#### continued

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#### continued

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## KNOW

# THY-CELF5

Wayne A. Secord, Ph.D. Elisabeth H. Wiig, Ph.D.

Presented for SpeechPathology.com January 2015

#### Disclosures

#### <u>Financial</u>

- Royalty Income from Sale of Tests
  - Especially CELF Products
  - And Other Tests & Books
- Professional Consultation
- Speaking Engagements

#### Non-Financial

- University Promotions
- Reputation & Influence





- · Measurement & Assessment
  - Traditional View of Diagnosis and Appraisal
  - Some Assessment Sins
  - The "Ideal Test"
  - Stages of Test Development
- Evolution of CELF-5 (Changing Schemas)
  - From CELF to CELF-R CELF-3 CELF-4 CELF-5
- Test Overview
  - What's New & Great
  - Test Changes & Fine Tunings
  - Test Deletions
  - Some Administration & Scoring Changes
- · The Assessment Process & Perspectives
- Research Overview

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THE MEASUREMENT & ASSESSMENT PROCESS

Wayne A. Secord, Ph.D. Ohio State University Columbus, OH

Elisabeth H. Wiig, Ph.D.

Knowledge Research Institute
Arlington, TX



## TRADITIONAL VIEW OF ASSESSMENT & DIAGNOSIS

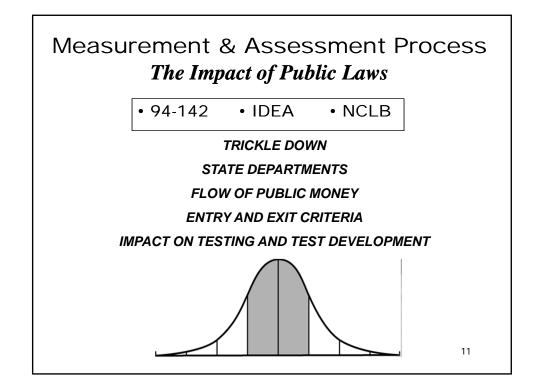
- DIAGNOSTIC CLASSIFICATION & SEVERITY
- ETIOLOGICAL AND BEHAVIORAL FACTORS
- FACTORS THAT MAY INFLUENCE INTERVENTION
- MAKE RECOMMENDATIONS
- DETERMINE PROGNOSIS

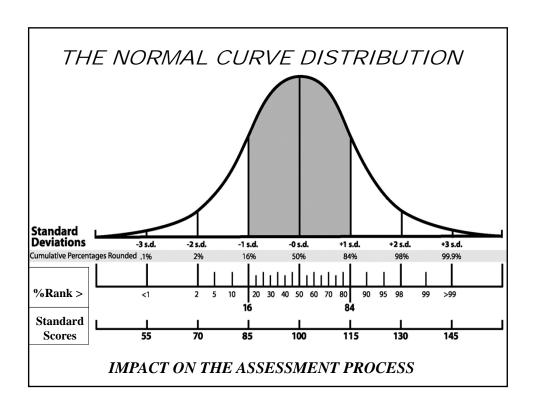
#### TRADITIONAL VIEW OF STANDARDIZED TESTING IN SCHOOLS

- DIAGNOSTIC CLASSIFICATION & SEVERITY
  - Statistical Comparison
  - Establish Eligibility for Categorization Purposes
- IDENTIFYING INTRAPERSONAL WEAKNESSES
- PRETEST POST-TEST

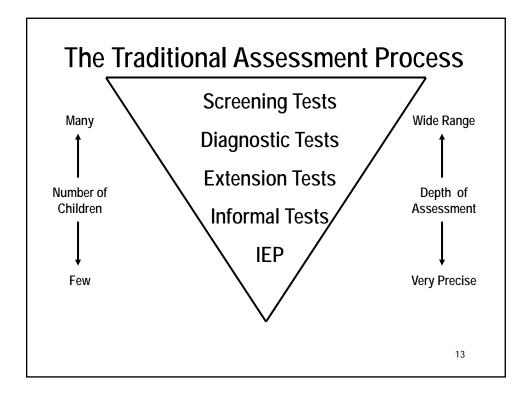
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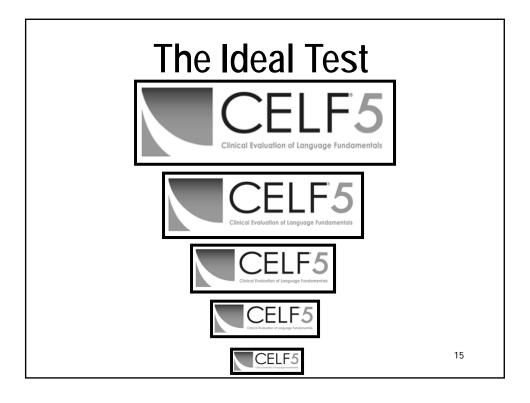




## The Ideal Test

- 1. Takes no longer than 30 minutes to administer
- 2. Includes a screening component
- 3. Simple, fun, and easy to adminster and score
- 4. Requires no addition, subtraction or multiplication
- 5. Comes in full color
- 6. Gives you permission to xerox the record forms
- 7. Costs no more than \$19.95





## **Test Development**

### (4 Stages)

STAGE 1: Conceptualization and Initial Design

STAGE 2: Creation of Pilot Study - Version 1

**STAGE 3: Field Testing and Revisions** 

STAGE 4: Standardization and Publication

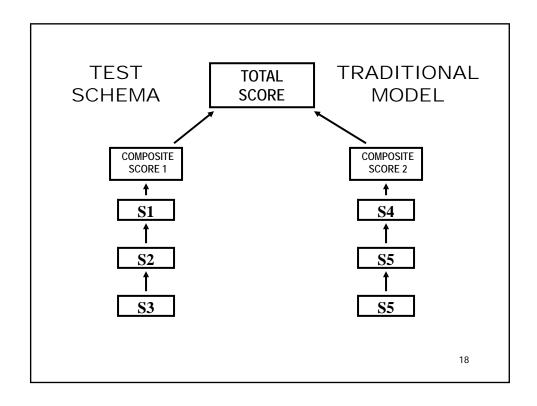
Typical Development Time = 3 Years





## Test Structure Changes 35 Years

- What it Takes
- Where It Started
- Some Test Models

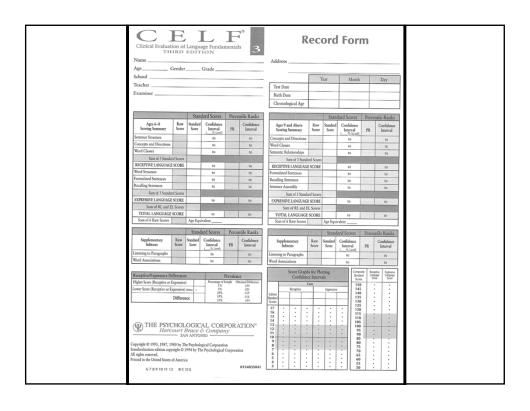


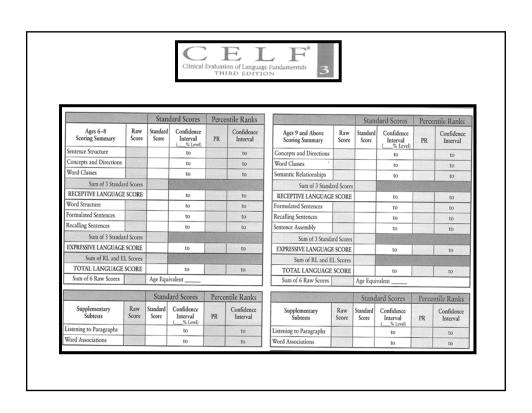


CELF  Language	TABLE 1: Age-Expected Grade Level Criteria    Solvert   1   2   3   4   5   6   7   128   50   9   19   11     Causer India   3   44   44   64   59   34   71   23   50   9   19   11     Si   1   1   1   2   3   4   44   64   59   34   71   23   50   50   24   10     Si   1   1   1   1   2   3   4   2   4   64   50   34   71   23   50   50   24   10     Si   2   3   4   2   3   6   2   3   5   10   2   3   5   5   3   3   4   4     Si   3   4   3   4   3   5   5   6   3   15   10   2   3   5   5   3   4     Si   4   3   5   3   6   4   15   15   2   3   5   5   3   4     Si   5   4   3   5   7   7   4   1   1   1   1   0   2   5   5   2   3   7     Si   4   3   5   7   7   4   1   1   1   1   0   2   5   5   2   2   7     Si   4   4   5   7   7   5   7   4   1   1   1   1   0   4   5   5   2   7   7     Si   4   3   3   3   3   3   3   3   7   7   3   5   6   2   7   7     Si   5   5   7   7   7   7   7   7   7   7	
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Language Production  Criterion	Total Raw Score Computation Grid Comparisons SUBTEST RAW SCORES/TOTAL RAW SCORES  Out Tale 1)  1. Wood & Sentence Structure 2. Wood Classes 3. Linguistic Concepts 4. Relationships & Ambiguities 4. Relationships & Ambiguities 4. Relationships & Ambiguities  Out Tale 1)  I Wood & Sentence Structure  I Wood Classes  I W	
Referenced	5. Oral Directions 6. Spoken Paragraphs Total Processing Raw Score  7. Word Series	
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Word Classes	1500		15.00	to		to	Linguistic Concepts	0.557		0.000	to	50	to	
Semantic Relationships	1000		16537	10	1 50	to	Sentence Structure	20000		200	to	100	to	
Sentence Assembly	1000		1000	to	100	to	Word Structure	3575		45500	to	280	to	
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### ORS

#### **Observational Rating Scales (ORS)**

- Guide Book on Use and Interpretation (data)
- Teacher, Parent & Student Rating Forms
- Used to Describe a Students' Problems in: Reading, Writing, Listening & Speaking
- Includes a Summary Form

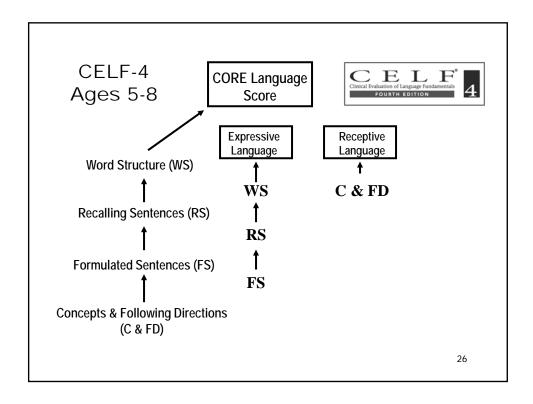


## TEST STRUCTURE

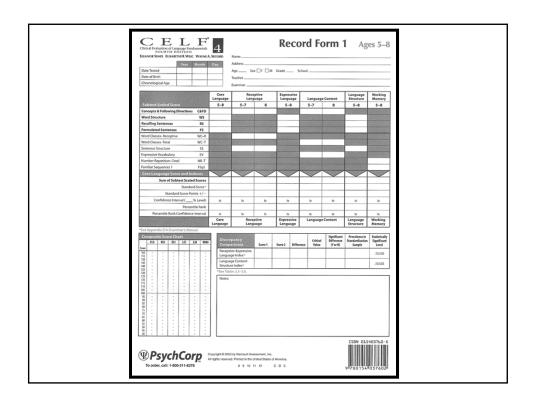


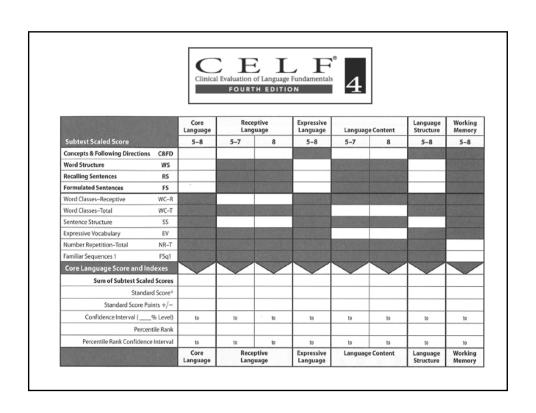


# **CORE Language Score**

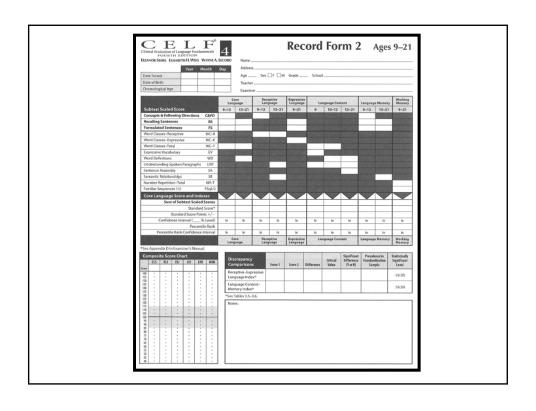


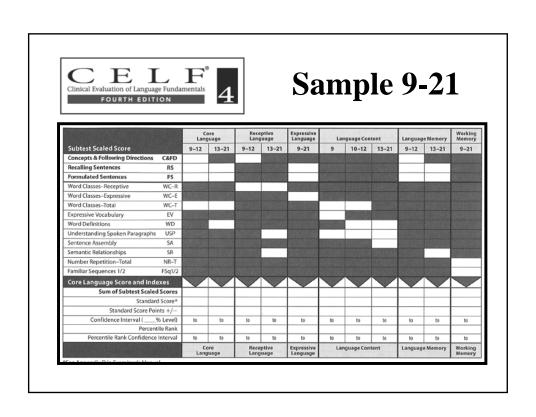
















## **TEST STRUCTURE**

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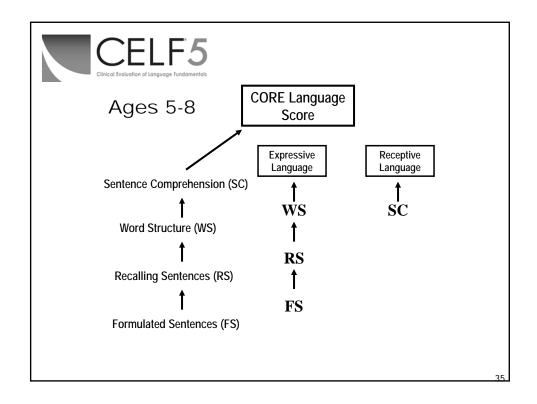
- Battery of tests to assess language comprehension and expression
- Age range: 5:0 through 21:11
- Administration time: **Core Language Score 30-45 minutes**
- Scores
  - Norm-Referenced (most of the tests)
  - Criterion-Referenced (a few tests)

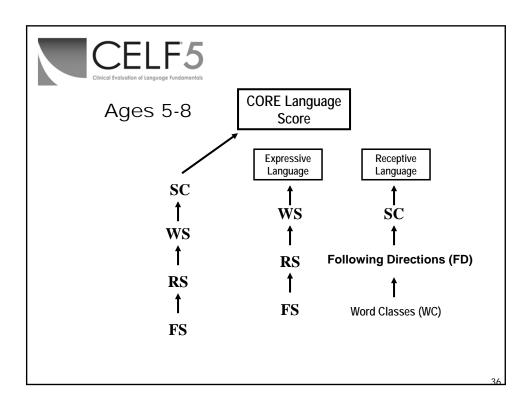


CELF.	5 Test	Structure		
Language Content	Language Structure	Oral-Written Language Connection	Pragmatics	Language Memory
Linguistic Concepts	Sentence Compre- hension	Understanding Spoken Paragraphs	Pragmatics Profile	Linguistic Concepts
Word Classes	Word Structure	Reading Compre- hension	Pragmatic Activities Checklist	Following Directions
Following Directions	Formulated Sentences	Formulated Sentences		Recalling Sentences
Semantic Relationships	Recalling Sentences	Structured Writing		Formulated Sentences
Word Definitions	Sentence Assembly	Observational Rating Scales		
Understanding Spoken Paragraphs				

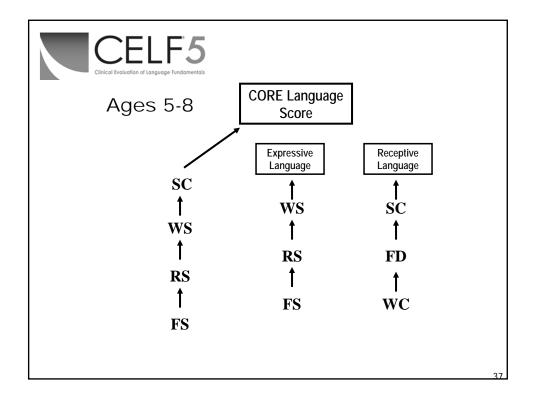
Name								Colculat	ion of Studen	er Age	9000000000
Address								Culcula	Year	Morth	Day
Age Sex:□F	□м	Grade	School					Test Date			
Teacher								Birth Date			
Examiner								Age			
Test Scaled Scores	2013		100000	15530	988655		352000	10 (2) (3)	3955	111111111111111111111111111111111111111	Z (55) (15)
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Word Structur				+	+	to	+	-	to	+	+
10.00	-			+	+		+	+		+	+
Word Classe				-	-	to	-	+	to	-	-
Following Direction				+	-	to	-	-	to	-	-
Formulated Sentence	res (FS)			-	_	to	-	_	to	-	-
Recalling Sentence						to	_		to		
Understanding 5 Paragraph	s (USP)					to			to		
Pragmatics Profi						to			to		
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Core Language Score (CLS)									to		to
Receptive Language Index (RLI)									to		to
Expressive Language Index (ELI)									to		to
Language Content Index (LCI)		230							to		to
Language Structure Index (LSI)									to		to
Discrepancy Comp	arisons	200	351536	100000		50000			Progmatics	Activities C	hecklist (PAC)
	Score 1	Score 2	Difference	Ortical Value	Significant Difference	Prevale Normativ	nce in Si e Sample Sign	tatistically ificant Level	Total observation	is chedied:	
Receptive—Expressive Language Index					Yes/No			15/.05		Criterion:	≤9
Language Content Structure Index*					Yes/No			15/.05	50000	0	Meets Does Not Meet
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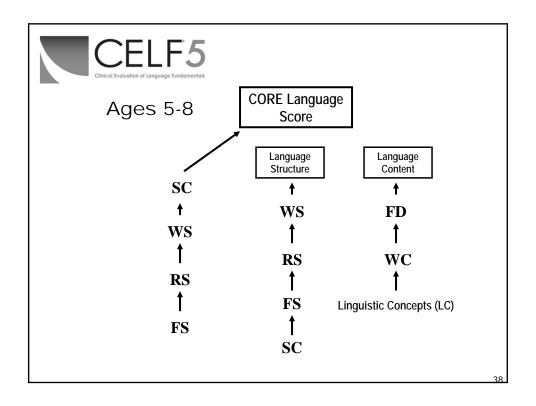




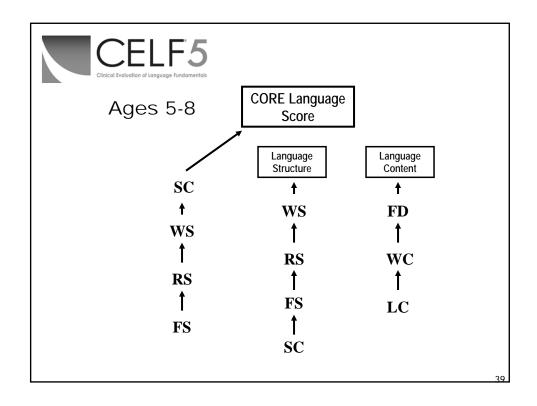


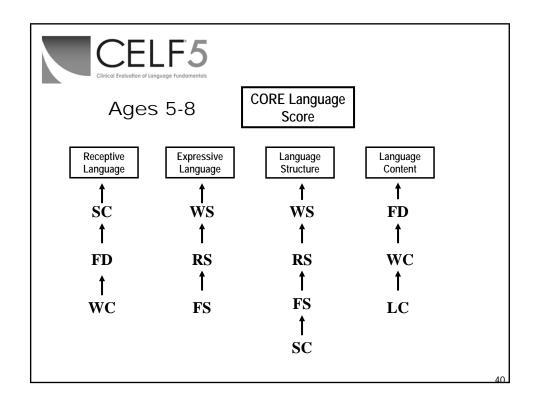




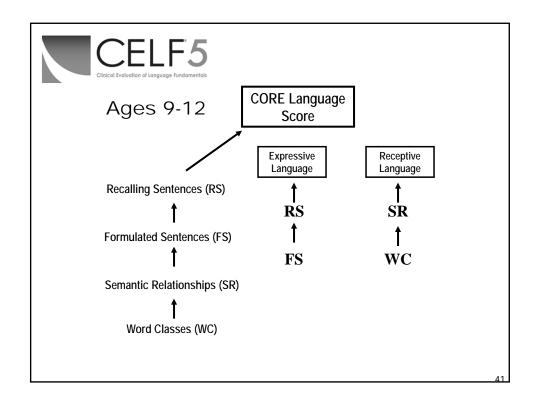


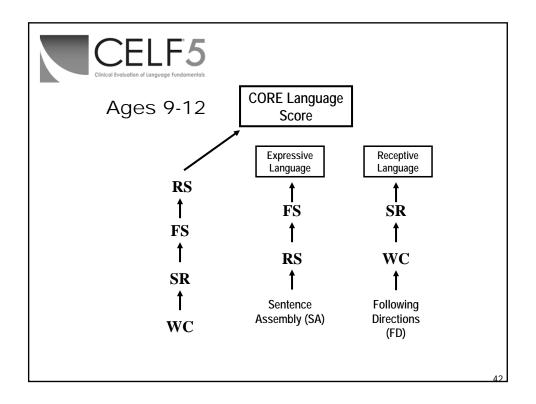




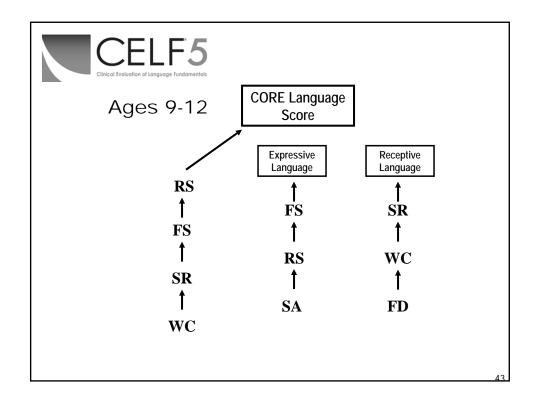


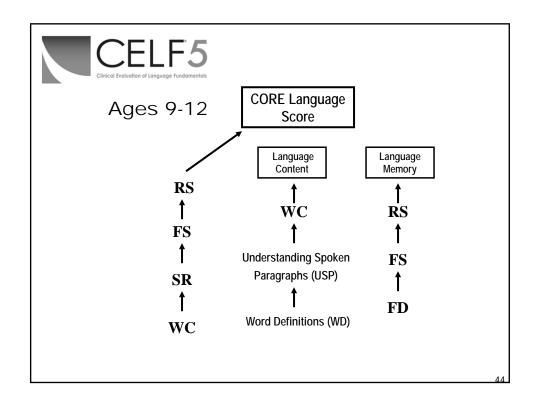




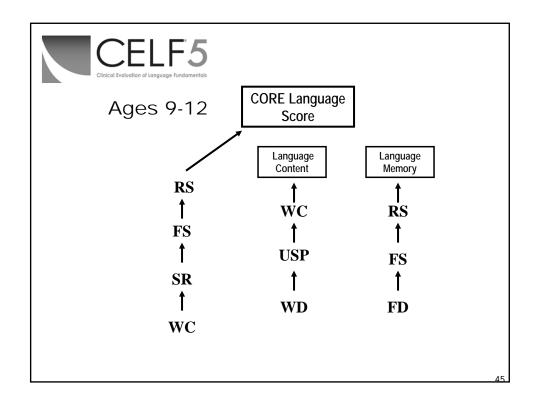


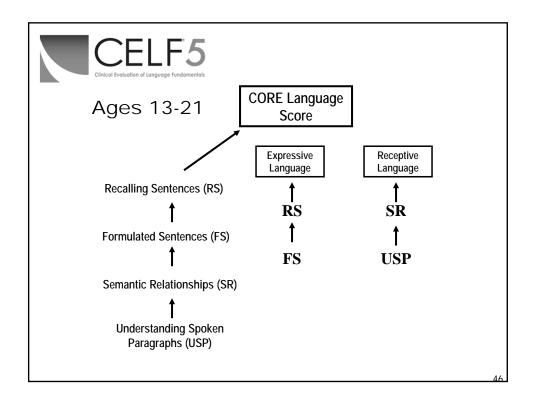




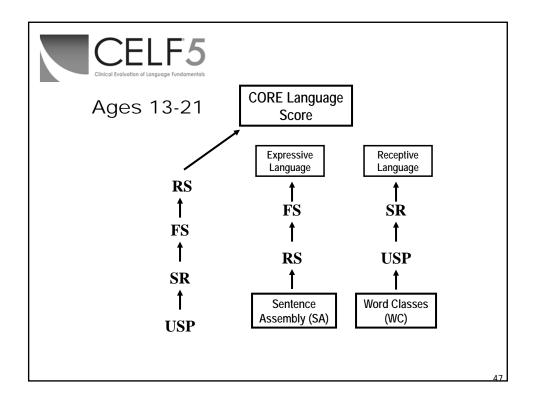


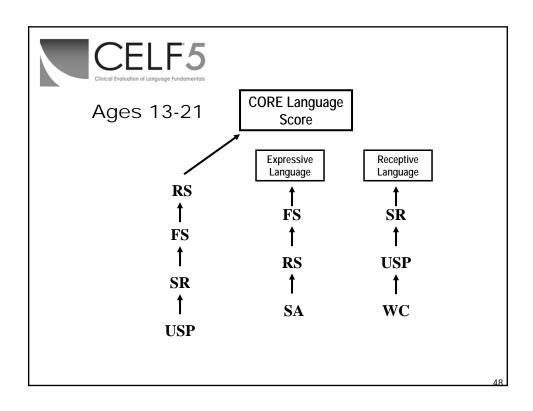




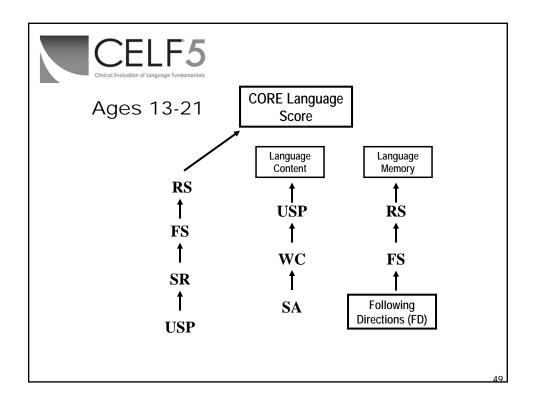


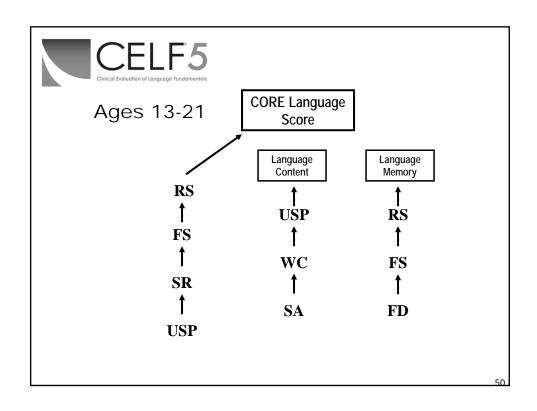




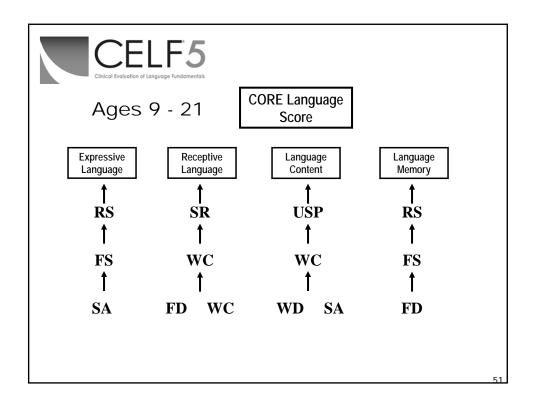


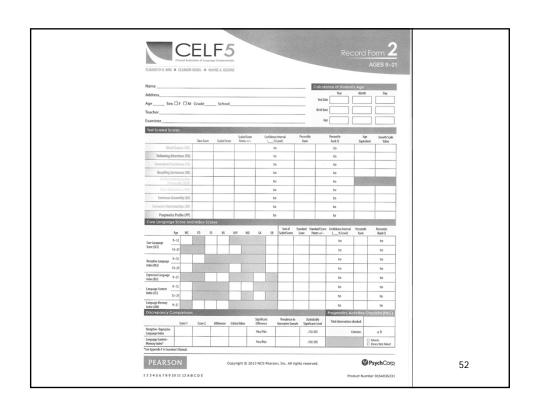
















## **TEST OVERVIEW Summary of Changes**

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#### ELF5 Some Assessment Trends

#### Social Language

- Increasing numbers of students identified with autism or Asperger's Syndrome ages 5-21 with social language issues in both mainstream and special classroom settings.
- Increased focus on social language skills for the mainstream classroom population (e.g., core curriculum often includes social/behavioral targets, anti-bullying initiatives).

#### RTI

- SLPs collaborating with classroom teachers, psychologists and other specialists to identify supports for students having difficulty meeting curriculum objectives.
- Examining the link between oral language and literacy.
- Increased SLP involvement in RTI activities.
- Requirements for more screening.

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PEARSON





- Align tests to current education models & assessment trends.
- Streamline the test.
- Enhance clinical utility.
- Improve and maintain psychometric properties.
- Increase user friendliness.
- Assess social language skills in authentic, interactive situations.
- Create an optional literacy component by adding one reading comprehension and one written language test that allows you to make oral-written language comparisons and begin collaboration with classroom teachers and reading specialists

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## Enhance Already Robust Psychometric Properties

- Update normative information
- Extend subtest floors & ceilings
- Improve item difficulty gradients
- **Evaluate item bias** 
  - Iterative psychometric analyses
  - Qualitative reviews by assessment and bias experts
  - Feedback from clinicians in the field testing over 2000 field test participants
- Test structure changes

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#### What's New and Great?

- More robust assessment of pragmatics
  - o Norm-referenced scores for Pragmatics Profile
  - New Pragmatics Activities Checklist
- Targeted assessment of written language
  - Reading Comprehension
  - Structured Writing
- · New digital options
  - Digital Kit: All manuals on flash drive; use paper record forms
  - Coming in 2014: Q: interactive platform offers digital administration & scoring using two i-Pads
- Current normative data reflecting today's diverse population

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#### **Overview of Test Changes**

- · Each test is a stand-alone assessment
- · Revised retained tests
  - New items include modifications to administration directions, basal and ceilings, test stimuli, and art
- New tests
  - Pragmatics Activities Checklist
  - Reading Comprehension
  - Structured Writing
- · Tests deleted from paper and digital kits
  - Expressive Vocabulary
  - Word Associations
  - Rapid Automatic Naming
  - Number Repetition
  - Familiar Sequences
  - Phonological Awareness

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continued



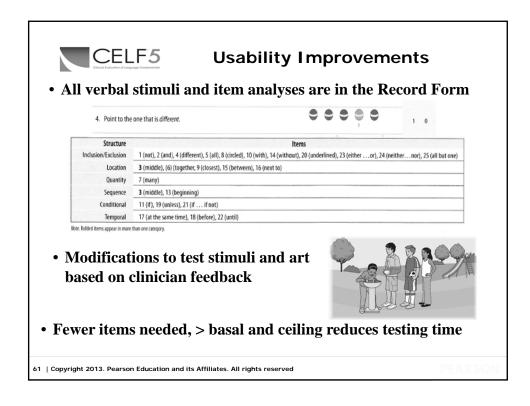
CELF5 New Language in Literacy Tests: **Reading Comprehension** Structured Writing

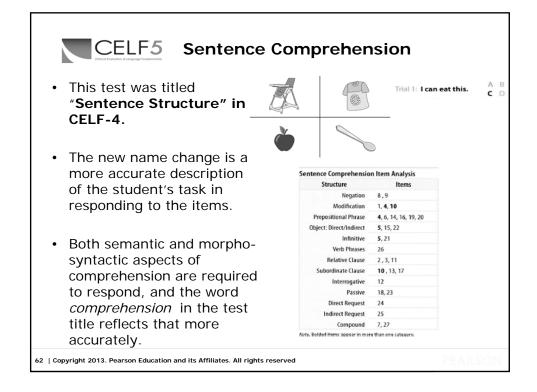
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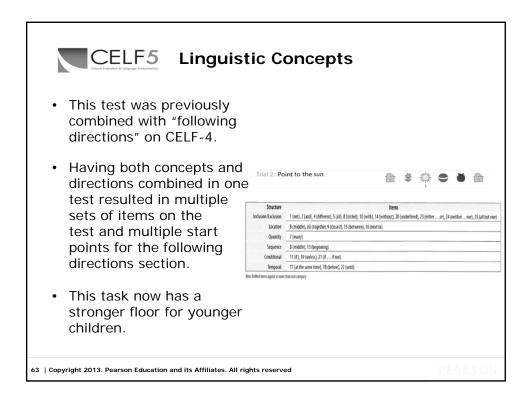
## **Some Test Fine Tunings**

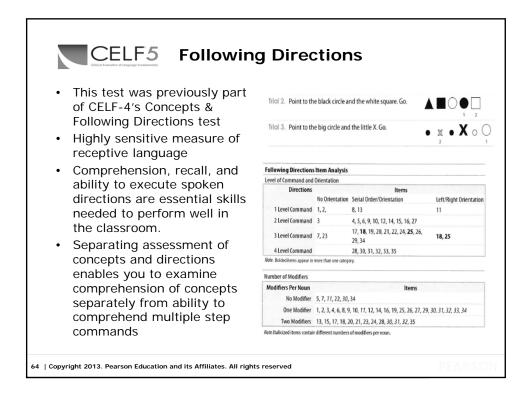




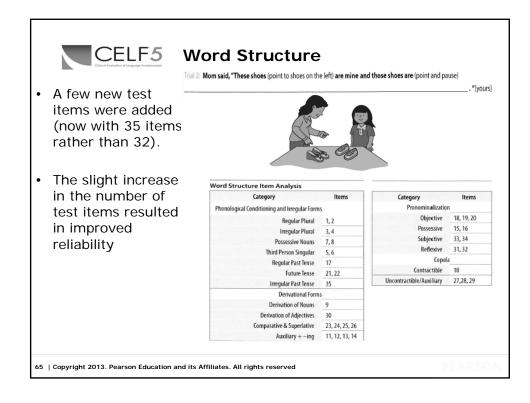


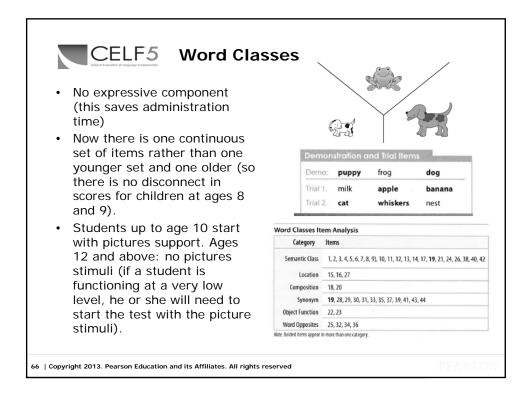




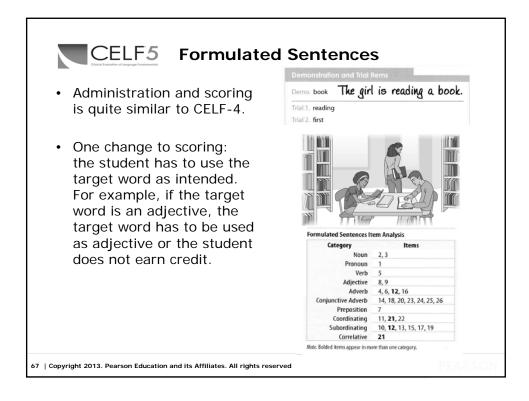


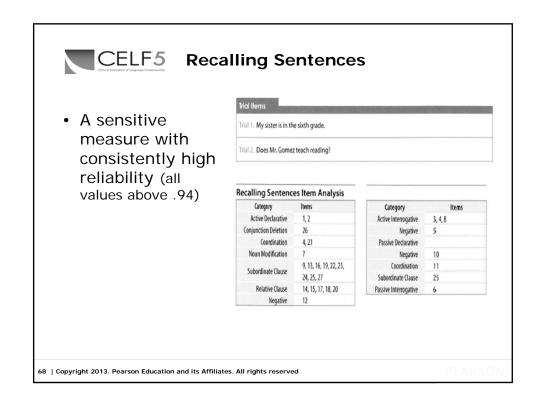




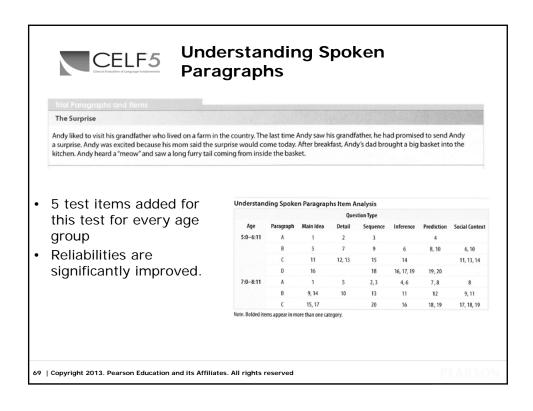


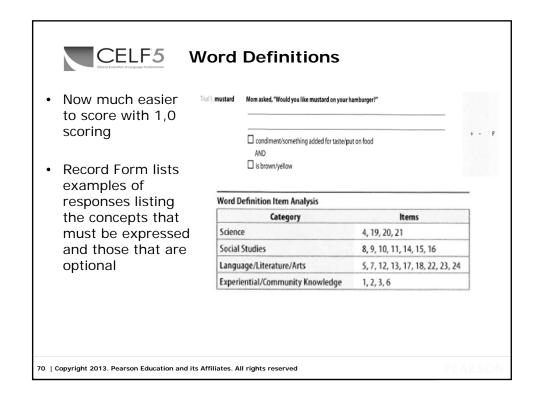




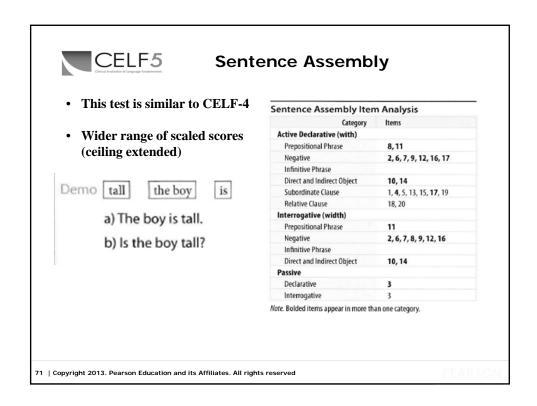


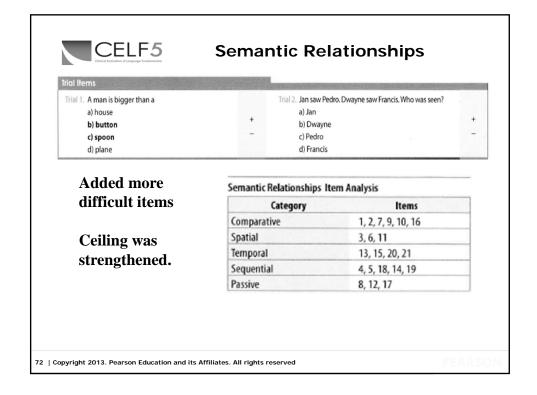
















#### **Summary of Fine Tunings**

#### 1. Sentence Comprehension

- Called Sentence Structure in CELF-4
- Now both semantic & morpho-syntactic aspects included

#### 2. Linguistic Concepts

- Previously combined with "Following Directions"
- Combination confusing with multiple sets of items
- Task now has a stronger floor for younger children

#### 3. Following Directions

- Previously "Concepts and Following Directions"
- Separation now enables much clearer assessment of both

#### 4. Word Structure

- Some additional test items
- Improved reliability

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**73** 



#### **Summary of Fine Tunings**

#### 5. Word Classes

- No Expressive Component - Use during extension testing Continuous set of items – less confusing & saves time

#### 6. Formulated Sentences

- Administration and scoring similar to CELF-4
- Words now used as planned, adjective, conjunction, etc.

#### 7. Recalling Sentences

- No changes - Very sensitive measure; High Reliability

#### 8. Understanding Spoken Paragraphs

- Five (5) test questions were added for each age group
- Reliabilities are now significantly improved

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### **Summary of Fine Tunings**

- 9. Sentence Assembly
  - Similar to CELF-4
  - Wider range of scaled scores (ceiling extended)

### 10. Semantic Relationships

- More difficult items were added
- Ceiling was strengthened

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CELF5 Graphic Summary of All Tests					
Language Content	Language Structure	Oral-Written Language Connection	Pragmatics	Language Memory	
Linguistic Concepts	Sentence Compre- hension	Understanding Spoken Paragraphs	Pragmatics Profile	Linguistic Concepts	
Word Classes	Word Structure	Reading Compre- hension	Pragmatic Activities Checklist	Following Directions	
Following Directions	Formulated Sentences	Formulated Sentences		Recalling Sentences	
Semantic Relationships	Recalling Sentences	Structured Writing		Formulated Sentences	
Word Definitions	Sentence Assembly	Observational Rating Scales			
Understanding Spoken Paragraphs					





### **Again: Some Major Changes to Tests**

- The CELF-4 Concepts and Following Directions subtest was split into two tests to examine concept development and ability to follow increasingly complex directions separately
- Scoring Word Definitions (Now 1, 0 instead of 2, 1, 0)
- Pragmatics Profile: now offers standard scores
- Again! Subtest Deletions Include:
  - Expressive Vocabulary
  - Number Repetition
  - Familiar Sequences
  - Phonological Awareness
  - Word Associations
  - Rapid Automatic Naming

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### Information about each test...

...can be found in the Examiner's Manual

- Test objective
- · Relationship to the curriculum
- Relationship to classroom activities
- New! Implications for intervention
- This information answers questions you may have about:
  - What language skills are being targeted in this test?
  - How do the language skills relate to the curriculum objectives the student is expected to master?
  - What activities are used in the classroom to teach and assess progress on curriculum objectives? What is the student actually required to do in the classroom to demonstrate mastery?
  - How can you use these test results to design intervention strategies?

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continued



# The Assessment Process

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## CELF-5 Assessment Process Test Scores

- Test Scores
  - Core Language and Index standard scores
  - Pragmatics Profile, Reading Comprehension, and Structured Writing scaled scores
  - Percentile ranks
  - Growth Scale Values
  - Age equivalents
- Index Scores: 4 per age group
  - Receptive
  - Expressive
  - Structure
  - Content
  - Language Memory

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# CELF-5 Assessment Process Severity Range

### · Above Educational Average

Standard score 115 and above (+1 SD above the mean)

### Average Educational Range

Standard score 86 to 114 (within +/-1 SD of the mean)

### • Mild Severity Range or Level

Standard score 79 to 85 (within -1 to -1.5 SD of the mean)

### • Moderate Severity Range or Level

Standard score 71 to 78 (within -1.5 to -2 SD of the mean)

### • Severe Severity Range or Level

Standard score 70 and below (-2 SD below the mean)

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### CELF-5 Assessment Process Educational Range

#### Above Educational Average

Standard score 115 and above (+1 SD above the mean)

### Average Educational Range

Standard score 86 to 114 (within +/-1 SD of the mean)

#### Marginal Educational Range

Standard score 79 to **85** (within -1 to -1.5 *SD* of the mean)

### Low Educational Range

Standard score 71 to 78 (within -1.5 to -2 SD of the mean)

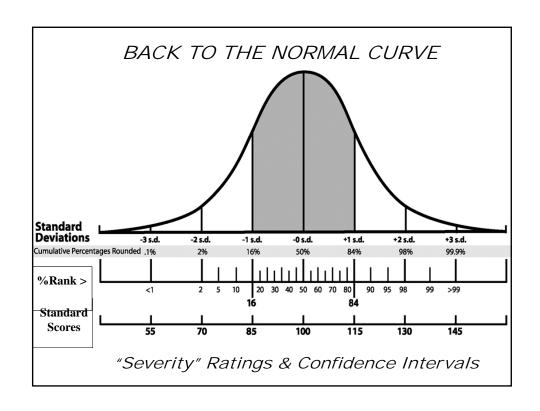
### · Very Low Educational Range

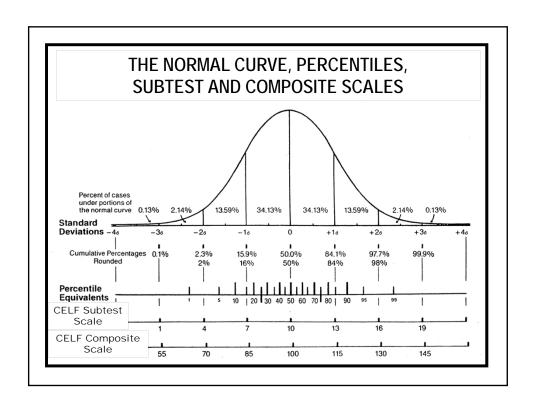
Standard score 70 and below (-2 SD below the mean)

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### CELF-5 Assessment Process Confidence Intervals

### **PREMISES AND ASSUMPTIONS:**

- No test, however reliable, yields a "true" score
- Measurement error (ME), like Chicken Man (is everywhere)
- ME arises from EVERYWHERE (internal and external factors)
- The Standard Error of Measurement (SEM) clarifies ME

#### **DEFINITIONS:**

- Confidence intervals provide a range for the "true" score
- Confidence intervals: 68%, 90%, 95% (In Norms Tables)
- Provides a powerful lens to view strengths and weaknesses
- Importance for Significant Differences Between Composite Scores

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CELF-5 Assessment Process

Prevalence of Index Score Discrepancies

Amount of	RLI	-EU	LCI	-LSI	LCI-	LMI	- Amount of
Discrepancy (points)	RLI < EU (-)	RLI > EU (+)	LCI < LSI (-)	(+)	(-)	LCI > LMI (+)	Discrepancy (points)
>40	0.0	0.0	0.0	0.1	0.0	0.1	>40
39	0.0	0.0	0.0	0.1	0.0	0.1	39
38	0.0	0.0	0.0	0.1	0.1	0.3	38
37	0.0	0.0	0.0	0.1	0.1	0.3	37
36	0.0	0.0	0.0	0.3	0.1	0.4	36
35	0.0	0.0	0.0	0.3	0.2	0.4	35
34	0.1	0.0	0.0	0.3	0.2	0.5	34
33	0.1	0.0	0.0	0.3	0.3	0.5	33
32	0.1	0.1	0.0	0.3	0.4	0.5	32
31	0.2	0.1	0.0	0.3	0.5	0.6	31
30	0.2	0.1	0.1	9.4	0.6	0.6	30
29	0.3	0.3	0.3	0.4	0.8	0.7	29
28	0.5	0.3	0.3	0.6	0.8	0.9	28
27	0.5	0.5	0.6	0.6	1.1	0.9	27
26	0.8	0.6	0.6	0.8	1,6	1.2	26
25 .	0.9	1.1	0.6	0.8	1,8	1.4	25
24	1.2	1.3	0.6	1.0	2.2	1.8	24
23	1.5	1.7	0.8	1.1	2.7	2:2	23
22	2.2	2.1	1.0	1,4	3.2	2.7	22
21	2.5	2.5	2.0	1.6	3.6	3.4	21
20	3.6	3.0	2.3	2.3	4.1	4.0	20
19	4.0	3.7	2.9	3.0	4.7	4.6	19
18	4.6	4.2	3.0	3.5	5.9	5.6	18
17	5.0	5.3	4.1	3.9	7.0	7.3	17
16	6.6	6.1	4.6	4.9	8.7	8.4	16
15	7.6	8.2	5.5	5.4	9.9	9.8	15
14	9.4	9.4	6.5	7.8	11.3	10.9	14
13	11.3	11.2	8.5	9.4	12.9	13.2	13
12	13.5	12.4	10.5	11.8	14.5	14.4	12
11	15.5	15.3	14.0	13.4	16.3	17.4	11
10	17.9	17.5	16.5	15.9	18.5	18.9	10
9	20.4	20.6	19.3	18.4	21.6	22.0	9
8	22.6	22.9	22.4	21.4	24.2	23.6	. 8
7	25.7	26.1	27.0	24.3	26.7	27.0	7
6	28.9	29.3	29.8	27.4	28.4	29.2	6
5	32.1	33.3	32.3	32.6	32.7	34.2	5
4	36.3	36.6	35.4	35.4	35.1	36.4	4
3	39.9	40.7	39.5	39.4	40.6	41.5	3
2	64.3	44.4	43.6	43.8	42.9	44.4	2
1	47.7	47.6	47.6	47.6	47.5	.49.1	1
Mean	8.6	8.6	8.0	8.0	9.1	9.0	Mean
SD	6.2	6.1	5.6	6.0	7.0	6.9	SD
Median	7.0	7.0	7.0	7.0	8.0	7.0	Median

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CELF-5 Assessment Process

Critical Values for Discrepancy Comparisons Between Index Scores

Age	Significance	RU-EU	LCI-LSI	LCI-LMI
Overall	0.05	9	9	10
	0.15	7	6	7
5:0-5:5	0.05	8	8	
	0.15	6	6	
5:6-5:11	0.05	9.	8	
	0.15	6	6	
6:0-6:5	0.05	8	7	
	0.15	6	5	
6:6-6:11	0.05	8	7	
	0.15	6	5	
7:0-7:11	0.05	10	9	
	0.15	7	7	
8:0-8:11	0.05	9	9	
	0.15	7	7	
9:0-9:11	0.05	8		9
	0.15	6		6
10:0-10:11	0.05	9		10
	0.15	6		7
11:0-11:11	0.05	9		10
	0.15	7		y

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12:0-12:11



**STUDENT** 

**CENTERED** 

Some Major Diagnostic Questions Language Assessment Perspectives Clinical, Educational, Social Cognitive

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### **CELF-5 Assessment Process**

Major Diagnostic Questions

- 1. Is there a language disorder?
- 1. Core Language Score
- 2. What is the nature of the disorder?

  Receptive and Expressive
  Content vs. Structure
  Language and Memory
  Reading and Writing
- 2. Language Index Score
- 3. What are the language strengths and weaknesses?
- 3. Profiling Usually Done with Subtest Scores

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### **CELF-5 Assessment Process**

- Is a language disorder affecting classroom performance?

  Evaluate language and communication in context using the Observational Rating Scale (ORS) and other authentic and descriptive measures to provide information about classroom accommodations, adaptation, and enhancements.
- If a student does not respond to a variety of classroom interventions, is his or her performance due to language skill deficits?
  - Administer tests appropriate to the student's age to answer referral questions
- If a language disorder is identified, what do I need to know to plan for intervention?
  - Identify the nature of the disorder by answering specific questions
- Are there significant differences in comprehension and expression?

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continued



### **CELF-5 Assessment Process**

Are there significant differences in comprehension and expression?

Are there weaknesses in the area of morphology, syntax, or semantics?

Are weaknesses related to language and memory?

How does the disorder affect reading and written language?

Does the disorder affect social interactions?

Based on CELF-5 results and additional assessment information collected, what is the best way to address the student's needs?

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### **CELF-5 Assessment Process**

### Language Assessment Perspectives

- 1. Clinical Perspective
- 2. Educational Perspective
- 3. Cognitive Perspective
- 4. Social Perspective

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# CELF-5 Assessment Process The Clinical Perspective

Question 1. *Is there evidence of a language disorder?*Core Language Score or other Total Language Composite

Question 2. What is the nature of the disorder?

Receptive vs. Expressive, Content vs. Structure Language & Memory – Strengths and Weaknesses

Question 3. How does this student's performance compare with that of his/her peers?

Norm Reference Performance compared to age & grade

Question 4. Does the student's clinical performance profile meet criteria for eligibility for speech and language services?

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# The Educational Perspective

Question 1. Which aspects of communication in context are compromised?

Pragmatics Profile – Pragmatics Checklist Nonverbal Communication

Question 2. Which aspects of academic performance are compromised?

Listening, Speaking, Reading, Writing, Other Areas

Question 3. Which curriculum objectives are compromised?

English & language arts, social studies, Sciences, arithmetic, algebra, phys. education, arts

Question 4. Which are the student's strengths, weaknesses, and learning adjustments?

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### **CELF-5 Assessment Process**

### ORS: Observational Rating Scales

### Content:

- 40 statements describe problems a student may have in listening, speaking, reading, and writing
- Uses negatively stated queries about observable behaviors (e.g., has difficulties)
- Rated on a 4-point frequency of occurrence scale (1=Never, 2=Sometimes, 3=Often, 4=Always)
- Separate ratings by teachers and parents

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**CELF-5 Assessment Process** 

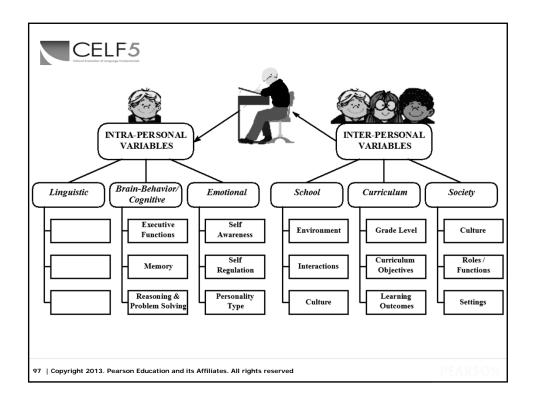
The Cognitive Perspective

Cognitive Considerations
Executive Functions
Working Memory

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# The Social Perspective

Question 1. What aspects of social communication are compromised?

Pragmatics - Perspective Taking - Nonverbal communication

Question 2. What aspects of peer relations are compromised?

Play or game activities, friendship, interactive sharing or participating in conversations or discussions

Question 3. What aspects of student-adult relationships are compromised?

Respect, following directions for activities, behavioral management, mutual respect, trust etc.

Question 4. What areas of social communication represent strengths?

**Pragmatics Profile – Pragmatics Checklist** 

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continued



# Research Overview



### **Research Overview**

### A Diverse STDZ Sample: Race/Ethnicity

Race/Ethnicity	N	%
Asian	87	3.7%
Black	328	13.8%
Hispanic	476	20.0%
Other	137	5.8%
White	1352	56.8%
Total Sample	2380	100%





### **Research Overview**

### **Diverse Parent Education Level**

Parent Education Level	N	%
Less than 11 years	292	12.3%
H.S. Diploma - GED	544	22.9%
1-3 Years College or Technical School	817	34.3%
4 or more Years of College	727	30.6%
Total Sample	2380	100%

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### **Research Overview**

### Standardization Sample by Region

Region of the US	N	%
Midwest	567	23.8%
Northeast	363	15.3%
South	873	36.7%
West	577	24.3%
Total Sample	2380	100%





### **Research Overview**

### Other Demographic Variables

Gender	N	%
Female	1190	50%
Male	1190	50%
Total Sample	2380	100%
-		

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### Index Score Reliability Coefficients

CELF-5 Index Scores	Average Reliability Coefficients (across target ages)
Core Language Score	.96 Excellent
Receptive Language Index	.95 Excellent
Expressive Language Index	.95 Excellent
Language Content Index	.95 Excellent
Language Structure Index	.96 Excellent
Language Memory Index	.95 Excellent





### Test Reliability Coefficients

age rondamentals				
CELF-5 Test	A۱	Average Reliability		
		Coefficients		
	(ac	cross target ages)		
Sentence Comprehension	.87	Good		
Linguistic Concepts	.91	Excellent		
Word Structure	.89	Good		
Word Classes	.90	Excellent		
Following Directions	.91	Excellent		
Formulated Sentences	.86	Good		
Recalling Sentences	.94	Excellent		
Understanding Spoken	.85	Good		
Paragraphs				
Word Definitions	.89	Good		
Sentence Assembly	.93	Excellent		
Semantic Relationships	.89	Good		
Pragmatics Profile	.98	Excellent		
Reading Comprehension	.87	Good		
Structured Writing	.75	Acceptable		

### Reliabilities for Clinical **Groups**

Clinical Group Test	Language Disorder (n=166)	Learning Disability (Reading & Writing) (n=69)	Autism Spectrum Disorder (n=66)	Average r <sub>xx</sub>
Sentence	.94 Excellent		.96 Excellent	.95 Excellent
Comprehension				
Linguistic Concepts	.96 Excellent		.98 Excellent	.97 Excellent
Word Structure	.93 Excellent		.94 Excellent	.94 Excellent
Word Classes	.96 Excellent	.92 Excellent	.97 Excellent	.95 Excellent
Following Directions	.96 Excellent	.90 Excellent	.98 Excellent	.96 Excellent
Formulated Sentences	.97 Excellent	.89 Good	.96 Excellent	.95 Excellent
Recalling Sentences	.98 Excellent	.92 Excellent	.97 Excellent	.96 Excellent
Understanding Spoken Paragraphs	.81 Good	.75 Acceptable	.91 Excellent	.84 Good
Word Definitions	.87 Good	.91 Excellent	.95 Excellent	.92 Excellent
Sentence Assembly	.92 Excellent	.94 Excellent	.97 Excellent	.95 Excellent
Semantic Relationships	.88 Good	.89 Good	.96 Excellent	.92 Excellent
Pragmatics Profile	.99 Excellent	.99 Excellent	.99 Excellent	.99 Excellent
Reading Comprehension	.93 Excellent	.86 Good	.93 Excellent	.91 Excellent

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### **Test-Retest Stability**

Test Retest Stability (n= 137)		
Test-Retest Interval	7-46 days	Mean: 19 days
Average corrected coefficient for all ages	.83 to .90	Good to Excellent

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### **Inter – Scorer Agreement**

Inter-Scorer Agreement	Reliability
Word Structure	.99
Formulated Sentences	.95
Word Definitions	.91
Structured Writing	.96





### **Sensitivity – Specificity**

 Sensitivity: The degree to which a test identifies a children who do indeed have the condition or disorder.

(Proportion of True/False Positives)

 Specificity: The degree to which a test identifies those children who do not have a condition or disorder.

(Proportion of True/False Negatives)

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### **DELF5** Sensitivity and Specificity

Core Language, Receptive, or Expressive Language index score	Standard Score Cut	Sensitivity	Specificity
-1 SD	85	1.0	.91
-1.33 SD	80	0.97	.97
-1.5 SD	77	0.85	.99
-2 SD	70	0.57	1.0





### **Clinical Utility**

- Purpose Identify an optimal cut score
   Minimize false negatives. Minimize false positives.
- Reason Maximize accuracy. Minimize cost.
- CELF-5 Clinical Utility (Optimal Cut Scores)

Core Language Index 80
Receptive Language Index 80
Expressive Language Index 80

CELF-5 Sensitivity 97% CELF-5 Specificity 97%

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### CELF5 A New Screening Edition

- Only screening test available for students ages 5:0 through 21:11
- Screening items are a subset of the CELF-5 diagnostic test items
- If you do follow-up screening with the full CELF-5, you do not need to re-administer the screening items
- New pragmatics screening item
- Can be used as a screening for other diagnostic tests



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