

# Implementing Interventions: Practical Questions



# **Tier 2 & 3 Implementation: What Can We Learn from Research?**

- When should Tier 2 start?
- Intervention “dosage”
- Group size
- Interventionists and location
- How should we evaluate response?

# When should Tier 2 start?

- Second half of kindergarten?
- Beginning of Grade 1?
- Middle of Grade 1?
- There are tradeoffs
  - Start early: Probably many “false positives”
  - Start later: Waste precious time for students who really need intervention
  - May be a matter of resources and priorities

# Tier 2 Intervention Dosage: Kindergarten

Al Otaiba, Schatschneider, & Silverman, 2005

- Randomly assigned students to receive the same small-group intervention 2 or 4 times per week or to a control condition
- 4 X per week performed significantly better than controls in word reading and comprehension, with large effect sizes
- 2 X per week performed significantly better than controls only on one phonemic awareness measure

# Time in Tier 2 Intervention (Grade 1)

Denton & Mathes, 2003

- Provided intervention to 163 first graders at-risk for reading difficulties
- Intervention provided daily for 40 minutes over 30 weeks in groups of 3-4 students
- Monitored ORF every 3 weeks
- Did not exit students from intervention but analyzed the percentage of students that met benchmarks at different points

# Time in Tier 2 Intervention (Grade 1)

Denton & Mathes, 2003

Percentage of Students Meeting Benchmark of 35 WCPM\* at Each Assessment Point

Assessment Points	Proactive Intervention (n = 80)		Responsive Intervention (n = 83)	
		Cumulative		Cumulative
9 weeks	2 %		0 %	
21 weeks	35 %	37%	46 %	46%
30 weeks	45 %	82%	31 %	77%
Never Met Criteria	18 %		23 %	

\*35 WCPM = 30<sup>th</sup> percentile for first grade, according to Good et al., 2002

# Study of Less Intensive Tier 2

Denton et al., 2011

- 193 at-risk students randomly assigned to 3 conditions; all received same intervention
  - Concentrated: 8 weeks, 4 times per week (32 sessions)
  - Extended: 16 weeks, 4 times per week (64 sessions)
  - Distributed: 16 weeks, 2 times per week (32 sessions)
- Provided *in addition to* Tier 1

# Results

- No significant differences between groups
- Fewer students met standards for adequate response than in our previous studies



STUDY	SCHEDULE	OTHER VARIABLES	Adequate RTI Treatment Group	Adequate RTI Typical Practice Comparison
Mathes et al., 2005	40 min. 5 days/wk 30 weeks	Groups of 3-4 Cert. Teachers <i>Responsive Reading</i>	<b>93 %</b>	<b>84 %</b> (Few got intervention)
Mathes et al., 2005	40 min. 5 days/wk 30 weeks	Groups of 3-4 Cert. Teachers <i>Proactive Reading (EIR)</i>	<b>99 %</b>	<b>84 %</b> (Few got intervention)
Denton et al., 2010	40 min. 5 days/wk 24 weeks	Groups of 3-4 Cert. Teachers <i>Responsive Reading</i>	<b>91%</b>	<b>79%</b>
Denton et al., 2011	30 min. 2-4 days/wk 8-16 weeks	Groups of 3 Paraprofessionals <i>Read Well</i>	<b>74-81%</b>	N/A

# Time in Tier 2 Intervention:

## Vaughn & Linan-Thompson, 2003

- Provided intervention to 45 2<sup>nd</sup> grade struggling readers, outside of regular classroom, groups of 3, 30 min. daily
- Established criteria based on oral reading fluency for exiting intervention
- Exited students who met criteria after 10, 20, and 30 weeks
- Examined continued growth without intervention (defined as gaining at least 1 wcpm per week after exit)

# Time in Tier 2 Intervention (Grade 2)

Vaughn et al., 2003

Assessment Points	% Meeting Exit Criteria	Baseline Mean ORF (sd)	Number Making Continued Growth After Exit
10 weeks	22%	32.5 (7.18)	<u>After 10 more weeks</u> : All 10 <u>After 20 weeks</u> : 7 of 10; 2 made minimal gains and 1 declined
20 weeks	31%	19.80 (9.99)	8 of 14; 2 made minimal gains and 3 declined
30 weeks	22%	13.40 (5.48)	
Never Met Criteria	24%	10.55 (4.76)	

# *Suggested* Intervention “Dosage”

TIER	LENGTH	DURATION
1	60-90 minutes uninterrupted <i>instruction</i> every day	All school year
2	30-40 minutes 4-5 days per week	Usually at least 20 weeks
3	50-60 minutes (or more?) every day	All school year, possibly over several years

If students meet benchmarks, you may consider an earlier exit, but provide regular “booster sessions”.

# Group Size

## Tier 2

- Based on direct research
  - 1:3 has comparable outcomes to 1:1 for most students
  - 1:3 is better than 1:10
- Based on effective interventions: 1:3 to 1:5

## Tier 3

- Based on effective interventions: 1:2 or 1:1 (possibly 1:3)

Elbaum, Vaughn, Hughes & Moody, 2000;  
Vaughn et al., 2003

# Who Can Provide Intervention?

## Tier 2

- Reading Specialists
- Paraprofessionals and other teachers, under certain conditions
- Classroom Teachers, under certain conditions
  - Consider scheduling and other demands
  - Cross-classroom collaboration?

Tier 3: Highly qualified and well-trained teachers with coaching support

# Paraprofessionals and Tutors

- Tier 2 intervention provided by non-certified paraprofessionals or tutors can result in improved outcomes for students (demonstrated in several studies)
- Important considerations
  - Carefully selected tutors (must have adequate PA, be able to learn letter-sounds, etc.)
  - Well-trained
  - **Supervised and *coached closely by a well-qualified teacher***
  - **Implement a well-described program (potentially scripted)**
  - **Keep group sizes small (e.g., 1-3 students)**

# How should response be evaluated?

- Types of measures
  - Progress monitoring (repeated measures)
    - Slope (rate of growth) vs. ending level
  - Final benchmark
  - Combinations
- Reading domains
  - Word reading/decoding
  - Fluency
  - Comprehension
- Actual benchmarks or cut-points: 20<sup>th</sup> %ile?  
25<sup>th</sup>? 30<sup>th</sup>? 40 wcpm?



# Approaches to Evaluation of RTI

Approaches that differ on these dimensions are **likely to identify different students as adequate and inadequate responders**, and there may be little or no overlap in the identified groups!

Barth et al., 2008; D. Fuchs et al., 2008

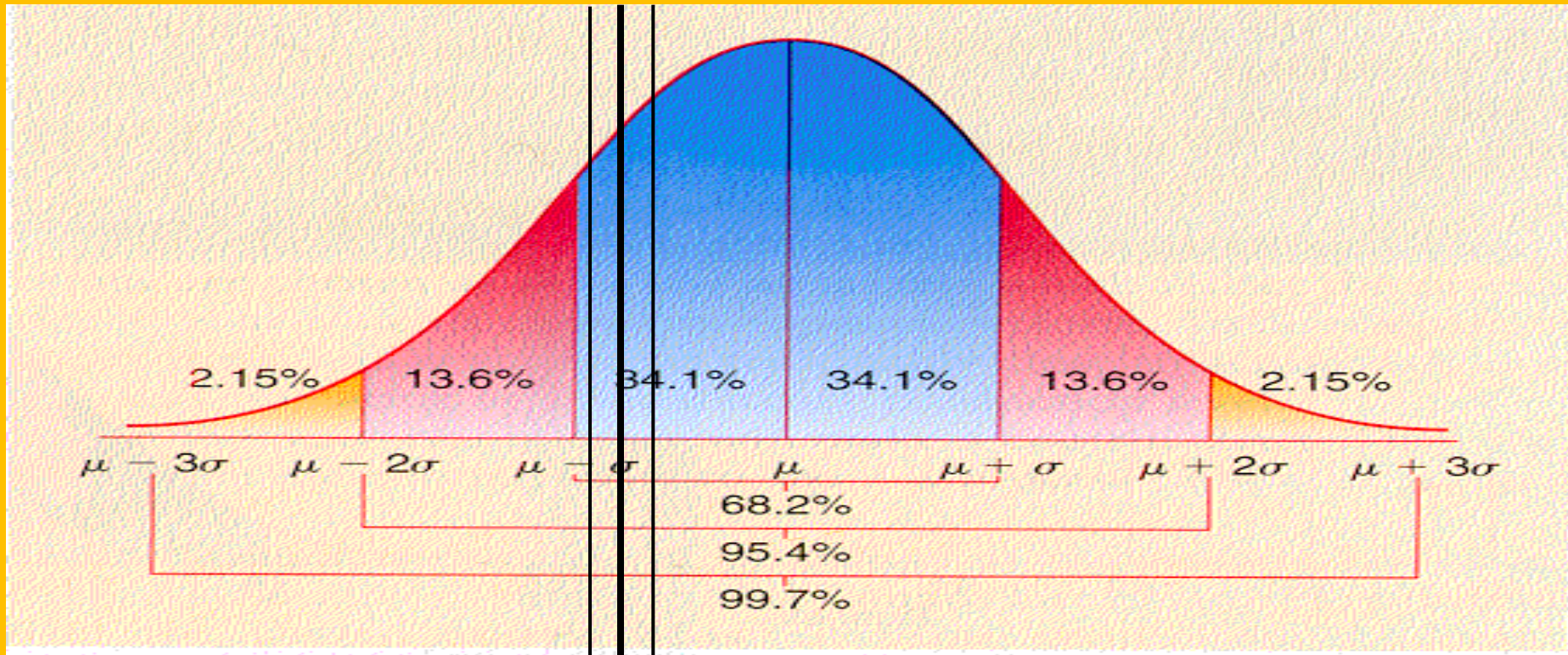
# An Evaluation of Criteria for Grade 1 Reading: Which approaches best predicted status at the end of Grade 2?

- Low *pre-test* scores on a test of word reading fluency
- Final benchmark of the 20<sup>th</sup> % ile on the *Test of Word Reading Efficiency* Sight Word Efficiency subtest
- Word Identification Fluency slope at least 1 *SD* below a normative sample

# Other Considerations

- **Final benchmarks** of performance at the 20<sup>th</sup> or 30<sup>th</sup> %ile on standardized tests of **word reading or word reading fluency** have been used in research
- **Fewer students will meet fluency** benchmarks than word reading benchmarks, but fluency is closely related to comprehension in the primary grades.
- **Multiple measures are better** than a single measure
  - All tests contain error
  - Any time a single cut-score is applied to make decisions, there will be errors on both sides of the cut-off

# Error



If you gave the same test to the same student tomorrow, the score would be a little different.

# Other Considerations

- There are **mixed findings on the use of slope** (rate of growth) on repeated fluency measures (Schatschneider, Wagner, & Crawford, (2008).
- Oral reading fluency passages are not “truly” equivalent in difficulty, introducing error into calculations of slope (Francis et al., 2008)
- **Definitely** use progress monitoring data to inform instruction.
- **Comprehension standards may make more sense beyond Grade 1**

# Challenges: Implementing an RTI Model

There is never enough

*TIME*

There is never enough

*MONEY*

There are never enough

*TRAINED PERSONNEL*



The numbers of children who still have reading difficulties after intervention is related to the *nature, quality, quantity* and *intensity of instruction*.

## The Power of Instruction!



What is the biggest challenge to RTI implementation in your school?

What is ONE idea for overcoming that challenge?



# RTI in Middle School





Learning for SUCCESS  
[www.texasldcenter.org](http://www.texasldcenter.org)

The Texas Center for Learning Disabilities (TCLD) investigates the classification, early intervention, and remediation of learning disabilities.

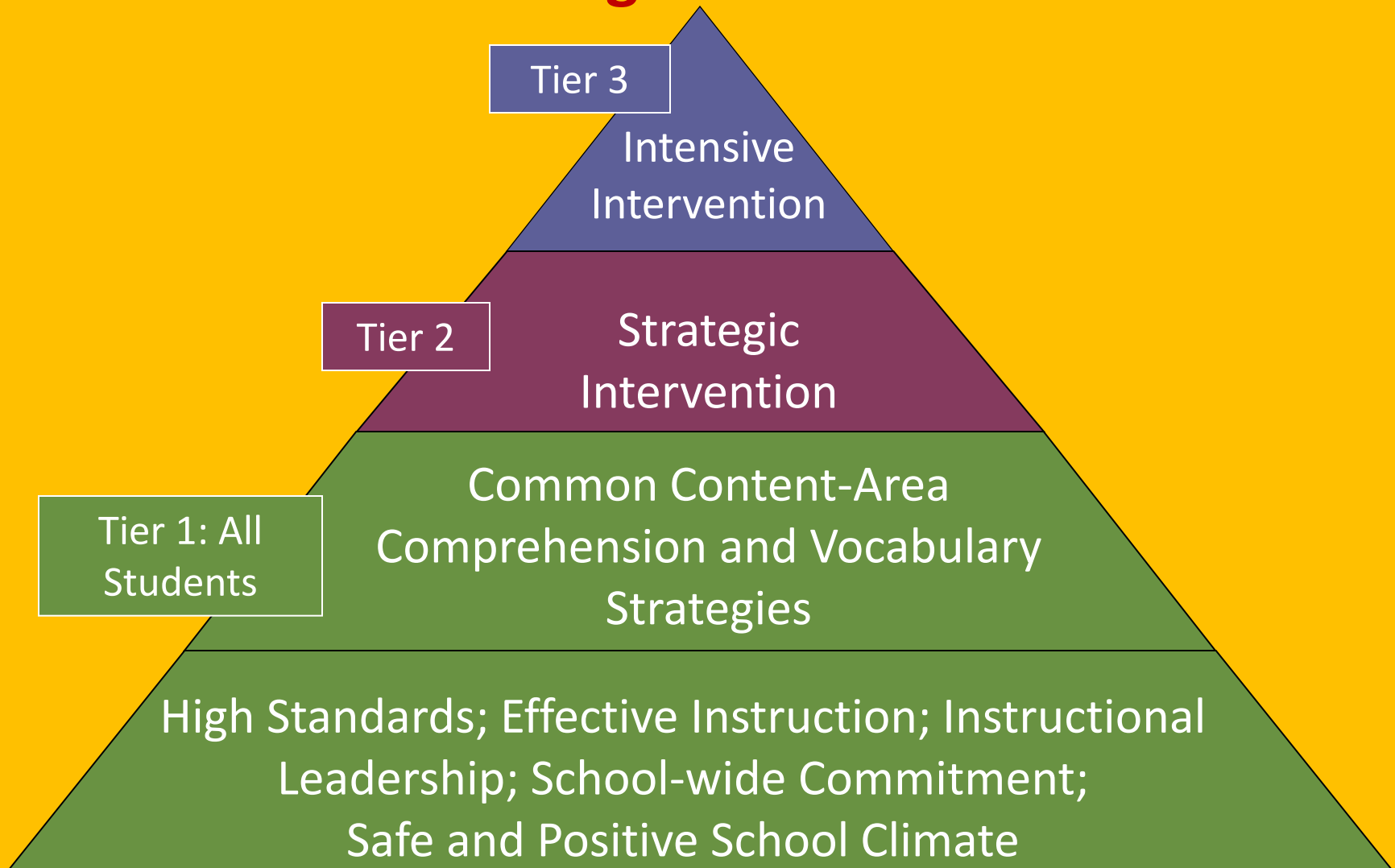


Jack Fletcher and David Francis,  
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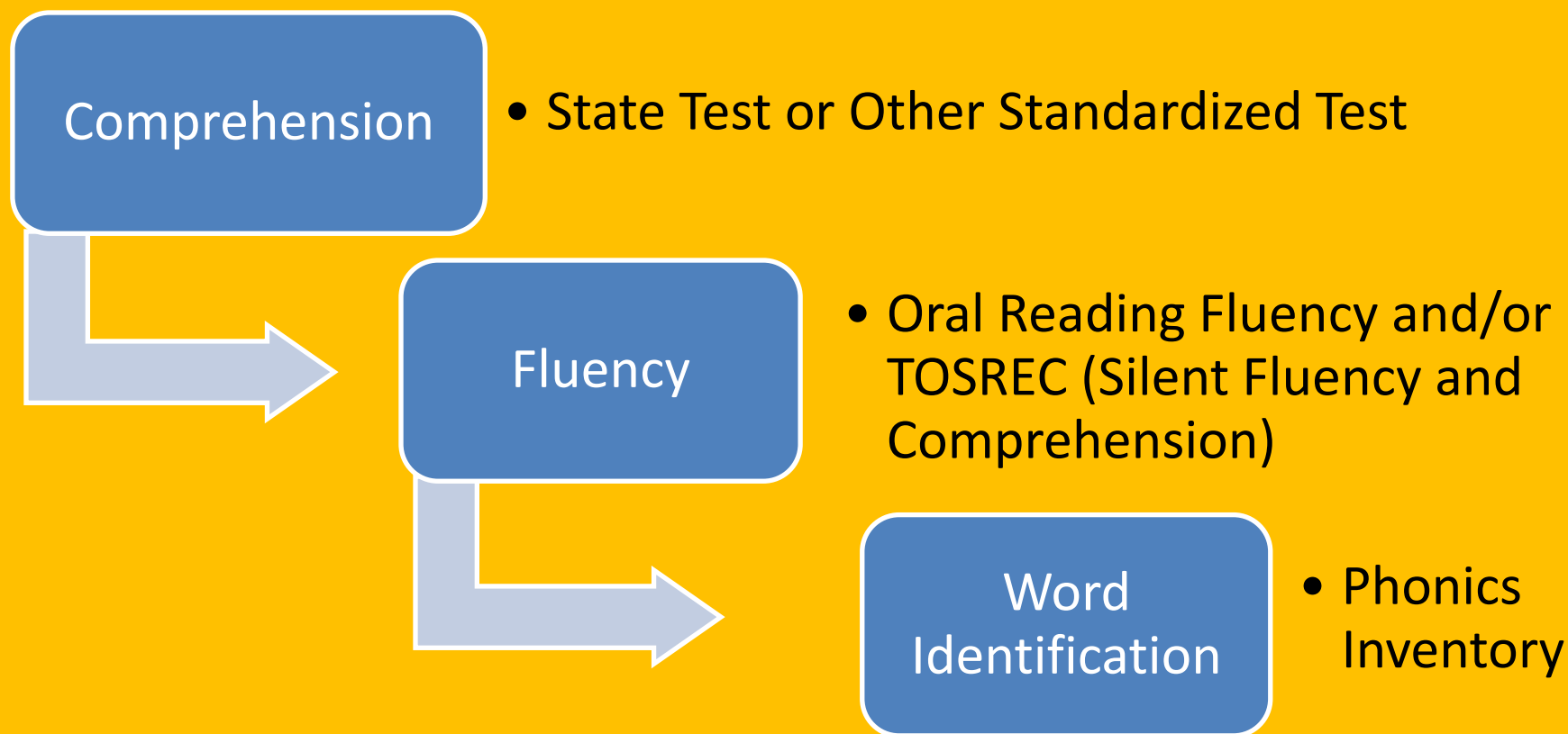


# One Example of a Tiered Middle School Reading Intervention



Denton et al., 2012, Brookes publishing.

# Screening, Identification, and Diagnostic Assessment



# RTI In Middle School

(Vaughn, Fletcher, and Others)

- Year 1: Tier 1 and Tier 2 intervention, Grades 6-8
- Year 2: Tier 3 Intervention for Low Responders, Grades 7-8
- Year 3: Continued Intervention for Low Responders, Grade 8

# Tier 1 in Middle School

- Implemented **across content area classes and reading classes**
- Small number of evidence-based **vocabulary and comprehension strategies taught and used consistently across classes**
- Teacher study groups in which they collaboratively planned lessons
- **“Bell-to-bell teaching”**
- **Active student involvement**



# Effective Instruction for Middle School Students with Reading Difficulties: The Reading Teacher's Sourcebook

Free Download from

[http://www.texasreading.org/utcrla/materials/middle  
school\\_instruction.asp](http://www.texasreading.org/utcrla/materials/middle_school_instruction.asp)

By Carolyn Denton, Sharon Vaughn, Jade Wexler,  
Deanna Bryan, & Deborah Reed

Also available from Brookes Publishing

## Tier 2 Students

- Struggling readers had failed the state high-stakes reading comprehension test or were on the “bubble” , or had not taken the test at grade level
- All read at least at a 3<sup>rd</sup> grade level
- Many had decoding and fluency problems as well as comprehension problems



# 6<sup>th</sup> Grade Study: Tiers 1 + 2

Vaughn et al., XX

- Struggling readers in 7 middle schools randomly assigned to Tier 2 intervention (n at posttest = 212) or Typical School Practice (n at posttest = 115)
- 3 urban schools (2 “inner city”); 4 located near a small city

# Tier 2 Implementation

- Took the place of an elective, about 50 minutes daily, year-long
- Class sizes of 10-15 students
- Researchers hired and supervised intervention teachers, who received substantial professional development



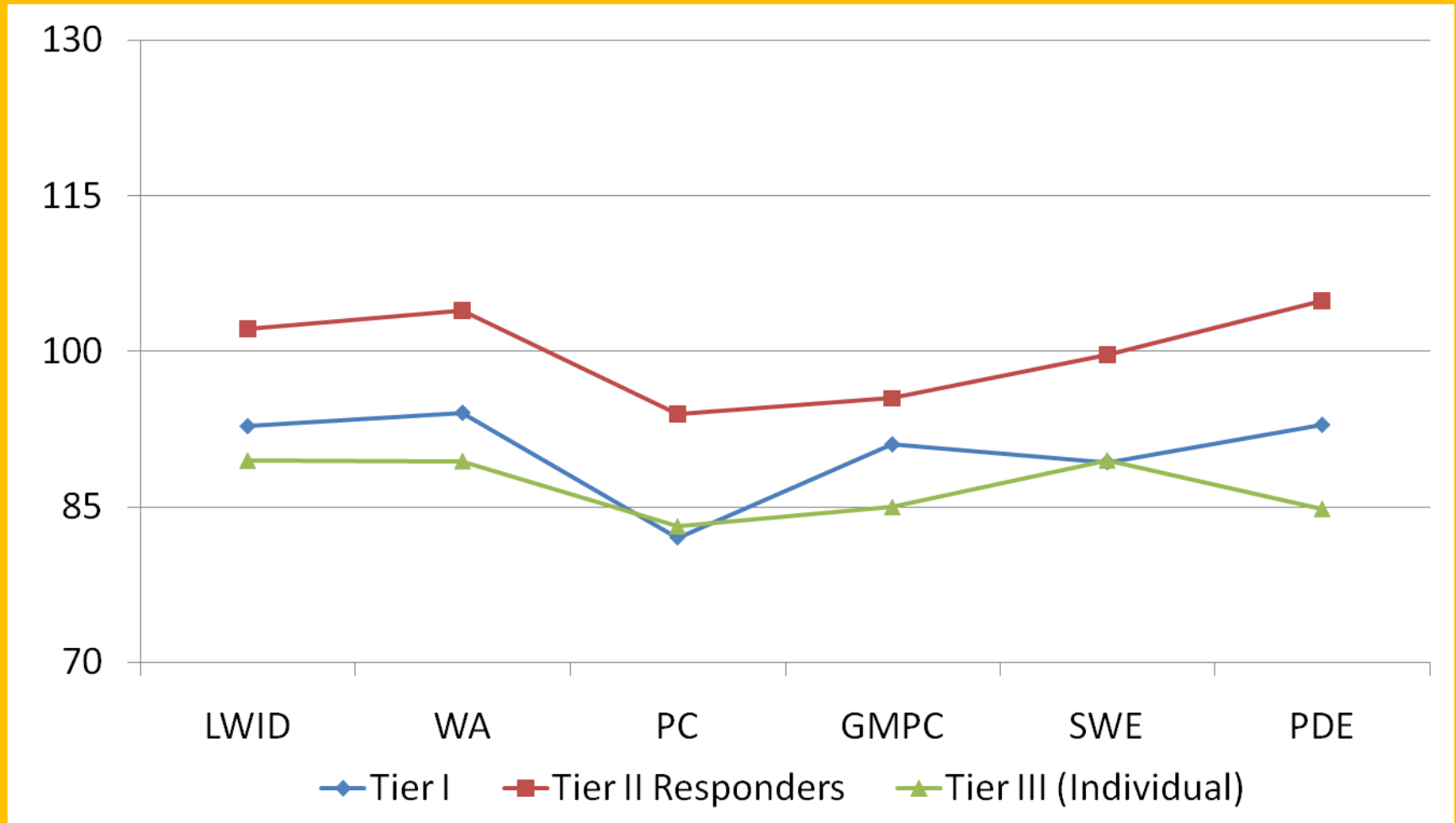
# Tier 2 Description

- Phase 1: Primary emphasis on multisyllable word study and reading fluency with secondary emphasis on vocabulary and comprehension (7-8 weeks)
- Phase 2: Primary emphasis on vocabulary and comprehension with secondary emphasis on word study and fluency (application of multisyllable word reading strategies learned in Phase 1) (17-18 weeks)
- Phase 3: Continued vocabulary and comprehension, with greater emphasis on independent student application of skills and strategies (8-10 weeks)

# Results: 6<sup>th</sup> Grade Study Tiers 1 + 2

- Tier 2 Intervention Group outperformed Typical Practice Group on word attack, spelling, the state accountability comprehension test, passage comprehension, and phonemic decoding efficiency.
- But...actual gains were small
- Effects were more apparent in particular subgroups of students (at a given site or at certain levels of pretest performance or age)

# Pretest Scores for Tier 3 Study



Mean = 100, sd = 15

# Tier 3: Grade 7

(Vaughn et al., 2011)

- Treatment students with low response in Grade 6 randomized to receive a standardized or individualized intervention
- Students still below benchmark in the comparison group continued in comparison condition
- No significant differences between standardized and individualized
- Treatment outperformed comparison on several reading outcomes

# Extended Tier 3: Grade 8

(Vaughn et al., 2012)

- Low responders to Grade 7 intervention received continued intervention in Grade 8
- Students still below benchmark in the comparison group continued in comparison condition
- Groups of 2 to 4, individualized intervention
- Treatment students performed significantly better than comparison in word identification and reading comprehension
- BUT treatment students did not close the gap with average students; **they maintained their discrepancy, while comparison students declined.**



Many people are suggesting a “triage” approach rather than a “tiered” approach for older students. Secondary struggling readers with the most severe problems are several years behind.

**Why put off intensive intervention?**

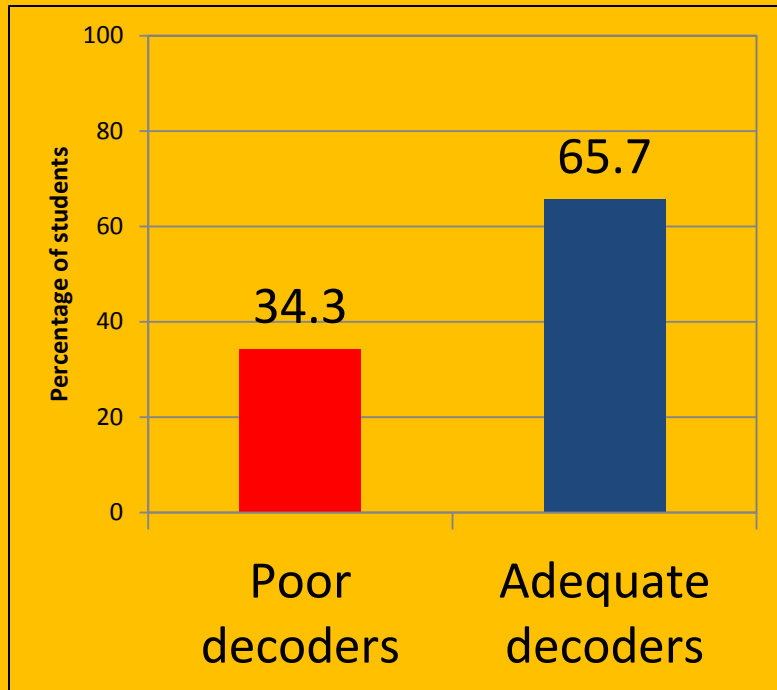
Vaughn, Denton, Fletcher, 2010



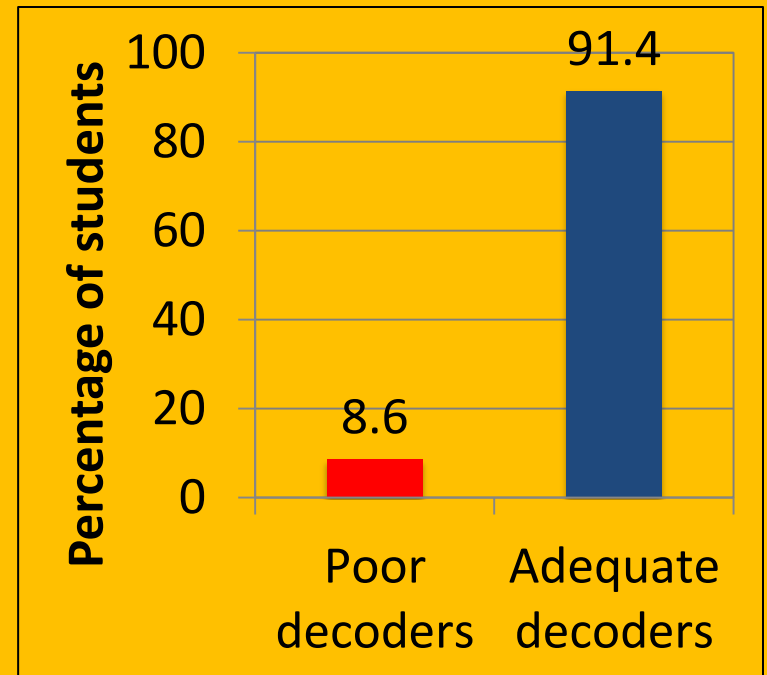
# Intervention for Older Students: Take-Away Messages

- **Adolescence is *not too*** late to intervene
- Problems are more complex, and **progress is typically slower** than in the primary grades
- **Serious reading difficulties are not easily remediated**; it may take several years
- Many students with comprehension difficulties also have word-reading problems; **provide a word identification program if needed**

# Percentage of Adolescents (G7-12) who Fail and Pass the Texas State Comprehension Test who are Adequate Decoders (above the 20<sup>th</sup> %ile on WJ III Letter-Word Identification)



**Poor  
Comprehenders**



**Adequate  
Comprehenders**

- **Implement a school-wide approach to enhanced vocabulary instruction** and the use of **a small number of consistent comprehension strategies** in every class
- **Comprehension strategy instruction is probably not enough** to overcome deficits in vocabulary and background knowledge.
- **Prioritize high-quality vocabulary instruction** and **look for ways to build background knowledge.**
  - **Read aloud** to students
  - Prioritize **expository text** reading
  - Ensure that **students read text** in content-area classes (use partner formats, etc.). Use graphic organizers to guide their reading.

# Interactive Graphic Organizers

- Help students understand relationships among key facts and concepts
- Can take many forms
- More effective if students are required to actively label, illustrate, sequence, etc.
- Students may write study guide questions using the graphic organizer.
- This supports literal understanding; students should be asked to use this literal information in some way to solve a problem or to connect it with other information

# Ocean Life

```
graph TD; A[Ocean Life] --> B[Plankton]; A --> C[Nekton]; A --> D[Benthos];
```

## Plankton

What?

\_\_\_\_\_

How Move?

\_\_\_\_\_

How Small?

\_\_\_\_\_

Examples:

Algae \_\_\_\_\_

Animals

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

## Nekton

What? \_\_\_\_\_

How Move? \_\_\_\_\_

Where Live?

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

4 \_\_\_\_\_

Examples:

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

## Benthos

What? \_\_\_\_\_

What Eat?

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

4 \_\_\_\_\_

Examples:

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

4 \_\_\_\_\_

**Photosynthesis**



**Respiration**



**Plants and Algae Use:**

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

\_\_\_\_\_ is combined  
with \_\_\_\_\_ to use the  
\_\_\_\_\_ in food.



**To Make**

1 \_\_\_\_\_

2 \_\_\_\_\_

**Produces**

1 \_\_\_\_\_

2 \_\_\_\_\_



# Voices of Students

“I would not mind starting over...But can you do that without my friends knowing about it? If so, I would love to learn my letter sounds again and learn how to pronounce words right. It would be good if I could figure out what words mean and could figure out what those stories mean.”

...A middle school student

McCray, Vaughn, & Neal, 2001

# Voices of Students

“I have been learning a lot. Some of the good things this year are that I can read what is on the menu for lunch. I tried to read the menu and would get so frustrated and I just had to stop. I used to shut down. I ate the same thing every day at school because I couldn’t read the menu. Now I still get frustrated, but I’m getting better.”

...A middle school student

McCray, Vaughn, & Neal, 2001



# Schools that “Beat the Odds”



# Characteristics of Schools with High Reading Performance Despite Challenges

- Strong instructional leadership
- Goal-setting and planning
- Regular assessment and monitoring of student progress
- Targeted instruction and intervention (A “whatever it takes” attitude)
- A “no excuses” approach with high expectations for every student
- A sense of urgency and a public commitment to learning

Denton, Foorman, & Mathes, 2003

# Cortez Elementary: Instructional Leadership

- Intervention is **not just for the students**. The principal, a former first grade teacher, is the **leader of her instructional team**.
- When a teacher needs assistance, the principal provides **mentoring and coaching**. She may personally go into a classroom to coach the teacher and model instructional approaches, send a reading specialist in, or send the teacher to get targeted training.
- At the same time, **the principal supports the teachers and provides what they need to succeed**. She has removed many of their duties, freeing their time for collaboration and planning for at-risk students.

# Pinedale School: Goal-Setting, Shared Responsibility with Central Coordination

- **Nothing is left to chance**, and no child is allowed to “fall through the cracks”
- At the beginning of each year, the teachers ***evaluate each child and set individual goals*** based on the results.
- **Classroom teacher is the “case manager”** for each student in her room. Students may receive services from other specialists, but the teacher coordinates the services and has ultimate responsibility for the student.

# Pinedale School: Assessment

- **Reading progress** of each Tier 2 and 3 child is **monitored weekly**
- **Principal meets with teams of teachers weekly** to look at the results and discuss changes that need to be made if a child is not on track to meet his/her reading goals.
- When a child is not on track, **everyone works together** to devise a plan
- Discussion is *descriptive* rather than *punitive*. **ALL** teachers and administrators are responsible for the progress of **ALL** students.

# Cortez Elementary: Intervention

- Principal describes “relentless” intervention
- Classroom teachers : 90 minutes of core reading instruction each day plus short-term Tier 2
- If needed, tutoring before or after school (in addition to the above).
- If needed: extra 45-minutes from a reading specialist each day
- Most at-risk taught by a dyslexia specialist.
- The most at-risk students, and students with reading difficulties who move into the school get “intensive care”, a special short-term intervention during recess (with prizes and pizza for motivation).

# Prospect School District Elementary Schools: Concentrated, Coordinated Intervention

- Universal screening and progress monitoring with **extensive use of the data** at the district, school, and classroom levels
- **Extensive, targeted teacher professional development** (principals attend too)
- **Tier 1: 90-minute daily reading instruction** with an **evidence-based core program** and small-group instruction
- **Classroom reading teachers provide extra short-term skills-based intervention** based on specific needs

# Prospect School District Elementary Schools: Grade 1 Intervention

- Reading specialists “push-in” to provide small-group intervention to Tier 2 and 3 Students during the **regular reading block** (intervention students receive a small group lesson from their regular teachers AND another one from the specialist)
- The same reading intervention teachers provide **supplemental “Tier 3” intervention to students with the most severe needs** (identified at the beginning of Grade 1 rather than waiting for Tier 2 to be ineffective)



# ***Eastport Elementary: Thinking Outside the Box***

- No designated reading interventionists; 4 first grade classrooms
- For 40 minutes every day, at-risk students go to intervention while all others have science/social studies
- Every day, during science and social studies times, 2 1<sup>st</sup> grade teachers take larger classes to free up the other 2 to deliver intervention; 2 special education teachers also provide small-group intervention during the same period
- Intervention is provided to 4 groups of 3-4 of the most at-risk students from each classroom for 40 min. per day
- Teachers are trained and coached in delivery of a research-validated intervention

# MLK Middle School: Instruction and Intervention

- **All students receive a reading class every day**
- Students are grouped according to ability; assessed and re-grouped every 6 weeks; instruction is provided at students' levels
- **ALL teachers at a grade-level provide reading instruction during one class period each day** (including content-area teachers, the gym teacher and the librarian!)
- Implement a research-supported scripted program
- Teachers receive professional development and coaching in implementing the program
- Struggling readers receive small group intervention during this same period.

# “No Excuses” Attitude: Cortez Elementary

Principal:

*“We (should be) able to see that we are teaching what the child needs to learn, and if not--why? And so we always are looking at ourselves. Is it our curriculum; is it the strategies the teacher might not have?”*

Teacher at Cortez Elementary: “As  
*professional educators we are  
responsible for teaching children to  
read. If they have an awful home life,  
we still have to teach them to read.  
We can’t have excuses, even if parents  
are in jail or homeless.”*

# A Sense of Urgency

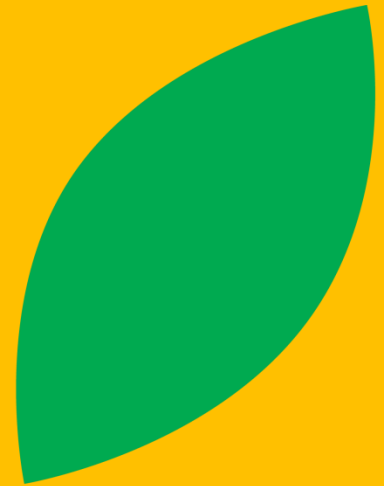
*“If (there is) a very at-risk child, ...we adjust the schedule of the child. If he needs extra help, that next day he will have a reading specialist work with him. If that’s not enough, then we have tutorials, and another teacher will work with him. We’ve built all of these safety nets to protect children who are at-risk. **A child who is very at-risk will have a schedule that is very different from other students.**”*

...A school principal in Denton, Foorman, & Mathes (2003)

# The bottom line...

*Students who are performing below grade level will only close the gap with their classmates if they learn **FASTER** than other students.*

***More Instruction  
Efficient Instruction  
More Practice***



*How can you convey a sense  
of urgency in your school or  
schools?*

# Einstein's Definition of Insanity

*Doing the **same thing** over and over again and expecting different results.*





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