Early Reading Intervention: A Preliminary Analysis of a State Initiative’s Impact on Special Education Outcomes

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Current Special Education Practices

- The Vision of IDEA was to provide effective services to students with disabilities

- Unfortunately, special education too often becomes an endpoint rather than a means for providing effective services (PCESE, 2002)
Wait-to-Fail Service Delivery

General Education

Special Education

Sea of Ineligibility
Current Service Delivery System Results in:

- Students receiving special education services
- Students not successful in general education
- Students not eligible for special education services

BUT
**Effective Schools Model**

**Tier 3: Intensive, Individual Interventions**
- Targets individual students
- Diagnostic assessments
- Idiosyncratic interventions
- Increased time, focus, intensity
- More frequent progress monitoring

**Tier 2: Targeted Group Interventions**
- Targets small groups of students (at-risk)
- High probability interventions
- Increased time and/or focus
- More frequent progress monitoring

**Tier 1: Universal Interventions**
- Targets all students
- Universal screenings
- Preventive, proactive

Students

- 80-90%
- 10-15%
- 1-5%
How Can We Improve Student Outcomes?

Current System

Effective Schools Model

1-5%
10-15%
80-90%
It’s All About Reading

Reading and Learning Disabilities:

- 52% of IDEA $$ go to LD Programs
- 70% +/- of special education “activities” (e.g., evaluations, staffings, IEPs) related to LD cases
- 85% of students identified as LD referred for reading difficulties
- 44% of IDEA $$ allocated for students with reading difficulties

- 61.2% of children with ED score in the bottom quartile in reading
How Do We Improve Reading Outcomes?

- By improving:
  - Tier I instruction (i.e., universal intervention, the core curriculum, initial instruction)
  - Tier II instruction (i.e., supplemental intervention, secondary intervention, strategic instruction)
  - Tier III instruction (i.e., tertiary intervention, intensive instruction)

- NCLB, *Reading First*, & IDEA ’04
Effective Schools Model

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**Tier 1: Universal Interventions**
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Students

- 80-90%
- 10-15%
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### Example of Tiered Reading Interventions

<table>
<thead>
<tr>
<th></th>
<th>Tier I</th>
<th>Tier 2</th>
<th>Tier 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td>90</td>
<td>120</td>
<td>180</td>
</tr>
<tr>
<td><strong>Curricular Focus</strong></td>
<td>5 areas</td>
<td>Less than 5</td>
<td>2 or less</td>
</tr>
<tr>
<td><strong>Curricular Breadth</strong></td>
<td>Core</td>
<td>Core + Supplemental</td>
<td>Core + Supplemental + Intensive</td>
</tr>
<tr>
<td><strong>Frequency of Progress Monitoring</strong></td>
<td>Yearly or greater</td>
<td>Monthly or greater</td>
<td>Weekly</td>
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</tbody>
</table>
What Does Research on Early Intervention Have to Say?

- Improved reading outcomes (Torgesen, 2001; VanDerHeyden & Jimerson, 2005)
- Reductions in the number of students requiring intensive intervention (Marston et al., 2003)
- Reductions in the number of special education (Marston et al., 2003; O’Connor, Fulmer, & Harty, 2005; VanDerHeyden, Witt, & Gilbertson, 2005; Tilly, 2003, December):
  - Referrals
  - Evaluations
  - Placements
- Reductions in disproportional representation of minority groups in special education (Marston et al., 2003; VanDerHeyden et al., 2005)
What Does Research on Early Intervention Have to Say?

- Decreases in mental health problems (Kellam, Rebok, Mayer, & Hawkins, 1998)
  - Aggressive symptoms
  - Depressive symptoms
  - Shy behaviors

- Reduction in false positive identifications (VanDerHeyden et al., 2003)

- Decreased latency of services (the “early” in early intervention)
Rationale

- Current research at the building & district levels suggests that early intervention:
  - decreases risk of being referred for special education
  - decreases risk of being identified with a high-incidence disability
  - decreases disproportional representation
  - increases referral accuracy

- What about outcomes when early intervention is implemented on a larger scale?
Research Questions

- How does implementing a state-level early intervention initiative affect the risk of being referred for special education services?
  - By:
    - Race/ethnicity?
    - Gender?
    - SES?

- How does implementing a state-level early intervention initiative affect the risk of being placed in special education?
  - By:
    - Race/ethnicity?
    - Gender?
    - SES?
Method
Reading First

One way to address the research questions is to examine a state’s Reading First data

Reading First overview:
- LEA’s apply to state agencies for sub-grants
- Priority given to LEA’s with high proportions of students from low-SES backgrounds
- Funding provided to improve the quality of universal, supplemental, and tertiary interventions
- Focuses on grades K-3
- Targets instruction in 5 big ideas in reading (National Reading Panel, 2000)
Florida’s *Reading First* Population

- *Reading First* implementation began in 2003-04
- **317** elementary schools have participated during the first two years *(Torgesen, 2005, August)*
- District size varied (measured by student enrollment):
  - Small = 510-3,630
  - Medium Small = 3,635-7,308
  - Medium = 15,208-17,621
  - Large = 17,970-39,573
  - Very Large = 49,748-128,176
Study Sample

- Random sample stratified by condition and district size

- Condition:
  - Reading First schools
  - Comparison schools

- District Size
  - Small
  - Medium Small
  - Medium
  - Large
  - Very Large
## Number of Schools by Condition in Population & Sample

<table>
<thead>
<tr>
<th>Condition</th>
<th>Small</th>
<th>Medium Small</th>
<th>Medium</th>
<th>Large</th>
<th>Very Large</th>
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<td><em>Reading First</em></td>
<td>26</td>
<td>28</td>
<td>26</td>
<td>113</td>
<td>135</td>
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<tr>
<td><em>Comparison</em></td>
<td>23</td>
<td>12</td>
<td>51</td>
<td>88</td>
<td>172</td>
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<tr>
<td><strong>Sample</strong></td>
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</tr>
<tr>
<td><em>Reading First</em></td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td><em>Comparison</em></td>
<td>20</td>
<td>12</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>
Measures

- Survey administered by the Florida DOE at the end of each school year
- Entered into a state management information system electronically by schools
- Data reported at the individual student level
- Relevant elements reported include:
  - Demographics
  - Special education status
  - Primary exceptionality
  - Referral reason
Procedure

- Requested permission to access data from the management information system

- Data set was provided with student level information including:
  - Year
  - District
  - School
  - Demographic information
  - Special education status
  - Primary exceptionality
  - Other exceptionality
  - Referral reason
  - Promotion status
What Outcomes Were Examined

- 4 years of data received
  - 2 baseline (2001-02 & 2002-03)
  - 2 implementation (2003-04 & 2004-05)

- 3 years examined (2001-02 data excluded)

- Wanted to investigate referrals initially
How Outcomes Were Measured

- Special education status variable on survey contains 6 elements:
  - Referred & Evaluation Pending
  - Evaluated & Ineligible
  - Determined Eligible & Not Placed
  - Determined Eligible & Placed
  - Temporarily Placed
  - Not Applicable

- Examined risk indices as method for examining data
  (Donovan & Cross, 2002)
  - Odds ratio
  - Composition index
  - Risk index

- Risk indices calculated for:
  - All students
  - Disaggregated by:
    - Demographic data
Results
First, Some Reading Outcomes (Torgesen, 2005, August)

- Data for the first two years suggest:
  - Improvements in end of the year DIBELS scores in grades K-2
  - A decline in the number of students failing the statewide assessment relative to NCLB
  - An increase in the number of students performing at grade level on the statewide assessment relative to NCLB
Instructional Effectiveness Data (Torgesen, 2005, August)

- Core curriculum
  - Over 80% of students meeting grade level objectives in grades K and 3
  - Improvements in percentage of students in grades 1 and 2 meeting grade level objectives

- Intervention
  - 45-55% responded to intervention in K
  - Only 5-16% responded in grades 1-3
## Sample Size by Year, Condition, & Demographics

<table>
<thead>
<tr>
<th>Year</th>
<th>Gender % (n)</th>
<th>Race/Ethnicity % (n)</th>
<th>SES % (n)</th>
<th>Total n</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>W</td>
<td>B</td>
</tr>
<tr>
<td>2002-03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RF</td>
<td>51.58%</td>
<td>48.10%</td>
<td>48.00%</td>
<td>30.07%</td>
</tr>
<tr>
<td></td>
<td>(30,584)</td>
<td>(28,522)</td>
<td>(28,460)</td>
<td>(17,830)</td>
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<tr>
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<td>52.02%</td>
<td>47.74%</td>
<td>43.09%</td>
<td>35.77%</td>
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<td></td>
<td>(24,049)</td>
<td>(22,069)</td>
<td>(19,920)</td>
<td>(16,536)</td>
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<tr>
<td>2003-04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RF</td>
<td>50.58%</td>
<td>46.61%</td>
<td>45.83%</td>
<td>28.47%</td>
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<tr>
<td></td>
<td>(30,990)</td>
<td>(28,561)</td>
<td>(28,081)</td>
<td>(17,444)</td>
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<td>46.39%</td>
<td>41.17%</td>
<td>34.49%</td>
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<tr>
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<td>(23,248)</td>
<td>(21,189)</td>
<td>(18,806)</td>
<td>(15,754)</td>
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<td>2004-05</td>
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<tr>
<td>RF</td>
<td>51.94%</td>
<td>47.76%</td>
<td>45.91%</td>
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<tr>
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<td>(30,549)</td>
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<td>(16,864)</td>
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<tr>
<td>C</td>
<td>52.40%</td>
<td>47.39%</td>
<td>41.72%</td>
<td>34.74%</td>
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<tr>
<td></td>
<td>(22,978)</td>
<td>(20,781)</td>
<td>(18,293)</td>
<td>(15,235)</td>
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</table>
Some Initial Findings for Referrals Across Years:

- Referred & Pending
  - *Reading First*: 49% decrease
  - Comparison: 70% increase

- Evaluated & Ineligible
  - *Reading First*: 4% decrease
  - Comparison: 76% increase
Some Overall Referral Trends

<table>
<thead>
<tr>
<th>School Year</th>
<th>Referred &amp; Evaluation Pending</th>
<th>Evaluated &amp; Ineligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-03</td>
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<tr>
<td><em>Reading First</em></td>
<td>.47% (n = 278)</td>
<td>.46% (n = 275)</td>
</tr>
<tr>
<td><em>Comparison</em></td>
<td>.27% (n = 126)</td>
<td>.25% (n = 116)</td>
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<tr>
<td>2003-04</td>
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<tr>
<td><em>Reading First</em></td>
<td>.24% (n = 149)</td>
<td>.47% (n = 287)</td>
</tr>
<tr>
<td><em>Comparison</em></td>
<td>.39% (n = 177)</td>
<td>.44% (n = 201)</td>
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<td>2004-05</td>
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<tr>
<td><em>Reading First</em></td>
<td>.24% (n = 143)</td>
<td>.39% (n = 232)</td>
</tr>
<tr>
<td><em>Comparison</em></td>
<td>.46% (n = 201)</td>
<td>.44% (n = 195)</td>
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</tbody>
</table>
Some Overall Referral Trends

- Reading First Referred & Pending
- Reading First Ineligible
- Comparison Referred & Pending
- Comparison Ineligible

School Year:
- 2002-03
- 2003-04
- 2004-05

Percentage:
- 0.00%
- 0.05%
- 0.10%
- 0.15%
- 0.20%
- 0.25%
- 0.30%
- 0.35%
- 0.40%
- 0.45%
- 0.50%
Some Initial Findings for Demographic Variables

- Referred & Pending
  - *Reading First*: decreased across gender and racial groups as well as low-SES students
  - Comparison: increased across gender, racial, and SES groups

- Evaluated & Ineligible
  - *Reading First*: decreased across gender as well as for some racial groups and low-SES students
  - Comparison: increased across gender and SES as well as most racial groups
Risk Indices for Referred & Pending Category by Year & Demographics

<table>
<thead>
<tr>
<th>Year</th>
<th>Gender</th>
<th>Race</th>
<th>SES</th>
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<td>2002-03</td>
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<tr>
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<td>.60%</td>
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<td>.31%</td>
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<tr>
<td></td>
<td>(n=185)</td>
<td>(n=93)</td>
<td>(n=88)</td>
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<td>.20%</td>
<td>.24%</td>
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<td></td>
<td>(n=81)</td>
<td>(n=45)</td>
<td>(n=47)</td>
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<td>2003-04</td>
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</tr>
<tr>
<td>RF</td>
<td>.26%</td>
<td>.24%</td>
<td>.22%</td>
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<tr>
<td></td>
<td>(n=81)</td>
<td>(n=68)</td>
<td>(n=63)</td>
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<tr>
<td>C</td>
<td>.50%</td>
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<td>.31%</td>
</tr>
<tr>
<td></td>
<td>(n=116)</td>
<td>(n=61)</td>
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<td>2004-05</td>
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<tr>
<td>RF</td>
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<td>.20%</td>
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<td>(n=80)</td>
<td>(n=79)</td>
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</table>
Risk Indices by Year & Race/Ethnicity

School Year

Percentage

- Reading First - White
- Reading First - Black
- Reading First - Hispanic
- Comparison - White
- Comparison - Black
- Comparison - Hispanic
Odds Ratios for Black & Hispanic Students vs. White Students by Year

![Graph showing odds ratios for Black and Hispanic students vs. White students by year](image)
Risk Indices for SES by Year

School Year

Percentage

Reading First - FRL
Reading First - No FRL
Comparison - FRL
Comparison - No FRL
<table>
<thead>
<tr>
<th>Year</th>
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<td>2002-03</td>
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<td>RF</td>
<td>.48%</td>
<td>.45%</td>
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<td>.24%</td>
<td>.28%</td>
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<td>2003-04</td>
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<td>.45%</td>
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<td>.40%</td>
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<td>.41%</td>
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<td>(n=113)</td>
<td>(n=102)</td>
<td>(n=69)</td>
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<tr>
<td>C</td>
<td>.48%</td>
<td>.41%</td>
<td>.58%</td>
<td>.40%</td>
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<td>(n=110)</td>
<td>(n=85)</td>
<td>(n=107)</td>
<td>(n=61)</td>
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Discussion
Summary

- Preliminary data analysis suggests improved referral outcomes for *Reading First* schools over first 2 years of implementation

- Students in *Reading First* schools demonstrated reductions in:
  - Risk across demographic variables
  - Disproportional representation
  - Miss rate for evaluated students
Previous Research

- Initial outcomes are consistent with previous research at the building & district levels demonstrating:
  - Reductions in referrals
  - Reductions in disproportional representation
  - Increased referral accuracy
Child-count percentages for students with high-incidence disabilities (1990-2001): Minneapolis Public Schools

Problem-solving model phase-in began in 1994

Adapted from Marston (2001).
Percentage of African-American students at each stage of referral process at 41 schools

<table>
<thead>
<tr>
<th>Stage</th>
<th>1997-98</th>
<th>2000-01</th>
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<tbody>
<tr>
<td>Student Population</td>
<td>44.33%</td>
<td>45%</td>
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<tr>
<td>Referred to Support Team</td>
<td>64.4%</td>
<td>59%</td>
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<tr>
<td>Evaluated for Special Ed.</td>
<td>69%</td>
<td>57.7%</td>
</tr>
<tr>
<td>Placed in Special Ed.</td>
<td>68.9%</td>
<td>55.4%</td>
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</table>
### Vail School District Data

#### RtI and Traditional Discrepancy Comparison
Amanda VanDerHeyden (2005)

<table>
<thead>
<tr>
<th>QUALIFY</th>
<th>Yes</th>
<th>No</th>
<th>Pending</th>
<th>Total</th>
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<tbody>
<tr>
<td>Poor RtI-Refer</td>
<td>15</td>
<td>2</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td>Good RtI-Do Not Refer</td>
<td>9</td>
<td>15</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>17</td>
<td>5</td>
<td>46</td>
</tr>
</tbody>
</table>
Implications for Research & Practice

- Data suggest that early intervention leads to a reduction in students referred for reasons other than a disability.

- Reductions in referrals allow schools to use their limited resources (i.e., time, money, personnel) more efficiently to improve student outcomes.

- Early intervention is needed for schools, districts, & states to meet the requirements set forth by NCLB & IDEA ’04.
Examples of Early Intervention

- *Reading First*
- *Peer Assisted Learning Strategies*
- *Positive Behavior Support*
- *Project ACHIEVE*
- *Problem-Solving Method/RtI*
Conclusions

- The discrepancy model has resulted in a wait-to-fail service delivery system.
- Data suggest that early academic, behavioral, & social-emotional interventions improve student outcomes.
- Recent federal legislation and initiatives provide schools, districts, & states with greater opportunity to adopt early intervention procedures to improve their students’ outcomes.
The Vision of IDEA:

- Early Intervention

1-5%  
10-15%  
80-90%
Questions
References

- See back of handout