Intervention

## ■ Instruction

- Dedicated and uninterrupted language arts block of at least 90-120 minutes
- Conceptualize instruction multi-dimensionally
  - TM Instruction in small groups or individually using homogenous skill based groups
  - Attending to the assessed skill levels of the group
- Provide A2i algorithm recommended amounts\*\*\*

## ■ Professional Development

- 2 workshops and monthly school meetings
- Classroom-based support bi-weekly

# A2i Software

- Uses the algorithms from our research backwards
  - We know how well we want students reading in the spring
    - Grade level or 1 school-year growth
  - We assess children's vocabulary and letter-word reading skills in the fall
- A2i Computes amounts of
  - TM-CF and CM-MF
- Recommends homogeneous ability groups
- Embedded in planning software
- Feedback on students' assessed progress

# Classroom View

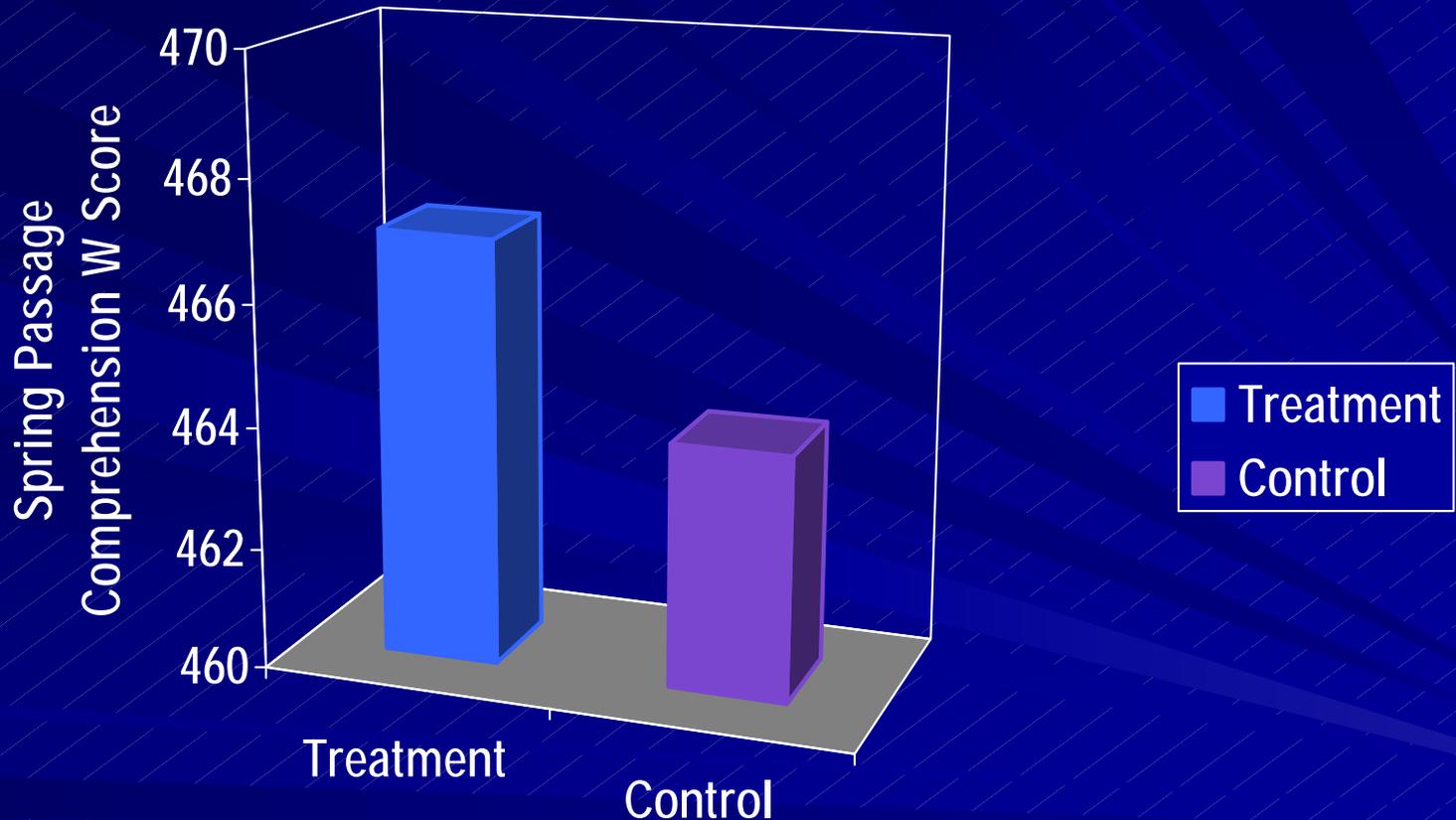
School: Ramapo HS  
Classroom: Mr. Demo's Classroom

	Teacher Managed		Child Managed		Group	
	Meaning-Focused	Code-Focused	Meaning-Focused	Code-Focused	Recommended	Assigned
<b>Group 1</b>						
Connor, Keegan	19	41 +	15	15	1	1
Pittman, Betty	19	33	15	15	1	1
<b>Recommended Minutes</b>	20	35	15	15		
<b>Group 2</b>						
Gershwin, Geoff	19	26	26	15	2	2
Rushing, Maurice	19	27	24	15	2	2
<b>Recommended Minutes</b>	20	25	25	15		
<b>Group 3</b>						
Elam, Jordan	19	24	22	15	3	3
Hostetter, Albert	19	24	21	15	3	3
Stimer, Gary	19	23	15	15	3	3
<b>Recommended Minutes</b>	20	25	20	15		
<b>Group 4</b>						
O'Connell, Dorothy	19	23	20	15	4	4
Valdez, Adriana	19	20	20	15	3	4
<b>Recommended Minutes</b>	20	20	20	15		
<b>Group 5</b>						
Marcus, Demario	19	20	24	15	4	5
Roberts, Terry	19	22	26	15	5	5
Russell, Elizabeth	19	21	23	15	5	5
<b>Recommended Minutes</b>	20	20	25	15		

[Update](#)  
[Reset to Recommended Groupings](#)

# HLM - Treatment versus Control Student Reading Comprehension Outcomes

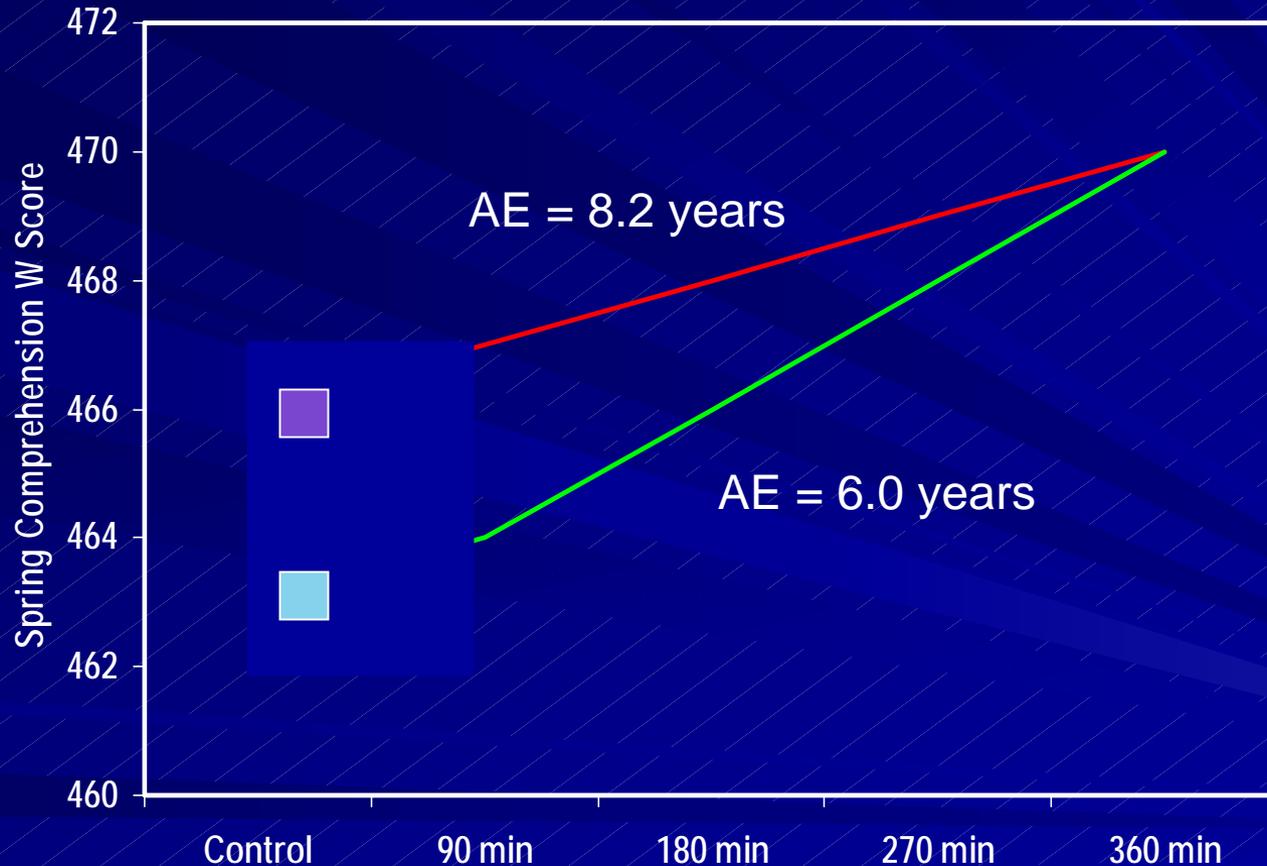
(Chart showing the Mean scores controlling for fall vocabulary, passage comprehension, letter-word reading, curriculum, FARL, and Reading First status. 464 = GE 1.8, 468 = GE 2.0, n = 616 students)



Mean scores controlling for fall vocabulary, passage comprehension, letter-word reading, curriculum, FARL, and Reading First status. 464 = GE 1.8, 468 = GE 2.0, n = 616 students

# A2i Use and Reading Comprehension

(Chart showing the Mean scores controlling for fall vocabulary, passage comprehension, letter-word reading, curriculum, FARL, and Reading First status. 464 = GE 1.8, 468 = GE 2.0, n = 616 students)



HLM fitted growth curves controlling for fall vocabulary, letter-word reading, curriculum, FARL, and Reading First status. 464 = GE 1.8, 468 = GE 2.0,

# But is it the child X instruction interactions?

- Precise amounts provided to each child should predict reading outcomes
- We coded the classroom observation videos at the child level
  - Stratified students by LW fall score and randomly selected 4 from high, middle, and low reading score groups
    - N = 464 students in 47 classrooms
  - Any activity during the dedicated language arts block that lasted 15 seconds or longer was coded
    - Management (TM, TCM, CM)
    - Grouping (Whole class, small group, etc.)
    - Content (Text reading, phonological awareness)

# ISI Coding Scheme

## Child-managed Pair

### 4.1. Literacy Codes:

#### 4.1.2. Phoneme Awareness

##### 4.1.3. Syllable Awareness

##### 4.1.4. Morpheme Awareness

##### 4.1.5. Onset/Rime Awareness

##### 4.1.6. Word ID/Decoding

##### 4.1.7. Word ID/Encoding

##### 4.1.8. Fluency

##### 4.1.9. Print Concepts

##### 4.1.10. Oral Language

##### 4.1.11. Print Vocabulary

##### 4.1.12. Reading Comprehens

##### 4.1.13. Text Reading

##### 4.1.14. Writing

##### 4.1.15. Library

##### 4.1.16. Assessment

#### 4.1.2. Phoneme Awareness

##### 4.1.2.2. Blending

##### 4.1.2.3. Elision/Initial

##### 4.1.2.4. Elision/Final

##### 4.1.2.5. Elision/Vowel

##### 4.1.2.6. Elision/Medial

##### 4.1.2.7. Substitution/Initial

##### 4.1.2.8. Substitution/Final

##### 4.1.2.9. Substitution/Vowel

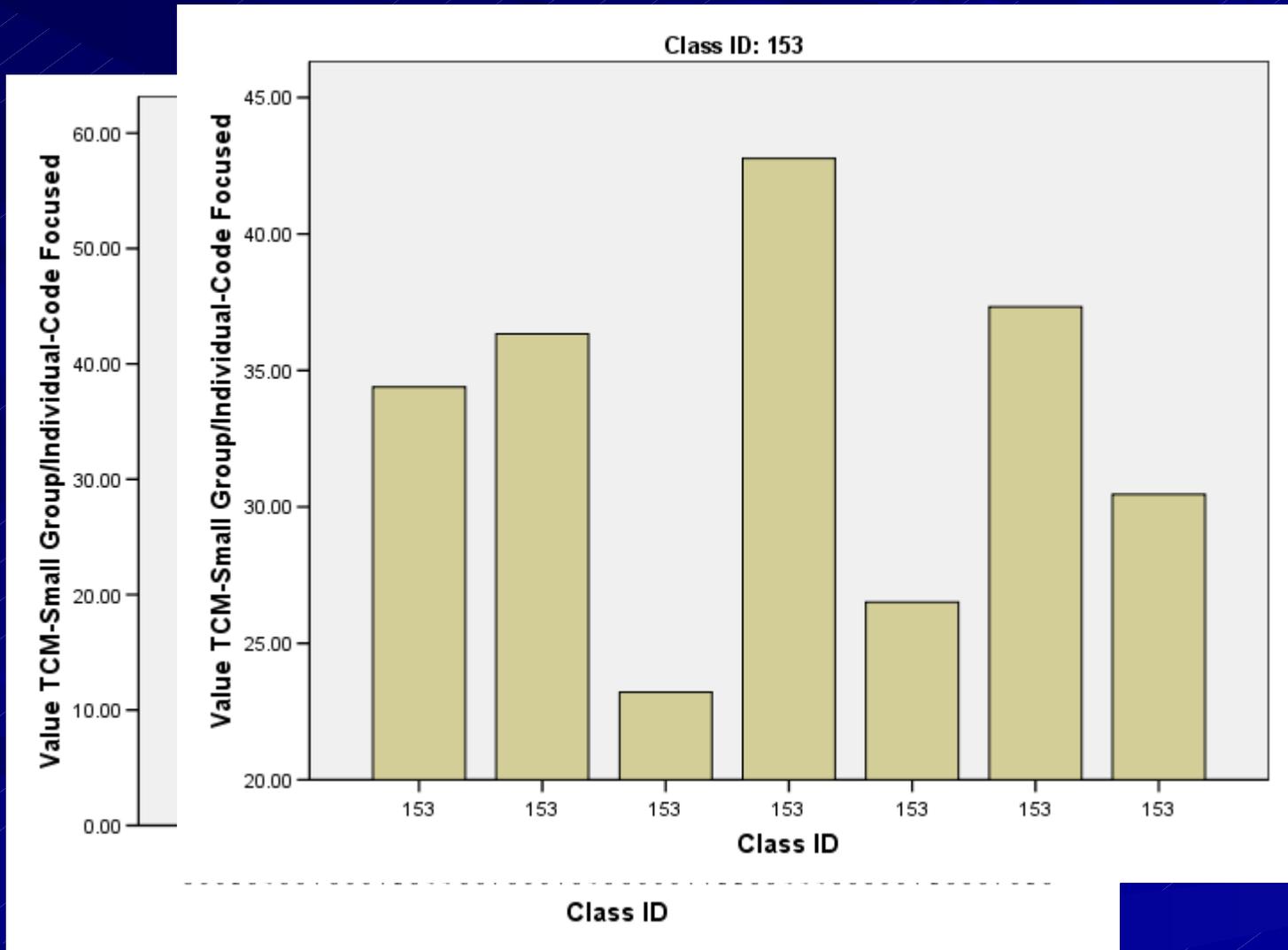
##### 4.1.2.10. Substitution/Medial

##### 4.1.2.11. Segmenting/Counting

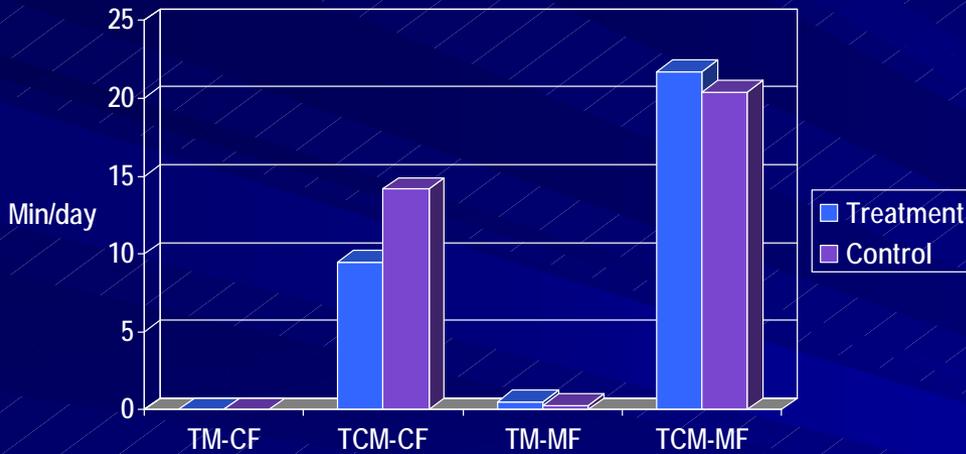
RECORD	TIME	ACTOR	BEHAVIOR	MODIFIER 1	MODIFIER 2
10	00:00:21	Derek	Talk	Child	
11	00:00:22	Derek	PlayNois		
12	00:00:32	Jerry	Element		
13	00:00:43	Derek	Null		
14	00:00:43	Jerry	Pedal		
15	00:00:53	Jerry	PlayNois		
16	00:01:01	Jerry	Look		
17	00:01:21	Jerry	Null		
18	00:01:23	Roger	Look		
19	00:01:34	Roger	Chase	Child	
(mark)	00:01:34				
21	00:01:39	Roger	Talk	Child	
22	00:01:46	Roger	Chase	Child	
23	00:01:52	Roger	Look		
24	00:02:01	Roger	Null		
25	00:02:03	Sean	Watch		
26	00:02:41	Sean	Null		
27	00:02:44	Edward	Look		
28	00:03:14	Edward	VisualCo	Child	
29	00:03:20	Edward	Watch		

Start	00:00:00
Current	00:00:32
End	----
Elapsed	00:00:32
Observed	00:00:32
Maximum	----
Remaining	----
Sample	----

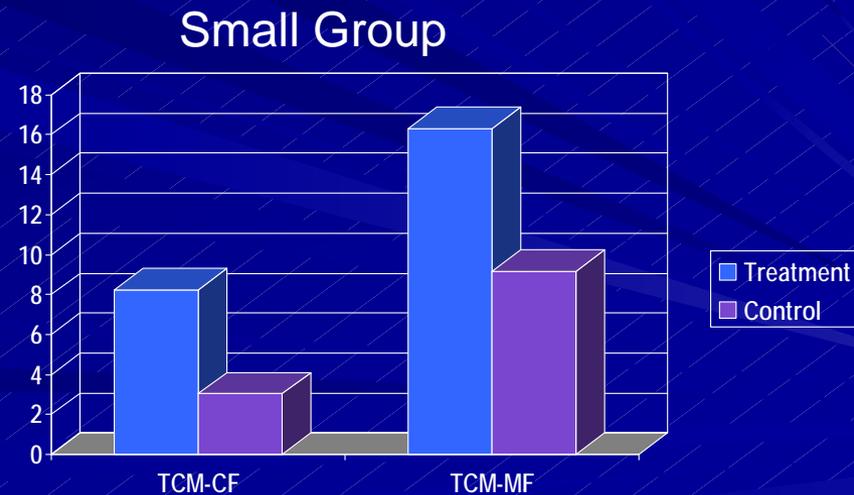
# TCM Small-group Code-focused



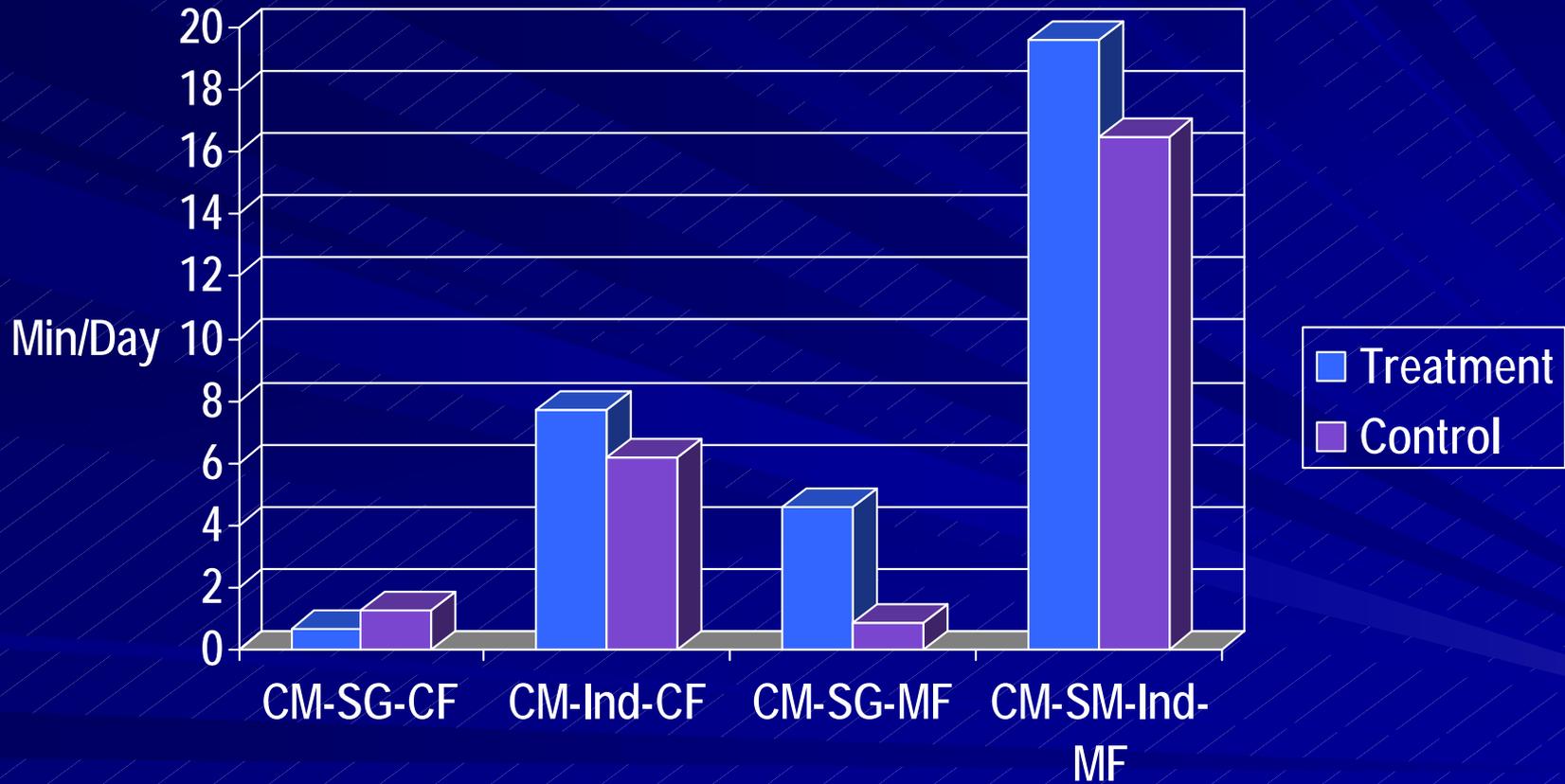
# Teacher-Managed Instruction- Winter



Whole Class



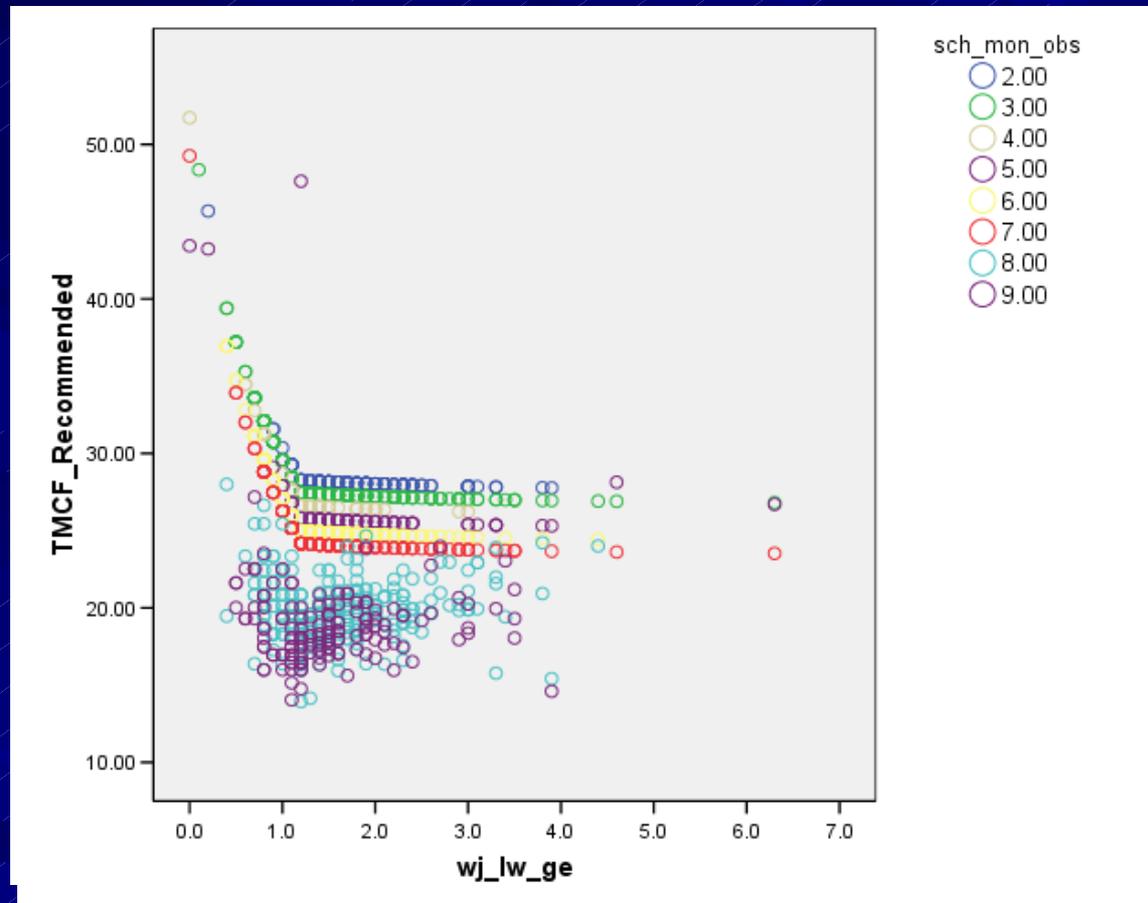
# Child Managed Instruction



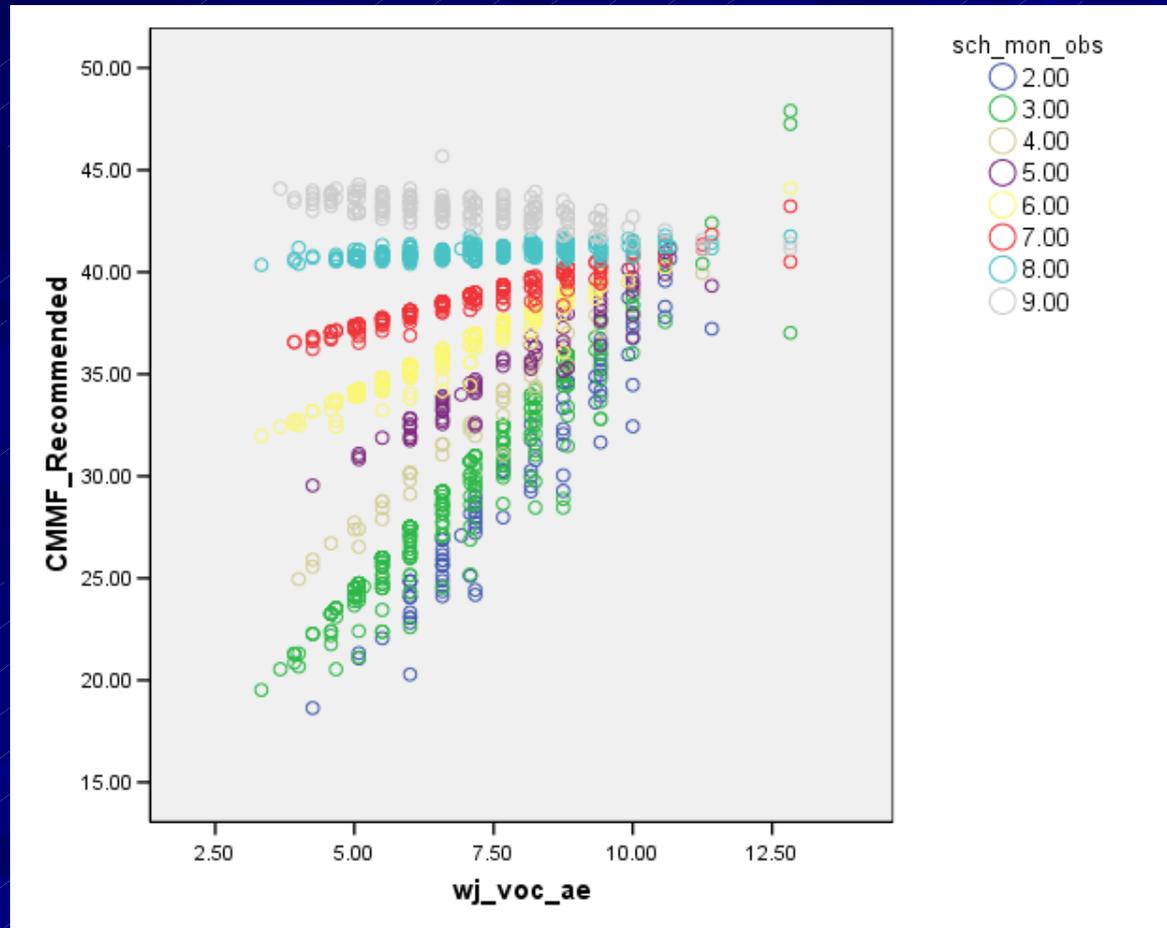
# Computing Distance from Recommendation (DFR)

- M = month of observation (August = 0).
- Target Outcome = fall LW\_ge + .9, but may not be less than 2.1
- TCMCF algorithm:
  - $TMCFa = ((\text{Target} - (.2 * LW\_ge)) / (.05 + (.05 * LW\_ge))) + 13.$
  - $TMCM-CF\_Recommended = (TMCFa - (.82 * M)).$
- $DFR = \text{abs}(\text{actual amount} - A2i \text{ recommended amount})$

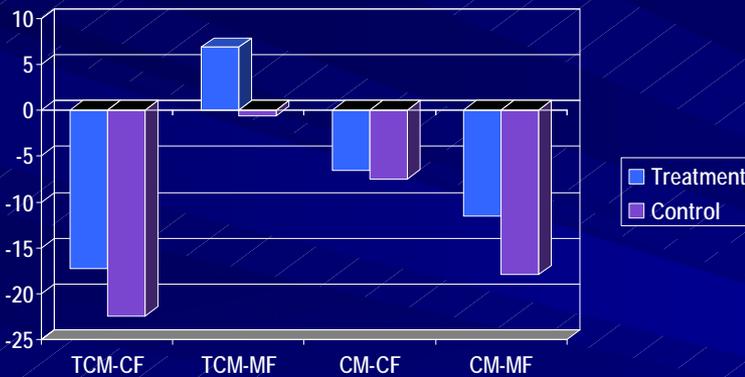
# Algorithm Results TM-CF



# Algorithm Results for CM-MF

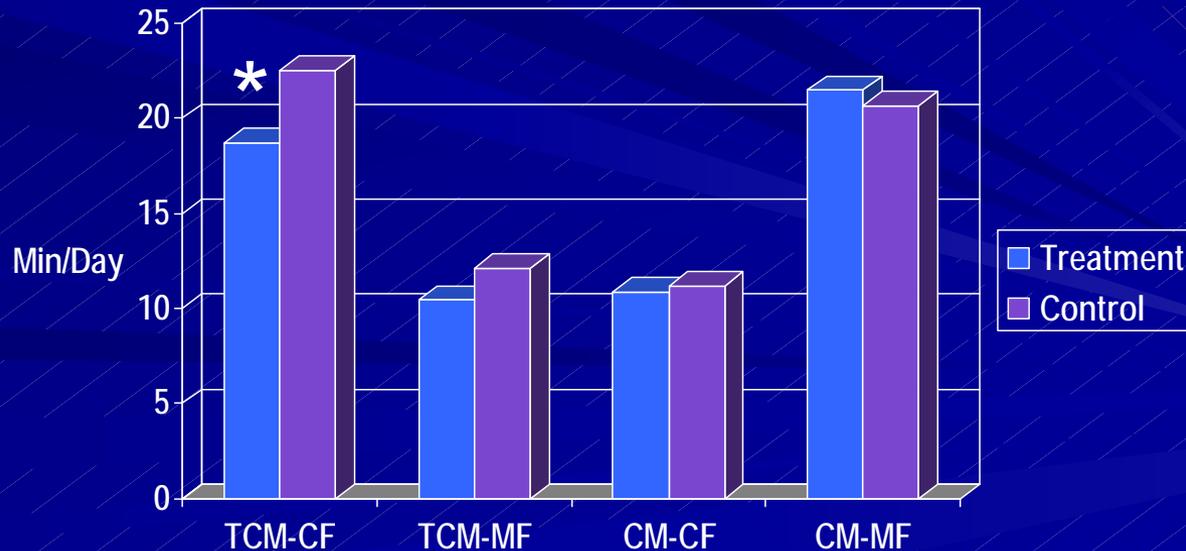


# Observed Winter – A2i recommended amounts



Simple Differences

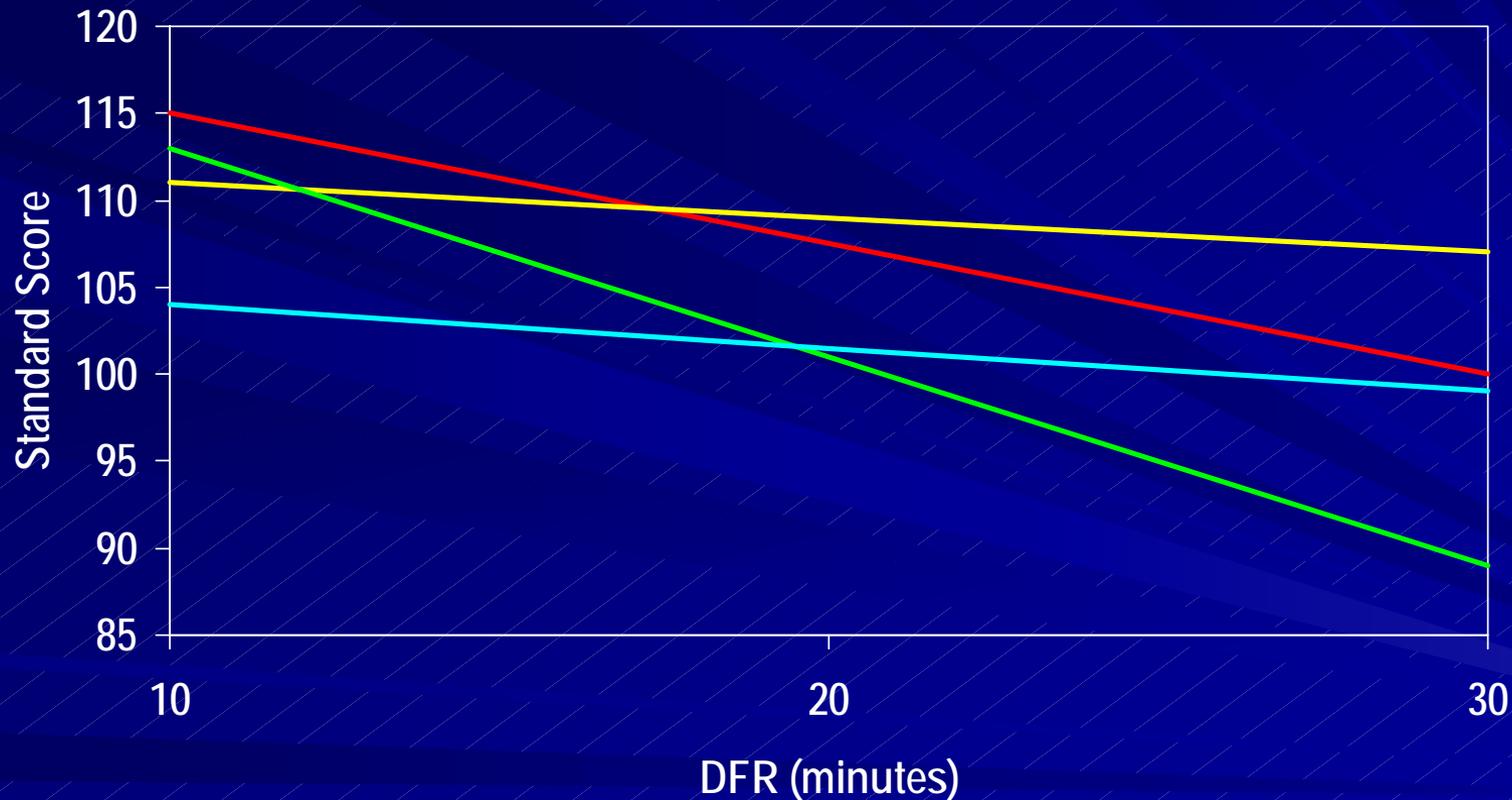
Distance From Recommendation Absolute Values



# HLM - DFR predicting student outcomes

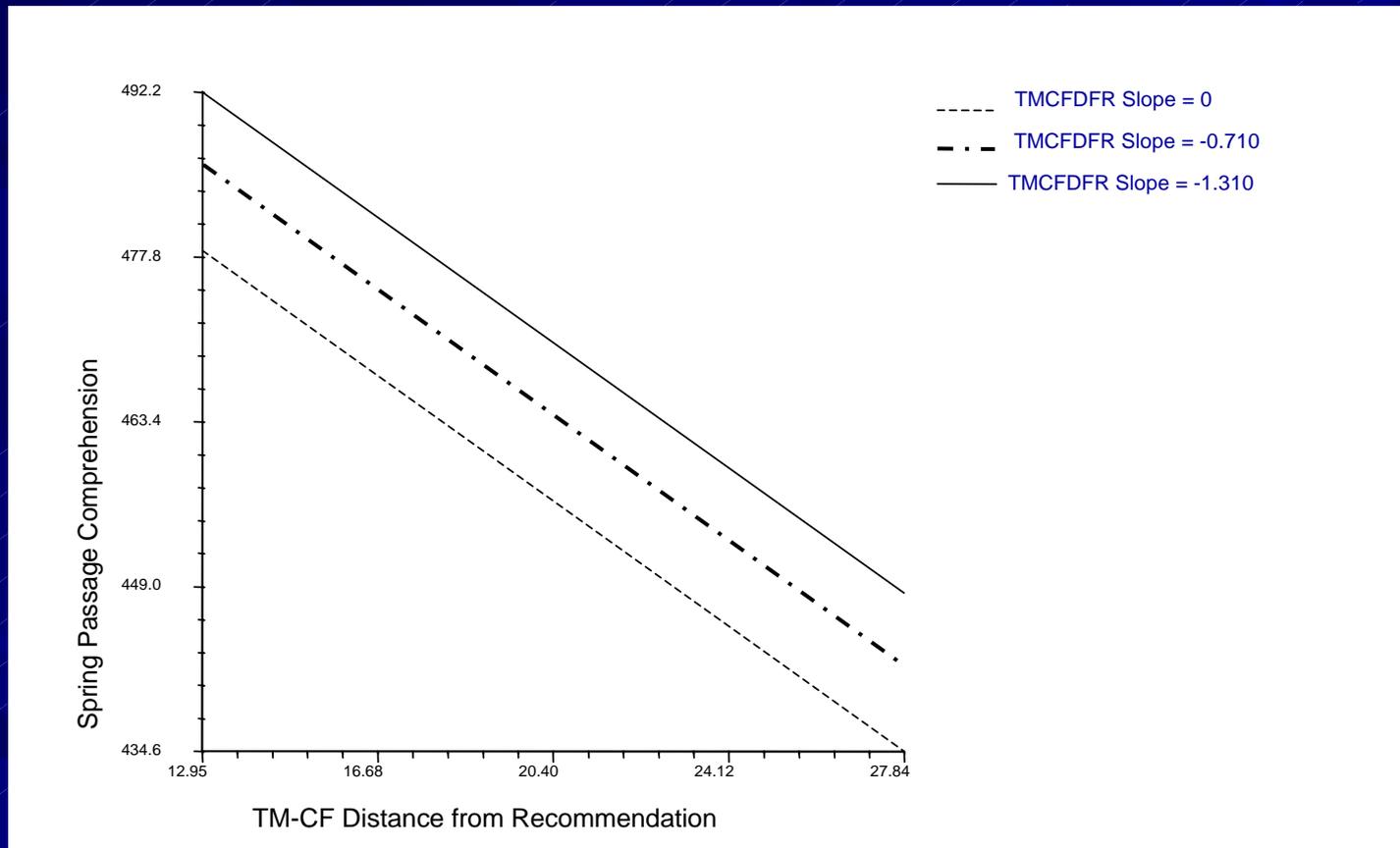
- Used HLM to compute fitted mean instruction across fall, winter and spring
- Except for TMMF, total amounts of instruction did not predict student spring outcomes
  - WJ Passage Comprehension
  - WJ Letter-word identification
  - Controlling for initial status and school percentage of children on free or reduced price lunch
- More time in TMMF predicted stronger student growth in Passage Comprehension W score
  - Coefficient = .31,  $p = .018$
- Greater A2i use predicted lower student DFRs

# Distance from Recommendations (SS)

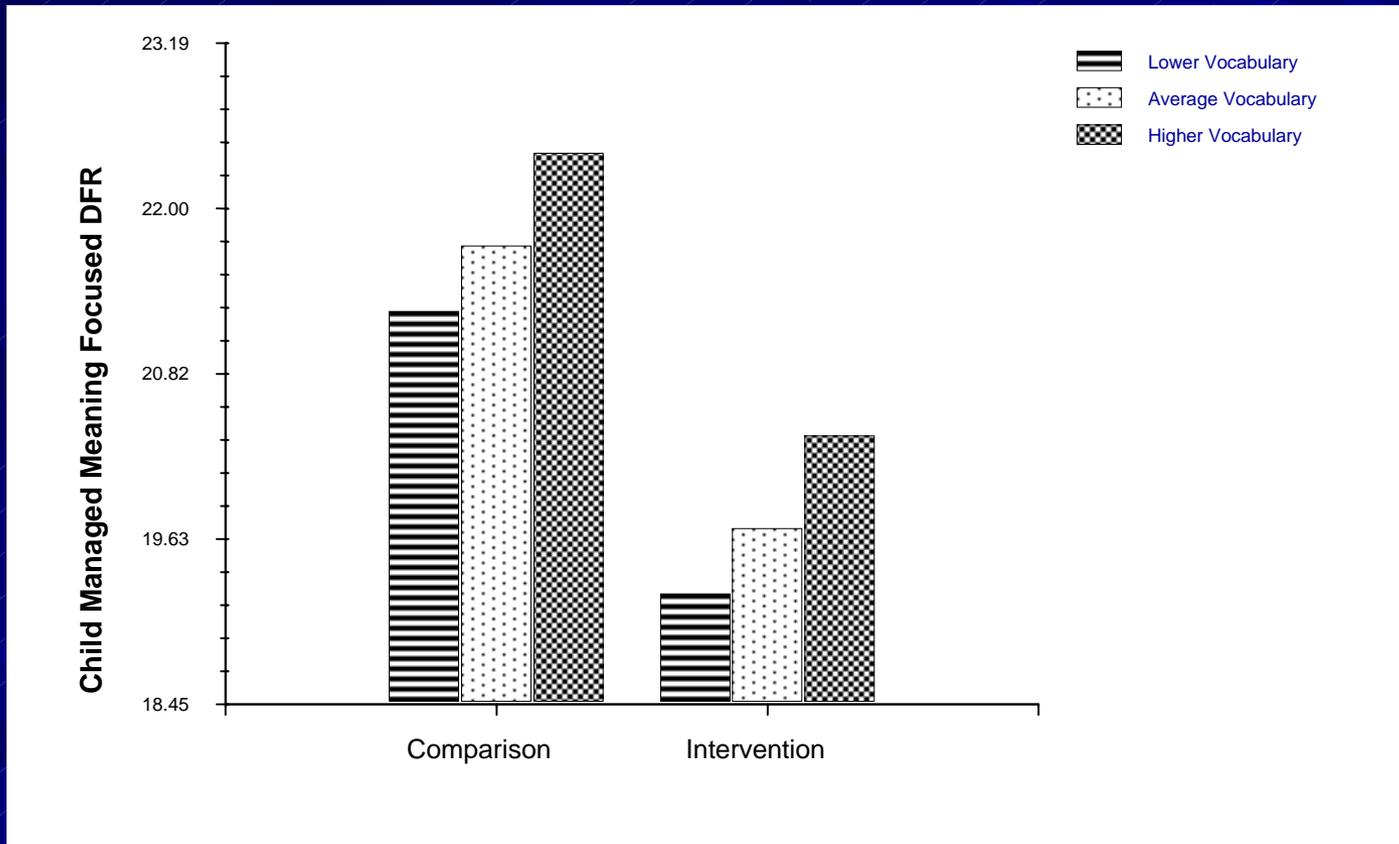


# Improving TMCDFR

(This chart illustrates three trend lines labeled TMCDFR Slope = 0, TMCDFR Slope = -0.710, and TMCDFR Slope = -1.310. The trend lines are plotted on a vertical axis of Spring Passage Comprehension and a horizontal axis of TM-CF Distance from Recommendation.)



# DFR and fall Vocabulary



# Summary

- In general, treatment teachers were more likely to individualize student instruction
  - Greater use of small groups
  - Significantly more precise TMCF and CMMF DFR scores
    - Variability in fidelity of implementation
- Precision or lower DFR scores positively predicted student reading outcomes – controlling for fall status
- Improving TMCF fidelity associated with stronger outcomes
- Children with strong vocabulary scores were least likely to receive A2i recommended amounts
  - Consider the schools in the study

# Implications

- Taken together, child X instruction interactions appear to be an underlying causal mechanism for the varying achievement outcomes seen in classrooms
- What is high quality and effective for one child may be less effective for another with different skills and knowledge
  - And we can predict this at least to some extent
  - Explicit Regimes (Raudenbush, 2007)
  - Reliable, valid, and sensitive progress monitoring assessments
- Understanding children's language skills may contribute to designing and implementing more effective instruction

# Links between Language and Literacy

- Intricate and sometimes counterintuitive
- Less specificity than anticipated
- Theories of language and literacy learning that fully integrate the child's role and contribution and are also outcome focused

# Implications for Practice

- Multiple sources of influence
- Building Knowledge appears to build language and literacy skills
  - E.g.,
- Explicit instruction in vocabulary
- Many implicit strategies also build language skills
  - Play in preschool
  - Science activities
  - Learning to read

# In the classroom

- How teachers and students interact
  - Open ended questions and wh-questions
    - Avoid yes-no questions
  - Conversations
  - Explicit focus on new words
  - Reading aloud and discussing books above students' reading level that have more complex syntax and vocabulary than decodable books

# We need more research!

- Moving beyond vocabulary and examining the role of the other aspects of language
  - Metalinguistic awareness
  - Morphosyntactic skills
    - Gleason suggests that we rely on syntax to help us figure out what words mean
  - Sociocultural aspects of language
    - Contrasting AAE and school language
    - English language learners

# Thank you and Questions

[cconnor@fcrr.org](mailto:cconnor@fcrr.org)

(picture of girl in classroom writing)



# 60 Months

- Speech should be completely intelligible, in spite of articulation problems
- Should have all vowels and the consonants, m,p,b,h,w,k,g,t,d,n,ng,y
- Should be using fairly long sentences and should use some compound and some complex sentences
- Speech on the whole should be grammatically correct
- Uses many descriptive words spontaneously-both adjectives and adverbs
- Knows common opposites: big-little, hard-soft, heavy-light, etc
- Has number concepts of 4 or more & can count to ten
- Should be able to repeat sentences as long as nine words
- Should be able to define common objects in terms of use (hat, shoe, chair)
- Should be able to follow three commands given without interruptions
- Should know his or her age
- Should have simple time concepts: morning, afternoon, night, day, later, after, while, tomorrow, yesterday, today

# 12 Months

- Uses one or more words with meaning (this may be a fragment of a word)
- Understands simple instructions, especially if vocal or physical cues are given
- Practices inflection
  - jargon
- Is aware of the social value of speech

# Literacy Minutes Manager (Monday)

**School:** Ramapo HS  
**Classroom:** Mr. Demo's Classroom  
**Status:** Active

Group Breakdowns	Teacher Managed		Child Managed		Summary
	Meaning-Focused	Code-Focused	Meaning-Focused	Code-Focused	
Group 1	20/15 +	45/45 +	35/30 +	25/15 +	125/105 +
Group 2	20/15 +	30/30 +	35/30 +	25/15 +	110/90 +
Group 3	20/15 +	25/25 +	45/35 +	15/15 +	105/90 +
Group 4	0/15	0/25	0/35	0/15	0/90
<b>Total Assigned/Rec.</b>	<b>60/60 +</b>	<b>100/125</b>	<b>115/130</b>	<b>65/60 +</b>	<b>340/375</b>

Timelines	Time Slots								Child-Managed Assigned/Rec.	Teacher-Managed Assigned/Available
	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00		
Demo, Al	W	M M M C C C C C			W C C C				165/180 <a href="#">Edit</a>	
zz1, Volunteer				C C					20/120 <a href="#">Edit</a>	
Group 1			C M		M C	M			60/45 +	
Group 2		C	M		C M M				60/45 +	
Group 3		C	M		M M	M			60/50 +	
Group 4									0/50	
<b>Total Assigned/Recommended</b>									<b>180/190</b>	
<b>Total Assigned/Available</b>									<b>185/300</b>	
<b>Total Available Minutes/Recommended</b>									<b>300/185 +</b>	