Research Overview

1. Multiple research phases both in USA, Australia and New Zealand

2. Over 4,000 students tested in standardisation and related reliability and validity studies in the US
   – Students tested from March through December 2012
   – Over 450 SLPs across the U.S. participated in standardisation testing

3. For the standardisation of the CELF-5A&NZ we worked with 184 speech language pathologists and collected data with a sample of more than 1,000 students.
   – Testing occurred between April 2016 and January 2017
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

Test Structure

<table>
<thead>
<tr>
<th>Language Content</th>
<th>Language Structure</th>
<th>Oral-Written Language Connection</th>
<th>Pragmatics</th>
<th>Language Memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linguistic Concepts</td>
<td>Sentence Comprehension</td>
<td>Understanding Spoken Paragraphs</td>
<td>Pragmatics Profile</td>
<td>Linguistic Concepts</td>
</tr>
<tr>
<td>Word Classes</td>
<td>Word Structure</td>
<td>Reading Comprehension</td>
<td>Pragmatic Activities Checklist</td>
<td>Following Directions</td>
</tr>
<tr>
<td>Following Directions</td>
<td>Formulated Sentences</td>
<td>Formulated Sentences</td>
<td></td>
<td>Formulated Sentences</td>
</tr>
<tr>
<td>Semantic Relationships</td>
<td>Recalling Sentences</td>
<td>Structured Writing</td>
<td></td>
<td>Recalling Sentences</td>
</tr>
<tr>
<td>Word Definitions</td>
<td>Sentence Assembly</td>
<td>Observational Rating Scales (ORS): Listening, Speaking, Reading, Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observational Rating Scale (ORS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Consider multiple assessment perspectives

RTI

Clinical

Educational

Social

In a language disability affecting the student’s classroom performance of productive language and communication in context using the Observational Rating Scale (ORS) and other authentic and descriptive measures to possible information needed to design classroom accommodations and adjustments.

If the student does not respond to a variety of classroom interventions, Is this or her performance due to language skill deficit?

A abbreviated test appropriate to the student’s age to answer the referral questions.

For a language disorder is identified, what information is needed to plan intervention?

Identify the nature of the disorder by answering the following questions.

Are there significant differences between comprehension and expression?

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

Are there weaknesses related to the interaction of language, memory, and attention?

Does the disorder affect written language?

Does the disorder affect social interaction?

Complete the Progressions Profile and/or the Progressions Activities Checklist.

Interpreting CELF-5 A&NZ Test Results & Recommendations

Based on the CELF-5 test results and additional assessment information collected, what is the best way to address the student’s needs?
Guidelines for Interpreting Performance

Scaled Scores

Table 5.2 Guidelines to Describe Performance

<table>
<thead>
<tr>
<th>Test Score</th>
<th>Classification</th>
<th>Relationship to Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 and above</td>
<td>Above average</td>
<td>+1 SD and above</td>
</tr>
<tr>
<td>8 to 12</td>
<td>Average</td>
<td>Within + or – 1 SD</td>
</tr>
<tr>
<td>7</td>
<td>Borderline/Marginal/At risk</td>
<td>At –1 SD</td>
</tr>
<tr>
<td>6 and below</td>
<td>Low to very low</td>
<td>Below –1 SD</td>
</tr>
</tbody>
</table>

Sentence Comprehension (SC)

Objective

To evaluate the student’s ability to (a) interpret spoken sentences of increasing length and complexity, and (b) select the pictures that illustrate referential meaning of the sentences.

Relationship to Curriculum

The abilities evaluated relate to primary school curriculum objectives for creating meaning and context in response to pictures or spoken sentences, and creating stories or descriptive text.

Relationship to Classroom Activities

Sentence comprehension and the understanding of relationships among spoken language, real-life references, and situations are emphasised when listening to stories or descriptions of events, as well as when matching sentences that are spoken or read to pictured references.

Implications for Intervention

If the student receives a below average score, you can analyse errors according to the categories in the item analysis table. This identifies the semantic, morphological, and syntactic structures that interfere with a student’s comprehension. Intervention should focus on developing the student’s receptive vocabulary skills and explicit (conscious) awareness of the structure of words and sentences using spoken sentences associated with illustrations and familiar, illustrated stories. During intervention it is important to talk about and illustrate the function of specific words and structural rules to increase semantic and syntactic awareness (Beck, McKeown, & Kucan, 2002; Rice & Blossom, 2013; Thompson & Shapiro, 2007).
Sentence Comprehension
Item Analysis

Example Recommendations for SC

GOAL 1: To increase the student’s ability to use and understand interrogatives and passive voice in both oral and written language.

Excerpt from Therapy Plan:
At the conclusion of the student’s IEP, when given grade-appropriate curriculum materials as stimuli, the student will produce 4-5 word sentences using targeted interrogatives and passive voice constructions with 80% accuracy, as measured through clinician observation, teacher feedback and parent report.

“Not to teach the student to point to the correct pictures”
Understanding Spoken Paragraphs (USP)

Objective

To evaluate the student's ability to (a) sustain attention and focus while listening to spoken paragraphs, (b) create meaning from oral narratives and text, (c) answer questions about the content of the information given, and (d) use critical thinking strategies for interpreting beyond the given information. The questions probe for understanding of the main idea, memory for facts and details, recall of event sequences, and making inferences and predictions.

Relationship to Curriculum

The abilities evaluated relate to primary and secondary school curriculum objectives for (a) listening to spoken instructional materials, (b) using the information presented, and (c) applying critical thinking skills to go beyond the given information to learn and create new knowledge.

Relationship to Classroom Activities

Understanding orally presented stories and descriptions of actions, events, or opinions is required for creating meaning and learning from instructional materials across academic subjects.

Implications for Intervention

Complete the Item analysis in the Record Form. The student's item response pattern provides evidence of linguistic, metacognitive, and metalinguistic awareness skills that are inadequate for understanding factual and implied information in paragraphs. These skills are equally important for reading comprehension. Fleming and Forester (1997) describe generic approaches to intervention that can be used to help develop students' abilities to think about and reflect on language (metacognitive and metalinguistic skills).

Understanding Spoken Paragraphs (USP)

<table>
<thead>
<tr>
<th>Ages 5–6 Item Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Idea</strong></td>
</tr>
<tr>
<td>1, 5, 11, 16</td>
</tr>
</tbody>
</table>

Note: Bold items appear in more than one category.
Example Recommendations for USP

GOAL 2: To support the student in understanding implied meaning of the text by focusing on multiple meanings and 20 common expressions within the student’s community (as evidenced through observation and parent/teacher discussion):

Excerpt from Therapy Plan:

1. By (IEP date) the student will be able to use grade appropriate vocabulary in retelling a story in 8 of 10 opportunities with 80% accuracy as measured by classroom performance and therapy outcomes.

2. By (IEP date) the student will be able to ask questions about a specific story in 7 or 10 opportunities with 85% accuracy as measured by therapy performance and teacher feedback.

3. By (IEP date) the student will be able to respond appropriately and accurately to questions regarding a given story in 7 of 10 opportunities with 90% accuracy as measured by classroom and therapy progress.

“Not teaching the student to answer questions from a written text”

Recalling Sentences

**Objective**

To evaluate the student’s ability to listen to spoken sentences of increasing length and complexity, and repeat the sentences without changing word meaning and content, word structure (morphology), or sentence structure (syntax). Semantic, morphological, and syntactic competence facilitates immediate recall (short-term memory).

**Relationship to Curriculum**

The abilities evaluated relate to primary and secondary school curriculum objectives for internalising simple and complex sentence structures to facilitate accurate recall of the meaning, structure, and intent of spoken sentences, directions, or instructions. The student's response indicates if critical meaning or structural features (e.g., specific word use, complex verb forms, embedded clauses) are internalised to facilitate recall.

**Relationship to Classroom Activities**

The ability to remember spoken sentences of increasing complexity in meaning and structure is required for following directions and academic instructions, writing to dictation, copying and note-taking, learning vocabulary and related words, and subject content.

**Implications for Intervention**

If the student receives a below-average score, analyse errors according to the categories in the item analysis table. This will identify the length and complexity variables that cause the greatest proportion of difficulties. Students with language disorders frequently have the greatest difficulty when sentences contain subordinate or relative clauses (complex sentence types). Increased length in words, due to noun modifications or coordination of phrases and clauses, may also cause difficulties in recall.
Recalling Sentences

<table>
<thead>
<tr>
<th>Category</th>
<th>Item</th>
<th>Category</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Declarative (with)</td>
<td>1</td>
<td>Active Interrogative (with)</td>
<td>2, 3, 6</td>
</tr>
<tr>
<td>conjunction deletion</td>
<td>25</td>
<td>negative</td>
<td>4</td>
</tr>
<tr>
<td>coordination</td>
<td>22, 25</td>
<td>Passive Declarative (with)</td>
<td>9, 15</td>
</tr>
<tr>
<td>noun modification</td>
<td>5</td>
<td>coordination</td>
<td>14</td>
</tr>
<tr>
<td>subordinate clause</td>
<td>8, 11, 15, 18, 19, 20, 23, 26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>relative clause</td>
<td>10, 12, 13, 16, 17, 21</td>
<td>subordinate clause</td>
<td>24</td>
</tr>
<tr>
<td>negative</td>
<td>10, 19</td>
<td>Passive Interrogative</td>
<td>7</td>
</tr>
</tbody>
</table>

Note. Bold items appear in more than one category.

Formulated Sentences (FS)

Objective
To evaluate the student's ability to formulate complete, semantically and grammatically correct, spoken sentences of increasing length and complexity (i.e., simple, compound, and complex sentences), using given words (e.g., cor, if, because) and contextual constraints imposed by illustrations. These abilities reflect the capacity to integrate semantic, syntactic, and pragmatic rules and constraints while using working memory.

Relationship to Curriculum
The abilities evaluated by Formulated Sentences relate to primary and secondary school curriculum objectives for internalising linguistic rules (semantic, syntactic, pragmatic) and integrating these to produce spoken narratives and discourse and create written text.

Relationship to Classroom Activities
The ability to formulate complete, semantically, syntactically, and pragmatically-acceptable spoken and written sentences of increasing complexity is emphasised in (a) storytelling, (b) sentence completion, combination, and transformation activities, (c) written text, and (d) editing text and other literacy activities.

Implications for Intervention
If the student receives a below-average score, analyse errors according to the categories in the item analysis table. This will identify stimulus words and grammatical markers that cause the student the greatest difficulties in integrating sentence components to create complete, grammatically-accurate propositions. Performance depends in part on explicit (conscious) structural linguistic knowledge and in part on working memory and metalinguistic awareness. Developing the conceptual meaning of the grammatical markers and their role in sentence structure in explicit procedures may develop metalinguistic awareness and help the student compensate for persisting working memory problems. Explicit structural knowledge is required to be able to edit and revise written text (Thompson & Shapiro, 2007). Sirrin and Gillam (2008) provide applicable reviews of evidence-based expressive language intervention practices.
Formulated Sentences

Example Recommendations for RS and FS

GOAL 3: During conversational speech, the student will spontaneously produce (choose from syntax item analysis menu) with 85% accuracy in 4 out of 5 trials in a variety of settings as measured by classroom and therapy progress.

Excerpt from Therapy Plan: By (date), the student will spontaneously produce (choose from syntax and morphology menu) in phrases/sentences during conversational speech with 85% accuracy in 4 out of 5 trials as measured by teacher and parent report.

“NOT: Supporting the student to repeat utterances of increasing length or to complete sentences in response to visual stimuli”
Guidelines for Interpreting Performance at Index Score Level

Standard Scores

<table>
<thead>
<tr>
<th>Core Language Score, Receptive Language Index, or Expressive Language Index</th>
<th>Classification</th>
<th>Relationship to Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>115 and above</td>
<td>Above average</td>
<td>+ 1 SD and above</td>
</tr>
<tr>
<td>86 to 114</td>
<td>Average</td>
<td>Within ± 1 SD</td>
</tr>
<tr>
<td>78 to 85</td>
<td>Borderline/Marginal/Mt risk</td>
<td>Within ± 1.5 SD</td>
</tr>
<tr>
<td>71 to 77</td>
<td>Low range/Moderate</td>
<td>Within ± 2.5 SD</td>
</tr>
<tr>
<td>70 and below</td>
<td>Very low range/Severe</td>
<td>−2.50 and below</td>
</tr>
</tbody>
</table>

Understanding the Test Scores

1. Is there a significant difference between comprehension and expression?
   - Compare CELF-5A&NZ receptive and expressive index scores

2. Are there significant differences in knowledge of content (i.e. semantics) and in knowledge of structure (i.e. morphology and syntax)?
   - Compare these index scores

3. Students Age 9+ years
   - Are the weaknesses related to language and memory?
Score Differences

Interpretation of performance
1. Examine if difference is statistically significant
   - Reflection of Standard Error
2. Examine if difference is clinically significant (rare ≤ 10-15%)

Discrepancy Comparison Example

<table>
<thead>
<tr>
<th>Discrepancy Comparisons</th>
<th>Score 1</th>
<th>Score 2</th>
<th>Difference</th>
<th>Critical Value</th>
<th>Significant Difference</th>
<th>Prevalence in Normal Range</th>
<th>Statistically Significant Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptive–Expressive Language Index</td>
<td>74</td>
<td>71</td>
<td>$</td>
<td>$</td>
<td>Yes</td>
<td>32.7</td>
<td>$106</td>
</tr>
<tr>
<td>Language Content–Marking Index*</td>
<td>75</td>
<td>76</td>
<td>-1</td>
<td>$</td>
<td>Yes</td>
<td>46.6</td>
<td>$106</td>
</tr>
</tbody>
</table>

*See Appendix F in Examiner's Manual.

Students Scoring between 77 and 100 are not “just fine”

<table>
<thead>
<tr>
<th>Standard Score</th>
<th>Percentile Rank</th>
<th>% of Students Performing Higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>78</td>
<td>7</td>
<td>93%</td>
</tr>
<tr>
<td>80</td>
<td>9</td>
<td>91%</td>
</tr>
<tr>
<td>85</td>
<td>16</td>
<td>84%</td>
</tr>
<tr>
<td>87</td>
<td>19</td>
<td>81%</td>
</tr>
<tr>
<td>90</td>
<td>25</td>
<td>75%</td>
</tr>
<tr>
<td>95</td>
<td>37</td>
<td>73%</td>
</tr>
</tbody>
</table>

Remember to report CIs for SS and PRs
Testing for Re-evaluation

Consider these factors when making retest decisions:

- Retesting should be conducted when, in the opinion of the examiner, the student is not likely to remember the test items and/or his or her responses when tested previously.
  - If retesting is required prior to this time, changes in performance should be interpreted in comparison to mean differences between original and retest scores obtained in the test-retest study (see Chapter 8, Table 8.4).
- Retesting should be conducted when the examiner thinks the child has made progress since the previous test administration.
- Retesting can be conducted when the student’s age at testing requires the next-age norms table to score (6 month intervals for 5 and 6 year olds and 12 month intervals for students 7 years and older).
- Retesting can be conducted when other factors negatively affecting the student’s performance (e.g., illness, inattention) cause you to question the accuracy of previous test results.

CELF-5\textsuperscript{A\&NZ} Examiner's Manual, pp 33-34.

Practice Effects

- The data also indicate the mean retest scores are higher than the scores from the first testing, with the effect sizes ranging from .04 to .54.
- In general, test-retest gains are less pronounced for the Language Content Index and Language Memory Index scores (and in the older ages) than any other standard score index.
- The composite score differences for the combined age bands, primarily due to practice effects, are approximately:
  - 6.0 points for the Core Language Score
  - 4.4 points for the Receptive Language Index score
  - 5.6 points for the Expressive Language Index score
  - 4.0 points for the Language Content Index score
  - 6.0 points for the Language Structure Index score, and
  - 4.3 points for the Language Memory Index score.
My Students had a birthday which norms do I use?

FAQ  The client was 12;11 years when we started the CELF-5, however due to some no-shows we finished the assessment the day after she turned 13;0 years. I am unsure of how to go about scoring the CELF as her age has changed during assessment. Would you have any recommendations on how to go about this? I’m not sure whether I would report from the start of assessment at the age of 12;11 years, or specify in each subtest what her score is according to her age on the specific date of testing.

A  It’s best practice to use the date of the first visit to calculate CA in determining which norm set to use. In this case, the 12 year old norms.

Clinically, I would recommend scoring your student as a 12 year old in the first instance and then compare her performance to the 13 year old norms to determine any meaningful differences (also considering confidence intervals) to aide intervention planning.

The norm set must remain constant.

CELF-4 and CELF-5 Correlations: Clinical Implications for A&NZ

- Although there is greater variability at the test score level than at the composite score level, many of the tests have very similar mean score differences.

- The test scores follow the same general trend that is seen with the composite scores in that many of the CELF-5 test score means are slightly higher than the CELF-4 subtest score means.

- This can be attributed to changes in the population on which the CELF-5 normative data is based. Due to the increase in second-language speakers, and better understanding of language differences as compared to language disorders, there is now a greater acceptance of differences among speakers than there was 10 years ago.
CELF-4 and CELF-5 Correlations: Clinical Implications for A&NZ

- Those changes are reflected in slightly higher CELF-5 scores. That is, if both were administered today, it is more likely that an examinee will score higher on CELF-5 than on CELF-4.

- The results suggest that CELF-5 and CELF-4 scores are highly correlated, because they measure similar constructs of language. Due to the counter-balanced design of the CELF-5 and CELF-4 study, the mean scores are expected to be very similar. However, slight mean score increases are seen for four of the six composite scores and six of the 11 tests that can be meaningfully compared.

- The slightly higher mean scores can be attributed to the changes in language ability in the population.

Sensitivity and Specificity

- **Sensitivity**: The degree to which a test identifies children who do indeed have the condition or disorder (Positive).

- **Specificity**: The degree to which a test identifies those children who do not have the condition or disorder (Negative).

- **False Positive**: A student who is falsely identified as having a condition or disorder.

- **False Negative**: A student with a condition or disorder who is not correctly identified by a test (the most serious error).
Sensitivity and Specificity

As reported, for the three CELF–5A&NZ scores, the cut score of 80 (at -1.3 SD from the mean) results in the best balance between the sensitivity and specificity measures - the optimal cut score.

Using this cut point for each of these composite scores resulted in a sensitivity of 85% (0.85) and specificity of 100% (1.0). In other words, using the cut score of 80, only 15% of children with language disorders were missed and no children without language disorders were misidentified as having language disorders.

Clinical Applications: HI

Across all scores, the effect size of hearing loss on language abilities of children using cochlear implants more than doubled that of children using hearing aids.

This suggests that the impact increases with the degree of hearing loss.

Children with hearing loss who use either hearing aids or cochlear implants had **Structured Writing scores** that did not significantly differ from those of typically hearing peers.

Guide to Administration for Hearing Impaired Populations
CELF-5A&NZ Examiner’s Manual, p. 248
Case Study

History and Referral

Lily was age 7½ and had recently relocated from a different state. Prior to the move, Lily was diagnosed with a mild-to-moderate language disorder and had received intervention services for four months. Lily’s diagnosis was based on a criterion-referenced measure, language sampling, classroom work samples, and teacher and parent reports. In her new school, Lily’s teacher and parents were concerned that she was struggling academically. The teacher also noted instances of Lily’s delayed fine and gross motor skills development. For example, Lily’s teacher stated that Lily had difficulty identifying and writing letters and numbers. Additionally, Lily’s parents stated that she, “often trips or bumps into things, and is generally clumsy.”

Referral Questions

After reviewing Lily’s present level of academic achievement and functional performance, the classroom teacher and the school reading specialist requested that Lily be administered a standardized measure to get a more complete profile of her language skills and to determine the following:

1. Did the student continue to manifest a language impairment?
2. If a language impairment is present, what are the patterns of strengths and weaknesses?
3. What implications does the profile of strengths and weaknesses have on the student’s ability to access her education?
4. Does the student continue to qualify for speech and language intervention services?
Test Results

The following scores were obtained from administration of CELF-5.

<table>
<thead>
<tr>
<th>Case Study Overview of CELF-5 Scores for Lily</th>
<th>Standard Score</th>
<th>Confidence Interval</th>
<th>Percentile Rank</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Language Score</td>
<td>84</td>
<td>77–91</td>
<td>14</td>
<td>6–27</td>
</tr>
<tr>
<td>Receptive Language Index</td>
<td>63</td>
<td>55–71</td>
<td>1</td>
<td>0.1–3</td>
</tr>
<tr>
<td>Expressive Language Index</td>
<td>96</td>
<td>90–102</td>
<td>39</td>
<td>25–55</td>
</tr>
<tr>
<td>Language Content Index</td>
<td>74</td>
<td>67–81</td>
<td>4</td>
<td>1–10</td>
</tr>
<tr>
<td>Language Structure Index</td>
<td>83</td>
<td>76–90</td>
<td>13</td>
<td>5–25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Scoring</th>
<th>Scaled Score</th>
<th>Confidence Interval</th>
<th>Percentile Rank</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sentence Comprehension</td>
<td>1</td>
<td>1–3</td>
<td>0.1</td>
<td>&lt;0.1–1</td>
</tr>
<tr>
<td>Linguistic Concepts</td>
<td>4</td>
<td>4–8</td>
<td>9</td>
<td>2–25</td>
</tr>
<tr>
<td>Word Structure</td>
<td>10</td>
<td>8–12</td>
<td>50</td>
<td>25–75</td>
</tr>
<tr>
<td>Word Classes</td>
<td>3</td>
<td>1–4</td>
<td>3.4</td>
<td>0–4–2</td>
</tr>
<tr>
<td>Following Directions</td>
<td>8</td>
<td>7–9</td>
<td>25</td>
<td>16–37</td>
</tr>
<tr>
<td>Formulated Sentences</td>
<td>10</td>
<td>8–12</td>
<td>50</td>
<td>25–75</td>
</tr>
<tr>
<td>Recalling Sentences</td>
<td>8</td>
<td>6–10</td>
<td>25</td>
<td>9–50</td>
</tr>
<tr>
<td>Understanding Spoken Paragraphs</td>
<td>9</td>
<td>7–11</td>
<td>37</td>
<td>16–63</td>
</tr>
</tbody>
</table>

Test results

- The Core Language Score of 84 (confidence interval of 77–91) placed the student’s overall performance in the below average range.
- The Receptive Language Index score of 63 (confidence interval of 55–71) is in the very low range, indicating difficulties in interpreting spoken information.
- The Expressive Language Index score of 96 (confidence interval of 90–102) placed the student’s performance in the average range.
- The 33-point difference between the Receptive Language Index and Expressive Language Index scores occurs rarely and is clinically significant (p < 0.05).
- The Language Content Index score of 74 (confidence interval of 67–81) indicates performance in the low range, indicating difficulties in creating meanings for the linguistic stimuli.
- The Language Structure Index score of 83 (confidence interval of 76–90) placed the student’s performance in the below average range.
- The 9-point difference between the Language Content Index and Language Structure Index scores is significant (p < 0.05), indicating relatively greater difficulties with language content (semantics) than with language form (structure).
Test results

- The test scaled scores range from a low of 1 to a high of 10.

- Scores for Word Structure (10), Formulated Sentences (10), Understanding Spoken Paragraphs (9), Following Directions (8), and Recalling Sentences (8) are in the average range and indicate areas of relative strength for Lily.

- In comparison, scores for Sentence Comprehension (1) and Word Classes (2) are in the very low range and indicated areas of weakness.

- The results underscored Lily’s difficulties in creating meanings for spoken sentences and perceiving relationships and associations among words.

Test results

- Analysis of the response pattern for Sentence Comprehension items indicated that sentences with embedded relative clauses (i.e., who) were matched correctly to the picture stimuli.

- In contrast, sentences with coordination (e.g., She is climbing and he is swinging.) and subordinated clauses (e.g., The boy gathers the apples after they have fallen to the ground.) tended to be misinterpreted.

- Lily’s poor performance may have resulted from visual-perceptual deficits that interfered with the perception of salient details in the test stimuli.

- Alternatively, the scattered distribution of accurate and inaccurate responses and no ceiling being reached on this test suggests that Lily’s attention may have fluctuated—indicating a possible need to review Lily’s behaviour on other tests.

- For example, analysis of Lily’s response pattern for Understanding Spoken Paragraphs indicates that for all paragraphs, factual questions usually resulted in more errors or “I forgot,” responses than inferential questions.

- This pattern also suggests that Lily’s attention may have fluctuated, but that contextual cues may have made it relatively easier for her to respond to inferential questions than to factual questions.

- The examiner indicated that although Lily was positive and cooperative throughout testing, she was intermittently distractible and off-task during administration of several tests.
Test Results

- The response pattern to items on the Word Classes test is consistent with difficulties in the acquisition and analysis of word meanings that are basic for forming associations.

- Because administration of this test was discontinued relatively early (ceiling Item 15), it is difficult to determine if Lily's difficulties with forming associations is tied specifically to semantic class (e.g., foot and hand are body parts) or if she has difficulty with other types of associations, such as object functions (e.g., hammer and nail), synonyms (e.g., silent and quiet), and word opposites (e.g., smooth and rough).

Recommendations and Follow-up

Based upon assessment information, Lily would benefit from structured language tasks and practice to address her weakness in the area of receptive language. Goals and objectives should be specifically targeted toward (a) comprehension of sentences of increasing length and complexity, and (b) increasing knowledge of word meanings and word associations.

In terms of follow-up, it would be important to administer the OMS to assess Lily's classroom language behaviors specifically and to identify areas of concern. The classroom ratings may provide a better understanding of interactions between classroom expectations and Lily's current linguistic abilities. Because Lily performed poorly on tests requiring her to attend to differences in visual stimuli, and past teacher and parent reports state concerns with problems identifying and writing letters and numbers (perhaps due to poor visual acuity) and general clumsiness (perhaps due to poor attentional skills), she should be referred for further motor skill testing and a visual acuity examination.
Where does the preponderance of evidence lie?

It is important to consider all the information about the student in conjunction with the CELF-5 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.
### Summary of Evidence

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<th>Assessment Tool</th>
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</table>
| Developmental History | Acquisition of L1 targets | • Like siblings  
• Matches dev’tal milestones  
• Early, frequent ear infections | | |
| Parent Interviews | Home language information | • Speaks English only  
• Communicates “fine” with family and friends | | |
| Academic History | Academic instruction | • Difficulties in subjects requiring good language skills  
• (language arts, social studies, science)  
• Below average performance  
• Increasing difficulty with class assignments | | |
| Teacher Interview/Reports | Teacher’s view of child’s performance in the classroom | | | Academic achievement:  
• Below grade level  
• High effort  
• Reduced class participation |

### Observations in Classroom
- Not conducted

### Dynamic Assessment
- Not conducted

### Language Sampling
- Connected speech in interactive contexts
  - Incorrect word usage
  - Limited vocabulary
  - Simple sentence structures
  - Morphosyntax errors inconsistent with age

### Norm Referenced Assessments
- Performance relative to a national sample of age-peers
  - Low to low average scores on multiple measures:
    - XXXX SS 72
    - XXXX SS 79
    - XXXX SS 69

### State test: reading, writing, math
- Unsatisfactory

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**Summary of Evidence**

- **Assessment Tool**: Assessment Tool  
- **Evidence Provided**: Evidence Provided  
- **Evidence Supports Normal Language Acquisition**: Evidence Supports Normal Language Acquisition  
- **Evidence Supports Possible S&L Disorder**: Evidence Supports Possible S&L Disorder  
- **Evidence Supports Possible Learning Disability**: Evidence Supports Possible Learning Disability
1. Use the Item Analysis to guide intervention strategies

2. Use the ORS items to guide this process

3. Focus on the priorities:
   - Curriculum
   - Teacher
   - Student

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.
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.
Recommended viewing

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

Join Consultant Psychologist, Valorie O'Keefe and Consultant Speech Pathologist, Angela Kinsella-Ritter, as they present the new evidence for diagnosing a developmental language disorder (DLD) where a child with a language disorder may have a low level of nonverbal ability. A discrepancy between language ability and nonverbal ability is not required for diagnosis.


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