University of Houston
Jack M. Fletcher, PI
David Francis (P1, Core B)

The University of Texas at Austin
Sharon Vaughn, Co-PI: P1, P2, P3
Jade Wexler
Greg Roberts (Core C)

The University of Texas–Houston
Andrew C. Papanicolaou (P4)
Carolyn Denton (P2)

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Texas Center for Learning Disabilities

- Project 1 (Classification) David Francis, UH
- Project 2 (Early Intervention) Carolyn Denton, UTH
- Project 3 (Remediation) Sharon Vaughn, UTA
- Project 4 (Magnetic Source Imaging) Andrew Papanicolaou, UTH
- Core A (Administrative) Jack Fletcher, UH
- Core B (Quantitative) David Francis, UH
- Core C (Dissemination) Greg Roberts, UTA
- Amy Barth, Paul Cirino, Jenifer Juranek, Karla Stuebing, Jeanne Wanzek, Jade Wexler, Jennifer Hocker, Terri Kurz, Melissa Romain
Minimal Responders over Time: Year 3

Sharon Vaughn
Jade Wexler, Audrey Leroux, Greg Roberts
The Meadows Center for Preventing Educational Risk
The University of Texas at Austin
Amy Barth, J.M. Fletcher
University of Houston
Grade 6–7 Students (Fall ‘06)

**Grade 6-7 On-track Readers**

- **Sufficient Progress**
  - **Tier II Intervention**
    - 1:15
    - Grade 6–7
  - **Insufficient Progress**
    - **Tier III Intervention**
      - Grade 7–8
        - **Random Assignment**
          - Standardized Protocol 1:5
            - Sufficient Progress
              - Exit intervention
          - Individualized Protocol 1:5
            - Sufficient Progress
              - Tier IV
                - Individualized Protocol 1:3
                  - Grade 8

**Grade 6-7 Struggling Readers**

- **Random Assignment**
  - Typical Instruction (Tier I Only)
    - Grade 6–7
  - Typical Instruction
    - Grade 7–8
  - **Exit intervention**
    - Follow-up Assessment
Year 2: Tier III Intervention

**Standardized Intervention**
- Specified use of time (3 phases of intervention)
- High control of curriculum and materials
- Modifications made at the group level
- Motivation through success only
- Systematic and explicit
- Fast paced instruction
- Ongoing progress monitoring
- Instruction in same components of reading (word study, comprehension, vocabulary, fluency)

**Individualized Intervention**
- Flexibility in use of time
- Low control of curriculum and materials
- Modifications made in response to individual student need
- Motivation through text selection, conferences, goal setting, positive calls home
### Framework for Conceptualizing Three Categories of Reading Difficulties

<table>
<thead>
<tr>
<th>Good Word Recognition</th>
<th>Poor Word Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specific Reading Comprehension Difficulties</strong></td>
<td><strong>Normally Developing Readers</strong></td>
</tr>
<tr>
<td>Good Oral Language Comprehension</td>
<td>Poor Oral Language Comprehension</td>
</tr>
<tr>
<td><strong>Mixed Reading Disability</strong></td>
<td><strong>Reading Disability (Dyslexia)</strong></td>
</tr>
<tr>
<td>Poor Oral Language Comprehension</td>
<td>Good Oral Language Comprehension</td>
</tr>
</tbody>
</table>

- **Specific Reading Comprehension Difficulties**
- **Normally Developing Readers**
- **Mixed Reading Disability**
- **Reading Disability (Dyslexia)**

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*William E. Tunmer, Massey University*
Conceptual Framework: Lesson Focus

**Group 1**: 50 minute periods (weekly):

- Vocabulary/Morphology: 35–45 minutes
- Comprehension/Text Reading: 170–180 minutes
- Attitude/Motivation: 15–25 minutes

**Group 2**: 50 minute periods (weekly):

- Word Study/Text Reading: 100–110 minutes
- Vocabulary/Morphology: 35–45 minutes
- Comprehension/Text Reading: 70–80 minutes
- Attitude/Motivation: 15–25 minutes
Phrase Fluency Example

in a jar  in a jam  in a rage  in a jar
for a letter  from a leader  for a letter  for a debtor
to his sister  to his sibling  toward a sister  to his sister
to the ball  at the hall  to the balloon  to the ball
on the wing  on the swing  for the win  on the wing
“The fish blows in air bubbles and goes limp.”

“It was easily startled by noises, such as the smell of a fire.”

“We were always a loving family, very angry with each other.”

“The two captains agreed that they should alter course. They would both steer their ships in the same direction they had started out going.”

“By 4:00 PM, the wind had intensified. The gusts slowed down.”

“All in all, tarantulas look quite lovely, so they have been portrayed as aggressive killers.”

“Despite their many eyes, tarantulas see well.”
Comprehension Phrases

“So maybe he wasn’t that **fierce** in day care, since I’m pretty sure he did hit a kid with his crutch once.”  (**vocabulary**)  

“Grim, he’s okay sometimes, like when Tony D. chased us into the pound, but most of the time he thinks he knows everything, which he doesn’t.”  (**referents**)  

It’s so dark he has to use a cigarette lighter, and the flame is so puny, you can see to the bottom of the stairs.  (**no sense**)
Findings Year 3: Tier IV
What about Reading Comprehension?
Findings Year 3: (Tier IV) Decoding and Spelling Cluster

- Woodcock Johnson Letter Word Identification Subtest
  - ES = 0.49

- Woodcock Johnson Word Attack Subtest
  - ES = 0.24
WJ Word Attack
Findings Year 3: (Tier IV) Fluency Cluster

- AIMSweb Mazes
  - ES = -0.22

- Test of Silent Reading Efficiency and Comprehension (TOSREC)
  - ES = 0.43

- Test of Word Reading Efficiency (TOWRE) Phonemic Decoding Efficiency subtest
  - ES = 0.52

- Test of Word Reading Efficiency (TOWRE) Sight Word Efficiency subtest
  - ES = 0.37
AIMSweb Maze
Test of Word-Reading Efficiency (TOWRE): Phonemic Decoding
Test of Word-Reading Efficiency (TOWRE): Sight Word
Findings Year 3: (Tier IV) Comprehension Cluster

- Gates MacGinitie Passage Comprehension subtest
  - ES = 1.20

- Woodcock Johnson Passage Comprehension subtest
  - ES = 0.32
Gates MacGinitie Passage Comprehension
WJ Passage Comprehension

Mean
## RTI: Decoding and Spelling Cluster

<table>
<thead>
<tr>
<th>Year 3 Measures</th>
<th>Tier IV</th>
<th>Tier I</th>
<th>p-value</th>
<th>Hedges’s g</th>
</tr>
</thead>
<tbody>
<tr>
<td>WJ Letter-Word ID</td>
<td>88.76</td>
<td>83.24</td>
<td>0.015</td>
<td>0.49</td>
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<tr>
<td>WJ Word Attack</td>
<td>83.67</td>
<td>80.76</td>
<td>0.123</td>
<td>0.24</td>
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</tbody>
</table>
# RTI: Fluency Cluster

<table>
<thead>
<tr>
<th>Year 3 Measures</th>
<th>Tier IV</th>
<th>Tier I</th>
<th>p-value</th>
<th>Hedges’s g</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIMSweb Mazes</td>
<td>87.99</td>
<td>90.07</td>
<td>0.406</td>
<td>-0.22</td>
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<tr>
<td>TOSRE</td>
<td>76.48</td>
<td>70.88</td>
<td>0.094</td>
<td>0.43</td>
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<tr>
<td>TOWRE Phonemic Decoding</td>
<td>87.39</td>
<td>80.10</td>
<td>0.030*</td>
<td>0.52</td>
</tr>
<tr>
<td>TOWRE Sight Word</td>
<td>89.68</td>
<td>85.62</td>
<td>0.195</td>
<td>0.37</td>
</tr>
</tbody>
</table>

*Not significant with Benjamini-Hochberg Correction of the statistical significance of effects with multiple comparisons.
## RTI: Comprehension Cluster

<table>
<thead>
<tr>
<th>Year 3 Measures</th>
<th>Adjusted Posttest Means</th>
<th>p- value</th>
<th>Hedges’s g</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tier IV</td>
<td>Tier I</td>
<td></td>
</tr>
<tr>
<td>Gates Passage Comprehension</td>
<td>82.78</td>
<td>74.18</td>
<td>0.001</td>
</tr>
<tr>
<td>WJ Passage Comprehension</td>
<td>88.85</td>
<td>85.66</td>
<td>0.146</td>
</tr>
</tbody>
</table>
Perspectives

- A comparable study: The Enhanced Reading Opportunities Study

- Two supplemental literacy programs designed as full year courses to replace a ninth grade elective class

- When analyzed jointly, the ERO programs produced an increase of 0.9 standard score point on the GRADE reading comprehension subtests. This corresponds to an effect size of 0.09 standard deviation and is statistically significant

## Perspectives

<table>
<thead>
<tr>
<th>All Schools</th>
<th>ERO  ((n = 1,408))</th>
<th>Non ERO ((n = 1,005))</th>
<th>Est. Impact</th>
<th>ES</th>
<th>(p)-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Comprehension</td>
<td>90.1</td>
<td>89.2</td>
<td>.9</td>
<td>.09</td>
<td>.019</td>
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<tr>
<td>Avg. Standard Score</td>
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<td></td>
<td></td>
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<tr>
<td>Reading Vocabulary</td>
<td>93.4</td>
<td>93.2</td>
<td>.3</td>
<td>.03</td>
<td>.472</td>
</tr>
<tr>
<td>Avg. Standard Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Who are the non-responders after 2 years of intensive intervention?

- “When I open a book, just to see those letters makes me want to go away…[I think] oh, this is frustrating”
- “The words...they are long and you don’t know what they mean and stuff”
- “When you read a book it takes too long and you might get bored with the same book”
- “[I don’t like] when you don’t understand what’s going on in the story”
- “Like when I am reading there are a lot of big words that I can’t say and sometimes I don’t know the words and how am I supposed to get it?”
Who are the non-responders after 2 years of intensive intervention? (cont.)

About a student’s content area classes:

- “…but they don’t tell us anything, like, they expect us to know already how to do it. So they just say ‘what is the main idea.’”
Who are the non-responders after 2 years of intensive intervention? (cont.)

About the intervention class:

- “Ms. S., she takes the time out and tells us what to do and what not to do, or just anything we have problems with, she comes by one-by-one to help us.”
What Does this Mean?
Overall Summary

- We do not think that students in middle grades with significant reading problems are likely to make rapid and readily remediated progress in reading.
- Many of these students with low comprehension also demonstrate low vocabulary and limited background knowledge.
What Does this Mean? Case Study Support

- Student answers were not always what we anticipated (high attendance and fondness of the reading class)
- Still, we are cautious: motivational factors, literacy habits, and lack of support in high school
- Most of these students struggle to express their thoughts; their lack of both reading and oral vocabulary makes it difficult for these students to effectively read and communicate.
- It may be possible that a positive and supportive experience like the reading class may be able to help reverse these negative experiences for some students; but improving actual reading skills remains a challenge.
Questions

- Is there a need for a Tier 2 intervention in secondary grades or is there only Tier 3?
- Based on the series of studies, what would you recommend for the role of SPED in providing reading interventions for students with reading disabilities?
- Do we think that secondary students with reading disabilities can meet grade level reading expectations?

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