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# What we know about the impact of intensive interventions with older students

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K-12 Literacy Seminar for Regional Centers

# Primary Characteristics of Struggling Readers in Middle and High School

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They are almost always less fluent readers—sight word vocabularies many thousands of words smaller than average readers

Usually know the meanings of fewer words

Usually have less conceptual knowledge

Are almost always less skilled in using strategies to enhance comprehension or repair it when it breaks down

And, there are students in every middle and high school who continue to struggle with basic word identification processes

# Some important questions about interventions for struggling readings in middle and high school

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Can phonics be successfully taught to students who still struggle in this area as fourth graders or 6<sup>th</sup> graders?

Should phonics be taught to students beyond early elementary school who still do not have proficient skills in this area?

For what proportion of struggling readers is instruction in comprehension strategies enough?

What approaches will be the most effective for the largest numbers of students?

What is currently known about the  
effects of intensive remedial  
interventions for older students with  
serious reading difficulties

## A study of intensive, highly skilled intervention with 60 children who had severe reading disabilities

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Children were between 8 and 10 years of age

Had been receiving special education services for an average of 16 months

Nominated as worst readers: at least 1.5 S.D's below grade level

Average Word Attack=69, Word Identification=69, Verbal IQ=93

Randomly assigned to two instructional conditions that both taught “phonics” explicitly, but used different procedures with different emphasis

Children in both conditions received 67.5 hours of one-on-one instruction, 2 hours a day for 8 weeks

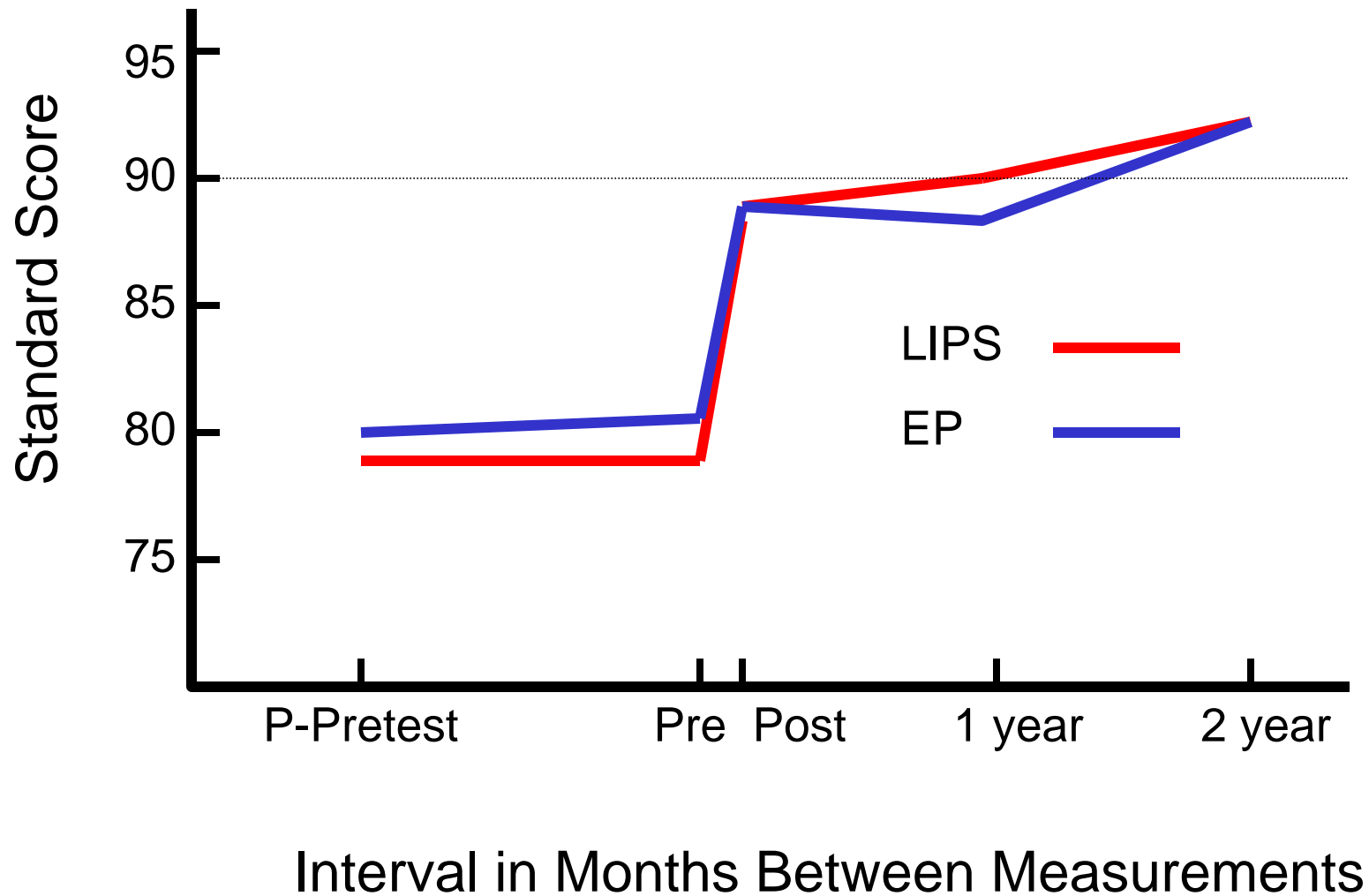
Children were followed for two years after the intervention was completed

# Time x Activity Analyses for the Two Intervention Approaches

	LIPS	EP
Phonemic Awareness and Phonemic Decoding	85%	20%
Sight Word Instruction	10%	30%
Reading or writing connected text	5%	50%

Torgesen, J.K., Alexander, A. W., Wagner, R.K., Rashotte, C.A., Voeller, K., Conway, T. & Rose, E. (2001). Intensive remedial instruction for children with severe reading disabilities: Immediate and long-term outcomes from two instructional approaches. *Journal of Learning Disabilities*, 34, 33-58.

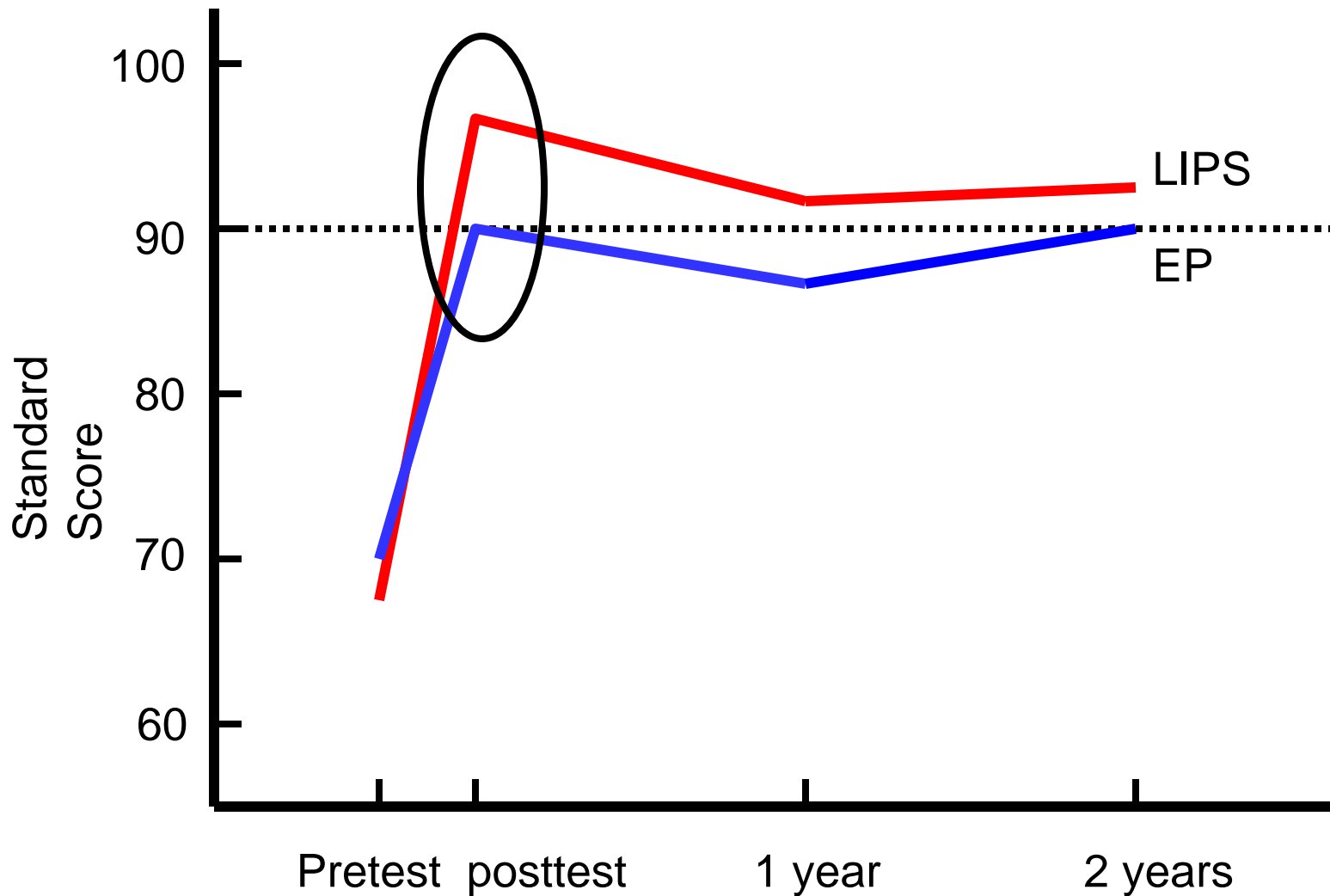
## Growth in Total Reading Skill Before, During, and Following Intensive Intervention





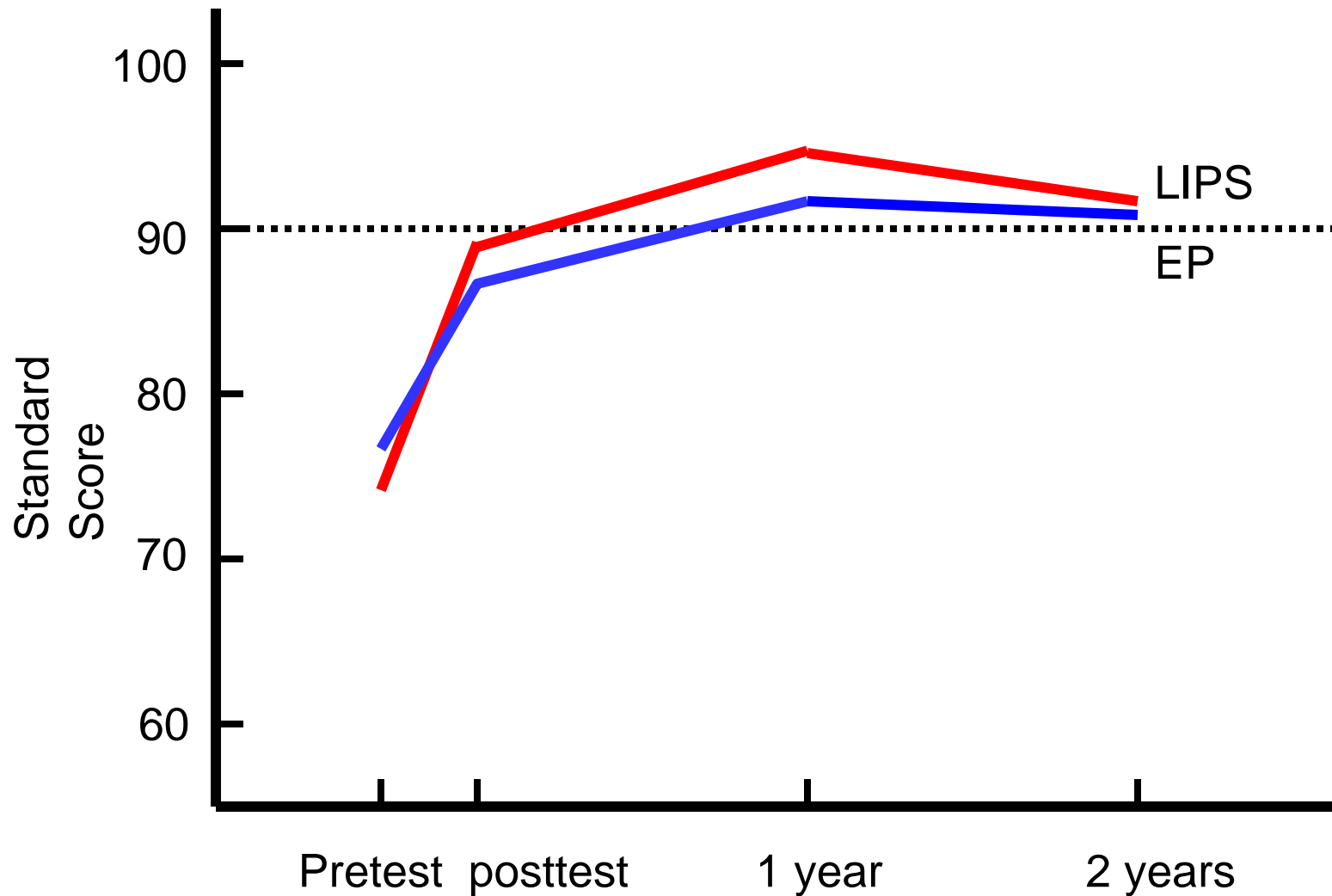
## Growth in phonemic decoding during intervention & follow-up

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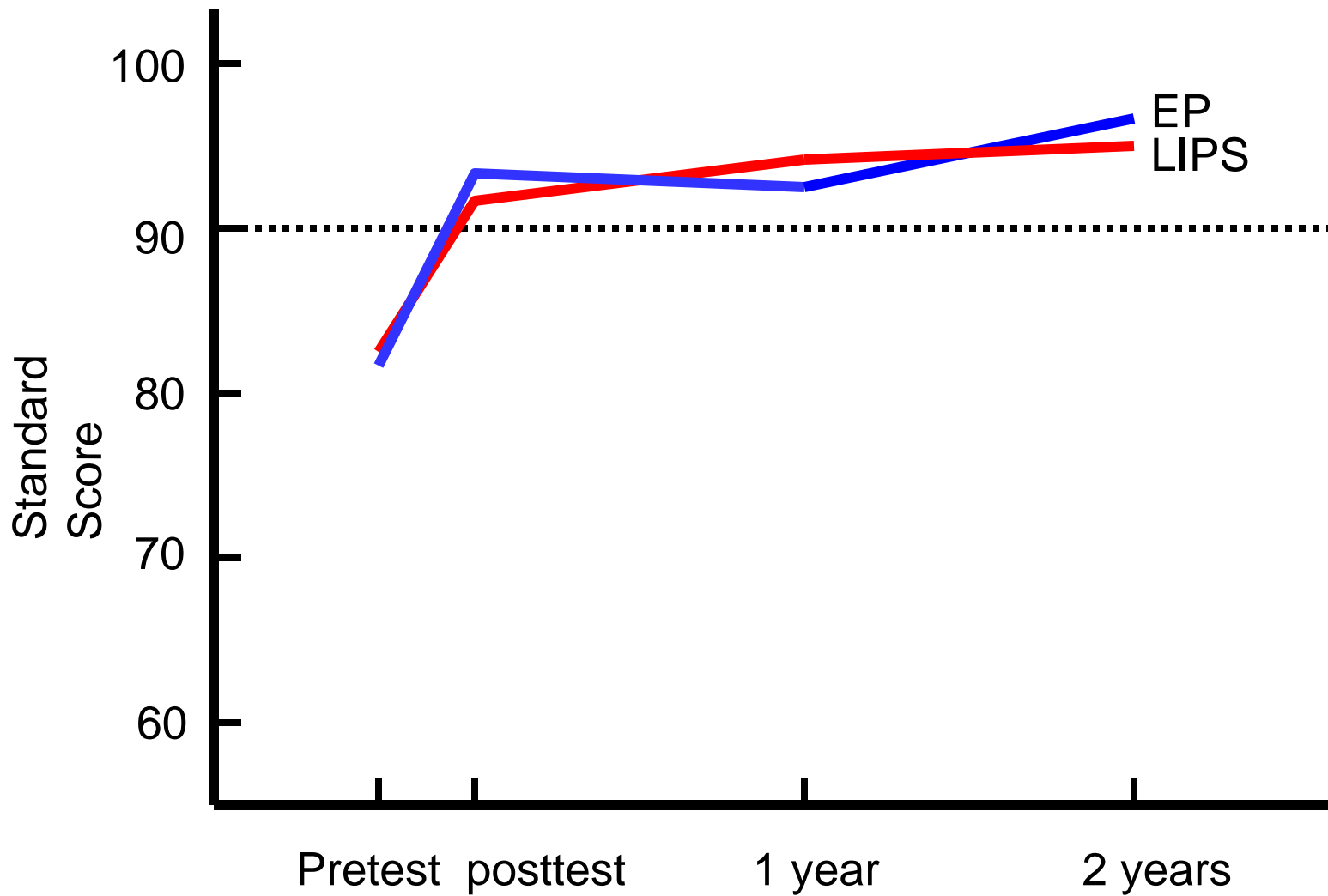
## Growth in text reading accuracy during intervention & follow-up

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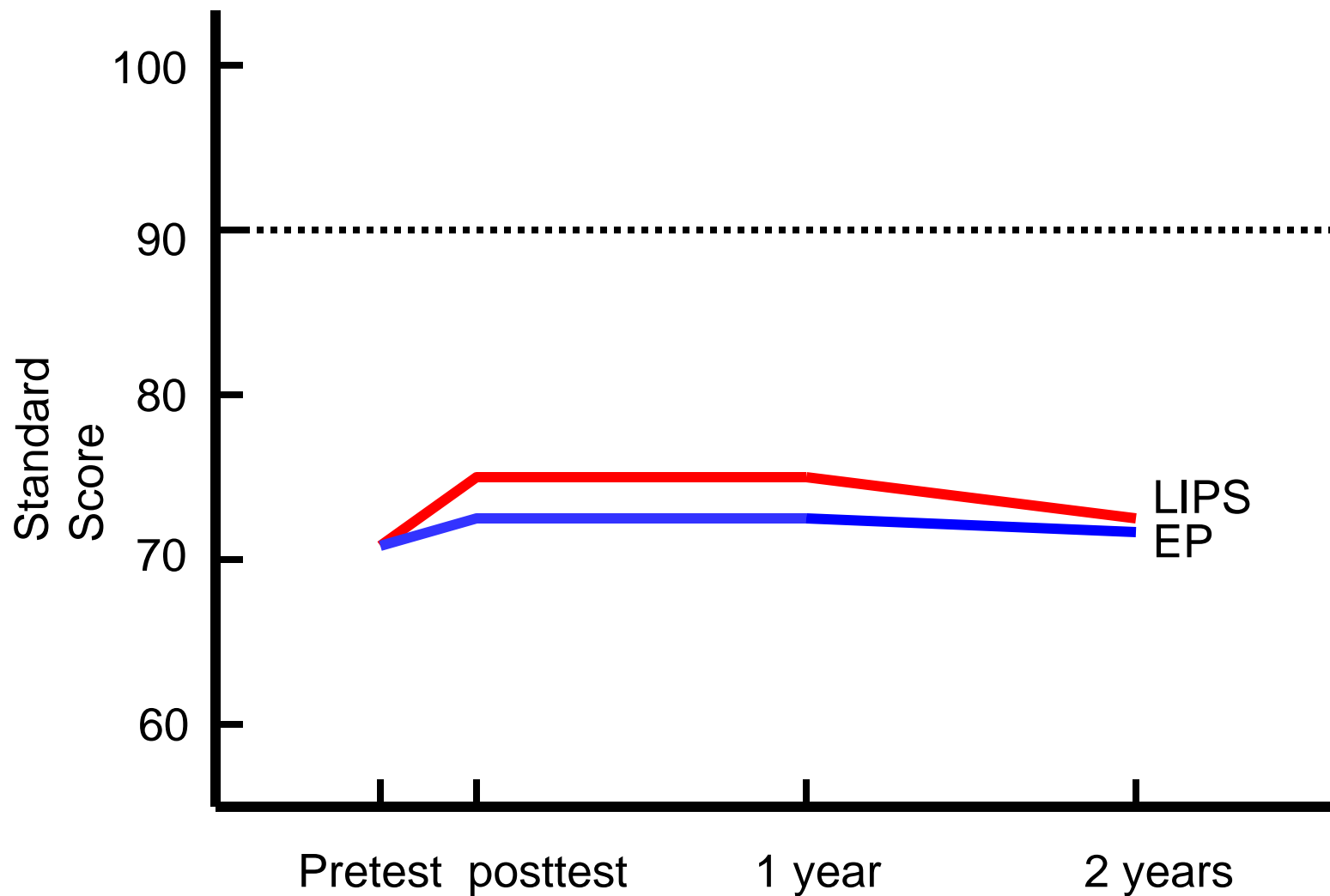
## Growth in comprehension during intervention & follow-up

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## Growth in fluency during intervention & follow-up

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## Oral Reading Fluency was much improved on passages for which level of difficulty remained constant

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Absolute change in rate from pretest to 2-year follow-up.

Most difficult  
passage

Pretest -- 38 WPM, 10 errors

Posttest -- 101 WPM, 2 errors

Next most difficult  
passage

Pretest -- 42 WPM, 6 errors

Posttest -- 104 WPM, 1 error

A School-based, treatment control study of 40 students

60% Free and reduced lunch

Mean Age 12 years (range 11-14)

45% White, 45% Black, 10% other

53% in special education

Received 94-108 hours (mean=100) hours of instruction

Intervention provided in groups of 4-5

Remedial Methods: Spell Read P.A.T.

Mean Word Identification Score = 83

Children begin with word level skills around 10th percentile

## A Brief Description of the Spell/Read P.A.T. program

Distribution of activities in a typical 70 minute session:

40 minutes -- Phonemic awareness/phonics

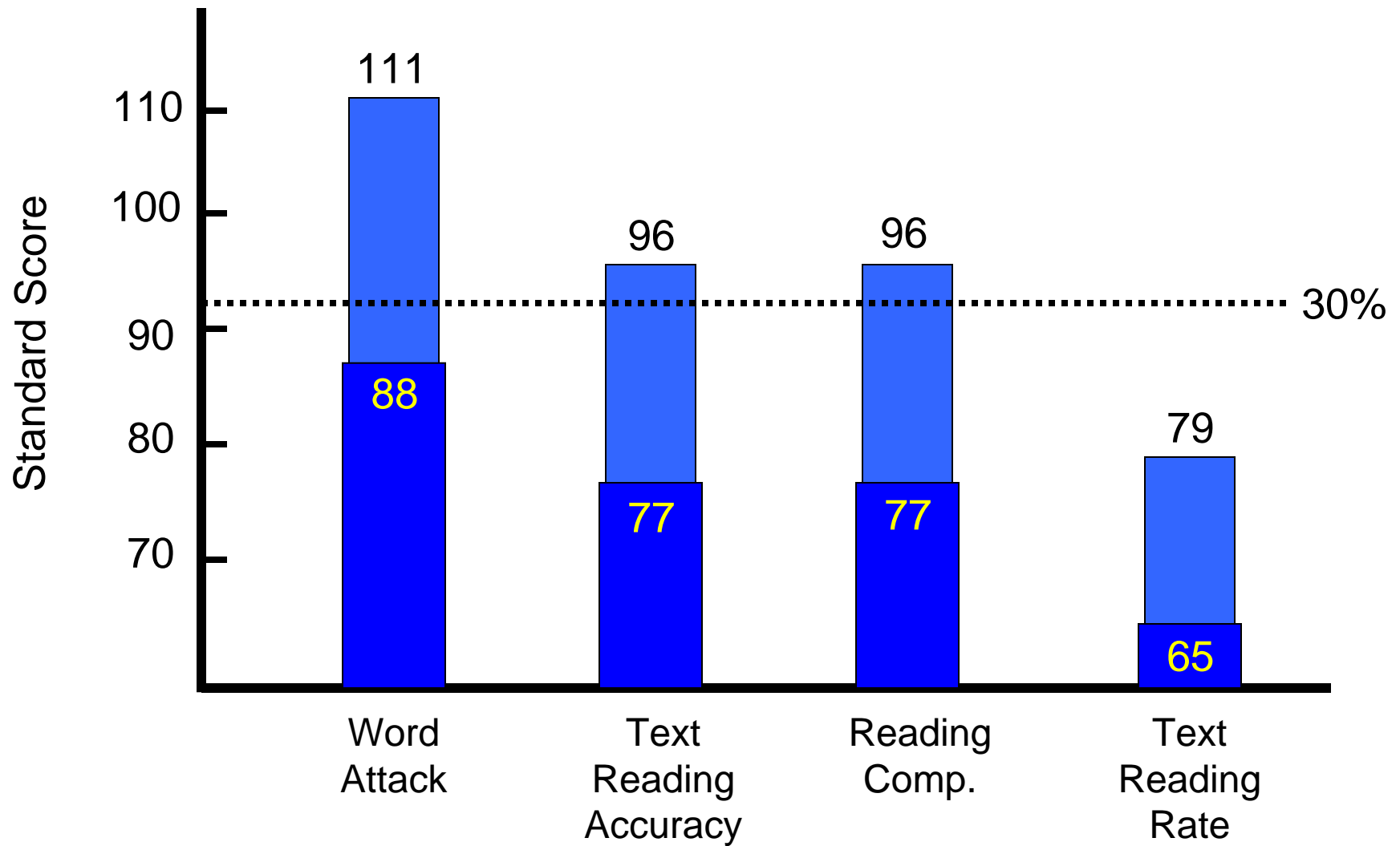
20 minutes -- shared reading

7 minutes -- writing about what was read

3 minutes -- wrap up

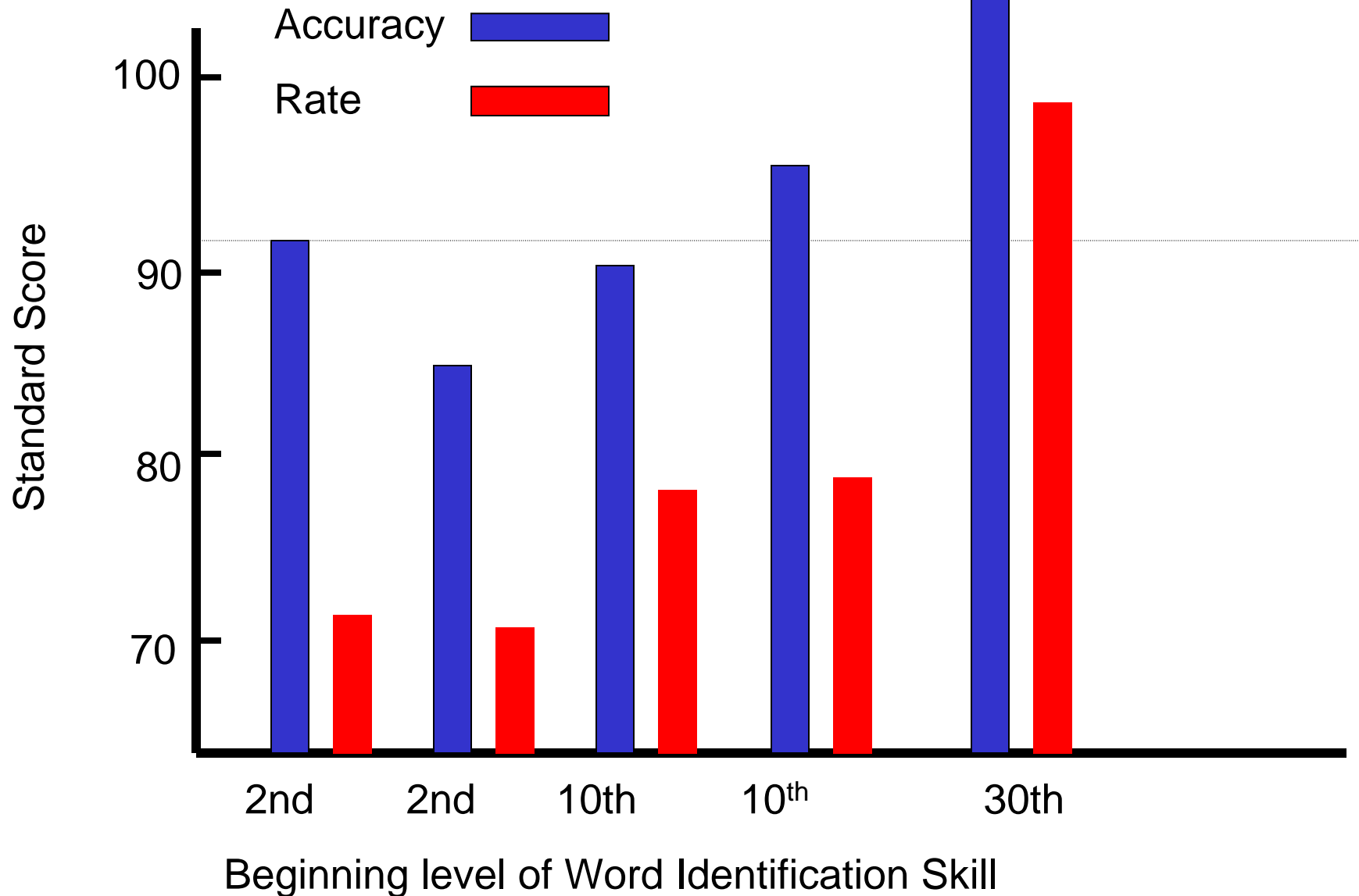
Systematic instruction in phonic elements beginning with mastery of 44 phonemes at single syllable level through multi-syllable strategies. Fluency oriented practice from beginning of instruction. Discussion and writing to enhance comprehension.

# Outcomes from 100 Hours of Small Group Intervention--Spell Read

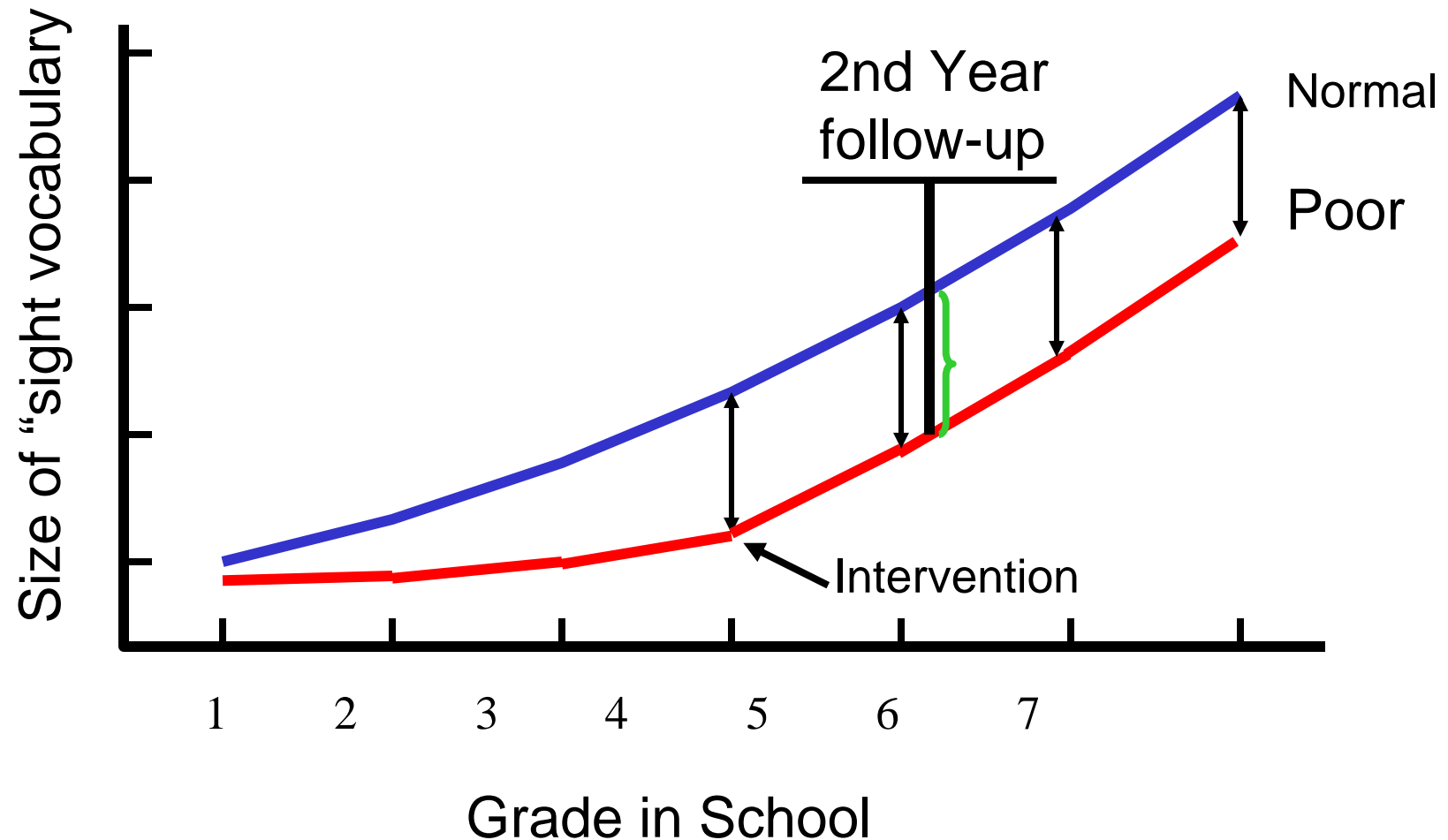




# Disparity in outcomes for rate vs. accuracy in five remediation studies



# Projected growth in “sight vocabulary” of normal readers and struggling readers before and after remediation

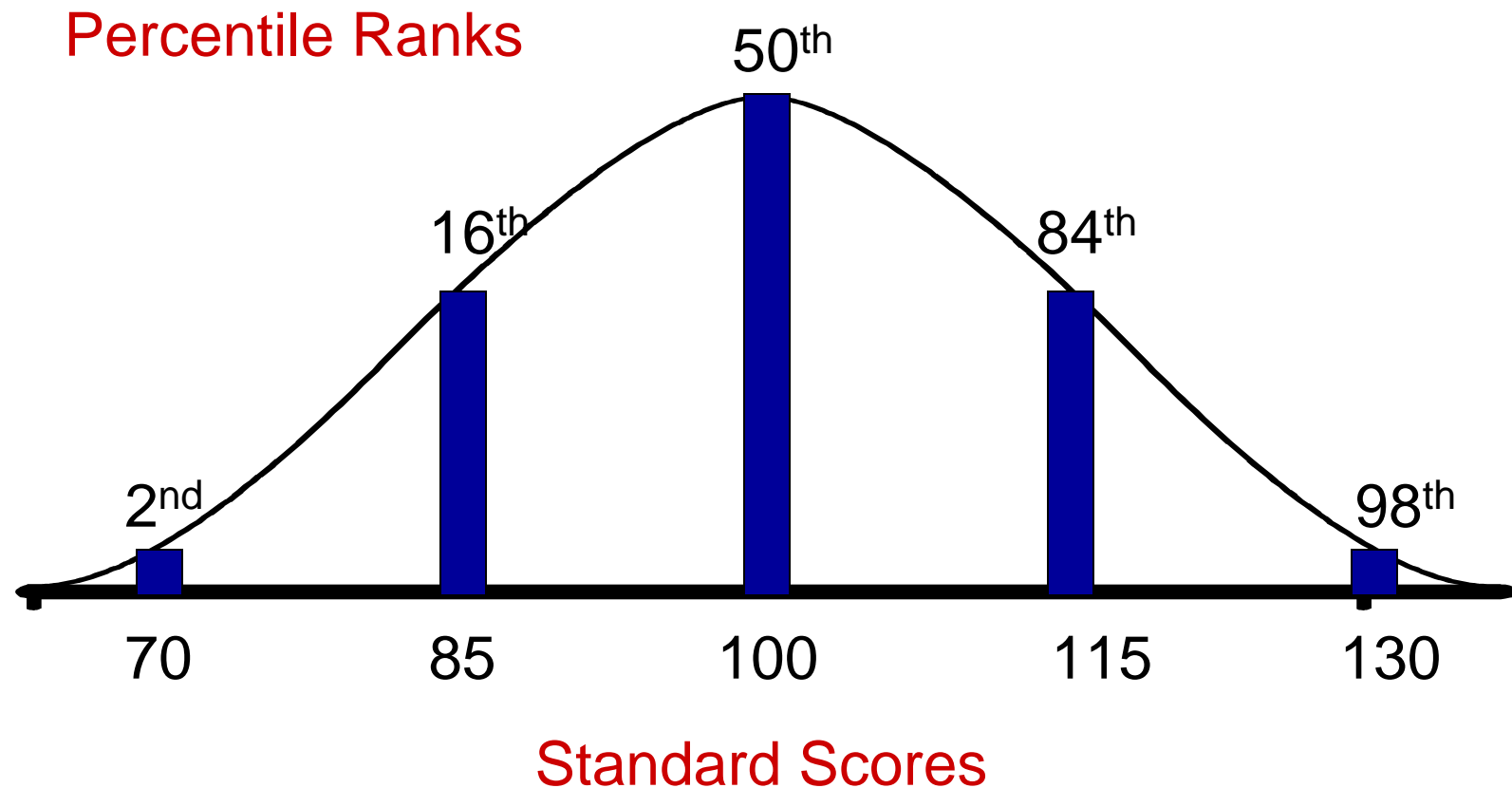


Remedial effectiveness vs. state level reading standards – what do we know about closing the reading gap for seriously impaired readers?

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An accurate and widely available metric—change in standard score per hour of instruction suggests that we know how to “close the gap” in terms of narrowing the gap

A standard score shows where you fall within the normal distribution of reading skills for student at your age or grade



# Growth rates for samples that started below the 5<sup>th</sup> percentile (ss=75) in word reading ability

<u>Authors</u>	<u>Hrs.</u>	<u>Word Attack</u>	<u>Word ID</u>	<u>P.Comp.</u>
Alexander	65	<u>.32</u> (45 <sup>th</sup> )	<u>.19</u> (21 <sup>st</sup> )	
Lovett,	35		<u>.16</u> (2 <sup>nd</sup> )	.14 (5 <sup>th</sup> )
Wise,	40	<u>.30</u> (35 <sup>th</sup> )	<u>.24</u> (13 <sup>th</sup> )	.14 (36 <sup>th</sup> )
Torgesen	68	<u>.41</u> (39 <sup>th</sup> )	<u>.20</u> (12 <sup>th</sup> )	.12 (27 <sup>th</sup> )
Torgesen	68	<u>.30</u> (25 <sup>th</sup> )	<u>.21</u> (10 <sup>th</sup> )	.15 (29 <sup>th</sup> )
Lovett,	70	<u>.24</u> (14 <sup>th</sup> )	<u>.18</u> (5 <sup>th</sup> )	.16 (6 <sup>th</sup> )
Lovett	70	<u>.30</u> (14 <sup>th</sup> )	<u>.20</u> (5 <sup>th</sup> )	.18 (4 <sup>th</sup> )
O & W	60	<u>.23</u> (35 <sup>th</sup> )	<u>.18</u> (9 <sup>th</sup> )	.17 (14 <sup>th</sup> )
Torgesen	133	<u>.18</u> (39 <sup>th</sup> )	<u>.07</u> (16 <sup>th</sup> )	.07 (19 <sup>th</sup> )

## Growth rates for samples that started with word reading ability between the 6<sup>th</sup> and 16<sup>th</sup> percentiles

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<u>Authors</u>	<u>Hrs.</u>	<u>Word Attack</u>	<u>Word ID</u>	<u>P.Comp.</u>
Truch (1994)	80		<u>.21</u> (32 <sup>nd</sup> )	
Truch (2003)	80		<u>.19</u> (48 <sup>th</sup> )	
Torgesen	51	<u>.29</u> (55 <sup>th</sup> )	<u>.16</u> (25 <sup>th</sup> )	.24 (35 <sup>th</sup> )
Torgesen	100	<u>.23</u> (77 <sup>th</sup> )	<u>.19</u> (39 <sup>th</sup> )	.19 (39 <sup>th</sup> )

## Average growth rates and final status for students who begin intervention at different levels of strength in word reading ability

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<u>Beginning Level</u>	<u>Word Attack</u>	<u>Word ID</u>	<u>P.Comp.</u>
Below 5 <sup>th</sup> percentile	.28 (29 <sup>th</sup> )	<u>.18 (9<sup>th</sup>)</u>	.14 14 <sup>th</sup>
Between 6 <sup>th</sup> & 16 <sup>th</sup>	.26 (66 <sup>th</sup> )	<u>.19 (29<sup>th</sup>)</u>	.27 36 <sup>th</sup>

Across a number of different methods and group sizes, we know it is possible to narrow the gap

We have not yet demonstrated publicly that we understand what must be done to close the gap

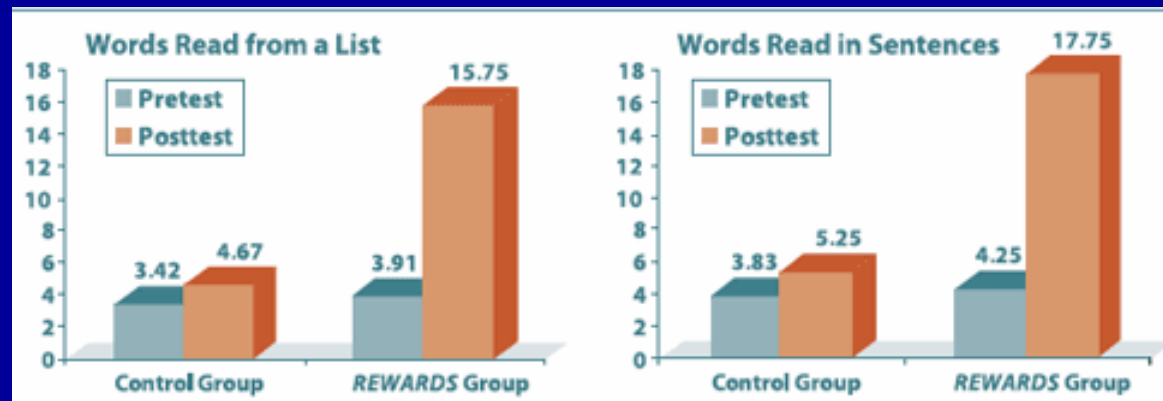
# Adolescent Literacy: Other interventions for older students

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## High level decoding and fluency

Assumes proficiency in early decoding

Targeted for students who have difficulties reading multisyllable words or who read slowly (60-120 WPM)



Archer, A.L. (1981). *Decoding of multisyllabic words by skill deficient fourth and fifth grade students*. Unpublished doctoral dissertation, University of Washington, Seattle.



# Adolescent Literacy: Other interventions for older students

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## Direct instruction in comprehension

Teachers explicitly explain and model a comprehension strategy

Guided practice with feedback with discussion

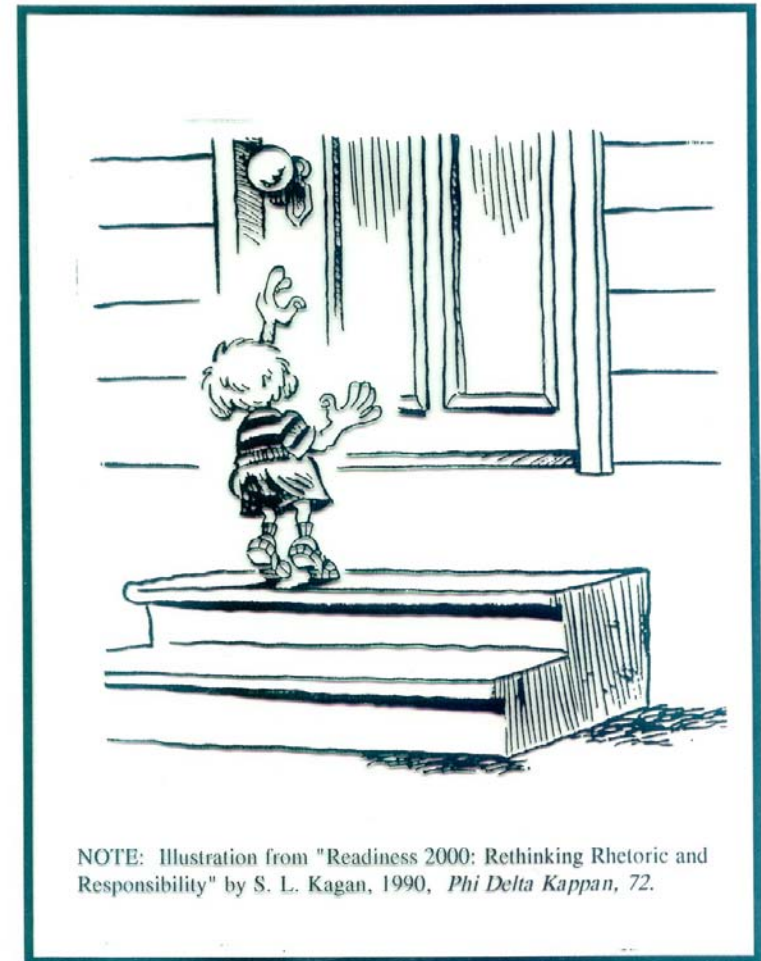
Independent practice and review, with further discussion

Applebee, Langer, Nystrand, and Gamoran (2003)

Gersten, Fuchs, Williams, and Baker (2001)

Block, C., Gambrell, L., & Pressley, M., (Eds.). (2002)

**A mistake we often make in education is to plan the curriculum materials very carefully, arrange all the instructional materials wall to wall, open the doors of the school, and then find to our dismay that they've sent us the wrong kids.**



NOTE: Illustration from "Readiness 2000: Rethinking Rhetoric and Responsibility" by S. L. Kagan, 1990, *Phi Delta Kappan*, 72.

# Foundations of a “science” of reading interventions for older students

## Reliable findings concerning the efficacy of one method vs. another

Word level vs. comprehension instruction

Direct vs. experiential learning

Comprehension strategies vs. fluency exp.

Swanson's meta-analysis is a good example.  
Some approaches to instruction work better than others (Swanson, 1999)

# Foundations of a “science” of reading interventions for older students

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Reliable findings concerning the impact of an intervention applied under specified conditions

How do students perform relative to a meaningful standard after an intervention

Evidence that student is using a strategy?

Growth in phonemic decoding skills?

Performance on experimenter-developed reading test?

# Foundations of a “science” of reading interventions for older students

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## Districts and schools will want to know:

If I adopt a specific curricula or intervention approach, provide a specific amount of training and support to teachers, teach students for a specified length of time in a specific group size:

What proportion of my level 1 (or level 2, etc.) students will be able to meet the grade level standard on our group administered reading comprehension (accountability test?)

# Foundations of a “science” of reading interventions for older students

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Although we are not likely to have answers to the previous question, we should be alert, when we examine intervention studies to:

- Nature of the outcome measures used

- The remaining gaps in performance after intervention

**Questions/Discussion?**

# References

Torgesen, J.K., Alexander, A. W., Wagner, R.K., Rashotte, C.A., Voeller, K., Conway, T. & Rose, E. (2001). Intensive remedial instruction for children with severe reading disabilities: Immediate and long-term outcomes from two instructional approaches. *Journal of Learning Disabilities, 34*, 33-58.

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