

## Advances in Progress Monitoring in Early Literacy

Scott McConnell and Alisha Wackerle  
 Research Institute on Progress Monitoring  
 University of Minnesota

Advances in Progress Monitoring: Curriculum-Based Measurement Research & Innovations  
 May 6, 2006

## Key Assumptions and Terms

- We are interested in General Outcome Measures of early literacy
  - Brief, easy to collect, inexpensive
  - Related to long-term outcome
  - Repeatable, and sensitive to growth and intervention
- We are interested in seamless and flexible progress monitoring
  - Assessment of child progress or development over extended period of time with single or empirically related set of measures
- We are interested in increasing alignment, efficiency, and effects from early childhood to elementary school
- We wonder if “early literacy” might be relevant at multiple ages

## Our View of Early Literacy

- Early Literacy is related to, but different from reading
  - Developmental precursors or prerequisites
  - Can have broad focus
    - Language (esp. vocabulary)
    - Phonological Awareness
  - Functionally and empirically, should relate to early reading measures
- Strong relation between “early literacy” and “reading” performance, and measures
- Logic of a “flexible and seamless model” of individual progress monitoring can be applied -- and perhaps be built from existing measures

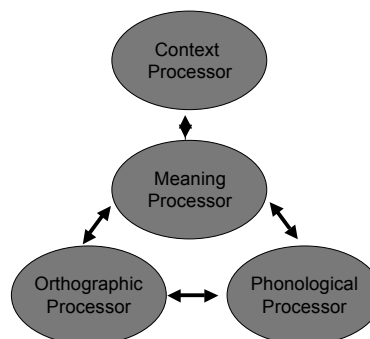
## What is Early Literacy?

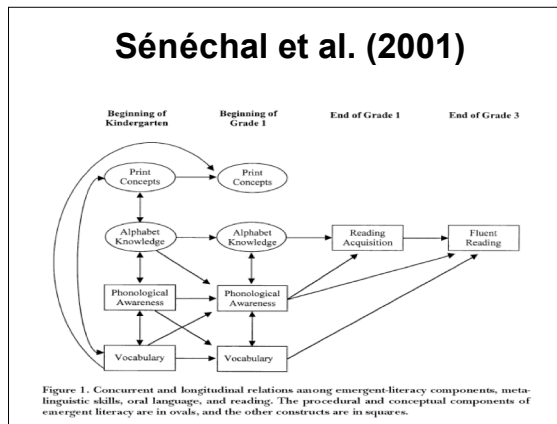
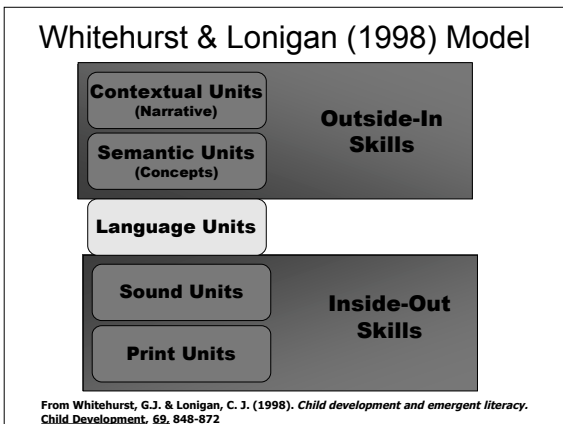
- Language
  - Vocabulary, decontextualized language
- Conventions about print
- Knowledge of letters
- Linguistic awareness
  - Phonemic awareness, metalinguistic skills
- Phoneme-Grapheme correspondence
- Other cognitive factors
- Initial reading

## Three Conceptual Models

- Adams, M. (1990). *Beginning to read: Thinking and learning about print*. Cambridge MA: Massachusetts Institute of Technology Press.
- Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development, 69*, 848-872.
- Sénéchal, M., LeFevre, J.-A., Smith-Chant, B. L., & Colton, K. V. (2001). On refining theoretical models of emergent literacy: The role of empirical evidence. *Journal of School Psychology, 39*(5), 439-460.

## Adams (1990)





- ### Summary of Key Variables in Early Literacy Development
- Language Development
    - Vocabulary
    - Store of Knowledge
  - Phonological Awareness and Analysis
  - Letter and Letter-Sound Correspondence
  - Word Reading
  - Reading Connected Text

- ### Can We Model and Measure Development of Early Literacy?
- Research on Individual Growth and Development Indicators
  - Research on Dynamic Indicators of Basic Early Literacy Skills
  - Research on Curriculum-Based Measures of Reading
    - Word reading
    - Reading connected text
    - Maze reading

- ### Research Questions
1. What are the basic psychometric characteristics of a set of early literacy measures for non-reading students?
  2. To what extent do these measures demonstrate characteristics of general outcome measures, specifically ease of use and sensitivity to growth over short periods of time?
  3. To what extent do these measures relate to one another? Over short term (8 weeks), how do measures predict one another?
  4. Does student performance across these measures demonstrate a sequence of development? What are the empirical connections for two "sequenced" measures?

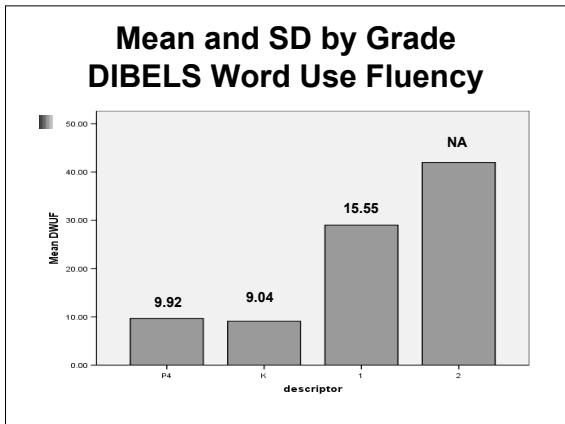
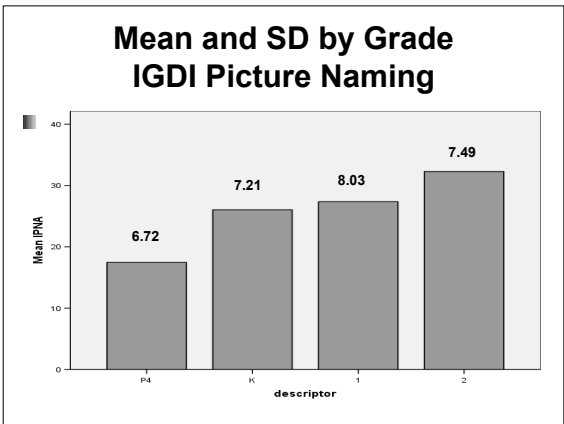
- ### Sample
- Children expected to be on typical trajectory toward development of competent reading skills
  - Preschool
    - "P3" Children two years prior to K entry, n = 2
    - "P4" Children one year prior to K entry, n = 13
  - Elementary
    - Kindergarten n = 49
    - Grade 1 n = 69
    - Grade 2 n = 102

- ### Measures - GOMs of Preschool
- Picture Naming
  - Rhyming
  - Alliteration
  - Blending
  - Letter Identification

- ### GOMs of Early Elementary
- Dibels
    - Phoneme Segmentation Fluency
    - Nonsense Word Fluency
    - Letter-Sound Identification
    - Word Use Fluency
  - Reading
    - Dolch word list reading
    - Curriculum-Based Measure of Oral Reading (passages)
  - Criterion Measure
    - Woodcock-Johnson Word Identification subtest

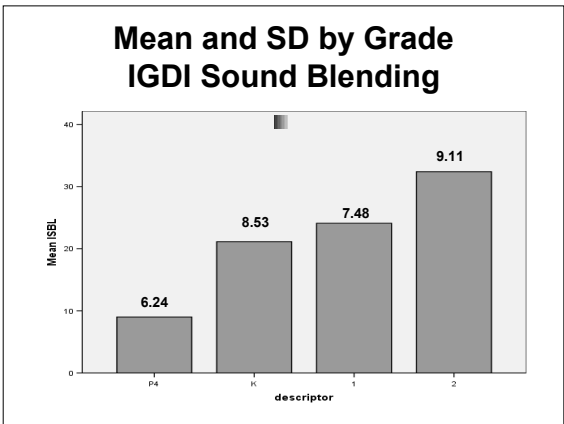
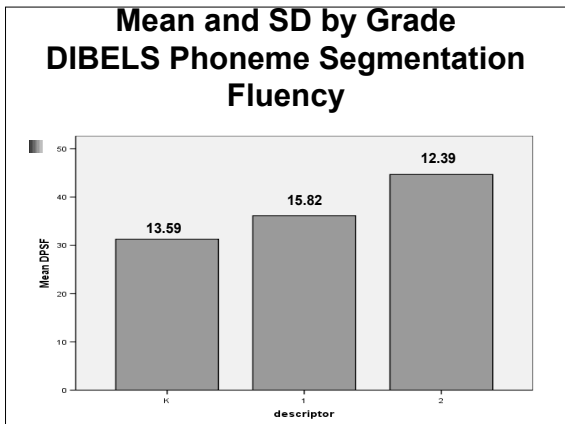
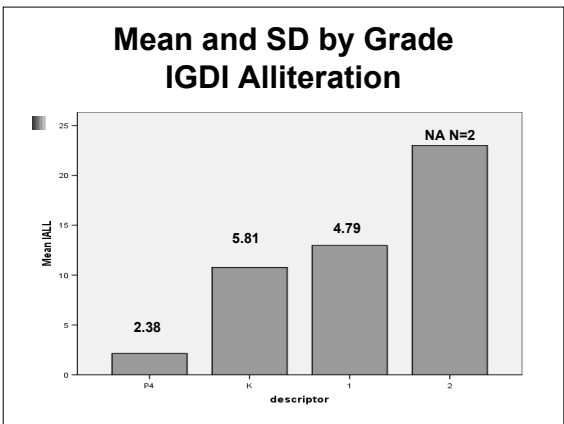
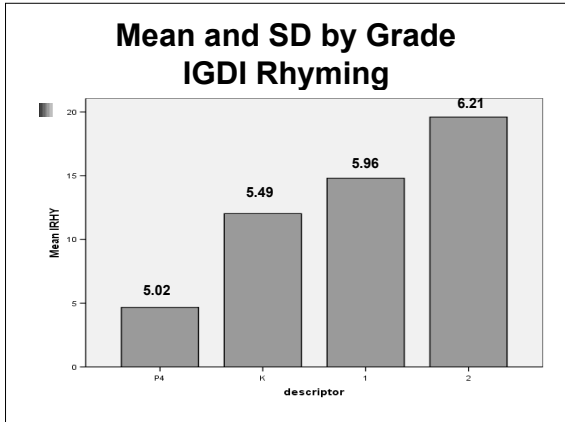
- ### Procedures
- Preschool Sample
    - Data collected in Summer 2005
    - Two assessment occasions, average of 53 days apart
    - All data collected by project staff
  - Elementary Sample
    - Data collected in AY 2005-2006
    - Two assessment occasions, average of 84 days apart
    - All data collected by project staff

## Initial Results



**Oral Language Correlations**

- Two measures of Oral Language fluency were used in the assessment battery.
  - Individual Growth and Development Indicators (IGDI) Picture Naming
  - DIBELS Word Use Fluency
- A correlation was obtained at .626 ( $p > .01$ )

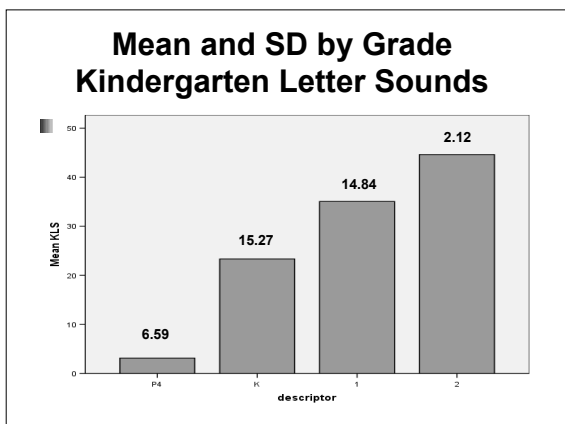
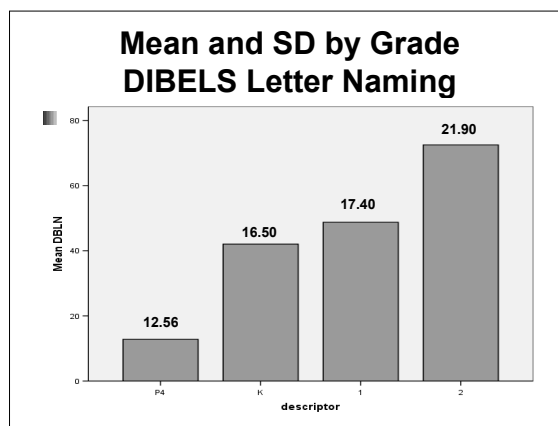
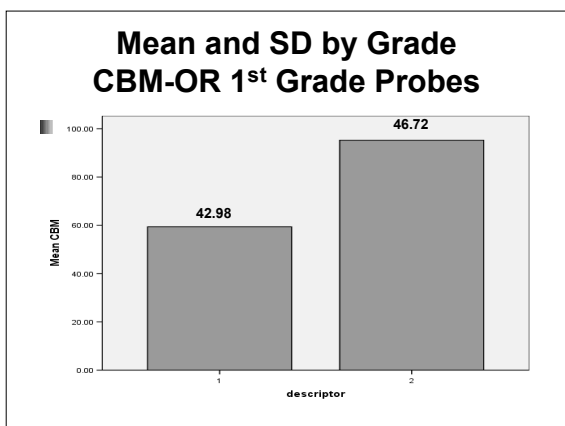
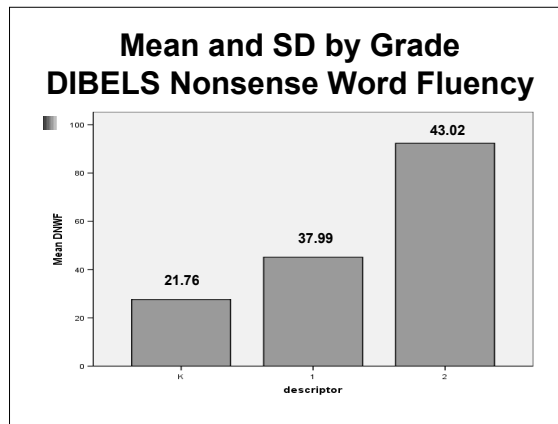
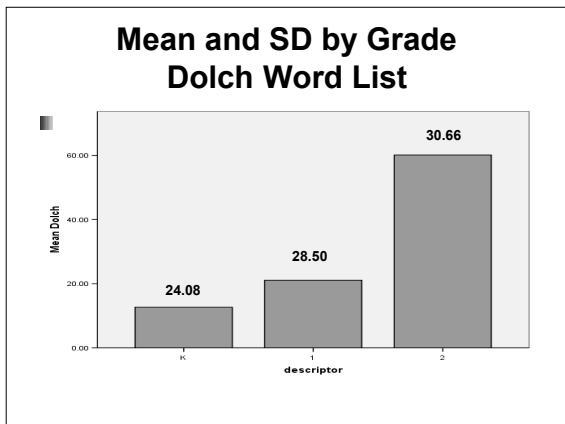


**Phonemic Awareness Correlations**

*Phonemic Awareness*

Measures	Rhyming	Alliteration	Phoneme Segmentation Fluency (PSF)	Sound Blending
Alliteration	.830**			
PSF	.320**	.454**		
Sound Blending	.577**	.760**	.477**	

\*\*  $p > .01$



### Reading Skills Correlations

**Reading Skills**

Measures	Dolch Word List	Nonsense Word Fluency (NWF)	CBM-OR	Letter ID	Letter Sounds
Nonsense Word Fluency	.604**				
CBM-OR	.643**	.559**			
Letter ID	-.031	-.031	NA		
Letter Sounds	.316**	.316**	.128	.812**	

<b>Emergent Literacy Skills Correlations</b>						
	IGDI Picture Naming	DIBELS WUF	IGDI Rhyming	IGDI Alliteration	DIBELS PSF	IGDI Sound Blending
<b>Nonsense Word Fluency</b>	.309**	NA	.437**	.436**	.286**	.482**
<b>CBM-OR</b>	.218**	NA	.283**	NA	-.015	.379**
<b>Letter ID</b>	.335**	.670*	.522**	.625**	.440**	.630**
<b>Letter Sounds</b>	.304**	.777**	.431**	.743**	.554**	.550**

- ### Implications and Conclusions
- By measure, reasonable growth over time
    - Some ceiling effects, fewer floor effects
  - Generally, good relations within “domains”
  - Correlations across “domains” and “ages”
  - Next steps?