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

- Fred Morrison
- Barry Fishman
- Chris Schatschneider
- ISI Team
- Teachers and students
- US Department of Education IES
- National Institute of Child Health and Human Development
- World Class Schools
- James Campbell & Associates
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.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

http://www.ldonline.org/article/6313
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", "noon time"
- 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**

Department of Otolaryngology - Head & Neck Surgery
University of Michigan Hospitals
(313) 936-8013

**HEARING AID EVALUATION**

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<th>AIDED = A</th>
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<table>
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**FREQUENCY IN HERTZ**

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**RECOMMENDED HEARING AID**

**SETTINGS**

**EAR**

**EARMOLD**

**COMMENTS:**

5/14/03

*Signature*
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.

Connor (2006) JDSDE
Christopher’s Language and Literacy Development (5 years at CI)

Graph representing a steadily progressive graph of Christopher’s language skills vs. the number of years with the implants' use.
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

Example of a graph representing a series of lines that represents the vocabulary growth curves in different groups: Group A1, Group A2, Group B, Group C, Hearing Aids, and Normal Hearing.
Graph representing groups of students and their vocabulary vs. their age and hearing status.

- Group A1
- Group A2
- Group B
- Group C

Vocabulary (PPVT RS)

Chronological Age in Years

Groups:
- Normal Hearing
- Hearing Aids
Intricate Links between Language and Literacy Development
Language Impairments

Catts, Fey, Tomblin, & Zhang, 2002

Graph representing 2nd grade vs. 4th grade in the areas of SLI, NLI, and control.
Graph representing 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).

- Pre-K: Oral Language (OL)
- Kindergarten (Knd): Code Related (CR)
- First Grade: Reading (R)
- Second Grade: Reading Comp (RC)
- Third & Fourth Grade: Accuracy (RA)
Reading is a multifaceted skill, gradually acquired over years of instruction and practice.

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

**Skilled Reading**
- fluent coordination of word reading and comprehension processes

- increasingly strategic
- increasingly automatic
Multiple Sources of Influence

- Home
- Preschool
- School
  - Teacher quality
  - Classroom instruction
- Community
  - SES
Sources of Influence on Student Achievement

Before Children Get to School

- **Dimensions of Parenting and home environment**
  - Family learning environment
  - Warmth/Sensitivity
  - Control/Discipline

- **Preschool and Childcare**
  - Amount
  - Quality

Child characteristics & development

- **Child characteristics & development**
  - Language
  - Literacy
  - Motivation
  - Self-Regulation

Sociocultural Factors

- **Sociocultural Factors**
  - Socioeconomic disadvantage
  - Parent education
  - Income
  - Race/Ethnicity

Once Children Start School

Children’s Ongoing Achievement

- **Dimensions of Classroom Environment**
  - Teach-Child Interactions
  - Peer Interactions/tutoring
  - Gender Assumptions
  - Warmth/Sensitivity
  - Control/Discipline
  - Instructional practices

- **Teacher Qualifications**
  - Teachers’ Education
  - Teachers’ Experience
  - Teacher Credential

Bronfenbrenner, 1986
Multiple Sources of Influence on Children’s Development

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 axes are listed as Passage Comprehension W and Total AAE score. There is a red circle around the AAPERCEN = 21 Total AAE score where both line trend much higher than the line for AAPERCEN = 44 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
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

<table>
<thead>
<tr>
<th>Code Focused</th>
<th>Teacher Managed</th>
<th>Child Managed</th>
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</thead>
<tbody>
<tr>
<td><strong>Alphabet activities</strong></td>
<td><strong>Spelling</strong></td>
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<tr>
<td><strong>Letter Sight-Sound</strong></td>
<td><strong>phonics worksheets</strong></td>
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<tr>
<td><strong>Phonological Awareness</strong></td>
<td><strong>handwriting activities</strong></td>
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</tr>
<tr>
<td><strong>Onset-rime, blending and segmenting</strong></td>
<td><strong>decoding activities</strong></td>
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<tr>
<td><strong>Word Segmentation</strong></td>
<td><strong>Student Buddy Reading</strong></td>
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<table>
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<th>Meaning Focused</th>
<th>Teacher Managed</th>
<th>Child Managed</th>
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<tr>
<td><strong>Vocabulary</strong></td>
<td><strong>Sustained Silent Reading</strong></td>
<td></td>
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<tr>
<td><strong>Teacher Read Aloud</strong></td>
<td><strong>Reading Comprehension worksheets</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Student Read Aloud, Choral Group Writing, Writing Instruction, Model Writing</strong></td>
<td><strong>Student Individual Writing</strong></td>
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<tr>
<td><strong>Listening Comprehension Discussion</strong></td>
<td><strong>Pair writing</strong></td>
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</table>
Preschool Instruction can enhance language growth

Teacher Facilitated Play

![Graph showing the relationship between Spring Vocabulary Score and Play (in minutes). The graph illustrates the trend lines of Higher fall Vocabulary and Lower fall Vocabulary.](image-url)
Preschool Instruction can enhance language growth

Teacher managed meaning focused

(The graph features a vertical axis of Spring Vocabulary Score and a horizontal axis of Teacher Managed Meaning Focused (in minutes). The graph illustrates the trend lines of Higher fall Vocabulary and Lower fall Vocabulary.

- WJPVWF = 460
- WJPVWF = 474

Teacher Managed Meaning Focused (in minutes)
Preschool Instruction can enhance language growth

Teacher managed code focused instruction

The graph illustrates the trend lines of Higher fall Vocabulary and Lower fall Vocabulary. The vertical axis represents Spring Vocabulary Score and the horizontal axis represents Teacher Managed Code Focused Instruction (TCM-CF-cl). The graph shows the impact of Teacher Managed Code Focused Instruction on vocabulary growth.

- Higher fall Vocabulary
- Lower fall Vocabulary

Key points:
- WJPVWF = 460
- WJPVWF = 474
## Science Instruction in 2nd Grade

<table>
<thead>
<tr>
<th>Science Activity</th>
<th>Word Reading</th>
<th>Vocabulary</th>
<th>Background Knowledge</th>
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<td>Language Arts</td>
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This chart graphs the trend lines for Higher Fall Vocabulary, Average Fall Vocabulary, and Lower Fall Vocabulary using the vertical axis of Spring Background Knowledge and the horizontal axis of CM Activities (Minutes per day). The chart also includes three linear equations:

- Blue line: $PPVT2A = -8.011$
- Red line: $PPVT2A = 2.989$
- Green line: $PPVT2A = 9.989$
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 TMCF amount

Percentiles from Norm Tables
Grade Equivalent 1.9 = Raw Score 34.5
Child-Instruction Interactions – Fall Vocabulary by CMMF amount and slope

![Graphs showing the trend lines of CMMF minutes of instruction per day and the CMMF slope (minutes per month).](image)

- **Graph 1:**
  - X-axis: CMMF minutes of instruction/day
  - Y-axis: Spring Decoding score
  - Lines: Vocabulary 90th (solid), Vocabulary 25th (dashed)

- **Graph 2:**
  - X-axis: CMMF slope (minutes per month)
  - Y-axis: Spring Decoding score
  - Lines: Vocabulary 90th (solid), Vocabulary 25th (dashed)
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

The graph illustrates that students with low vocabulary scores earned higher RC scores in high engagement classrooms while students with high vocabulary scores earned higher RC scores.
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)
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 points.
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?
## Schools

Table representing schools with treatment teachers and control teachers in reading, total number first grade classroom, Core curriculum, and present of students on FARL.

<table>
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<th>School</th>
<th>Treatment School?</th>
<th>Reading First?</th>
<th>Total number first grade classrooms</th>
<th>Core Curriculum</th>
<th>% of students on FARL</th>
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</table>

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. Dano's Classroom

### Teacher Managed

<table>
<thead>
<tr>
<th>Group</th>
<th>Meaning-Focused</th>
<th>Code-Focused</th>
<th>Recommendation</th>
<th>Assigned</th>
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### Child Managed

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### Group

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<th>Recommended Minutes</th>
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**Update**

**Reset to Recommended Groupings**
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)
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 Comprehension
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
TCM Small-group Code-focused

Class ID: 153

Value TCM-Small Group/Individual-Code Focused

Class ID
Teacher-Managed Instruction - Winter

(Two graphs representing the whole class and a small group.)
Child Managed Instruction

[Bar graph representing CM-SG-CF, CM-Ind-CF, CM-SG-MF, and CM-SM-Ind-MF along the x-axis, and Min/Day on the y-axis ranging from 0 to 20. The graph shows a comparison between Treatment and Control groups for each category.]
Computing Distance from Recommendation (DFR)

- $M = \text{month of observation (August} = 0)$.
- Target Outcome = fall $\text{LW}_{\text{ge}} + .9$, but may not be less than 2.1
- TCMCF algorithm:
  - $\text{TMCFa} = (((\text{Target} - (.2 \times \text{LW}_{\text{ge}})) / (.05 + (.05 \times \text{LW}_{\text{ge}}))) + 13$.
  - $\text{TMCM-CF}_{\text{Recommended}} = (\text{TMCFa} - (.82 \times M))$.
- $\text{DFR} = \text{abs (actual amount} - \text{A2i recommended amount})$
Algorithm Results TM-CF
Algorithm Results for CM-MF

![Graph representing through a sequence of red, blue, green, yellow, and purple dots, in a upward slant.](image)
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.
This chart features a vertical axis of Standard Score with a horizontal axis of DFR (minutes). The four individual trend lines charted are TM-CF predicting LW, TM-CF predicting PC, CM-MF predicting LW, and CM-MF predicting PC.
Improving TMCF DFR

The chart illustrates three trend lines labeled TMCF DFR: Slope = 0, TMCF DFR Slope = -0.710, and TMCF DFR 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.
The chart features a vertical axis of Child Managed Meaning Focused DFR with the data in the horizontal axis grouped by Vocabulary level. The comparison and intervention groupings show similar trends in vocabulary levels:

- Lower Vocabulary
- Average Vocabulary
- Higher Vocabulary

Between both groupings, the trends in vocabulary levels remain consistent:

- Comparison: 18.45, 20.82, 22.00
- Intervention: 19.63, 23.19
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

ccconnor@fcrr.org
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

<table>
<thead>
<tr>
<th>Group</th>
<th>Meaning-Focused</th>
<th>Code-Focused</th>
<th>Child Managed</th>
<th>Summary</th>
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<tr>
<td>Group 1</td>
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<td>45/45+</td>
<td>35/30+</td>
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<td>45/35+</td>
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<td>Group 4</td>
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### Timelines

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| Total Assigned/Recommended | 180/190 |
| Total Assigned/Available | 195/300 |
| Total Available Minutes/Recommended | 300/135 |