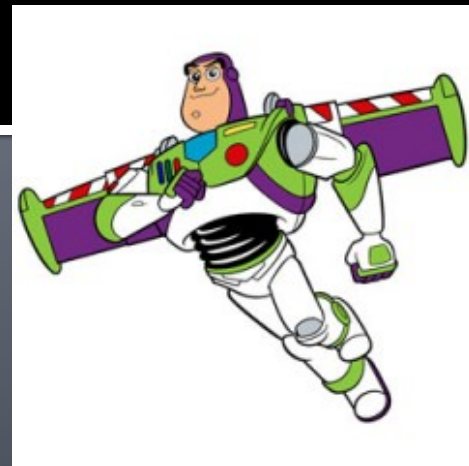


Simple View of Reading and Beyond: Need for Expanded Models to Guide Assessment and Intervention for Reading Disorders

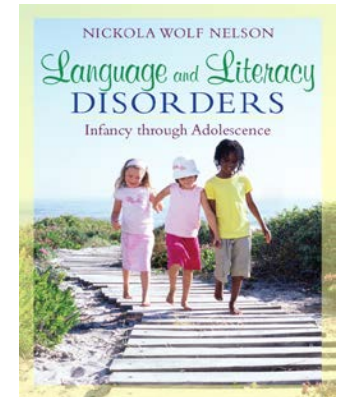
International Dyslexia Association
Grapevine, Texas
October 30, 2015

Nickola Wolf Nelson, Ph.D., CCC-SLP
Michele A. Anderson, Ph.D., CCC-SLP
Western Michigan University



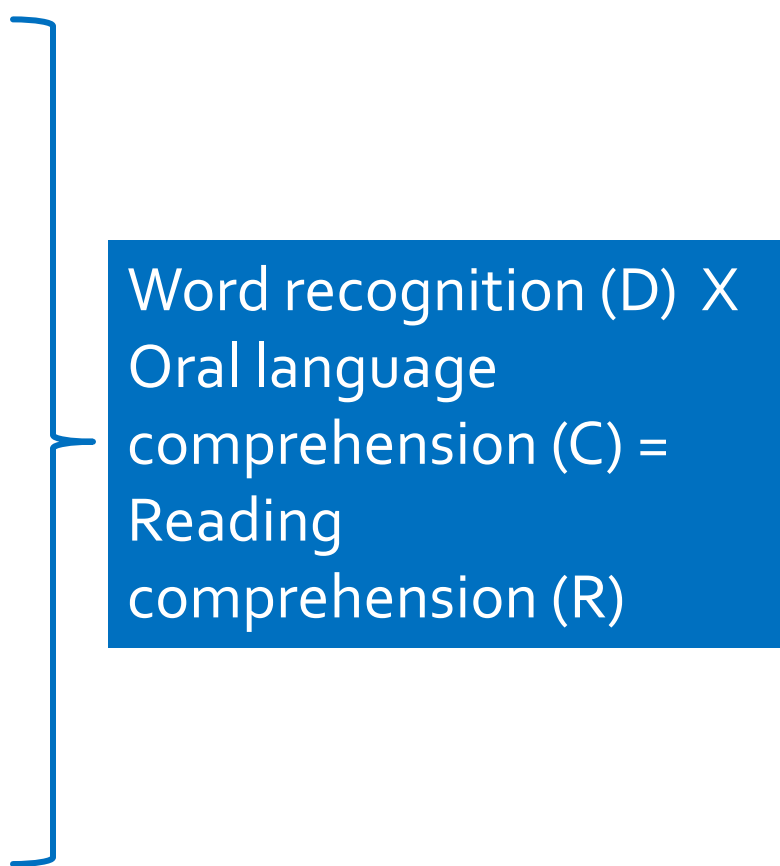
Disclosure/Acknowledgments

- Nickola Nelson is a co-author of the Test of Integrated Language and Literacy Skills (TILLS). References to this measurement tool will be made during this session. **Nonfinancial: No relevant nonfinancial relationships exist.**
- Many graduate students, colleagues, test administrators
- Nelson, N. W., Plante, E., Helm-Estabrooks, N., & Hotz, G., (2016). *Test of Integrated Language and Literacy Skills (TILLS)*. Baltimore, MD: Paul H. Brookes Publishing, Inc. (with potential royalties). Paul H. Brookes Publishing Co. also contributed financially and nonfinancially to the development of the TILLS.
- U.S. Department of Education, Office of Special Education Programs, and Institute of Education Sciences, National Center for Special Education Research, Grant R324A100354 to Western Michigan University funded the standardization research on the TILLS. However, the opinions in this presentation are those of the authors and not the U.S. government.
- Nelson, N. W. (2010). *Language and Literacy Disorders: Infancy through Adolescence*. Boston, MA: Allyn & Bacon.



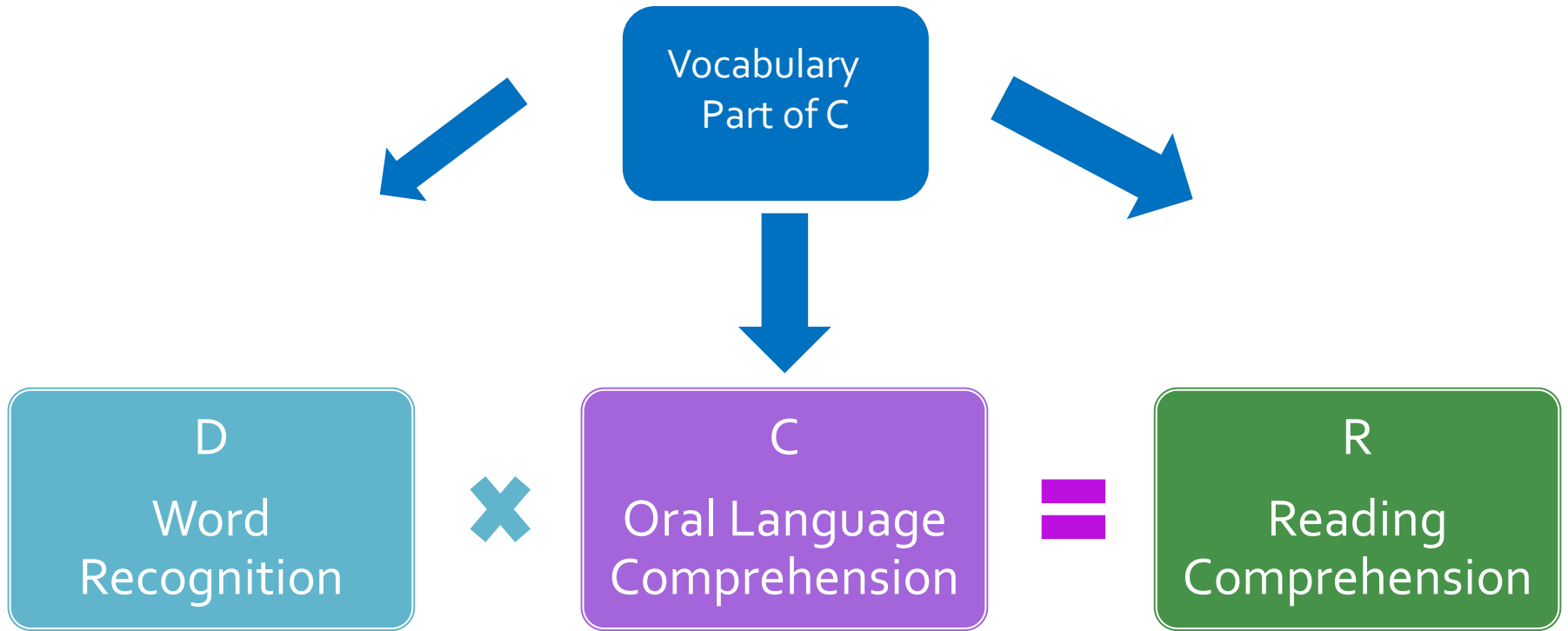
“Simple View of Reading”

- Reading decoding/ word recognition
 - Sound/word level knowledge
 - Phonological (and orthographic) aspects of language
 - Focus on form
- Reading comprehension
 - Sentence/discourse level knowledge
 - Nonphonological aspects of language
 - Relies on accurate decoding
 - Focus on making sense



Word recognition (D) X
Oral language
comprehension (C) =
Reading
comprehension (R)

Gough, P. B., & Tunmer, W. (1986). Decoding, reading, and reading disability. *Remedial and Special Education*, 7, 6-10.



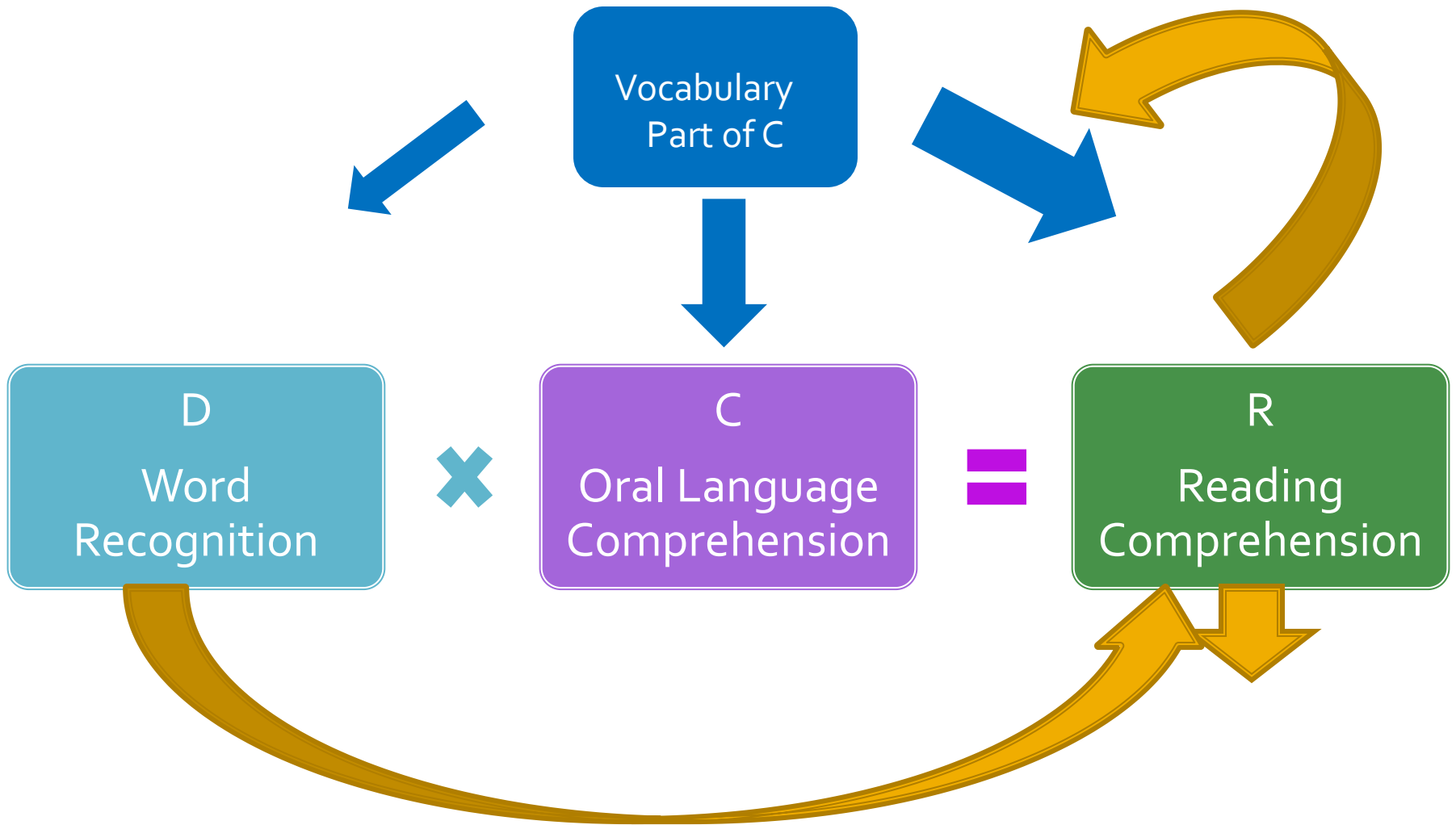
Simple View of Reading (SVR; Gough & Tunmer, 1986)

Simple View of Reading Redux (Tunmer & Chapman, 2012)

Definition of Dyslexia

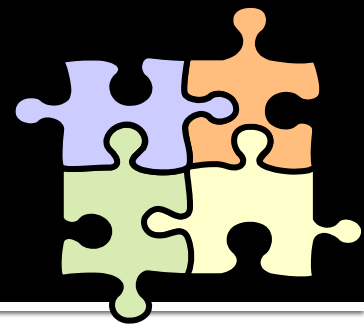
*"Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with **accurate and/or fluent word recognition and by poor spelling and decoding abilities**. These difficulties typically result from a deficit in the **phonological component of language** that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. **Secondary consequences** may include problems in **reading comprehension** and reduced reading experience that **can impede growth of vocabulary and background knowledge.**"*

- Adopted by the IDA Board of Directors, Nov. 12, 2002. This Definition is also used by the National Institute of Child Health and Human Development (NICHD). Many state education codes, including New Jersey, Ohio and Utah, have adopted this definition. Learn more about how consensus was reached on this definition: [Definition Consensus Project](#).



Listening comprehension > Reading comprehension
(Badian, 1999; Stanovich, 1994)

How simple are the pieces?



DECODING/WORD RECOGNITION

- Phonemic awareness
- Orthographic awareness
- Morphological awareness
- Vocabulary knowledge
 - Structure
 - Semantic
- Nonword reading and spelling
- Real word reading with or without syntactic context
- Etc.

LANGUAGE COMPREHENSION

- Word recognition
 - Speech perception
 - Reading decoding
- Vocabulary
- Complex syntax
- Cohesive devices
 - Pronoun reference
 - Anaphoric reference
 - Catephoric reference
- Discourse structure
- Inference
- Logical reasoning
- Memory
- Attention
- Goal to measure language, not world knowledge
- Etc.

VOCABULARY SKILLS

- Word structure
 - Morphology
 - Phonology
 - Orthography
- Concrete word referents
- Figurative meanings
- Multiple meanings
- Semantic relationships
 - Categorical/contrastive
 - Part-whole
 - Synonym/antonym
 - Attributes
 - Functional
 - Temporal
 - Logical
 - Emotional
- Etc.

Scarborough's Reading Rope (2001)

LANGUAGE COMPREHENSION

- Background Knowledge
- Vocabulary Knowledge
- Language Structures
- Verbal Reasoning
- Literacy Knowledge

WORD RECOGNITION

- Phonological Awareness
- Decoding (and Spelling)
- Sight Recognition

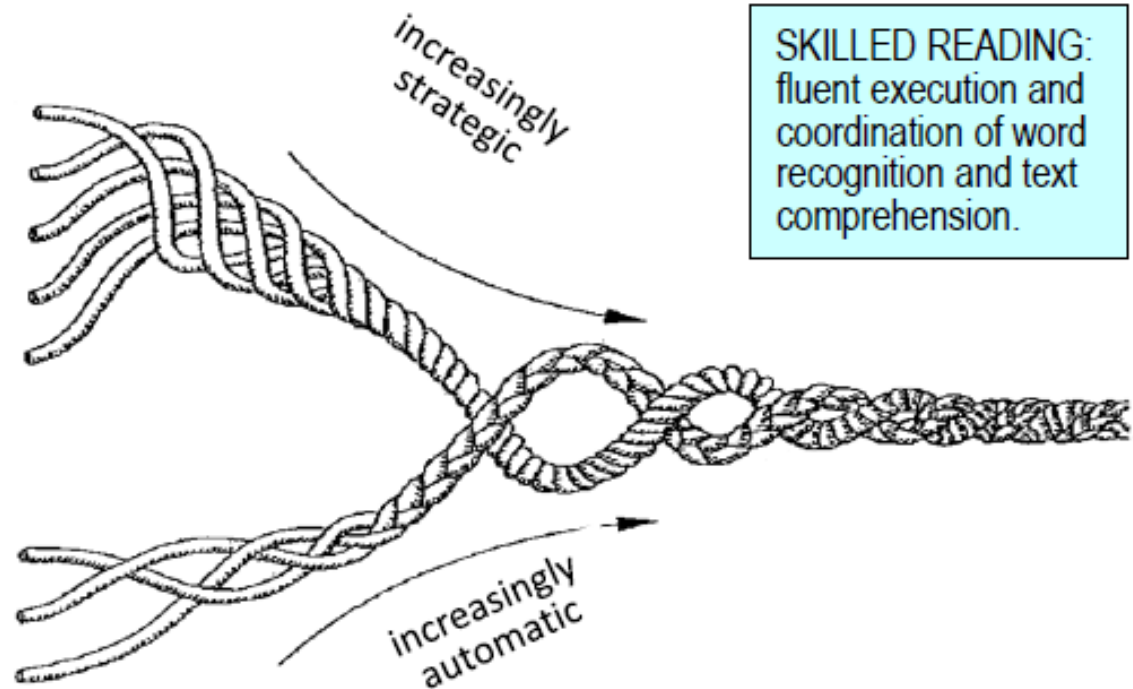
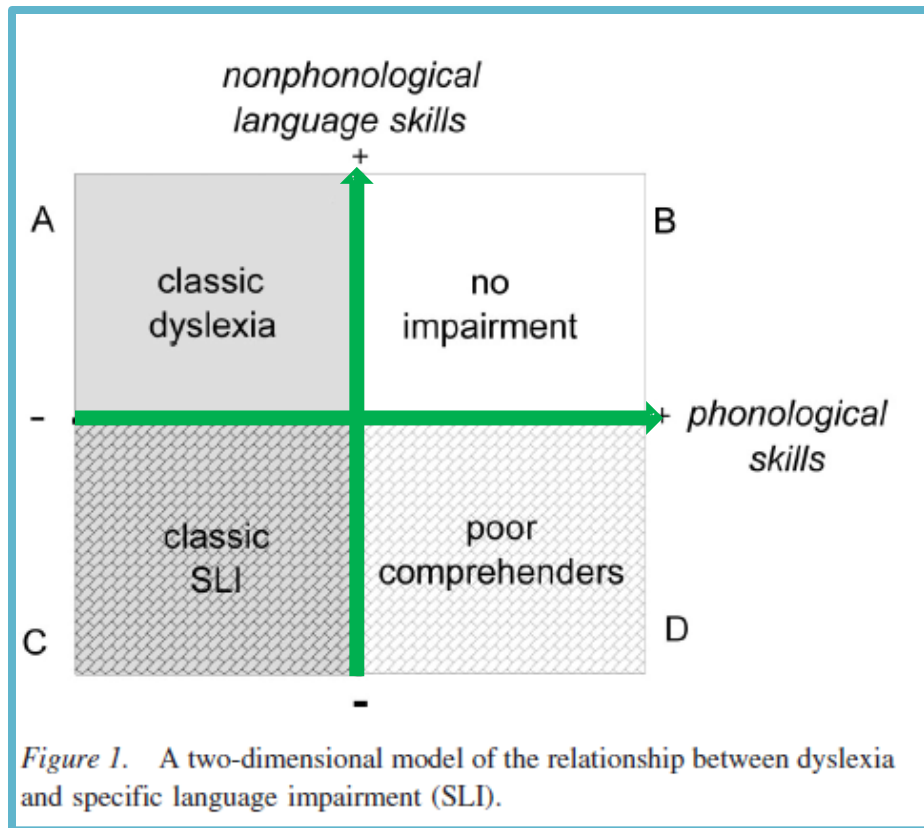


Figure 8.1. Illustration of the many strands that are woven together in skilled reading. (p. 98)

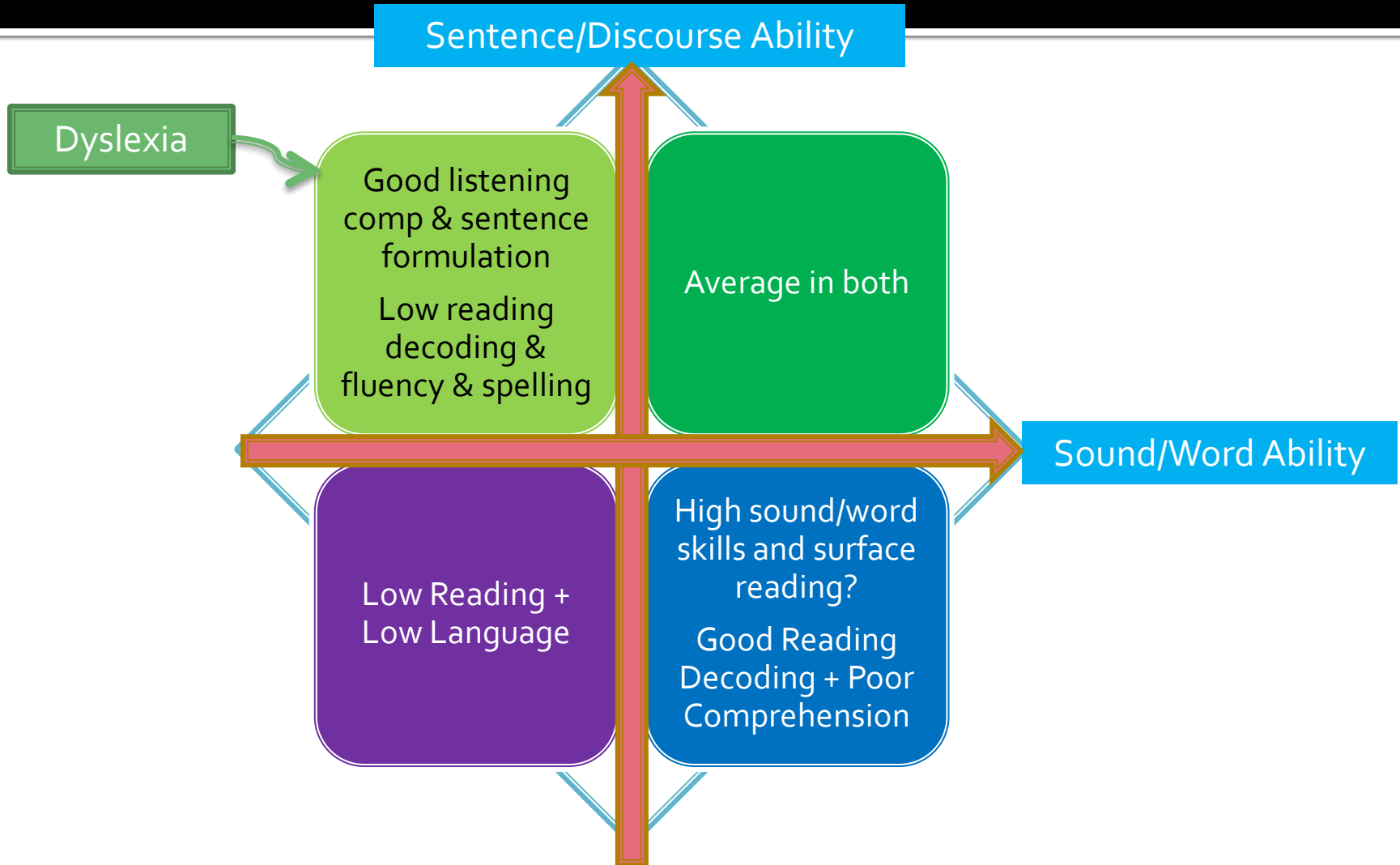
How does the SVR relate to oral language difficulties?

- Two dimensions may explain dyslexia and specific language impairment (SLI)
 - Phonological skills (sound/word level)
 - Nonphonological skills (sentence/discourse level)



(Bishop & Snowling, 2004; Catts, Adlof, Hogan, & Weismer, 2005)

Applying the Quadrant Model



Language Levels X Modalities Model

Modality	Language Level	
	Sound/Word Level	Sentence/Discourse Level
Listening	1. Vocabulary Awareness (VA) 2. Phonemic Awareness (PA)	6. Listening Comprehension (LC) 8. Following directions (FD)
Speaking	4. Nonword Repetition (NWRep)	3. Story retelling (Comp Qs) (SRcomp) 13. Social communication (SC)
Reading	10. Nonword Reading (NWRd) 11. Reading Fluency (RF)	7. Reading comprehension (RC)
Writing	5. Nonword Spelling (NWSp) 12c. Written Exp - word score (WEwd)	12a. Written Exp discourse score (Wedisc) 12b. Written Exp sentence combining score (WEscs)
Memory	14. Digit Span Forward (DSF) 15. Digit Span Backward (DSB)	9. Delayed story retelling (DSR)



15 Subtests

17 scores (3 scores for
Written Expression)

1. Vocabulary Awareness

***“Here are three words.
Let’s read them together.”***

“dog–cat–bone”

***Say, “Tell me two words
that go together.”***

Then ask, “Why?”

SUBTEST 1
Practice Item

dog

cat

bone

Practice Items

dog–cat–bone	dog–cat–bone
Both animals / pets	Dogs like / eat / chew / bury bones
light–sun–feather	light–sun–feather
Sun gives light / both bright	Feather is light / not heavy

2. Phonemic Awareness

“If the word is bip, and we take away the first sound, the word becomes[hesitate]... ip.”

“If the word is stig, and we take away the first sound, the word becomes... tig.”

Practice Items

Item	Phonetic spelling	Spoken response
bip → ip	/bɪp/ → /ɪp/	
stig → tig	/stɪg/ → /tɪg/	

3. Story Retelling

6-11

STORY 3A: "TOMMY THE TRICKSTER"

Directions

- Begin audio recording (recommended). Say, *"I'm going to read you a story called 'Tommy the Trickster.' Listen carefully. Your job is to tell the story back to me just like I tell it to you. I can only read it once. Any questions?"* (Answer.) *"Let's begin."*

- Read the age-appropriate story, starting with its title, with a natural rate and tone.

"Tommy's mother thought he was getting fat from eating too much junk food. So, she stocked the refrigerator with fruit and carrot sticks. She even put these things in his lunchbox. But Tommy was a fast talker. At school he convinced his friends that cookies were bad for them. Then he traded his fruit and carrots for their cookies. His mother didn't know why Tommy kept gaining weight when all she had given him were healthy foods."

- Say, *"Now tell me the same story. Start now."*

Select the age-appropriate story and say, ***"I'm going to read you a story. Listen carefully. Your job is to tell the story back to me just like I tell it to you."***

Comprehension Questions

Question		
1. Why did Tommy's mother worry about him? She thought he was getting fat/gaining weight.		
2. How did Tommy trick his mother? By trading his healthy foods for his friends' cookies.		
3. Why did Tommy's mother feel confused? Because she was giving him healthy foods but he was still gaining weight.	0	1
4. In the story you heard that Tommy was a fast talker. What do you think that meant? He was good at talking people into things/convincing/persuasive (not he could talk very fast).	0	1

Content Units	Score
1. Tommy's (must use proper name to count on first instance)	0 1
2. mother	0 1
3. thought he (Tommy, worried)	0 1
4. was getting fat (bigger, gaining weight)	0 1
5. from eating	0 1
6. too much	0 1
7. junk food (cookies)	0 1
8. so she	0 1
9. stocked (put)	0 1
10. the refrigerator (fridge, icebox)	0 1
11. fruit (healthy foods [only scores once] [not grapes, etc.])	0 1
12. carrots (carrot sticks, healthy foods, vegetables)	0 1
13. she even put	0 1
14. these things	0 1
15. in his lunchbox (lunch bag, lunch)	0 1
16. but Tommy (he)	0 1
17. was a "fast talker" (figurative meaning)	0 1

Content Units	Score
18. at school	0 1
19. he convinced (talked them into, told)	0 1
20. his friends	0 1
21. that cookies	0 1
22. were bad	0 1
23. for them	0 1
24. then he traded	0 1
25. his fruit (healthy foods [only scores once])	0 1
26. carrots (carrot sticks, healthy foods)	0 1
27. for cookies	0 1
28. his mother	0 1
29. didn't know why	0 1
30. Tommy (he)	0 1
31. kept gaining weight (getting bigger/fatter)	0 1
32. when all she had given him	0 1
33. were healthy foods	0 1

4. Nonword Repetition

Say, ***“I am going to play a voice recording for you. The person on the recording will say a pretend word that is not a real word. You will only hear the word once. Listen carefully so you can say the word just like the person you hear.”*** Start the recording.

Subtest Items

6-18

Item	Actual/target spoken response	Imitation score	
		0	1
1. gid	$\frac{\quad}{/gɪd/}$	0	1
2. stenders	$\frac{\quad}{/stɛndəz/}$ $\frac{\quad}{/stɪndəz/}$	0	1
23. proderopia	$\frac{\quad}{/prɒdəopiə/}$	0	1
24. transvathial	$\frac{\quad}{/trænzvɛiθiəl/}$	0	1

5. Nonword Spelling

Administer immediately after Nonword Repetition.

Say, ***“I am going to play another voice recording of pretend words. These are the same words you said before. This time your job is to spell the words.”***

“Remember, these are not real words, but they are like real words...”

Subtest Items

6;6-18

Item	Child's written response	Spelling score	
		0	1
1. gid	g i d	0	1
	t e n d e r s i n z	0	1
	d e r o p i a t o r	0	1
	a n s v a t h i a l a i i e l	0	1

SUBTEST 5: NONWORD SPELLING

Age 5;4
Bilateral aided
Sensory-neural loss.

Practice Items

bup bup
standed stam

Test Items

1. gid gysteding 13.

2. stenders Sutinouing 14.

3. vilding veing 15.

4. tep tuPS 16.

5. dabe gade 17.

6. farbing urdinged 18.

7. 19.

8. 20.

9. 21.

10. 22.

11. 23.

12. 24.

6. Listening Comprehension

Say, “I’m going to read some very short stories. Your job is to listen and pay careful attention. Then I’ll ask you some questions about the story. Tell me ‘yes’ if you are sure the answer is ‘yes.’ Tell me ‘no’ if you are sure the answer is ‘no.’ If the story doesn’t clearly tell you the answer, tell me ‘maybe.’

6. The land beyond the mountains was divided into two new territories. Each was to have its own governor, who would be selected by the President following consultation with his advisors.					
a. Was a different governor going to be appointed for each new territory?	(Y)	N	M	0	1
b. Were the mountains part of the new territories?	Y	(N)	M	0	1
c. Was the President in charge of choosing the new governors?	(Y)	N	M	0	1

7. Reading Comprehension

Administer immediately following Listening Comprehension:
“Now, it’s your turn to read some short stories and answer the questions in your Student Book. Circle yes if you are sure the answer is yes. Circle no if you are sure the answer is no. If the story doesn’t clearly tell you the answer, circle maybe.”

Subtest Items

6;6-11




1. “What I Did on My Summer Vacation” is the topic the teacher makes her class write about the first day of school every year. When school started a month ago, the teacher gave her usual first writing assignment.

a. Was “The Middle East” the first writing assignment?	Y	(N)	M	0	1
b. Did all of the students take a trip on their summer vacation?	Y	N	(M)	0	1
c. Did the teacher ask her class to write about their summer vacations?	(Y)	N	M	0	1

8. Following Directions

“I’m going to give you some directions to follow with your pencil in your Student Book. Listen carefully because I can only say them once. When I say ‘Go,’ move the card and use your pencil to follow the directions.”

Subtest Items

Instructions	Student’s response (from <i>Student Response Form</i>)	Score	
<p>6-9 → Number 1: Draw a circle around the heart. Go.</p>		0	1
<p>Number 6: Draw a line above the tree and circle the lock. Go. [Line may be horizontal or vertical.]</p>		0	1
<p>Number 8: If there is an arrow pointing down, draw a circle under the moon. If not, circle the star. Go.</p>		0	1

9. Delayed Story Retelling

Turn to the age-appropriate story and say, ***“Remember the story [Tommy the Trickster/The Rubber Raft]? Tell me the story again. Try to remember as much as you can. Start now.”***

Content Units	Score	
1. Tommy’s (must use proper name to count on first instance)	0	1
2. mother	0	1
3. thought he (Tommy, worried)	0	1
4. was getting fat (bigger, gaining weight)	0	1
5. from eating	0	1
6. too much	0	1
7. junk food (cookies)	0	1
8. so she	0	1
9. stocked (put)	0	1
10. the refrigerator (fridge, icebox)	0	1
11. fruit (healthy foods [only scores once] [not grapes, etc.*])	0	1
12. carrots (carrot sticks, healthy foods, vegetables)	0	1
13. she even put	0	1
14. these things	0	1
15. in his lunchbox (lunch bag, lunch)	0	1
16. but Tommy (he)	0	1
17. was a “fast talker” (figurative meaning)	0	1

Content Units	Score	
18. at school	0	1
19. he convinced (talked them into, told)	0	1
20. his friends	0	1
21. that cookies	0	1
22. were bad	0	1
23. for them	0	1
24. then he traded	0	1
25. his fruit (healthy foods [only scores once])	0	1
26. carrots (carrot sticks, healthy foods)	0	1
27. for cookies	0	1
28. his mother	0	1
29. didn’t know why	0	1
30. Tommy (he)	0	1
31. kept gaining weight (getting bigger/fatter)	0	1
32. when all she had given him	0	1
33. were healthy foods	0	1

10. Nonword Reading

Say, ***“These are pretend words that are not real words, but they are like real words. Your job is to read these words out loud.”***

pog

keb

troom

redikament

nopiphonia

interdepable

smorifious

periothial

kizmanician

Subtest Items

Stimulus word	Expected production (and acceptable alternatives)	Score	
1. pog	_____ /pɔg/ /pag/	0	1
2. keb	_____ /kɛb/	0	1

6;6-7

22. smorifious	_____ /smɔr ɪ' fi əs/ /smɔr ɪ fi' əs/	0	1
23. periothial	_____ /per i ə' θi əl/ /per i ɔ' θi əl/ /per i ɒ θi' əl/	0	1
24. kizmanician	_____ /kɪz mə nɪ' jən/	0	1

11. Reading Fluency

Say, ***“Here are some facts that tell a story. First, read the title out loud.”***

“Now read the facts.” If the student is an emergent reader, you may say, ***“Just read the words you know.”***

The Principal’s Daughter

We have a principal.
 The principal has a daughter.
 Her name is Sara.
 She wants to be a clown.
 She came Monday.
 She came to our school.
 She had on makeup.
 She had on a wig.
 A ball was on her nose.
 It was red.
 It was big.
 She looked scary.
 She walked into a class.
 The children were young.
 The children saw her.
 Some children cried.
 They were scared.
 She took off her wig.
 The children were happy.
 They knew Sara.

READING FLUENCY SCORING FORM			
Story B: “The Principal’s Daughter” (p. 71)			
Story elements	Score	Story elements	Score
Title: The Principal’s Daughter	/3	11. It was big.	/3
1. We have a principal.	/4	12. She looked scary.	/3
2. The principal has a daughter.	/5	13. She walked into a class.	/5
3. Her name is Sara.	/4	14. The children were young.	/4
4. She wants to be a clown.	/6	15. The children saw her.	/4
5. She came Monday.	/3	16. Some children cried.	/3
6. She came to our school.	/5	17. They were scared.	/3
7. She had on makeup.	/4	18. She took off her wig.	/5
8. She had on a wig.	/5	19. The children were happy.	/4
9. A ball was on her nose.	/6	20. They knew Sara.	/3
10. It was red.	/3	Column total	/37
Column total	/48	Total score	/85

12. Written Expression – Discourse, Sentence, and Word Scores

- **“Here’s another story. It has facts about a little dog. It’s okay, but it sounds choppy. Here is an example of how you could put the facts together to make it sound less choppy and more interesting.”**
- **“Now it’s your turn to put the facts for your story together in a way that sounds better.”**

SUBTEST 12: Written Expression (WE)

Sample Rewritten Story

A little brown-and-white dog almost got hit by a car in front of our school. He was scared, but he was okay.

The Principal's Daughter

We have a principal.
 The principal has a daughter.
 Her name is Sara.
 She wants to be a clown.
 She came Monday.
 She came to our school.
 She had on makeup.
 She had on a wig.
 A ball was on her nose.
 It was red.
 It was big.
 She looked scary.
 She walked into a class.
 The children were young.
 The children saw her.
 Some children cried.
 They were scared.
 She took off her wig.

8-10

WRITTEN EXPRESSION CONTENT UNITS SCORING FORM

Story B: "The Principal's Daughter" (p. 71)

1. We have a <u>principal</u> .	0	1	11. It was <u>big</u> .	0	1
2. The principal has a <u>daughter</u> .	0	1	12. She looked <u>scary</u> .	0	1
3. Her <u>name</u> is Sara.	0	1	13. She walked into a <u>class</u> .	0	1
4. She wants to be a <u>clown</u> .	0	1	14. The children were <u>young</u> .	0	1
5. She came <u>Monday</u> .	0	1	15. The children <u>saw</u> her.	0	1
6. She came to our <u>school</u> .	0	1	16. Some children <u>cried</u> .	0	1
7. She had on <u>makeup</u> .	0	1	17. They were <u>scared</u> .	0	1
8. She had on a <u>wig</u> .	0	1	18. She <u>took off</u> her wig.	0	1
9. A <u>ball</u> was on her <u>nose</u> .	0	1	19. The children were <u>happy</u> .	0	1
10. It was <u>red</u> .	0	1	20. They <u>knew</u> Sara.	0	1
				Content Units total	/20

Discourse Score	___ Content Units / 20 possible × 100 = ___ % Content Included
Sentence Score	___ Content Units / ___ T-units* = ___ Sentence Score (record 2 decimal places)
Word Score	___ Total Words – ___ Error Words = ___ Total Correct Words / ___ Total Words × 100 = ___ % Words Correct

The principal has a daughter ^{who} now
went to Guernsey. When she came on Monday
to our school, she had make up a wig and
a ball that was big and red on her nose. That stuff
made her looked scary. She walked in to a class
with young children. Some kids cried
because they were scared.
Then Sara the principal's daughter took off her wig.
The children were happy to see Sara ^{who} they
knew.

Discourse Score: 18/20
content units = 90%
Sentence Score: 18
content/7 T-units = 2.57
Word Score: 74/88 wds
without error = 84%

WRITTEN EXPRESSION SCORING FORM			
Story B: The Principal's Daughter (ages 8;0-10;11)			
1. We have a <u>principal</u> .	1	11. It was <u>big</u> .	1
2. The principal has a <u>daughter</u> .	1	12. She looked <u>scary</u> .	1
3. Her <u>name</u> is <u>Sara</u> .	1	13. She walked into a <u>class</u> .	1
4. She wants to be a <u>clown</u> .	1	14. The children were <u>young</u> .	1
5. She came <u>Monday</u> .	1	15. The children <u>saw</u> her.	1
6. She came to our <u>school</u> .	1	16. Some children <u>cried</u> .	1
7. She had on <u>makeup</u> .	1	17. They were <u>scared</u> .	1
8. She had on a <u>wig</u> .	1	18. She <u>took off</u> her <u>wig</u> .	1
9. A <u>ball</u> was on her <u>nose</u> .	1	19. The children were <u>happy</u> .	1
10. It was <u>red</u> .	1	20. They <u>knew</u> Sara.	1
			Content Units total 18 /20

13. Social Communication

“This activity is about acting a scene, like from a show on TV or a movie. Your job is to be an actor.”

Say, “I’ll give you a really short scene. Then I’ll ask you to tell me what one of the people would say. This is important—you should say it how the person would say it in the scene. Remember, you’re the actor! Let’s try one. I’ll do the first one to show you.”

Test Item 4

David always uses hints to get his grandmother to buy him things. David is out shopping with his grandmother and sees some boots he wants. What do you think David would say?

“It is red. It is my favorite color, and I will kiss you if you buy it.”

14. Digit Span Forward

15. Digit Span Backward

14. Say, “I am going to say some numbers. Listen to the numbers, and when I finish, you say them back to me exactly the same way.”

15. “This time, when I read the numbers to you, I want you to listen carefully and say them back to me in backward order.”

Factor analysis support for the SVR

	Factor Reference Structure (Semipartial Correlations)		Final Community Estimate
	Factor 1	Factor 2	
Phonemic Awareness	0.547	0.074	0.550
Non-word Spelling	0.600	0.067	0.642
Non-word Reading	0.734	-0.058	0.786
Reading Fluency	0.406	0.077	0.325
Written Expression Word Score	0.409	0.009	0.267
Story Retelling	-0.052	0.500	0.345
Vocabulary Awareness	0.229	0.472	0.629
Listening Comprehension	0.009	0.548	0.476
Reading Comprehension	0.264	0.420	0.589
Following Directions	0.153	0.409	0.412
Social Communications	0.075	0.476	0.428



Regression Analysis Support for the SVR

Tunmer & Chapman, 2012
Age 7;0-7;11 (N = 122)

TILLS, 2015
Ages 6;0-18;11 (N = 1887)

Model	R ²	ΔR ²	β	Model	R ²	ΔR ²	β
1 Age	.001	.001	.045	1 Age	.007	.007	.047*
2 +List Comp	.460	.459	.260*	2 +List Comp	.356	.349	.303*
3 +Wd Rec	.773	.313	.525*	3 +Wd Rec	.533	.177	.051*
4 +Vocab	.797	.022	.210*	4 +Vocab	.571	.038	.294*

* Statistically significant $p < .05$

Identification Core Subtests, Cut Scores, and Sensitivity/Specificity

6-7 YEAR OLDS

- Core subtests
 - Vocab Aware
 - Phoneme Aw
 - NW Rep
- Sensitivity
84%
- Specificity
84%

8-11 YEAR OLDS

- Core subtests
 - Vocab Aware
 - NW Spell
 - NW Read
 - WE-Discourse
- Sensitivity
88%
- Specificity
85%

12-18 YEAR OLDS

- Core subtests
 - Phoneme Aw
 - NW Spell
 - Rdg Comp
 - Reading Fluency
 - WE-Word
- Sensitivity 86%
- Specificity 90%

Corroborating Information

Multiple sources

Co-norming Student Rating Scale

Student Language Scale

SLS



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 Michele A. Anderson, Ph.D., CCC-SLP

This Student Language Scale may be used with the Test of Integrated Language and Literacy Skills™, other assessment tests, or as a stand-alone measure to gather multiple perspectives on a student's language/literacy abilities and other skills.

Student's name: _____ Grade: _____ Date: _____

Person responding: General education teacher Special education teacher Other: _____
 Student Parent/guardian

Compared with other students of the same age, circle the number to show how good this student is at...	Not good						Very good
1. Understanding school vocabulary words	1	2	3	4	5	6	7
2. Using school vocabulary words when talking	1	2	3	4	5	6	7
3. Figuring out new words when reading	1	2	3	4	5	6	7
4. Spelling words correctly when writing	1	2	3	4	5	6	7
5. Understanding a story when listening	1	2	3	4	5	6	7
6. Telling a story that makes sense	1	2	3	4	5	6	7
7. Understanding a story when reading	1	2	3	4	5	6	7
8. Writing a story that makes sense	1	2	3	4	5	6	7
9. Following spoken directions	1	2	3	4	5	6	7
10. Being organized about schoolwork	1	2	3	4	5	6	7
11. Paying attention in school	1	2	3	4	5	6	7
12. Interacting socially with other students	1	2	3	4	5	6	7

Please check the things that you think are **easiest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

Please check the things that you think are **hardest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

What one thing do you think is most important to help this student do better at school?

9 year old Third Grade Girl



- History of difficulty learning to read and write
- Tested for Special Ed in Grade 3 (not with the TILLS), but **did not qualify**
 - Test of Early Written Language (TEWL-3) SS 106
 - Wechsler Indiv Achievement Test (WIAT-III)
 - Word Reading 12th %ile ; Word Reading Speed 25th %ile
 - Pseudoword Decoding 12th %ile; Pseudoword Decoding Speed 50th %ile
 - Early Reading Skills 12th %ile
 - Reading Comprehension 16th %ile
 - Oral Reading Fluency 21st %ile; Oral Reading Accuracy 7th %ile; Oral Reading Rate 27th %ile
 - Spelling 23th %ile (*fist/fix, could/cold, tal/tall, nite/night*)
 - Math problem solving 23rd %ile, Numerical operations 39th %ile
- Classroom teacher reports relative strength in math “particularly if story problems are read aloud”

Gen Ed. Teacher SLS in 3rd Grade

Your time and careful attention will help the research team learn how to improve this rating scale. If you are willing to help, please complete all items. If you have questions, call Dr. Anderson at 260-387-8446 or ask your local contact person.

Person responding: General Ed. Teacher Special Ed. Teacher Other: _____
 Student Parent/Guardian

Student's research ID#: _____ Student's grade level: 3 Today's date: 1-20-13

Compared with other students of the same age, circle the number to show how good this student is at...	Not good						Very good
1. Understanding school vocabulary words	1	2	3	4	5	6	7
2. Using school vocabulary words when talking	1	2	3	4	5	6	7
3. Figuring out new words when reading	1	2	3	4	5	6	7
4. Spelling words correctly when writing	1	2	3	4	5	6	7
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7. Understanding a story when reading	1	2	3	4	5	6	7
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9. Following spoken directions	1	2	3	4	5	6	7
10. Being organized about school work	1	2	3	4	5	6	7
11. Paying attention in school	1	2	3	4	5	6	7
12. Interacting socially with other students	1	2	3	4	5	6	7

Please check the things that you think are **easiest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments: *She is a good worker & has struggles as a student but still perseveres.*

Please check the things that you think are **hardest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments: *she struggles with reading & decoding words as well writing*

What one thing do you think is most important to help this student do better at school?

provide structured small writing reading opportunities as well as directed instructions in reading & spelling

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The contents of TLLS Standardization Version 2 were developed under Grant No. H02419014 from the Institute of Education Sciences of the U.S. Department of Education. For more information, visit www.tlls.org.

Parent SLS in 3rd Grade

Your time and careful attention will help the research team learn how to improve this rating scale. If you are willing to help, please complete all items. If you have questions, call Dr. Anderson at 260-387-8446 or ask your local contact person.

Person responding: General Ed. Teacher Special Ed. Teacher Other: _____
 Student Parent/Guardian

Student's research ID#: _____ Student's grade level: 3 Today's date: _____

Compared with other students of the same age, circle the number to show how good this student is at...	Not good						Very good
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12. Interacting socially with other students	1	2	3	4	5	6	7

Please check the things that you think are **easiest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

Please check the things that you think are **hardest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

What one thing do you think is most important to help this student do better at school?

taking her time

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9 year old girl



	Oral Language										Written Language						
	Sound/Word Level				Sentence/Discourse Level						Sound/Word Level				Sent/Disc Level		
	PA	NW Rep	DSF	DSB	VA	LC	FD	SR	DSR	SC	NW Read	RF	NW Spell	WE-Word	RC	WE-Disc	WE-Sent
Standard Score	3	9	7	6	5	8	7	6	5	10	2	0	4	7	5	11	7
2 SD	16-19	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	15	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	14	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1 SD	13	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	12	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	11	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Mean	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	9	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1 SD	7	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	6	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	5	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2 SD	4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	3	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
3 SD	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	0	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

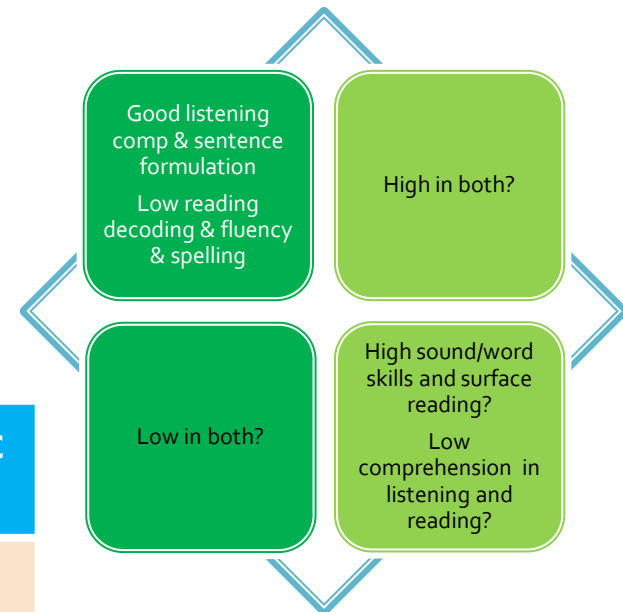
Handwritten annotations on the table include:

- A pink arrow pointing from the mean line (score 10) to the 'WE-Disc' column at score 11.
- A blue circle around the 'PA' column at score 3.
- A black circle around the 'VA' column at score 5.
- A blue circle around the 'NW Read' and 'RF' columns at score 2.
- A blue circle around the 'NW Spell' column at score 4.
- A black circle around the 'PA' column at score 3.
- A black circle around the 'VA' column at score 5.
- A black circle around the 'NW Read' column at score 2.
- A black circle around the 'NW Spell' column at score 4.
- A black circle around the 'WE-Disc' column at score 11.
- A black circle around the 'WE-Sent' column at score 7.

TILLS scores for 9 year old girl

Age Band	Identification Composite Standard Score	Cut Score	Sensitivity	Specificity	Decision: Is the identification composite <u>less</u> than the cut score?
6-7 years		24	84	84	<input checked="" type="checkbox"/> Yes This score is consistent with the presence of language and literacy disorders.
8-11 years	22	34	88	85	<input type="checkbox"/> No This score does not meet the criterion for identifying language and literacy disorders.
12-18 years		42	86	90	

- Core subtests
 - Vocab Aware
 - NW Spell
 - NW Read
 - WE-Discourse



Sd/Word Comp	Sent/Disc Comp
50	75

Gen Ed. Teacher SLS in 3rd Grade

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Person responding: General Ed. Teacher Special Ed. Teacher Other: _____
 Student Parent/Guardian

Student's research ID#: _____ Student's grade level: 3 Today's date: 1-20-13

Compared with other students of the same age, circle the number to show how good this student is at...	Not good						Very good
1. Understanding school vocabulary words	1	2	3	4	5	6	7
2. Using school vocabulary words when talking	1	2	3	4	5	6	7
3. Figuring out new words when reading	1	2	3	4	5	6	7
4. Spelling words correctly when writing	1	2	3	4	5	6	7
5. Understanding a story when listening	1	2	3	4	5	6	7
6. Telling a story that makes sense	1	2	3	4	5	6	7
7. Understanding a story when reading	1	2	3	4	5	6	7
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9. Following spoken directions	1	2	3	4	5	6	7
10. Being organized about school work	1	2	3	4	5	6	7
11. Paying attention in school	1	2	3	4	5	6	7
12. Interacting socially with other students	1	2	3	4	5	6	7

Please check the things that you think are **easiest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments: *She is a good worker & has struggles as a student but still perseveres.*

Please check the things that you think are **hardest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments: *she struggles with reading & decoding words as well writing*

What one thing do you think is most important to help this student do better at school?

provide structured small writing reading opportunities as well as directed instructions in reading & spelling

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Parent SLS in 3rd Grade

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Person responding: General Ed. Teacher Special Ed. Teacher Other: _____
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Student's research ID#: _____ Student's grade level: 3 Today's date: _____

Compared with other students of the same age, circle the number to show how good this student is at...	Not good						Very good
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7. Understanding a story when reading	1	2	3	4	5	6	7
8. Writing a story that makes sense	1	2	3	4	5	6	7
9. Following spoken directions	1	2	3	4	5	6	7
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11. Paying attention in school	1	2	3	4	5	6	7
12. Interacting socially with other students	1	2	3	4	5	6	7

Please check the things that you think are **easiest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

Please check the things that you think are **hardest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

What one thing do you think is most important to help this student do better at school?

taking her time

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Gen Ed. Teacher SLS in 4th Grade

Your time and careful attention will help the research team learn how to improve this rating scale. If you are willing to help, please complete all items. If you have questions, call Dr. Anderson at 269-387-8446 or ask your local contact person.

Person responding: General Ed. Teacher Special Ed. Teacher Other: _____
 Student Parent/Guardian

Student's research ID#: 311603 Student's grade level: 4th Today's date: 5-16-14

Compared with other students of the same age, circle the number to show how good this student is at...	Not good	2	3	4	5	6	7	Very good
1. Understanding school vocabulary words	(1)	2	3	4	5	6	7	
2. Using school vocabulary words when talking	(1)	2	3	4	5	6	7	
3. Figuring out new words when reading	(1)	2	3	4	5	6	7	
4. Spelling words correctly when writing	(1)	2	3	4	5	6	7	
5. Understanding a story when listening	1	2	3	(4)	5	6	7	
6. Telling a story that makes sense	1	2	3	(4)	5	6	7	
7. Understanding a story when reading	1	2	(3)	4	5	6	7	
8. Writing a story that makes sense	1	(2)	3	4	5	6	7	
9. Following spoken directions	1	2	3	4	(5)	6	7	
10. Being organized about school work	1	2	3	(4)	5	6	7	
11. Paying attention in school	1	2	3	4	(5)	6	7	
12. Interacting socially with other students	1	2	3	4	(5)	6	7	

Please check the things that you think are **easiest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

Please check the things that you think are **hardest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

What one thing do you think is most important to help this student do better at school?

needs interventions in all areas to help her be successful.

Parent SLS in 4th Grade

Your time and careful attention will help the research team learn how to improve this rating scale. If you are willing to help, please complete all items. If you have questions, call Dr. Anderson at 269-387-8446 or ask your local contact person.

Person responding: General Ed. Teacher Special Ed. Teacher Other: _____
 Student Parent/Guardian

Student's research ID#: 311603 Student's grade level: 4 Today's date: 5/15/14

Compared with other students of the same age, circle the number to show how good this student is at...	Not good	2	3	4	5	6	7	Very good
1. Understanding school vocabulary words	1	2	3	(4)	5	6	7	
2. Using school vocabulary words when talking	1	2	3	(4)	5	6	7	
3. Figuring out new words when reading	1	2	3	(4)	5	6	7	
4. Spelling words correctly when writing	1	2	(3)	4	5	6	7	
5. Understanding a story when listening	1	2	3	4	(5)	6	7	
6. Telling a story that makes sense	1	2	3	4	5	(6)	7	
7. Understanding a story when reading	1	2	3	(3)	5	6	7	
8. Writing a story that makes sense	1	2	3	(3)	5	6	7	
9. Following spoken directions	1	2	3	4	5	6	(7)	
10. Being organized about school work	1	2	3	4	5	(6)	7	
11. Paying attention in school	1	2	3	4	5	6	(7)	
12. Interacting socially with other students	1	2	3	4	5	6	(7)	

Please check the things that you think are **easiest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

Please check the things that you think are **hardest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

What one thing do you think is most important to help this student do better at school?

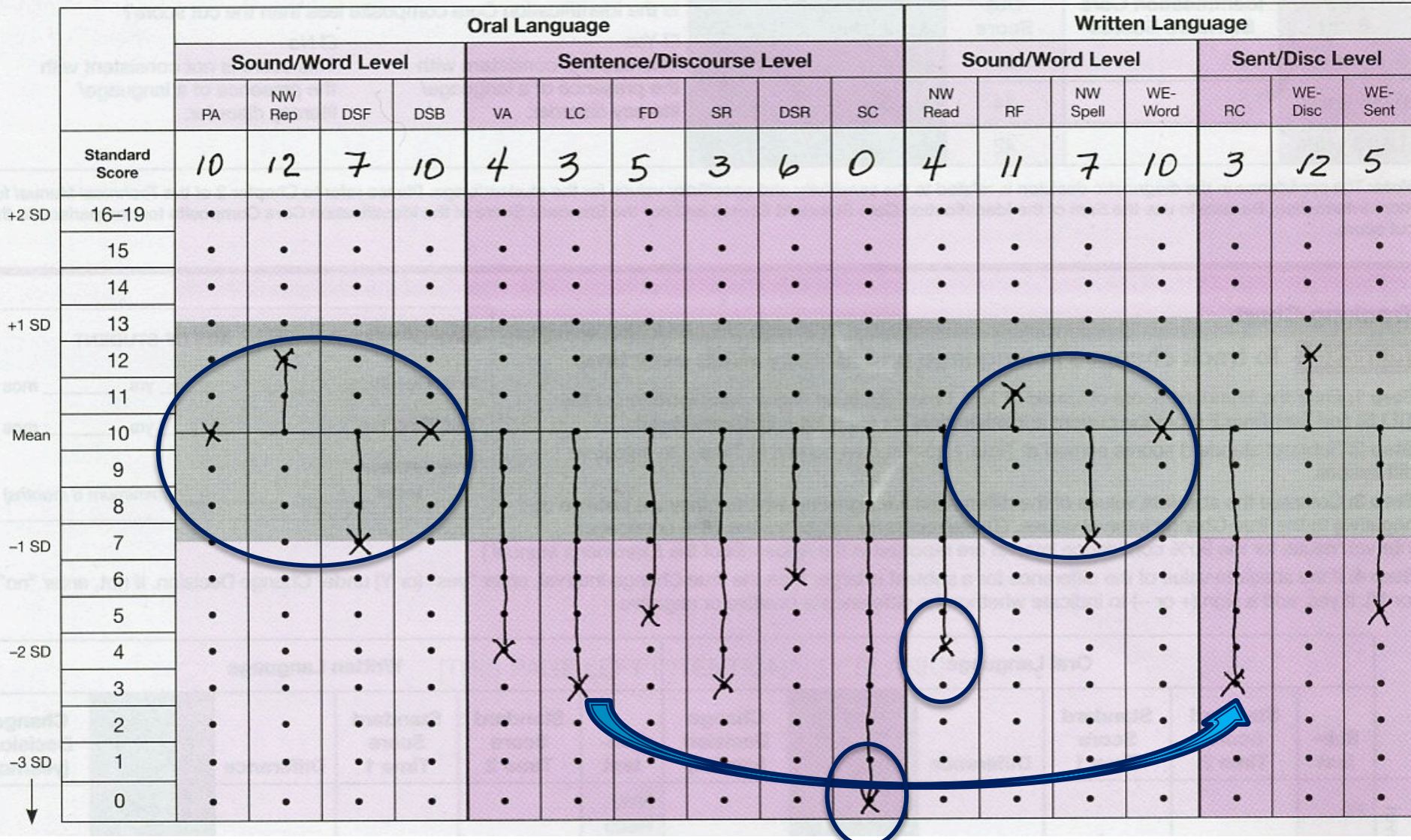
Giving extra time for reading + writing

10 year old 5th Grade Boy



- Hx of prematurity; born at 26 weeks, in hospital for 5 months
- Primary eligibility speech/language impairment on basis of language
- Goals in multiple areas of language and math
 - Verbal expression
 - Language content
 - Reading comprehension
 - Math calculation
 - Math reasoning

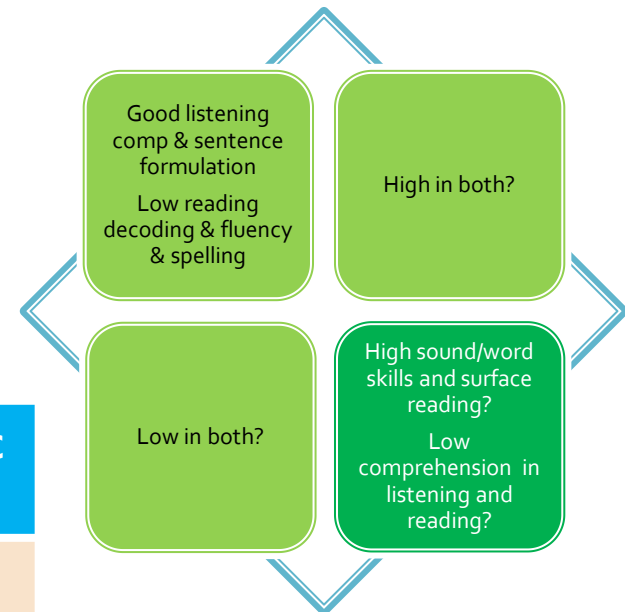
10 year old boy



TILLS scores for 10 year old boy

Age Band	Identification Composite Standard Score	Cut Score	Sensitivity	Specificity	Decision: Is the identification composite <u>less</u> than the cut score?
6-7 years		24	84	84	<input checked="" type="checkbox"/> Yes This score is consistent with the presence of language and literacy disorders.
8-11 years	27	34	88	85	<input type="checkbox"/> No This score does not meet the criterion for identifying language and literacy disorders.
12-18 years		42	86	90	

- Core subtests
 - Vocab Aware
 - NW Spell
 - NW Read
 - WE-Discourse



Sd/Word Comp	Sent/Disc Comp
92	57

14 year old 10th Grade Boy

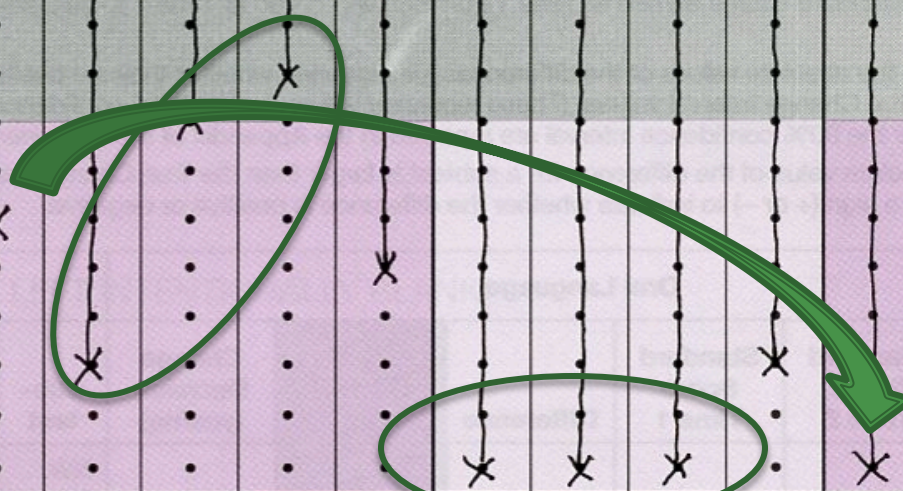


- Hispanic; not an English language learner
- History of speech/language impairment on basis of language
 - Syntax goals
 - Morphology goals
- SLI primary and SLD secondary on IEP

14 year old boy



	Oral Language										Written Language						
	Sound/Word Level				Sentence/Discourse Level						Sound/Word Level				Sent/Disc Level		
	PA	NW Rep	DSF	DSB	VA	LC	FD	SR	DSR	SC	NW Read	RF	NW Spell	WE-Word	RC	WE-Disc	WE-Sent
Standard Score	0	0	4	8	4	5	2	7	8	4	0	0	0	2	0	9	6
+2 SD	16-19	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	15	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	14	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
+1 SD	13	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	12	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	11	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Mean	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	9	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
-1 SD	7	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	6	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	5	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
-2 SD	4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	3	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
-3 SD	0	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•



Gen Ed. Teacher SLS in 10th Grade

Person responding: General Ed. Teacher Special Ed. Teacher Other: _____

Student Parent/Guardian

Student's research ID#: 450219 Student's grade level: 10 Today's date: 6/6/13

Compared with other students of the same age, circle the number to show how good this student is at...	Not good						Very good
1. Understanding school vocabulary words	1	2	3	4	5	6	7
2. Using school vocabulary words when talking	1	2	3	4	5	6	7
3. Figuring out new words when reading	1	2	3	4	5	6	7
4. Spelling words correctly when writing	1	2	3	4	5	6	7
5. Understanding a story when listening	1	2	3	4	5	6	7
6. Telling a story that makes sense	1	2	3	4	5	6	7
7. Understanding a story when reading	1	2	3	4	5	6	7
8. Writing a story that makes sense	1	2	3	4	5	6	7
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11. Paying attention in school	1	2	3	4	5	6	7
12. Interacting socially with other students	1	2	3	4	5	6	7

1. Please check the things that you think are **easiest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

2. Please check the things that you think are **hardest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

3. What one thing do you think is most important to help this student do better at school?

Give verbal & visual instruction. A lot of one-on-one when able.

Parent SLS in 10th Grade

Person responding: General Ed. Teacher Special Ed. Teacher Other: _____

Student Parent/Guardian

Student's research ID#: 450219 Student's grade level: 10th Today's date: 6/6/13

Compared with other students of the same age, circle the number to show how good this student is at...	Not good						Very good
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5. Understanding a story when listening	1	2	3	4	5	6	7
6. Telling a story that makes sense	1	2	3	4	5	6	7
7. Understanding a story when reading	1	2	3	4	5	6	7
8. Writing a story that makes sense	1	2	3	4	5	6	7
9. Following spoken directions	1	2	3	4	5	6	7
10. Being organized about school work	1	2	3	4	5	6	7
11. Paying attention in school	1	2	3	4	5	6	7
12. Interacting socially with other students	1	2	3	4	5	6	7

Please check the things that you think are **easiest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

Please check the things that you think are **hardest** for this student to do:

Art (drawing/painting) Dance Music Mechanical Sports Math Social Listening Talking
 Reading Writing Other: _____

Comments:

What one thing do you think is most important to help this student do better at school?

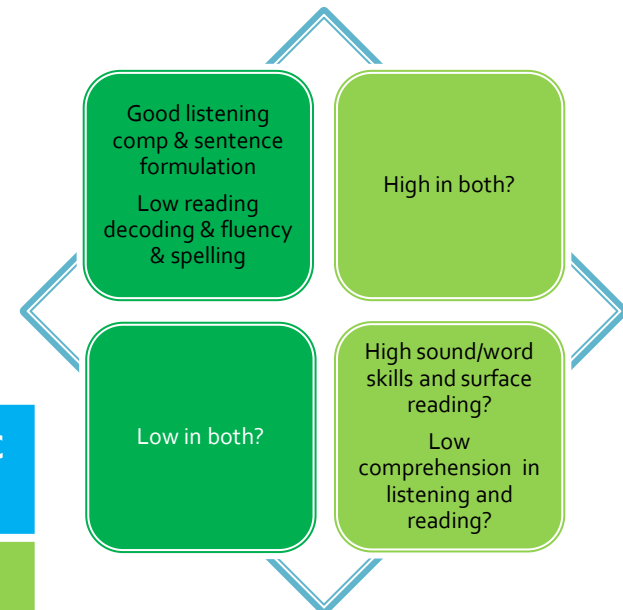
TILLS scores

Age Band	Identification Composite Standard Score	Cut Score	Sensitivity	Specificity	Decision: Is the identification composite <u>less</u> than the cut score?
6-7 years		24	84	84	<input checked="" type="checkbox"/> Yes This score is consistent with the presence of language and literacy disorders.
8-11 years		34	88	85	<input type="checkbox"/> No This score does not meet the criterion for identifying language and literacy disorders.
12-18 years	2	42	86	90	<input type="checkbox"/> No This score does not meet the criterion for identifying language and literacy disorders.

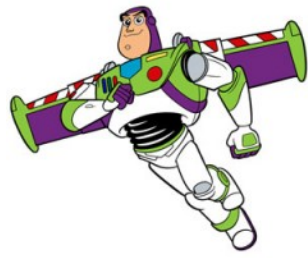
Core subtests

- Phoneme Aw
- NW Spelling
- Reading Comp
- Reading Fluency
- WE-Word

Sd/Word Comp	Sent/Disc Comp
8	58



Support for the SVR

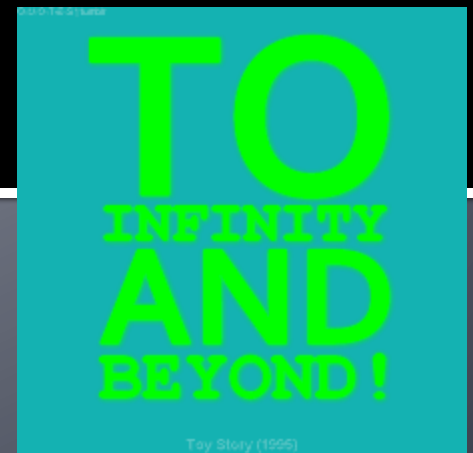


To Infinity and Beyond

- Factor analysis: 2 factors
- Regression models:
SVR (including vocab) explains variance in RC
- Clinically meaningful

- Individual differences rule
- Student may be good at word recognition or reading fluency but still struggle with word structure knowledge
- Comprehension may vary across types of discourse:
 - Listening Comprehension
 - Story Telling
 - Following Directions
 - Social Communication
- Memory and attention may play varied roles
- Parent, teacher, and student input are critical
- Take advantage of strengths; target weaknesses

Comments
Questions
Thank you!



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