Prevention: The Promise and the Power

Keynote Address
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Dynamic Measurement Group

“Back to the Basics” From Urban Dictionary:

If you talk about getting back to basics, you are suggesting that people have become too concerned with complicated details or new theories, and that they should concentrate on simple, important ideas or activities.
Back to Basics

Getting back to basics is the SIMPLEST WAY to find CALM in the CHAOS

The Chaos

I am not sure that I can do DIBELS now because:
- now we are doing RTI/MTSS
- now we have the Common Core
- Now we have to focus on teaching children to comprehend more complex text
- we have to identify children who have dyslexia
Back to Basics: DIBELS

PREVENTION


Why DIBELS?

Grade 1 Cohort
Grade 2 Cohort
Grade 3 Cohort
Grade 4 Cohort
Grade 5 Cohort

Words Per Minute

Middle 10%
Low 10%

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Need for DIBELS®: Prevent Reading Difficulties


The Issue: Differences in Precursors to Reading Trajectories Begin Even Earlier (Hart & Risley, 1995)

Hart & Risley, 1995
Effects of Preschool?

Marked variation in findings of lasting effects of preschool:
- Some evidence of long-term benefits
- Sizeable short-term benefits in children’s academic skills
  - Initial gains tend to dissipate as children progress through elementary school

Campbell et al., 2012; Jenkins et al., 2011; Philips, Gormley, & Anderson, 2016; Schweinhart, 2005; Yoshikawa, Weiland, & Brooks-Gunn, 2016

Role of Kindergarten

Complementary → Enhance
Compensatory → Compensate
Discordant → Dissipate

Bailey, Duncan, Odgers, & Yu, 2017; Phillips et al., 2017
Preschool Early Literacy Indicators (PELI)

- 604 children with PELI and DIBELS Next Data at BOY, MOY, and EOY in PreK and K
  - 50 preschool classrooms in 26 schools from 8 different states
  - 105 kindergarten classrooms in 42 schools

PELI to Kindergarten DIBELS Data
Effectiveness of Preschool and Kindergarten in Promoting and Maintaining Early Literacy Skills

Poster Presented at the National Research Conference in Early Childhood
Arlington, VA

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Research Questions

1. What is the linkage between children’s early literacy skills at the end of preschool and their performance on early literacy skills at the beginning of kindergarten?
2. Are there programmatic differences in growth of early literacy skills during preschool?
3. Are there programmatic differences in the degree to which kindergarten programs (i.e., kindergarten context) maintain and increase early literacy skills acquired in preschool?
1. Linkage of Skills Preschool to Kindergarten

Composite Score Linkages

- PCS .74 → PCS .80 → PCS .61 (±.71) → DCS .74 → DCS .81 → DCS

Phonological Awareness Linkages

- PA .57 → PA .64 → PA .57 → FSF .51 → FSF .60 → FSF .54 → FSF

Alphabet Knowledge Linkages

- AK .70 → AK .83 → AK .65 → LNF .75 → LNF .75 → LNF

Boys (BOY), Midyear (MOY), End of Year (EOY)

Links to PELI and DIBELS Next

Differences in Growth

- Individual Slope of Progress
- Classroom Mean Slope of Progress (Based on 35 PK45 classrooms with at least 10 students)
Kindergarten HLM Model

Level 1, individual student progress model

\[ \text{RLexile}_t = \pi_0 + \pi_1 \cdot \text{TOY}_t + \epsilon_t \]

Where:

- \( \text{RLexile}_t \) = Research Lexile for student \( i \) at time \( t \)
- \( \text{TOY}_t \) = time of year (1 = beginning, 2 = middle, 3 = end)

Level 2, between student model of progress

\[ \begin{align*}
\pi_0 &= \beta_{00} + \beta_{01} \cdot \text{PK45INT}_i + \beta_{02} \cdot \text{PK45SLP}_i + r_{0i} \\
\pi_1 &= \beta_{10} + \beta_{11} \cdot \text{PATH345C}_i + r_{1i} \\
\pi_2 &= \beta_{20} + \beta_{21} \cdot \text{PATH345C}_i + r_{2i}
\end{align*} \]

Where:

- \( \text{PK45INT}_i \) = Preschool intercept (initial skills) for student \( i \) from the preschool model of growth
- \( \text{PK45SLP}_i \) = Preschool slope (rate of progress) for student \( i \) from the preschool model of growth
- \( \text{PATH345C} \) = Proportion of kindergarten context students making at least typical progress on DIBELS Next.

Kindergarten Progress

Figure 3. HLM Model 1: Suppose a child enters preschool with average skills, makes average growth in preschool, and makes average growth in kindergarten.
Figure 3. HLM Model 1: Suppose a child enters preschool with average skills, makes average growth in preschool, and makes average growth in kindergarten.

Figure 4. HLM Model 2: Suppose a child enters preschool with low skills, makes high growth in preschool, and makes low growth in kindergarten.
Figure 5. HLM Model 3: Suppose a child enters preschool with low skills, makes low growth in preschool, and makes high growth in kindergarten.

Figure 6. HLM Model 4: Suppose a child enters preschool with low skills, makes high growth in preschool, and makes high growth in kindergarten.
How to Sustain Preschool Effects

- Hypotheses proposed:
  - Focused kindergarten curricula teaching advanced content
  - Alignment of instructional content between preschool and kindergarten
  - Onsite support/coaching for teachers
  - Summer school
  - Family involvement

Entwisle, Alexander, & Olson, 2001; Galindo & Sheldon, 2012; Yoshikowa et al., 2016

Thinking is Required
One Size Does Not Fit All
Formative Assessment

John Hattie evaluated more than 800 meta-analyses of 138 influences on student achievement:
- Student
- Teacher
- Teaching
- Curricula
- School
- Home

Formative Evaluation and Progress Monitoring, $d = 0.90$

The 3rd largest effect on student achievement out of 138 possible influences.
How to Sustain Preschool Effects

- How about if we do formative assessment and progress monitoring?

Progress Monitoring

Notion of Measures as Indicators

- Teachers have to understand the **skills**
  - What they are
  - How they develop
  - How to teach them
What Are DIBELS®? Dynamic Indicators of Basic Early Literacy Skills

Understand Benchmark Goals

- What they are
- What they are not
- How to use them

| If the student achieves a score | The odds of achieving subsequent early literacy goals are: | The likely need for support to achieve subsequent early literacy goals is: |
|--------------------------------|------------------------------------------------─|-------------------------------------------------|
| at or above the benchmark goal | → 80% – 90%                                            | → Core Support                                    |
| below the benchmark goal       | → 40% – 60%                                             | → Strategic Support                               |
| below the cut point for risk   | → 10% – 20%                                            | → Intensive Support                               |
There are Shades of Red, Yellow, and Green

<table>
<thead>
<tr>
<th>Benchmark Status</th>
<th>What it Means: Design Specifications</th>
<th>Likelihood of Meeting Later Reading Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>At or Above Benchmark</td>
<td>Overall likelihood of achieving subsequent early literacy/reading goals is 80% to 90%</td>
<td>80% to 90%</td>
</tr>
<tr>
<td>Below Benchmark</td>
<td>Overall likelihood of achieving subsequent early literacy/reading goals is 40% to 60%</td>
<td>40% to 60%</td>
</tr>
<tr>
<td>Well Below Benchmark</td>
<td>Overall likelihood of achieving subsequent early literacy/reading goals is 10% to 20%</td>
<td>10% to 20%</td>
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Just weighing the pig doesn’t make it fatter: **Use** the data
Getting back to basics is the SIMPLEST WAY to find CALM in the CHAOS

Thank You!

For more information:

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