


**Cognition, Learning & Language: The identification of cognitive and language disorders**

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 Pearson

The graphic on the right features a green background with a blue USB cable, a green gear, a network diagram with blue nodes, and a blue pencil tip.



## Webinar Outline

- An introduction and overview to the assessment and considerations for the identification of...
  - Language Disorders (expressive and/or receptive): Considering the new CATALISE research
  - Intellectual Disability
  - Specific Learning Disabilities: Reading, Writing and Spelling disorders (dyslexia/dysgraphia)

1 2

## Neuro-Developmental Disorders

- A group of conditions with onset in the developmental period. The disorders typically produce impairments of personal, social, academic, or occupational functioning.
- The range of developmental deficits varies from very specific limitations of learning or control of executive functions to global impairments of social skills or intelligence.
- The neurodevelopmental disorders frequently co-occur.
- For some disorders, the clinical presentation includes symptoms of excess as well as deficits and delays in achieving expected milestones.



DSM-5: Neurodevelopmental Disorders

## Examples of neuro-developmental disorders

- intellectual disability
- sensory impairments
- visual impairment
- auditory impairment
- motor disorders
- learning disorders
  - dyslexia (reading disorders)
  - dyscalculia (maths disorders)
  - dysgraphia (written expression and spelling disorders)
- language disorders (expressive and/or receptive)
- attention-deficit hyperactivity disorder
- autism spectrum disorders



..some children will have difficulties in more than one area

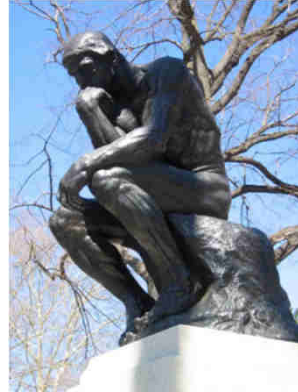


## What do we mean by “Cognitive”?

*“The capacity of the individual to act purposefully, to think rationally, and to deal effectively with his/her environment.”*  
(Wechsler, 1944)

Wechsler utilised subtests designed to measure varied aspects of intelligence:

- Verbal comprehension
- Abstract fluid reasoning
- Visual Spatial problem solving
- Quantitative reasoning
- Memory
- Processing speed



## What do we mean by adaptive behaviour?

*Personal and social skills needed for everyday living*

*Independence: the practical skills and behaviours that are needed to take care of oneself*

Assessment of these skills can support identification of Intellectual Disability.

Important to assess for **NDIS** support needs.



## What is Language?

### Language /'læŋgwɪdʒ/ [noun]

1. the method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way.
2. a system of communication used by a particular country or community.
3. Linguistic communication (vs non-linguistic)



## What is Language?

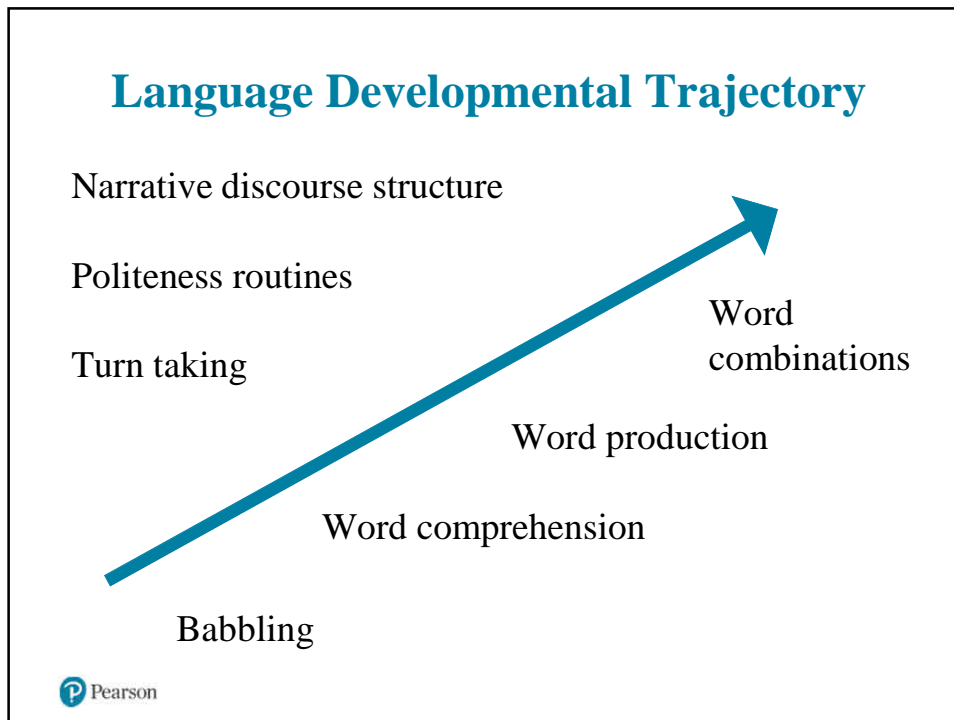


### Two conditions must be met:

1. **Semantics** – arbitrary units (words) which must have meaning
2. **Syntax** – words must be organised in a rule-based manner

Chomsky: it is syntax that is innately human. Animals can learn words (perhaps) but cannot have a grammar.





## Language-related difficulties

- Speech, language and communication difficulties may also affect a child's behaviour, social and emotional functioning
  - Left untreated and unsupported children with developmental language disorders can develop significant behavioural and emotional difficulties
- A large proportion of children in the criminal justice system have language difficulties (Professor Pamela Snow <http://pamelasnow.blogspot.com.au/>)

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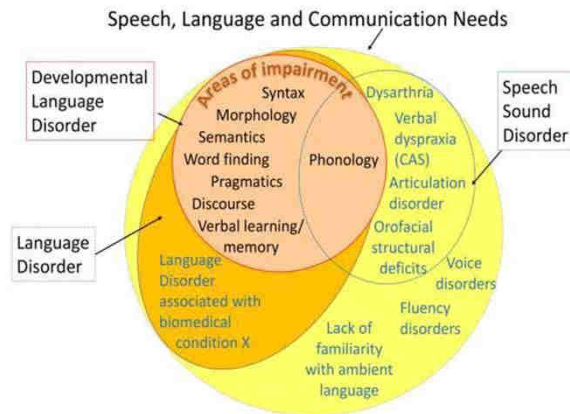


### How 'specific' is developmental language disorder?

- One problem with the term SLI was the word 'specific'. People varied in how they interpreted this. Sometimes, the child could not get a diagnosis of SLI unless they had **no** difficulties other than those affecting language.
- The CATALISE definition of DLD notes: Impairments in cognitive, motor or behavioural domains can co-occur with DLD, and should be noted, but are not used to exclude a diagnosis of DLD. These co-occurring conditions include:
  - Attention Deficit Hyperactivity Disorder (ADHD)
  - Motor problems (including Developmental Co-ordination Disorder, or 'developmental dyspraxia').
  - Developmental Dyslexia
  - Speech difficulties
  - Behavioural and emotional disorders

## Developmental Language Disorder (DLD) in relation to Speech, Language and Communication Needs (SLCN)

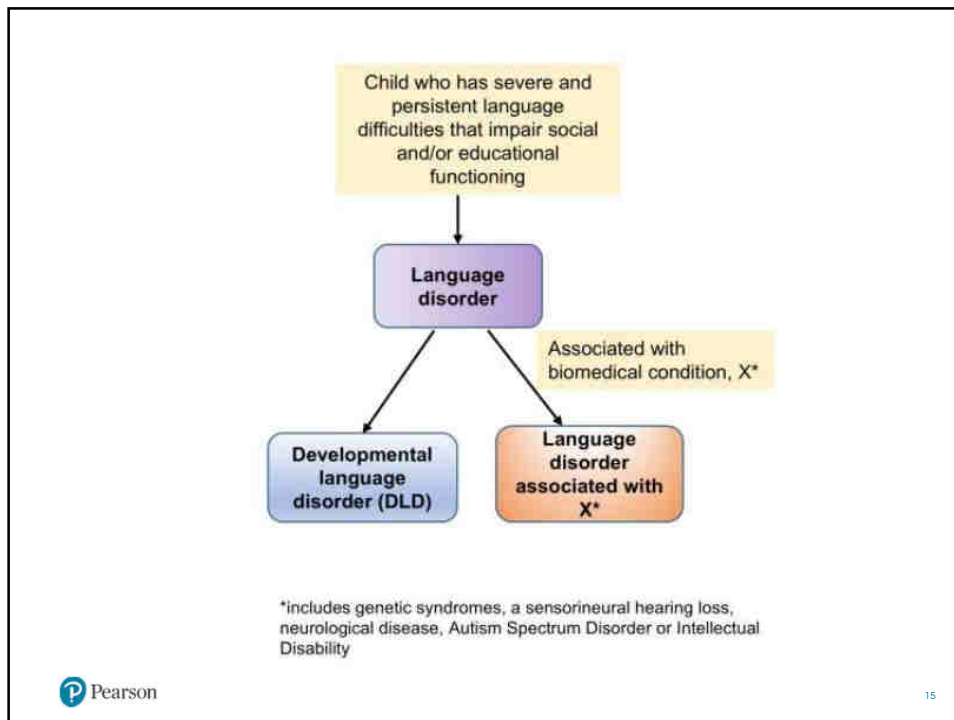
- SLCN is a broad category that covers the wide range of conditions affecting speech, language and communication.
- Language Disorder is nested within the overall category of SLCN, with DLD nested within Language Disorder



## Criteria for identifying Developmental Language Disorder (DLD)

The CATALISE\* recommendation is that the term Developmental Language Disorder (DLD) should be used for children where:

1. The child has language difficulties that create obstacles to communication or learning in everyday life
2. The child's language problems are unlikely to resolve (or have not resolved) by five years of age, and
3. The problems are not associated with a known biomedical condition such as brain injury, neurodegenerative conditions, genetic conditions or chromosome disorders such as Down Syndrome, sensorineural hearing loss, Autism Spectrum Disorder or Intellectual Disability.
4. Multiple sources of information should be used in assessment, including interview/questionnaires with parents/caregivers and teachers, direct observation of the child, and standardised age-normed tests or criterion-based assessments.



## What about nonverbal IQ?

- Intellectual Disability (ID) is a differentiating condition. According to DSM-5, intellectual disability is diagnosed when the child shows both 'intellectual deficits and adaptive deficits that fail to meet the standards for personal independence'. This diagnosis would typically entail an IQ below 70 plus major limitations of adaptive behaviour. In such cases, the diagnosis would be **'Language Disorder associated with Intellectual Disability'**.
- For children who do not meet criteria for Intellectual Disability, nonverbal ability is *not* used in the diagnostic criteria for DLD, and the diagnosis does not require the child to be assessed by an educational psychologist.



## What about nonverbal IQ? (ctd.)

- In this regard, DLD differs from SLI, where definitions often required a mismatch between language abilities and nonverbal ability.
- There have been numerous research studies that fail to find differences between children who do and do not have this mismatch, either in terms of causes of language disorder, or in terms of response to intervention.
- In the past, children who have language problems in the context of low normal-range nonverbal abilities have been in a diagnostic 'no-man's land', where they have not received services because they do not meet criteria for SLI. These children would meet criteria for DLD.



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## Types of SLCN that don't meet criteria for DLD:

### 1. Late talkers

- Because many toddlers make good progress after a late start, the CATALISE recommendation is that for 2-3 year olds, watchful waiting is adopted unless specific risk factors are present, i.e., poor language comprehension, poor use of gesture, and/or a family history of language impairment.
- Children with slow language development who do not have these risk factors would not merit a diagnosis of "disorder" unless the problems persist to 5 years of age.



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## Types of SLCN that don't meet criteria for DLD:

### 2. Uncomplicated phonological problems in preschoolers

- Phonological problems in pre-schoolers that are not accompanied by other language problems usually respond well to intervention.
- Thus they would not meet criteria for DLD because the problems are unlikely to persist.
- The term 'speech sound disorder' (SSD) is recommended for such cases.



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## Types of SLCN that don't meet criteria for DLD:

### 3. Language limitations due to lack of exposure to English

- Children with limited exposure to English at home may have restricted developmental language opportunities in English.
- [Development in the student's home language may be age-appropriate](#)
- They would not be regarded as having DLD unless there was evidence that they had poor expressive and/or receptive language in the home language, with indicators of poor prognosis. [To establish this, it is necessary to gather information on the child's language skills in their home language, by direct assessment if feasible, or via parental report.](#)

RALLI videos on bilingualism:

- [https://www.youtube.com/watch?v=g7Sj\\_uRV7S4](https://www.youtube.com/watch?v=g7Sj_uRV7S4)
- <https://www.youtube.com/watch?v=p9iWG0M5z40>



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## Impact of CATALISE findings on practice

- In contrast to some previous definitions of SLI, DLD does not require a mismatch between verbal/ non-verbal ability. Provided the child does not meet criteria for intellectual disability, low-range non-verbal ability is compatible with a diagnosis.
- The profile of language skills is not relevant for a diagnosis of DLD. Although it has been common practice to regard an uneven, 'spiky' profile of skills as evidence of disorder, there is no supporting evidence for this approach.
- **The traditional distinction between language delay and language disorder is not supported by research, and so the term 'language delay' is not recommended.** Young children who do not meet criteria for language disorder but who may benefit from SP input may be referred to as having 'language difficulties'.
- Children who have Language Disorder with an associated biomedical condition should be assessed by a SP, and offered intervention if appropriate.



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Language disorders  
“vs” intellectual  
disability?

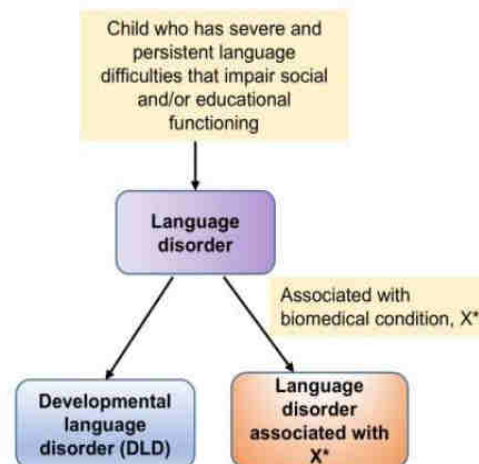
## Cognitive Assessment

**Before CATALISE:** Differential diagnosis: Does the child have an Intellectual Disability or a SLI?

**After CATALISE:** Does the child have a DLD, or, a Language Disorder associated with Intellectual Disability?



## Cognitive Assessment



\*includes genetic syndromes, a sensorineural hearing loss, neurological disease, Autism Spectrum Disorder or Intellectual Disability

## Cognitive Assessment

**CATALISE research indicates that there is no particular score a child must have on a measure of non-verbal “IQ” in order to be identified as having a DLD.**

**The use of cognitive assessments is to determine if the child’s language delays are best explained by intellectual disability, or, to establish that language has not developed at a typical rate despite ‘normal’ IQ.**




### DSM 5 Language Disorder

- Persistent difficulties in acquiring and using language
  - Reduced vocabulary
  - Limited sentence structure
  - Impairments in discourse
- Language development is substantially and quantifiably below expected level for age
- Functional limitations in effective communication, social participation, academic achievement, or occupational performance
- Difficulties are not attributable to hearing or other sensory impairment, or another medical or neurological condition
- No specific non-verbal IQ level required, but requirement that difficulties are **not** better explained by intellectual disability

### DSM 5 Intellectual Disability

- Deficits in intellectual functions, such as reasoning, problem solving, planning, abstract thinking, judgment, academic learning, and learning from experience.
- IQ of 70 or below, measured on an individualised, standardised, culturally appropriate, psychometrically sound test.
- Deficits in adaptive functioning that result in failure to meet developmental and sociocultural standards for personal independence and social responsibility
- Limited functioning in one or more activities of daily life, such as communication, social participation, and independent living, across multiple environments, such as home, school, work, and community, measured in a standardised way





**Age range: 2 ½ - 7**

**Index scores most sensitive to language:**

- VCI (Verbal Comprehension)
- VAI (Vocabulary Acquisition)

**Index scores least sensitive to language:**

- FRI (Fluid Reasoning)
- VSI (Visual Spatial skills)
- PSI (Processing Speed)
- WMI (Visual Working Memory)
- NVI (Non Verbal Index)






**Expressive Language Disorder**

Composite	Clinical Mean	Control Mean	Mean Diff.	p value	Std. Diff.
VCI	86.1	102.6	16.48	<.01	1.30
VSI	98.0	101.2	3.20	.38	.26


**Mixed Receptive-Expressive Language Disorder**


Composite	Clinical Mean	Control Mean	Mean Diff.	p value	Std. Diff.
VCI	78.3	99.3	21.03	<.01	1.66
VSI	91.4	98.6	7.19	.02	.49
VAI	81.8	99.4	17.64	<.01	1.28



  
**Non-Verbal Index (NVI)**

- NVI provides an estimate of cognitive ability that does not include language based tasks.
- It is made up of subtests that do not require the child to speak at all.
- The NVI has important applications for very young children with language delays:
  - Can help to confirm or rule out intellectual disability in children who have language delays, ASD, hearing impairment, or who are still learning English
  - The NVI may be noticeably higher than the Full Scale IQ in children with language disorders or language differences



  
**Intellectual Disability-Mild**  
The NVI and the FSIQ are in the extremely low range.


Composite	Clinical Mean	Control Mean	Mean Diff.	p value	Std. Diff.
NVI	64.8	96.8	31.97	<.01	3.17

↑

**Expressive Language Disorder**  
The NVI is in the average range

Composite	Clinical Mean	Control Mean	Mean Diff.	p value	Std. Diff.
NVI	93.1	102.0	8.88	.01	.67


↑



**WPPSI-IV** Intellectual Disability-Mild

Composite	Clinical Mean	Control Mean	Mean Diff.	<i>p</i> value	Std. Diff.
→ VCI	66.1	99.4	33.26	<.01	2.71
VSI	65.1	97.9	32.76	<.01	3.16
FRI	68.7	95.3	26.65	<.01	2.40
WMI	72.1	100.3	28.21	<.01	2.38
PSI	69.7	94.2	24.45	<.01	1.90
→ FSIQ	63.6	97.4	33.81	<.01	3.24
VAI	68.5	98.2	29.72	<.01	2.67
→ NVI	64.8	96.8	31.97	<.01	3.17
GAI	62.6	97.0	34.39	<.01	3.33
CPI	66.1	96.5	30.38	<.01	2.52

n = 39; ages 2:6-7:6

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**WISC-V<sup>A&NZ</sup>**  
WECHSLER INTELLIGENCE SCALE FOR CHILDREN® FIFTH EDITION


**Ages: 6-16 years**

**Index scores most sensitive to language:**


- VCI (Verbal Comprehension)
- AWMI (Auditory Working Memory)

**Index scores least sensitive to language:**

- FRI (Fluid Reasoning)
- VSI (Visual Spatial)
- PSI (Processing Speed)
- NVI (Non Verbal Index)
- Picture Span (Visual Sequential Memory)

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## WISC-V Clinical Group Study

Verbal Comprehension    Visual Spatial    Fluid Reasoning    Working Memory    Processing Speed

↑


### WISC-V Clinical Study

- ASD with Language Impairment: Mean VCI 80.4
- ASD without Language Impairment: Mean VCI 102.5



## Non-Verbal Index (NVI)

- NVI provides an estimate of cognitive ability that does not include language based tasks.
- It is made up of subtests that do not require the child to speak at all.
- The NVI has important applications for children and adolescents with language delays:
  - Can help to confirm or rule out intellectual disability in children who have language delays, ASD, hearing impairment, or who are still learning English
  - The NVI may be noticeably higher than the Full Scale IQ in children with language disorders or language differences



## Non Verbal Index (NVI) in ID

### WISC-V: Mild Intellectual Disability Clinical Study

- Mean FSIQ 60
- Mean NVI 62

### WISC-V: Moderate Intellectual Disability Clinical Study

- Mean FSIQ 49
- Mean NVI 53

**Little to no variation between index scores**

**Both FSIQ and NVI are extremely low**

**Adaptive Behaviour is on par with IQ level**



## Clinical Presentation and Adaptive Behaviour

### Mild Intellectual Disability

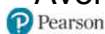
- Mean General Adaptive Composite: 68
- Extremely low range and on par with IQ

### Language Disorder

- Mean General Adaptive Composite: 84
- Low average range
- But with variability between skills areas: greatest deficits in Communication and Functional Academics

### Hearing Impairment

- Mean General Adaptive Composite: 99
- Average range



### Quick Guidelines for Wechsler test users

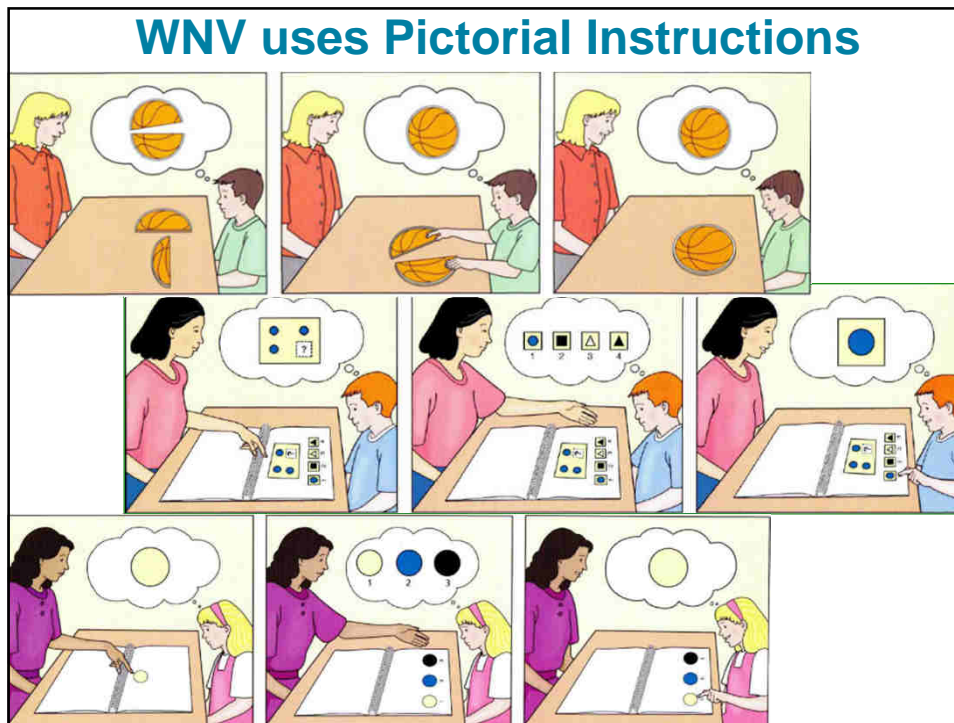
- If both the VCI and auditory working memory scores are below the broad average range, and the non-verbal scores (such as FRI, VSI, PSI, PS, NVI) are significantly higher than VCI, consider DLD and refer to a speech pathologist for further assessment.
- If the AWMl is the only relative weakness in the profile, and VCI is similar to non-verbal scores, DLD is unlikely. However, other disorders, such as those in reading, may still be a hypothesis.
- If FSIQ and the NVI are both in the extremely low range (<70) with little variation between indices, an intellectual disability may be a more appropriate hypothesis.
  - Assess adaptive behaviour to confirm.
  - Refer to a speech pathologist to determine if Language Disorder associated with ID should be considered.



### Wechsler Non Verbal (WNV)

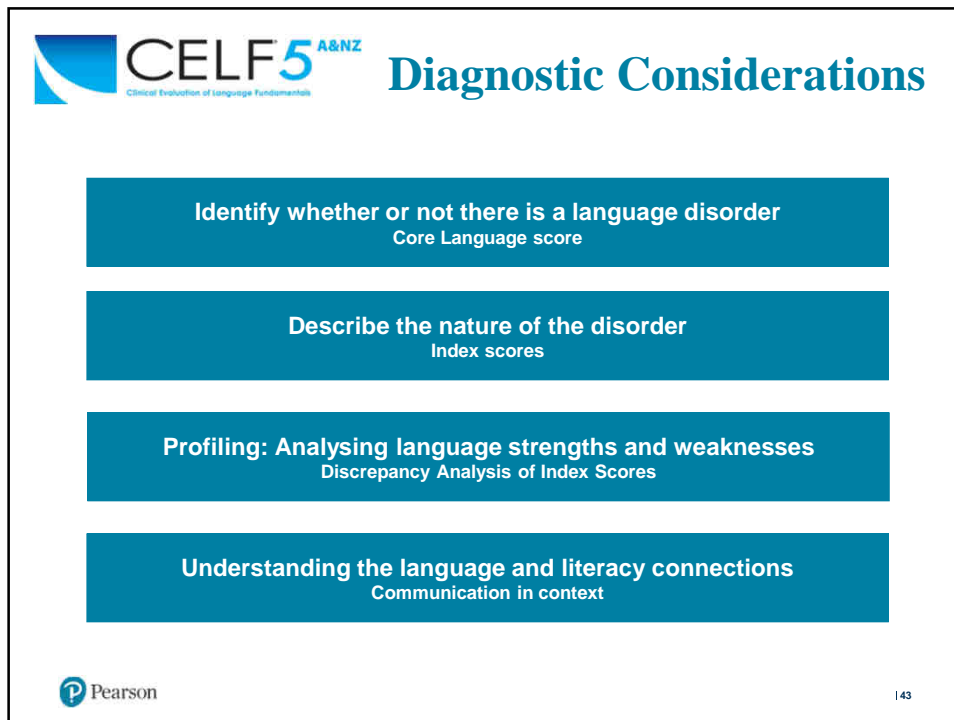
- An alternative to the WISC /WPPSI may be the WNV
- A test of general ability measured by using nonverbal tests that
  - does not contain verbal content (e.g. Vocabulary)
  - does not require the examinee to speak
  - uses pictorial directions
  - Measures fluid reasoning, processing speed, and visual memory





## Cognitive Assessment summary

- If FSIQ and non-verbal measures of cognitive ability are both in the extremely low range, with little variation between indices (ie a low flat profile), an intellectual disability may be an appropriate hypothesis.
- Assess adaptive behaviour to confirm.
- Refer to a speech pathologist to determine if Language Disorder associated with ID should be considered.
- If FSIQ and non-verbal measures of cognitive ability differ greatly, with non-verbal measures in the broad average range or above, intellectual disability is unlikely. In this case ID is not supported by the strong non-verbal scores.
- Refer to a speech pathologist to determine if DLD is identifiable.



**CELF 5<sup>A&NZ</sup>**  
Clinical Evolution of Language Fundamentals

## Diagnostic Considerations


- Identify whether or not there is a language disorder**  
Core Language score
- Describe the nature of the disorder**  
Index scores
- Profiling: Analysing language strengths and weaknesses**  
Discrepancy Analysis of Index Scores
- Understanding the language and literacy connections**  
Communication in context

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### DSM-5 Areas (315.39)


	DSM-5 specific areas of impairment	Corresponding CELF-5 <sup>A&amp;NZ</sup> subtests
<b>Impairments in Vocabulary Knowledge and Use</b>	Vocabulary and Word definitions	Word Definitions (WD) Linguistic Concepts (LC) Word Classes (WC) Semantic Relationships (SR)
	Following Directions	Following Directions
	Listening comprehension	Understanding Spoken Paragraphs (USP)
<b>Impairments in Word and Sentence Structure</b>	Morphology	Word Structure (WS)
	Syntax	Sentence Comprehension (SC) Recalling Sentences (RC) Sentence Assembly (SA)
	Clarity or organisation of oral expression	Formulated Sentences (FS)
<b>Impairment in Discourse and Conversation</b>	Pragmatics (299.0)*	Pragmatics Profile (PP) Pragmatics Activities (PAC)
	Reading	Understanding Written Paragraphs
	Writing	Structured Writing: "Structure," "Word Form," and "Punctuation" error analysis categories

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## CELf-5<sup>A&NZ</sup> Assessment Process Educational and Severity Ranges

- *Above Educational Average/Above Average Performance*  
Standard score 115 and above (+1 SD above the mean)
- *Average Educational Range/Average Performance Range*  
Standard score 86 to 114 (within +/-1 SD of the mean)
- *Marginal Educational Range/"at Risk"/Mild Severity Range*  
**Standard score 78 to 85 (within -1 to -1.5 SD of the mean)**
- *Low Educational Range/Moderate Severity Range*  
Standard score 71 to 77 (within -1.5 to -2 SD of the mean)
- *Very Low Educational Range/Severe Severity Range*  
Standard score 70 and below (-2 SD below the mean)




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## Students Scoring between 77 and 100 are not "just fine"

Standard Score	Percentile Rank	% of Students Performing Higher
78	7	93%
80	9	91%
85	16	84%
87	19	81%
90	25	75%
95	37	73%




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**It is important to consider all the information about the student in conjunction with the CELF-5<sup>A&NZ</sup> results.**

*Additional information may include:*

1. Developmental history
2. Medical history
3. Academic history
4. Comparison of the student's academic progress to peers of a similar cultural background with English as a second language
5. Parent interview
6. Observations
7. Input from other professionals
8. Language sampling
9. Dynamic (how easily a student learns new tasks in the learning environments), criterion-referenced, or norm-referenced assessments.

 [Understanding the Scores](#) and [Summary of Evidence](#) | 47



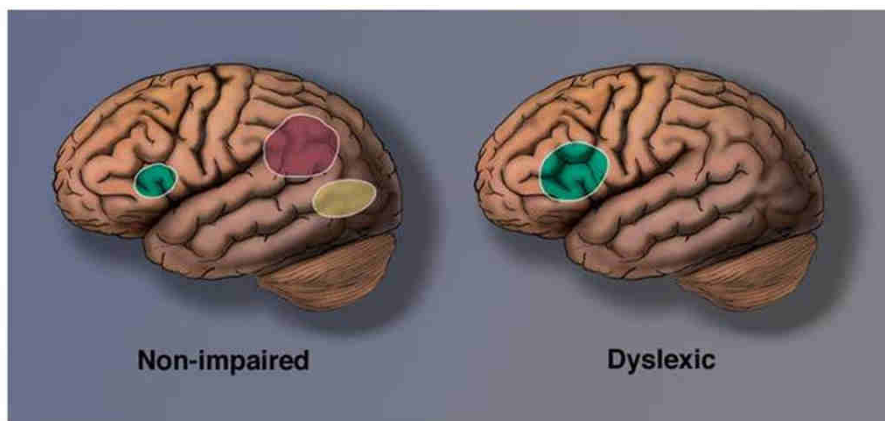
## Child has great conversations, but still not reading!?

### Is it a reading disorder, dyslexia?

- Characterised by **unexpected** difficulty in reading accuracy, rate of decoding, word reading, text reading & spelling (Lyon et al. 2003)/IDA
- Difficulties attributed to a phonological core deficit. Is not due to poor hearing or vision.
- Is neurobiological in origin & is unexpected on basis of other cognitive skills & instructional history



## Neural Signature for Dyslexia: Disruption of Posterior Reading Systems



© Sally Shaywitz, *Overcoming Dyslexia*, 2003





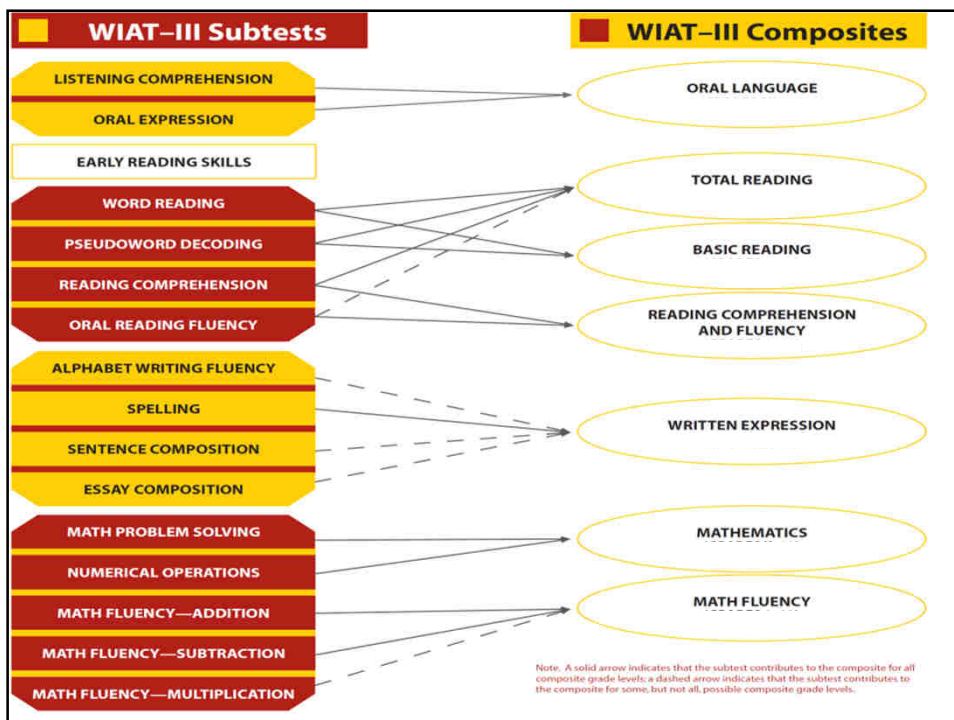
**fmri**

Left side      Right side      Left side      Right side

A person's brain while reading

Dr. Ben Foss's brain is on the right – the scan shows low activity in the language area: the temporal parietal lobes that sit on both the left and right sides of the brain.

Book: [The Dyslexia Empowerment Plan](#)



## DSM-5: Specific Learning Disability

- A student must have difficulties in at least one of the following areas, and difficulties must have continued for at least 6 months despite targeted help:
  - Inaccurate, slow, effortful reading (accuracy, rate, fluency)
  - Difficulty understanding the meaning of what is read
  - Difficulty with spelling
  - Difficulty with written expression (grammar, punctuation, organisation)
- Dyslexia refers to learning difficulties related to word recognition, decoding, and spelling
- Dysgraphia is a term used to describe difficulties with written expression



## DSM-5: Specific Learning Disability cont.

- Affected academic skills are substantially below what is expected for his/her age
- Cause problems in school, work, or daily living
- Difficulties must NOT be due to
  - Economic or environmental disadvantage or lack of instruction
  - Motor, Vision or hearing problems that are not corrected or other neurological problems (such as stroke, for example).
  - Limited English language proficiency
  - Low cognitive ability/intellectual disability



## WIAT III Clinical Study: SLD vs typical learner

Composite	SLD Mean	Control Mean	Mean Diff.	p value	Effect Size
Oral Language	90.4	99.2	8.81	<.01	0.58
Basic Reading	78.5	99.7	21.16	<.01	1.70
Reading Comprehension and Fluency	80.5	99.0	18.47	<.01	1.41
Written Expression	80.7	98.5	17.82	<.01	1.52

**Will often have average to above scores in numerical operations subtests.**



**n = 86 (School Years 2-12)**

## Clinical Study: Mild Intellectual Disability

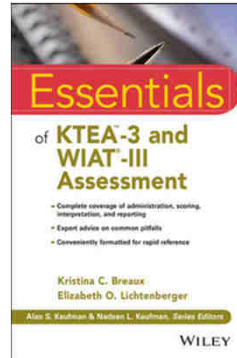
Composite	Mild ID Mean	Control Mean	Mean Diff.	p value	Effect Size
Oral Language	64.9	97.4	32.44	<.01	2.79
Basic Reading	62.9	95.8	28.66	<.01	2.42
Reading Comprehension and Fluency	62.2	95.9	33.70	<.01	2.88
Written Expression	65.6	96.6	31.06	<.01	2.42
Mathematics	64.3	97.5	33.19	<.01	2.61
Math Fluency	66.0	96.3	30.34	<.01	2.18
Total Achievement	62.1	95.0	32.63	<.01	3.06

**n = 70 (School Years PreSchool-12)**



## WIAT-III Dyslexia Index

- The technical and normative tables for the WIAT-III Dyslexia Index scores are available in the [Essentials of KTEA-3 and WIAT-III Assessment](#) (2016).



### Dyslexia Index Scores

The **Dyslexia Index** scores were designed to provide theoretically sound and research-based composite scores that maximize clinical sensitivity for identifying young children at-risk for **dyslexia** as well as students and adults who may have **dyslexia**. However, no single **score** is sufficient to identify or diagnose **dyslexia**.



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## WIAT-III Dyslexia Index

Test or index score	Grade/ Age	Subtests/Items	Mean reliability	Effect size	AUC	Administration time (min.)
WIAT®-III Dyslexia Index 1	K-1	Early Reading Skills + Spelling	.94	1.66	.88	12
WIAT®-III Dyslexia Index 2	2-12+ Ages 7-25	Oral Reading Fluency + Pseudoword Decoding + Spelling	.98	1.84	.90	15

Test or index score	Administration time (min.)
WIAT®-III Dyslexia Index 1	12
WIAT®-III Dyslexia Index 2	15

Dyslexia Group score on Dyslexia Index: **78**

Matched Control Group Score: **99**

**21** point difference =  
1.84 Effect Size



1

## WISC-V Clinical Studies

- WISC-V scores from a group of children with Specific Learning Disabilities in Reading/Writing were compared to scores from a matched control group
- The following scores showed the largest effect sizes, and were the most different from the control group
  - Digit Span Backwards
  - Working Memory Index
  - Auditory Working Memory Index



## Reminder: Quick Guidelines for WISC/WIAT users

- If Verbal Comprehension, auditory working memory, and Oral Language (WIAT III) are all relative weaknesses, consider DLD. Refer to a speech pathologist for follow up.
- If auditory working memory is a relative weakness in a profile where Verbal Comprehension and Oral Language are strong, a DLD is unlikely. However, other disorders, such as SLD/Dyslexia may still be a hypothesis.
- Although a full language assessment is not warranted, a comprehensive reading and spelling assessment is.



## Examples:

- VCI 100
- NVI 107
- FSIQ 105
- AWTI 79
- WIAT III Oral Language  
98
- WIAT III Dyslexia Index  
81

**Hypothesis:** Specific  
Learning Disability



## Specific Learning Disability (Reading and/or Written Expression)

- CELF-5<sup>A&NZ</sup> scores from a group of children with Specific Learning Disabilities in Reading/Writing were compared to scores from a matched control group.
- The following scores showed the largest effect sizes, and were the most different from the control group:
  - *Test Level*
    - Word Definitions (WD)
    - Reading Comprehension (RC)
  - *Index Level*
    - Language Memory Index (LMI)



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## Screening in the Classroom

### Raven's 2

A convenient, versatile, and easy-to-use nonverbal assessment of ability for ages 4-90yrs.



### Shaywitz DyslexiaScreen

Quick, evidence-based screening tool that identifies students who are at risk for dyslexia for Years F-2.



### Clinical Evaluation of Language Fundamentals - Fifth Edition, Screener Test (CELF-5 A&NZ Screener)


Quickly and accurately screens children aged 5 to 21 years who may be experiencing language difficulties



## Summary


- There are many potential causes of language disorders because language is a complex behaviour influenced by genetic, biological, perceptual, cognitive, linguistic, and environmental factors.
- A primary risk for young children with language disorders is reading and academic learning difficulties.
- The **CATALISE** research recommends that a discrepancy between language ability and nonverbal ability is not required for diagnosis of DLD.
  - Children with low nonverbal ability who do not meet the criteria for intellectual disability can be given a diagnosis of DLD.
  - Children who present with Language Disorder **and** meet the criteria for intellectual disability may be diagnosed with LD associated with Intellectual Disability.
  - Children who present with Language Disorder **and** meet the criteria for Specific Learning Disability (SLD) may be diagnosed with LD associated with SLD.






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### Main References – freely available for download from the links

See the two CATALISE papers for full supporting references

Bishop, D. V. M., Clark, B., Conti-Ramsden, G., Norbury, C. F., & Snowling, M. J. (2012). RALLI: An internet campaign for raising awareness of language learning impairments. *Child Language Teaching & Therapy*, 28(3), 259-262. doi:10.1177/0265659012459467. pdf here: <http://journals.sagepub.com/doi/pdf/10.1177/0265659012459467>

Bishop, D. V. M., Snowling, M. J., Thompson, P. A., Greenhalgh, T., & The CATALISE Consortium. (2016). [CATALISE: a multinational and multidisciplinary Delphi consensus study](#). Identifying language impairments in children. *PLOS One*, 11(7), e0158753. doi:10.1371/journal.pone.0158753

Bishop, D. V. M., Snowling, M. J., Thompson, P. A., Greenhalgh, T., & The CATALISE Consortium. (2017). [Phase 2 of CATALISE: a multinational and multidisciplinary Delphi consensus study of problems with language development: Terminology](#). *Journal of Child Psychology & Psychiatry*. doi:10.1371/journal.pone.0158753

<https://speechpathologyaustralia.cld.bz/JCPSLP-March-2018>

[SPA adopts terminology for language disorder and DLD:](#)  
<https://speechpathologyaustralia.cld.bz/Speak-Out-Feb-2017/6>

[The difficulties, disorder and disability dilemma:](#) <https://speechpathologyaustralia.cld.bz/Speak-Out-June-2017/22>



## References

Borgstein, J. *The Lancet* - 9 February 2002 (Vol. 359, Issue 9305, Page 473) DOI: 10.1016/S0140-6736(02)07676-6 [Half a Brain]

Clark, M.K., & Kamhi, A.G. (2010). *Language Disorders (Child Language Disorders)*. In: JH Stone, M Blouin, editors. *International Encyclopedia of Rehabilitation*. Available online: <http://cirrie.buffalo.edu/encyclopedia/en/article/31/>

*The Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association, 2013)

Leonard L. (1998). *Children with specific language impairment*. Cambridge (MA): Massachusetts Institute of Technology.

Raiford, S.E. & Coalson, D.L. (2014) *Essentials of WPPSI IV Assessment*. John Wiley & Sons, Inc., Hoboken, NJ.

Wiig, E. H. (2008) *Language disabilities*. In A. Prifitera, D. H. Saklofske, L. G. Weiss, & E. Rolfhus (Eds.) *WISC-IV Clinical Assessment and Intervention*. (p. 173-192). N.Y.: Elsevier Inc.

