How Language Affects Reading: What Parents and Professionals Need to Know

By

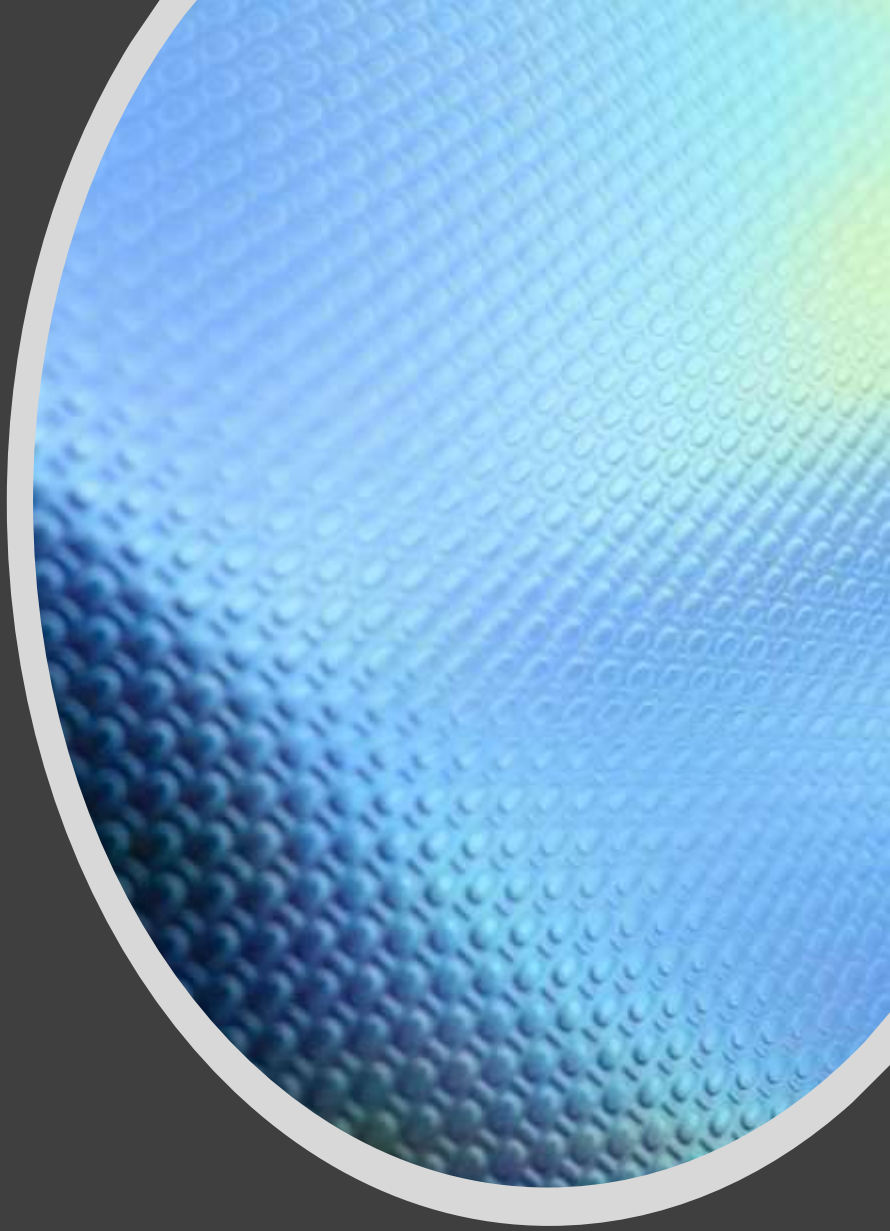
- **Tatyana Elleseff MA CCC-SLP**
- Speech Therapist I
- Rutgers University
- Smart Speech Therapy LLC

Overview

- This webinar reviews the role of language in the acquisition of reading and explain why children with reading difficulties must be assessed for language deficits.
- It explains how undetected language deficits can adversely hamper reading interventions causing the students to plateau in their literacy gains.
- Finally, it offers suggestions regarding which assessments should be considered by parents and professionals for students who exhibit persistent reading difficulties.

Learning Objectives

Be	At the end of this presentation learners will be able to
Discuss	Discuss the role of language in the development of literacy
Identify	Identify risk factors associated with language and literacy disorders
Describe	Describe the value of language assessments for children with confirmed/suspected reading disorders
Identify	Identify the most sensitive standardized language and literacy assessment instruments for students 6-18 years of age



Hierarchy of Oral Language Development

- **Listening**
  - Comprehension of words, phrases, sentences, stories
- **Speaking**
  - Speaking single words, phrases, sentences, engaging in conversations, producing stories
  - **Reading**
    - Words, sentences, short stories, chapter books, etc.
    - General topics
    - Domain specific topics (science, social studies, etc.)
  - **Spelling**
  - **Writing**
    - Words, sentences, short stories, essays
- Oral language develops along a continuum with listening comprehension and verbal expression being the foundational framework for development of later more complex abilities such as reading, spelling, and writing
- Learners struggling in the areas of literacy (e.g., reading, spelling and writing) may have unrecognized and undetected oral expression and social communication deficits which are adversely impacting their literacy acquisition abilities

Statistical Learning and Language Acquisition (Seidenberg & MacDonald, 2018)

Table 1. Several types of language statistics in English that are crucial for oral and written language use

Language Level(s)	Example	Relevance
Phoneme positions	/h/ does not occur at ends of words, /ŋ/ does not occur at word beginnings	The statistics of phoneme locations in words support word recognition and identifying word boundaries in the speech stream (Vitevitch, Luce, Pisoni, & Auer, 1999).
Phoneme and letter transition probabilities	The phoneme sequence /nv/ is rare compared with /nt/; the same holds for the corresponding letter sequences NV and NT.	Sequences with low-transition probability are likely candidates for word and syllable boundaries in speech and syllable boundaries in reading (e.g., CANVAS, CAN VOICE; (Seidenberg, 1987).
Syllable stress assignment in reading	Pronunciation of RECORD as REcord vs. reCORD varies with part of speech	Readers use sentence context to identify stress and part of speech even in silent reading. Patterns are only probabilistic: ANCHOR, e.g., has the same stress pattern in both noun and verb forms (Seidenberg, 2017).
Word meaning	GROUND (n) floor vs. GROUND (n) background vs. GROUND (v) past tense of grind vs. GROUND (v) conduct electricity GROUND (adj.) pulverized	Most common content words in English are ambiguous; meanings often belong to different parts of speech. Comprehenders must use semantic and syntactic context to identify the intended interpretation. Context is statistical—the floor sense of GROUND co-occurs with fell on the, and the adjective sense co-occurs with foods such as meat and coffee (MacDonald, 1993; Seidenberg, Tanenhaus, Leiman, & Bienkowski, 1982).
Conceptual combination	BIRD STATUE = statue depicting a bird; MARBLE STATUE = statue made of marble (not depicting it), MARBLE CATALOG = catalog describing marble, not made of it.	Compound nouns, such as BIRD STATUE, MOUNTAIN MAGAZINE, ANCHOR LOCK, have many possible meanings but also probabilistic regularities that help comprehenders settle on the most likely interpretation (Murphy, 1990).
Collocation	Collocations in American English include: BACK IN THE DAY, NO WORRIES, GOOD TO GO, BRUSH YOUR TEETH, ON THE OTHER HAND	Collocations are high-frequency word sequences. These include but are not limited to idioms. Whereas frequency effects of individual words are well known to language researchers, there is growing recognition that comprehenders also track collocation frequencies and use them in speech and reading (Arnon & Snider, 2010).
Pronoun ambiguity	Maria told Sue that she . . . SHE can refer to either Maria or Sue	Pronouns are extremely common in speech and texts but create ambiguities. Statistical regularities, such as pronouns more often referring to grammatical subjects or other prominent nouns, guide children's interpretation (Arnold, Brown-Schmidt, & Trueswell, 2007).

- "Statistical learning is the largely unconscious process of learning the patterns of one's environment— the probabilities that events will occur, or occur together, and in which sequences (Lany & Saffran, 2013; Seidenberg, 2017)."
- Language has numerous statistical properties
- Vocabulary learning is statistical
  - "Children with smaller vocabularies …do not simply know fewer words; they also know less about language and the world"
  - **"Words are statistically linked to other words and to other levels of linguistic representation and thus carry information about the sentences in which they occur"**

Explicit and Implicit Language Learning

- Language is also learned via implicit and explicit experiences
- Implicit learning - the **ability to learn the complex and subtle regularities that underlie a language without even realizing** it
  - Subconscious
- Explicit experiences—instruction and feedback, exploration and discovery—with intention and awareness.
  - Teacher/Caregiver mediated
- Students with language and learning needs require explicit teaching opportunities to acquire the necessary language abilities
  - They need teaching of concepts their peers acquire automatically/without active thinking
    - Requires more effort

What Happens When Language Learning is Impaired?

- There will be notable differences in how the child is communicating, expressing self, reading, writing, etc., as compared to other children
- Deficits may be very obvious or quite covert
  - Difficulty formulating sentences vs. comprehending and using subtle ambiguous language structures
- Child may have an impressive lexicon and robust vocabulary knowledge but use it incorrectly
  - Formulates sentences which do not make sense semantically
  - Odd vocabulary usage, etc.

Terminology

- Developmental Language Disorder (DLD) Endorsed in a consensus study involving a panel of experts (CATALISE Consortium, Bishop, et al 2017).
- Previously a wide range of terminology used (wide ranging and confusing, overlapping labels) resulted in poor communication, lack of public recognition, and denial of services.
- In North America, we used the term Specific Language Impairment (SLI)
- SLI overlaps with DLD, but was rejected by the CATALISE panel because it was seen as overly restrictive
  - Implied the child had relatively pure problems with language in the absence of any other impairments.
- There's no evidence that children with SLI respond differently to intervention, or have different causal factors, from other children with language problems. (CATALISE Consortium, Bishop, et al 2017)
- Hence, the term DLD will be used throughout this presentation

Developmental Language Disorder (DLD)

- Children have difficulties comprehending what is being said to them as well as expressing selves unrelated to obvious biomedical issues (e.g., ASD, HI, ID, etc.)
  - Normal development in all areas with the exception of language
- Specific Language Impairment (SLI) was the old label
- Recent name change better reflects the types of difficulties children have (Bishop, Snowling, Thompson, Greenhalgh, and The CATALISE Consortium, 2017)
  - Difficulties persist to adulthood
  - Significantly impact functioning
  - Require additional assistance
    - SLP assessment and treatment
    - Special education placements

The term Developmental Language Disorder (DLD) should be used for children where...

1 The child has language difficulties that create barriers to communication or learning in everyday life

2 The child's language problems are unlikely to be resolved by five years of age

3 The problems are not associated with a known biomedical condition such as brain injury, neurodegenerative conditions, or chromosome disorders

ROYAL COLLEGE OF SPEECH & LANGUAGE THERAPISTS

Their Language Abilities are just Fine!

Social vs Academic Language Acquisition

Social Language	Academic Language
In everyday interactions in spoken/written form	In textbooks, research papers, conferences in spoken/written form
For everyday conversation	Used in school/work conversations
Used to write to friends, family, or for other social purposes	Appropriate for written papers, classwork, homework
Informal, such as words like "cool," "guy," "kidding")	Very formal and more sophisticated in its expressions, such as words like "appropriate," "studies," "implementation"
Can use slang expressions	Don't use slang
Can be repetitive	Uses a variety of terms
Can use phrases	Uses sentences
Sentences don't follow grammar conventions necessarily,	Sentences begin with appropriate transitions, like, "moreover" or "in

Academic Language Areas

- **Literate Vocabulary Knowledge** (Nippold, 2018)
  - Difficult words that occur in academic contexts
- **Semantic Awareness** (Taylor, Duff, Woollams, Monaghan, & Ricketts, 2015)
  - Semantic processes are associated with word reading skills, namely children read words better when they know their meanings
- **Morphological Awareness** (James, Currie, Xiuli Tong, & Cain, 2020)
  - Plays a crucial role in supporting higher-level text processing
  - It is partly mediated by vocabulary knowledge
  - Becomes an increasingly important predictor of reading comprehension between 6 and 11 years
  - Makes a unique contribution to reading comprehension ability beyond oral vocabulary and word reading skill

Impact of Oral Language on Reading Comprehension

- Reading comprehension is a **collection of skills** (Gray, 2017)
- Solid **language abilities** strongly correlate with reading comprehension outcomes **(Clarke, Snowling, Truelove,** & **Hulme, 2010)** as well as
- **Oral** vocabulary knowledge **(Ouellette** & **Shaw. 2014)**
- Strong discourse and narrative abilities significantly positively correlate with reading comprehension abilities (**Catts, Fey, Tomblin, & Zhang 2002**; **Dickinson & McCabe, 2001**; **Griffin, Hemphill, Camp, & Wolf, 2004**)
- Knowledge of literate vocabulary words (**abstract nouns**, **metacognitive verbs**, etc.), in isolation and in context of read text (**Nippold , Hegel ,** & **Sohlberg** 1999; Nippold, 2006) is very important as well as
- Background knowledge
- Inference making
- Grasp of text structure
- Grasp of literary devices

Types of Oral Language Deficits

- **Phonology** (understanding and use of speech sounds -phonemes)
- **Morphology** (understanding and use of word parts including morphemes, affixes, etc.)
- **Vocabulary and Semantics** (understanding how to define and manipulate words)
- **Syntax** (understanding and use of complex sentence structures)
- **Pragmatics** (understanding and use of language in social contexts)
- **Children with reading deficits can have difficulties in some or all of the above areas**
- Research indicates that oral language deficits place children at a higher risk for dyslexia (Catts et al, 2005; Adlof et al, 2017). Research also shows that having a Developmental Language Disorder (DLD) places children at a high risk of developing reading deficits (Adlof, 2017).
- **This is why a comprehensive language assessment should be a necessary component of all literacy evaluations**

Special Note on Social Communication

- Numerous studies show that both language and reading deficits are associated with depression, anxiety, attention, as well as behavioral problems (Arnold et al., 2005; Boyes, Leitao, Claessen, Badcock, & Nayton, 2016; Kempe, Gustafson, & Samuelsson, 2011; Huc-Chabrolle, Barthez, Tripi, Barthelemy, & Bonnet-Brihault, 2010; Knivsberg & Andreassen, 2008; Mammarella et al., 2014).
- Studies also indicate that there's a significant correlation between psychiatric impairments and poor social pragmatic functioning.
  - Benner, Nelson, and Epstein (2002) examined 26 studies (n= 2,796) that addressed students with EBD and language deficits and found that ~ 71% of students were identified with pragmatic language deficits.
  - Cohen et al., 1998 found that most common difficulties were in the areas of emotion decoding and social problem solving
  - Bryan, 1991 found that these children present with significant difficulties understanding another person's affective state

- Children with language deficits are impaired in multiple areas of language
- Researchers found evidence that children with language deficits manifested pragmatic difficulties in conversational contexts with partners and were unable to adequately adjust to the needs of others in social interactions (Brinton, & Fujiki, 1993: Brinton & Fujiki, 1995; Brinton, Fujiki, & Powell, 1997; Fujiki & Brinton, 1994: Fujiki, Brinton & Todd 1996)
- Children with language impairments were less accepted by peers, had poorer friendships, were perceived by teachers as being more withdrawn (as compared to peers) as well as presented with poor emotional competence and emotional intelligence (Brinton & Fujiki, 2012; Fujiki, Spackman, Brinton, & Illig, 2008; Spackman, Fujiki, Brinton, Nelson, & Allen, 2005)
- Research unequivocally indicates that children with language impairment or DLD, also present with concomitant social communication difficulties, which if left untreated will significantly adversely affect their academic outcomes (reading and writing) as well as future life success
- Due to the varying the nature of social communication deficits (internalizing versus externalizing manifestations) many social communication deficits will be missed without the administration of appropriate social pragmatic language assessments
- Social pragmatic assessments ARE NOT routinely administered in numerous school settings as part of comprehensive language assessments
- **Assessment of social communication abilities should be a REQUIRED component of all language and literacy evaluations**

Their Social Skills Are Just Fine

Dyslexia as a Language Based Disorder

- **International Dyslexia Association**: *"Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by... [list of symptoms] These difficulties typically result from a deficit in the phonological component of **language** that is often unexpected in relation to ... Secondary consequences may include problems in reading **comprehension** and reduced reading experience that can impede growth of **vocabulary** and background knowledge." [language-based areas]*
- A number of researchers have confirmed that dyslexia is a language-based disorder (**Elbro, Borstrøm, & Petersen, 1998**; **Shaywitz, 1998**; **Snowling, 1998**)
- **American Academy of Pediatrics, 2009** explicitly labeled dyslexia as a language-based disorder to counteract the misperception that it is a visually based disorder (Adlof & Hogan, 2017)
- Since dyslexia has been defined as a **language-based disability** it is very important to assess foundational areas of language to determine whether the child presents with covert oral language deficits affecting his/her ability to read and write.

Dyslexia Controversy

- **Defined differently in various studies (Elliot & Grigorenko, 2014)**
  - Struggle with phonemic awareness
  - Struggle with fluent single word decoding
  - Decoding difficulties cannot be explained in an alternative fashion (not due to something else)
  - Significant reading performance between reading and IQ
  - Phonological, RAN/RAS deficits
  - Failure to make meaningful progress in reading even after EBP reading instruction
- **Belief in unsubstantiated "dyslexia subtypes"** (e.g., phonological, surface, double deficit, etc.) (Manis, Seidenberg, Doi, McBride-Chang, & Petersen, 1996; Manis et al., 1999; Stanovich, Siegel, & Gottardo, 1997; Rack, Snowling, & Olson, 1992; Van den Broeck & Geudens, 2012, Tamboer et al, 2014; Zoubrinetzky et al, 2014)
- **Artificial divide of poor readers into dyslexic and non-dyslexic groups lacks scientific rationale** (Elliot & Grigorenko, 2014)
- **Various evaluators assess 'dyslexia' differently** (Ryder & Norwich 2018) which results in:
  - Questionable interpretation of literacy difficulties
  - Commitment to outdated discrepancy concepts (IQ/reading scores)
  - Lack of appropriated standardized testing practices
  - Lack of appropriate clinical testing properties
  - Overreliance on professional observation and experience above test results
- **The term does not contribute to understanding of what deficits the student is experiencing in the areas of literacy** (Elliot & Grigorenko, 2014)

Language Disorder or Learning Disability? (Sun & Wallach, 2014)

- If the child experiences any deficits in the foundational language areas such as listening and speaking, s/he will most certainly experience difficulties in the more complex areas of language such as reading and writing
- Many children with language disorders are later classified with a learning disability because their "later learning difficulties [took on] the form of problems acquiring higher levels of spoken language comprehension and expression as well as reading and writing"
- "**Illusory recovery**" - "a time period when the students with early language disorders seem to catch up with their typically developing peers" by undergoing a "spurt" in language learning, which is followed by a "post-spurt plateau" because due to their ongoing deficits and an increase in academic demands "*many children with early language disorders fail to "outgrow" these difficulties or catch up with their typically developing peers*"

Language Disorder or Learning Disability? (Sun & Wallach, 2014) (cont.)

- "The use of different labels by different professionals in different contexts should not obscure **the commonalities** among children with language disorders, no matter what they are called" (p. 26)
- Longitudinal research shows numerous difficulties experienced by children with "early language disorders" during school years and in adulthood "in all domains of academic achievement (spelling, reading comprehension, word identification, word attack, calculation)… (p. 29)".
- Children with language disorders are later classified with a learning disability because their "later learning difficulties [took on] the form of problems acquiring higher levels of spoken language comprehension and expression as well as reading and writing" (p. 29).

Risk Factors for Language and Literacy Disorders

- Genetic syndromes
- Intellectual disability
- Family history (genetic inheritance)
  - Speech language delay
  - Dyslexia/learning disability/special education
  - Psychiatric diagnoses
- Developmental history
  - Adoption/Foster care
    - Early childhood abuse, neglect, trauma
  - Delayed/disordered language development
    - Early intervention services
    - Preschool disabled program attendance
  - Social communication/Behavioral deficits
  - Early emerged learning deficits
    - Difficulty counting, reciting letters of alphabet, poor memory for names/novel words, etc.

Idiopathic Causation

- A number of children with no recognizable family history of learning disabilities, may be at risk for future literacy deficits **if they display a pattern of linguistic difficulties during early development** (e.g., delayed developmental milestones)
- *If the child experiences any deficits in the foundational language areas such as listening and speaking, s/he will most certainly experience difficulties in more complex areas of language: reading, writing, and spelling.*

Warning Signs of Literacy Deficits in Young Children

- **Documented history of language impairment**
- **Receipt of therapy services from a very early age**
  - Early intervention
  - Preschool-disabled eligibility
- **Absence of early-onset linguistic deficits but presence of early-onset literacy difficulties**
  - Difficulty remembering nursery rhymes and songs
  - Trouble remembering the letters of the alphabet
  - Trouble recognizing simple rhyming words, numbers, letters, etc.
    - Even without a pertinent family history of literacy disabilities it may be **important for a child to undergo an early literacy assessment in order to determine whether intervention is warranted**

Implications for Assessment

- Because many children (with DLD) “may not show academic or language-related learning difficulties until linguistic and cognitive demands of the task increase and exceed their limited abilities”, SLPs must consider the “**underlying deficits that may be masked by early oral language development”** and **“evaluate a child’s language abilities in all modalities, including preliteracy, literacy, and metalinguistic skills”.**

Assessment Process: Where to Begin?

- Data Collection
- Create Referral Forms/Checklists
  - Place a check next to the deficit area
- Can't Assess Everything
- Don't waste TIME!
- Target Deficit Areas ONLY!
  - Not all general language assessments are alike

Sample Areas of Difficulty
Check all that apply:

D. Vocabulary

___ Limited vocabulary

___ Immature vocabulary (not age appropriate)

___ Often uses non-specific words (thing, stuff)

___ Mishears and mispronounces novel words and/or names

___ Difficulty retaining and remembering new words

___ Difficulty providing appropriate definitions of words

___ Difficulty using text-based context clues to determine definitions

___ Difficulty providing synonyms, antonyms, etc.

E. Narratives and Storytelling

___ Produces stories which are vague and lack details

___ Produces rambling stories which are difficult to follow

___ Stories leave out critical information such as relevant details

___ Stories lack insight into characters feelings, beliefs, thoughts, etc.

___ Word-retrieval difficulties characterized by (_____)

___ Fictional story retelling lacks many story grammar elements

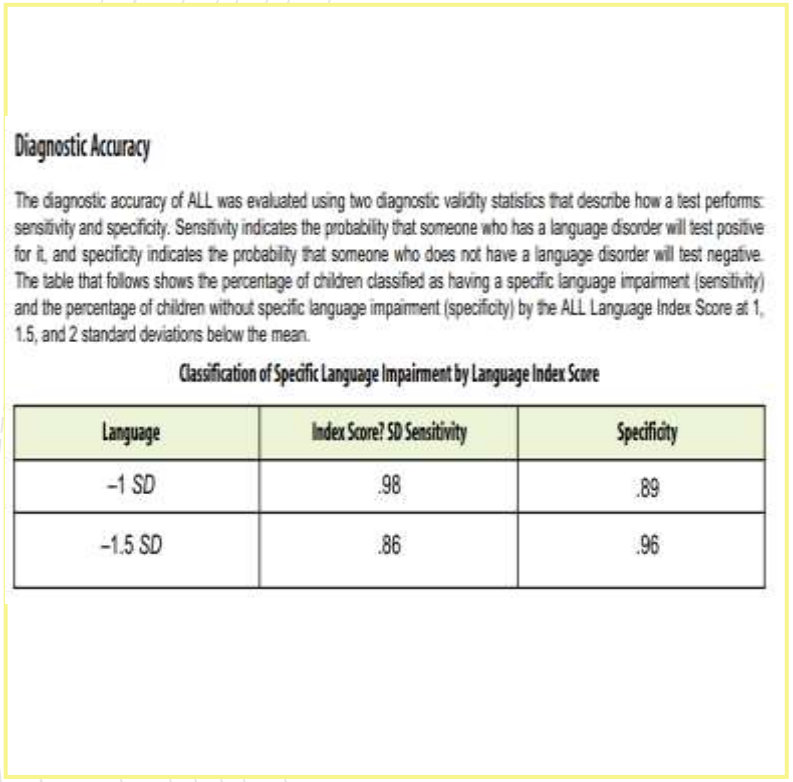
Assessment Limitations: Common Pitfalls

- **Psychometrically weak tests were used that didn't uncover deficits**
  - Presence of children with language and learning disorders in the normative sample which makes it difficult to determine typically developing from language impaired children
    - **E.g., CELF-5** normative sample of 3000 children contained 23% of children with children with language and learning needs (Leader's Project, 2014)
- **Inappropriate tests were used**
  - One-word vocabulary tests, which possess limited to no value for school aged verbal children as compared to semantic flexibility testing (vocabulary manipulation tasks)
    - Research has found that single word vocabulary tests have poor psychometric properties and are not representative of linguistic competence embedded in life-activities (conversations academics, etc.) (**Gray et al., 1999; Ukrainetz & Blomquist, 2002; Bogue, DeThorne, Schaefer, 2014**)
- **Not all the deficit areas were assessed**
  - Testing did not delve into all areas of concern as indicated by parental/teacher reports
    - E.g., parents identified narrative deficits, but a narrative assessment was not performed
- **Assessment results were misinterpreted**
  - There's a presence of significant language and learning needs but the examiner did not interpret the results correctly
    - Cognitive referencing was used to deny services because there was no discrepancy between IQ and language abilities
- **Erroneous goals were formulated**
  - E.g., Following directions
    - "Following directions" is a complex process which involves activation of available semantic and syntactic knowledge, comprehension of sentences with a variety of clauses, as well as numerous other linguistic factors. The goal 'targeting decontextualized directions' will not meaningfully assist the students with comprehension of school work and navigation of the classroom environment (Wallach, 2014)

Comprehensive Educational Assessments

- Developed to rank children within the range of the general population
- No mention of sensitivity and specificity in their technical manuals
- Discriminant accuracy for the purpose of disorder identification is **unknown**
    - **Do quite well on these test and be reading, writing or oral language impaired**
- ***Woodcock-Johnson IV Tests of Achievement*** **(WJ IV-ACH)**
- ***Woodcock-Johnson IV Tests of Oral Language*** **(WJ IV-OL)**
- **Wechsler Individual Achievement Test Fourth Edition (WIAT-4)**
- **Kaufman Test of Educational Achievement Third Edition (KTEA-3)**

Assessment of Literacy and Language (ALL) (2020) Ages: Pre-K -1st Grade



Diagnostic Accuracy

The diagnostic accuracy of ALL was evaluated using two diagnostic validity statistics that describe how a test performs: sensitivity and specificity. Sensitivity indicates the probability that someone who has a language disorder will test positive for it, and specificity indicates the probability that someone who does not have a language disorder will test negative. The table that follows shows the percentage of children classified as having a specific language impairment (sensitivity) and the percentage of children without specific language impairment (specificity) by the ALL Language Index Score at 1, 1.5, and 2 standard deviations below the mean.

Classification of Specific Language Impairment by Language Index Score

Language	Index Score? SD Sensitivity	Specificity
–1 *SD*	.98	.89
–1.5 *SD*	.86	.96

- Administration time: ~60 min
- 3 levels
  - Initial indicator subtests (10-15 min)
  - Diagnostic subtests (specific) (<45 min)
  - Criterion-referenced subtests (1-5 min)
    - Not all subtests are administered to all children
- Assessment areas:
  - Listening comprehension
  - Spoken language
  - Phonological awareness
  - Alphabetic knowledge
  - Print awareness
  - Fluency

ALL (Cont.)

ALL provides three levels of assessment: Initial Indicator (screening), Diagnostic, and Criterion-Referenced (extension testing determined by clinical judgment).

Level 1: Initial Indicator — 10–15 minutes
Determining if diagnostic evaluation is needed—Qualification Level A (bachelor's)/B (master's)

Pre-K	Kindergarten (fall)	Kindergarten (spring)	First Grade
Basic Concepts Rhyme Knowledge	Basic Concepts Letter Knowledge	Basic Concepts Letter Knowledge	Basic Concepts Phonics Knowledge

Level 2: Diagnostic — 45 minutes
Diagnosing and Describing the Disorder—Qualification Level B

EMERGENT LITERACY

Pre-K	Kindergarten (fall)	Kindergarten (spring)	First Grade
Basic Concepts Rhyme Knowledge	Basic Concepts Letter Knowledge	Basic Concepts Letter Knowledge	Basic Concepts Phonics Knowledge

LANGUAGE

Pre-K	Kindergarten (fall)	Kindergarten (spring)	First Grade
Basic Concepts Receptive Vocabulary Parallel Sentence Production Listening Comprehension	Basic Concepts Receptive Vocabulary Parallel Sentence Production Word Relationships Listening Comprehension	Basic Concepts Receptive Vocabulary Parallel Sentence Production Word Relationships Listening Comprehension	Basic Concepts Receptive Vocabulary Parallel Sentence Production Word Relationships Listening Comprehension

Level 3: Criterion-Referenced — 1–5 minutes/subtest
Evaluating related clinical behaviors—Qualification Level B

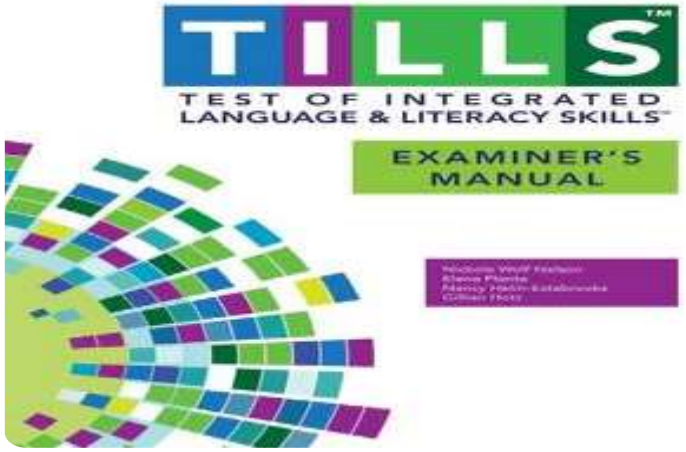
Pre-K	Kindergarten (fall)	Kindergarten (spring)	First Grade
Book Handling Matching Symbols Word Retrieval Rapid Automatic Naming	Book Handling Matching Symbols Word Retrieval Rapid Automatic Naming	Book Handling Matching Symbols Word Retrieval Rapid Automatic Naming	Book Handling Concept of Word Matching Symbols Word Retrieval Rapid Automatic Naming Invented Spelling Letter Knowledge

Early Reading First and Reading First Components and ALL Subtests and Tasks

Early Reading First and Reading First Components	ALL Subtest	The Child's Task
Language	Basic Concepts	The child points to a picture that best represents the target concept.
	Receptive Vocabulary	The child points to a picture that best represents the word the examiner says.
	Parallel Sentence Production	The child completes a phrase or sentence (cloze procedure) that contains the targeted structure(s).
	Word Relationships	The child describes the relationship between two stimulus words.
Phonological Awareness	Rhyme Knowledge	Task 1: The child tells if pairs of words rhyme. Task 2: The child identifies the one word out of a set of words that does not rhyme. Task 3: The child produces a word that rhymes with a stimulus word. Task 4: The child produces a word that rhymes with the stimulus word in a given sentence
	Sound Categorization	The child identifies which word does not start with the same sound as the others when given a set of 3 or 4 words
	Elision	Task 1: The child deletes syllables or sounds in stimulus words to form new target words. Pictures are used as stimuli. Task 2: Administered like Task 1, but stimulus pictures are not used.
Alphabetic Knowledge	Letter Knowledge	Task 1: The child points to letters on the stimulus page as they are named by the examiner. Task 2: The child names letters that the examiner points to. Task 3: The child writes letters that the examiner names.
	Phonics Knowledge	Task 1: The child produces the sounds of the letters. Task 2: The child produces the sounds of the letter combinations. Task 3: The child reads nonsense words.
	Invented Spelling	The child writes words dictated by the examiner.
Print Awareness	Book Handling	The child identifies parts of a book and demonstrates how to use a book.
	Concept of Word	The child identifies groups of letters as words.
	Matching Symbols	The child points to the symbol that matches the target symbol presented by the examiner.
Fluency	Sight Word Recognition	The child reads words.
Comprehension	Listening Comprehension	The child retells a story and answers questions about that story.

Comprehensive Assessment: Language and Literacy

- The **Test of Integrated Language & Literacy Skills (TILLS) (2016)** is an assessment of oral and written language abilities in students **6–18** years of age composed of 15 subtests.
- Assesses literacy skills such as **reading fluency, reading comprehension, phonological awareness, spelling, as well as writing** in monolingual as well as simultaneously bilingual school age children.



Language Modality	Language Dimension	
	Sound/Word Level	Sentence/Discourse Level
Listening	1. Vocabulary Awareness 2. Phonemic Awareness	6. Listening Comprehension 8. Following Directions
Speaking	4. Nonword Repetition	3. Story Retelling 13. Social Communication
Reading	10. Nonword Reading 11. Reading Fluency	7. Reading Comprehension
Writing	5. Nonword Spelling 12a. Written Expression – Word Score	12b. Written Expression – Discourse Score 12c. Written Expression – Sentence Combining Score
Memory	14. Digit Span Forward 15. Digit Span Backward	9. Delayed Story Retelling

TILLS (cont.)

Table 3.4. Sensitivity and specificity levels by age for all ages tested by the TILLS

Age groups	Sensitivity	Specificity
6-year-olds	84%	82%
7-year-olds	84%	86%
8-year-olds	97%	100%
9-year-olds	83%	81%
10-year-olds	81%	81%
11-year-olds	86%	82%
12-year-olds	83%	100%
13-year-olds	84%	86%
14- to 18-year-olds	87%	87%

- Standardized to identify language and literacy disorders
- Excellent psychometric properties

Table 2.2. TILLS subtests that support diagnosis of language and literacy disorders at different ages

Age range (years)	Identification Core[a]	Sensitivity	Specificity
6;0–7;11	1. Vocabulary Awareness (VA) 2. Phonemic Awareness (PA) 4. Nonword Repetition (NWRep)	84	84
8;0–11;11	1. Vocabulary Awareness (VA) 5. Nonword Spelling (NWSpell) 10. Nonword Reading (NWRead) 12. Written Expression–Discourse Score (WE-Disc)	88	85
12;0–18;11	2. Phonemic Awareness (PA) 5. Nonword Spelling (NWSpell) 7. Reading Comprehension (RC)[c] 11. Reading Fluency (RF) 12. Written Expression–Word Score (WE-Word)	86	90

TILLS (cont.)

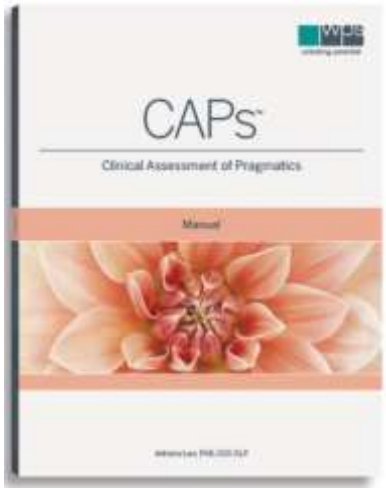
Subtests Sensitivity to Language and Literacy Impairments Based on Age Groups

Assessing Subtle Deficits

- Evidence informed SLPs will review the **child's background history**, **available medical and educational records** and distribute **comprehensive checklists** to parents and teachers so they could identify the students' **specific deficit areas** for identification of **best testing batteries to administer**
  - Assess areas of parental/teacher concern coupled with areas known to be sensitive to language and literacy deficits
    - **Narratives**
    - **Social communication**
    - **Reading fluency and comprehension**
    - **Written composition**

Assessing Pragmatics: Clinical Assessment of Pragmatics (CAPs)

- Video assessment comprised of 6 subtests for ages 7-18
- **Instrumental Performance Appraisal**
  - Awareness of Basic Social Routines
- **Social Context Appraisal***
  - Reading Context Cues
- **Paralinguistic Decoding**
  - Reading Nonverbal Cues
- **Instrumental Performance**
  - Using Social Routine Language
- **Affective Expression***
  - Expressing Emotions
- **Paralinguistic Signals***
  - Using Nonverbal Cues
- The normative sample consisted of **914** individuals out of which **137** (or **15**%) included individuals with atypical language development: **ASD**: N-**18**; **SLI**: N-**27**; Other (**Learning Disabilities**): N-**92**.
- **Some subtests are more sensitive than others***



Core Composite SD	Sensitivity	Specificity
-1 SD	1.00	0.85
-1.5 SD	1.00	0.9
-2 SD	0.90	0.97

Conclusion

- Because students with reading deficits continue to be underserved in the schools it is highly important to assess not just their reading but also their oral language abilities via psychometrically-sound standardized assessments and clinical language assessments (of relevant areas) in order to adequately reflect the learner's difficulties in the "real world".
- It is important to ensure that assessments yield diagnostic information needed to formulate treatment goals for the students in question
- All students need to receive fair and appropriate assessments which will result in targeted and relevant therapeutic services
- Anything less is a denial of Free Appropriate Public Education (FAPE) to which all students are entitled to
- It is NEVER too late to help!

Contact Information:
Tatyana Elleseff MA CCC-SLP

- ***Group:** https://www.facebook.com/groups/EBPSLPs/
- **Blog:** www.smartspeechtherapy.com/blog/
- **Shop:** http://www.smartspeechtherapy.com/shop/
- **Business Page:** www.facebook.com/SmartSpeechTherapyLlc
- **Twitter:** https://twitter.com/SmartSPTherapy
- **Email:** tatyana.elleseff@smartspeechtherapy.com