UNDERSTANDING POTENTIAL

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Neurodevelopmental Assessment Report
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George- Exemplar Report

D.o.B: 2012

Address: Surrey

Parents:

School Year: Year 5 – Surrey

Contents

Understanding Potential: UP

UP offers a neurodevelopmental assessment service for children where there are concerns around undiagnosed or unidentified barriers or hurdles that are impacting on their learning and development. UP has a team of experienced professionals including clinical psychologists, speech and language therapists, teachers and dyslexia specialists who contribute to the assessment process. At its core, the service provides a holistic, multi-disciplinary and thorough neurodevelopmental assessment tailored for each child's individual needs. The service provides a report which profiles the child's strengths and difficulties, as well as specific recommendations relevant to the child.

Professionals involved

Dr Alexandra Livesey (BSc, DClinPsy, HCPC registered) is a highly specialist clinical psychologist with over 15 years of working with people with complex neurodevelopmental profiles. Within the NHS she is the principle clinical psychologist within the only national Fetal Alcohol Spectrum Disorders (FASD) Service where she leads the team in relation to neuropsychological assessment. She is passionate about promoting neurodiversity and identifying everyone's potential and is the director of UP.

Louise Fox (BSc, MRCSLT, HPC registered) is a specialised speech and language therapist with over 18 years experience of working with people with complex neurodevelopmental profiles. Within the NHS she is a speech and language therapist within the only national Foetal Alcohol Spectrum Disorders (FASD) service, having worked alongside Dr Alexandra Livesey, the director of UP, for the past six years. She also works supporting students with additional needs in a further education setting. She is driven to help identify potentially undiagnosed language disorders in people with complex neurodevelopmental profiles and help them develop strategies to function in a world that favours the neurotypical population.

Kirstie Livesey-Bland (BSc, PGCE, MSc) is a highly experienced primary school teacher with over 15 years of working in mainstream primary schools, as a classroom teacher, part of the senior leadership team as well as a SENCO. She works closely with Educational Psychologists and Specialist Teachers in her teaching role. She has a background in psychology and is passionate about supporting all children to meet their potential.

REASON FOR REFERRAL

George is a 10-year-old girl who was referred to UP due to concerns from her parents around the discrepancy between specific aspects of her learning. They felt that she had considerable strengths and was a capable child, but reports from school and from observations of work at home indicated that she had considerable difficulty with spelling, reading and some aspects of writing. George's parents had started to notice these difficulties when George was around age 6 when the family was living abroad. Her parents report that although George was often referred to as bright and very capable for her age, it became quickly apparent that she struggled to keep up with her peers when it came to reading and writing, especially spelling. In 2021 the family emigrated to the UK where George started in Year 5. Reports from the school indicate that George has settled very well, is very capable, motivated and engaged with her learning. Yet despite this, continues to find spelling, reading and aspects of writing very difficult and is having interventions within school to assist her with this. However, she has not yet met the school's threshold for a referral to Educational Psychology. At home, George's parents report that she finds it very difficult to focus on her homework, especially literacy, and that she is often physically exhausted after her day at school. As a result there are increasing numbers of arguments occurring when her Mum insists she does her homework. George also has additional work to complete to try and help her "catch up" with her school peers. Her parents report that they believe that George understands the value of doing additional work, but the mental effort as well as her awareness of her personal challenges is increasingly impacting on her self-esteem and confidence. At times, her parents have noticed that she can become overwhelmingly tearful and frustrated which is out of character for her.

Clinical Observations from the Assessment

The assessment was completed in three sessions, across 5 hours (one session at school and two within the service setting). Each assessment was held in a quiet private room with few distractions and each session contained several conversational and movement breaks. George was also observed within the school setting during break time and in class. George's parents completed the Connors Questionnaire, a Dyslexia Screen Checklist and a Referral Questionnaire. Her teacher also completed the Connors Questionnaire.

Attention and behaviour

Psychology Observations

George was upbeat and happy to engage with assessors upon entering the assessment room. George found it relatively easy to maintain focus on the tasks, but in between tasks could become distracted by noises, or things she found in the room. George would sometimes attempt to rush through tasks and attempt to start before the examiner had fully explained the instructions. George exhibited quite a lot of physical energy, sometimes being fidgety in her seat, but she appropriately requested regular movement breaks between tasks. George responded very well to verbal positive reinforcement and rewards between sub-tests to maintain motivation. She often wanted to know how she was doing, and whether she had got an item correct. At times she exhibited a slight sense of a fear of failure. It was clear that George was very aware of her personal challenges and areas she found harder. When asked to complete tasks that involved such areas, George appeared to require a much higher level of effort, but despite this worked hard to always try her best. It was often after these tasks that she requested a break. There were also times when George's confidence appeared to dip, again usually on tasks that she found hard and was aware she was struggling more with.

It should be noted that the assessment was held in a quiet room with little distractions and on a one-to-one basis, therefore definitive comment cannot be made about her ability to work and focus in different settings with external influence, such as noise and other people. However, observations from the assessment indicate that George could find such environments a little more challenging, especially if she is fatigued and/or being asked to a task that is challenging for her.

Speech and Language observations

George was observed for a short period of time during break. She initially was seen sitting on a bench with two friends writing in a note pad and then when asked by another friend to join them George followed them to a different part of the field to join a game of hide and seek. She followed the rules of the game and was observed taking turns, initiating and joining in group conversations. She was also observed initiating a hug with one of her peers.

In the classroom George was focussed on the maths activity the class was engaged in. She understood the rules of the game and was aware of the children around her and responded to them as expected when they made comments. She also was seen to infer from something another child said that someone could see her sheet in front of her and therefore could cheat, and so she turned her paper over in response. She was seen to fiddle with things on the desk in front of her, but this did not distract her from what she needed to focus on.

During the assessment George focussed and engaged for 90 minutes without a break. She regularly checked the time as she wanted to get back to class for a particular activity but realised when that was not going to happen and remained engaged in the tasks presented to her.

General Social Communication

George's social communication was mature and appropriate. George's conversations were reciprocal and she appeared to enjoy engaging in conversation relating to a variety of topics. George was appropriately friendly and used both verbal and non-verbal communication in a social setting well.

NEURODEVELOPMENTAL ASSESSMENT

George's cognitive ability was assessed using the Wechsler Intelligence Scale for Children: 5th Edition (WISC-V). The WIAT-III (Weschler Individual Attainment Test – III) was also completed in order to ascertain George's core ability verses her current attainment. George's Speech and Language Ability was assessed in using the Clinical Evaluation of Language Fundamentals: 5th Edition (CELF-5). As is standard practice within the service, observations of George's social communication, concentration and attention and executive functioning (EF) were also completed to gain a holistic perspective of the child's neurodevelopmental profile.

Interpretation of scores

Across the administered tests, a range of different types of scores are reported. The Composite, Index and Standard scores show how well George performed compared to children her age. Composite and Index scores range from 40 to 160. Half of all children will score less than 100, and half of all children will score more than 100. Scores from 80 to 120 are broadly within the average range. Standard Scores range from 1-19, with half of children scoring above 10 and half below. Standard Scores between 8-12 are considered in the Average Range. The percentile rank shows George's rank in the national comparison group. If her percentile rank were 45, it would mean that she scored higher than approximately 45 out of 100 children her age. For the WIAT-III, Age Equivalent Scores are also reported. Where segments of the tables are highlighted, this indicates specific areas of either strength of difficulty. Please see the Appendix for full details of the results.

Wechsler Intelligence Scale for Children: 5th Edition (WISC-V)

The WISC-V is used to assess the general thinking and reasoning skills of children aged 6 to 16 years. This test has six main scores: Verbal Comprehension score, Visual Spatial score, Fluid Reasoning score, Working Memory score, Processing Speed score and Full-Scale IQ score. The Full-Scale IQ score is derived from the combination of parts of the Verbal Comprehension, Visual Spatial, Fluid Reasoning, Working Memory, and Processing Speed scores.

George's Full-Scale IQ (FSIQ) had a large degree of difference between subtests that make up the overall score, therefore only the range is reported, we can be 95% sure her true ability lies between 97-109 – which falls in the Average range. Even this range score should be interpreted with some caution, as use of it in isolation minimizes her strengths and relative weaknesses is her cognitive profile.

Composite Score	Standard Score	Percentile	Descriptive Category
Full Scale IQ*	97-109	-	Average
Verbal Comprehension (VCI)	116	86	High Average
Visual Spatial (VSI)	97	42	Average
Fluid Reasoning (FRI)	109	73	Average
Working Memory (WMI)	115	84	High Average
Processing Speed (PSI)	86	18	Low Average

Verbal Comprehension

This index indicates how well George did on tasks that required her to listen to questions and give spoken answers. These tasks evaluate her skills in understanding verbal information, thinking, and reasoning with words, and expressing thoughts as words. George's Verbal Comprehension score was 116 (86th percentile) indicating that her skills are within the High Average Range for a child her age. She scored particularly well on the *Vocabulary* subtest, displaying understanding of words above what would be expected for her age. Compared to her lowest index score, **VCI was a relative strength for George, with less than 5% of children showing such a large difference between their VCI and PSI**.

Visual Spatial

The Visual Spatial Index (VSI) measures the ability to evaluate visual details and understand visual spatial relationships in order to construct 2D and 3D designs from a model. This skill requires visual spatial reasoning, integration and synthesis of part-whole relationships, attentiveness to visual detail, and visual-motor integration. George scored 97 (42nd percentile), which falls in the Average Range. George found the *Block Design* task challenging, commenting herself, that she could not work out how to rotate the blocks to make the design.

Fluid Reasoning

The Fluid Reasoning Index (FRI) measures the ability to detect the underlying conceptual relationship among visual objects and use reasoning to identify and apply rules. Identification and application of conceptual relationships in the FRI requires inductive and quantitative reasoning, broad visual intelligence, simultaneous processing, and abstract thinking. George's Fluid Reasoning score was 109 (73rd percentile), falling in the Average Range. George was able to notice and then correct her own mistakes on both tasks.

Working Memory

The Working Memory Index (WMI) measures the ability to register, maintain, and manipulate visual and auditory information in conscious awareness, which requires attention and concentration, as well as visual and auditory discrimination. George scored 115 (84th percentile) which falls in the High Average range. George concentrated very hard on these tasks. She preferred the Visual Working Memory Task, and there was a significant difference in her scores across the Visual and Verbal Working Memory Task.

Processing Speed

This index indicates how well a child does on timed tasks requiring them to quickly scan symbols and make judgments about them. George scored 86 (18th percentile) which falls in the Low Average Range. George was quiet and focused for the full two minutes of this task but demonstrated difficulties with processing the information quickly, yet was accurate. She scored below average for *Coding*, and visibly required more effort on this task compared to others administered. **Compared to her overall score (FSIQ), her PSI is a significant weakness with less than 5% of the population showing such a large difference between their overall score and their PSI. Moreover, when compared to her WMI and VCI, PSI is significantly lower, with the large difference between her WMI and PSI occurring in less than 4% of the population**.

The Weschler Individual Attainment Test-Third Edition (WIAT-III)

The WIAT-III is used to assess the achievement levels of children aged 4 to 18 years. The test has seven main scores. The WIAT-III can be used alongside the WISC-V to ascertain differences between predicted and actual achievement levels based on ability scores. Such differences can be indicative of a specific learning difficulty.

George's Total Achievement Score had a large degree of difference between subtests that make up the overall score, therefore only the range is reported, we can be 95% sure her Total Achievement lies between 99-107 – **which falls in the Average range**. Even this range score should be interpreted with some caution, as use of it in isolation minimizes her strengths and relative weaknesses is her achievement profile.

Composite	Standard Score	Percentile Rank	Descriptive Category
Oral Language	116	86	High Average
Total Reading	89	23	Low Average
Basic Reading	94	34	Average
Reading Comprehension & Fluency	86	18	Low Average
Written Expression	98	45	Average
Mathematics	105	63	Average
Total Achievement*	99-107	-	Average

Oral Language

This score indicates how well a child understands spoken language (receptive vocabulary) as well as comprehension of verbal information. It also examines the ability to hold verbal information in mind and recall language, as well as use expressive language fluently. George scored 116 (86th percentile) indicating that her skills in using oral language are in the High Average range. In particular her use of

vocabulary, as well as her ability to recall spoken language was strengths. Overall, her **Oral Language achievement level is significantly higher than both her Total Reading and Reading Comprehension & Fluency composite scores, with less than 5% of children with her ability level having such a large difference**.

Total Reading

This score assesses a child's attainment levels across reading comprehension, simple word reading, pseudoword decoding (made-up words, consisting of phonic groups), and oral reading fluency. George scored 89 (23rd percentile) which falls in the Low Average Range. However, there was a large difference in subtests scores within this composite score.

George scored within the Average range for her reading comprehension, simple word reading and pseudoword decoding but within the Very Low range for her Oral Reading Fluency. This indicates that her accuracy when reading single words at a time, and also decoding previously unread words, as well as her understanding of what she is reading matches her overall verbal ability level. However, the speed at which she reads is significantly lower than would be expected for a child her age and with her ability level.

Moreover, the speed at which she reads was found to be at the 1st percentile, indicating that 99% of children would read significantly faster than her. 90% of children would also read pseudowords faster than George. This apparent challenge in reading fluency is also highlighted when comparing her oral reading fluency score with her highest WIAT-III subtests (Oral Expression and Listening Comprehension). **There were significant differences between her oral reading fluency and these tests, with less than 1% of children having such a large difference between their ability to read fluently and their ability to use oral expression.** Less than 5% of children also have as large a difference between their ability to read fluently and their ability to comprehend oral information.

Basic Reading

This score assesses simple word reading and pseudoword decoding. George scored 94 (34th percentile) on this composite. Her ability to read single words and decode previously unseen words fall within the Low Average to Average range. It should be noted that George has been undertaking Speech and Language Therapy Tasks to assist her with these specific skills, over the last few years.

Reading Comprehension & Fluency

This score assesses Reading Comprehension and reading fluency, it essentially combines understanding or written language and speed at which information is read. As outlined above, George found reading quickly very challenging. But her ability to comprehend the information she is reading is within the average range. **Overall she scored 86 (18th percentile) which falls in the Low Average range. However as stated above, her Oral Reading Fluency falls within her Very Low Range.**

Written Expression

This score assesses the child's achievement level in relation to accurate sentence composition as well as paragraphs. It encompasses assessment of grammatical usage, as well as spellings. **George's overall score fell at 98 (45th percentile). However there was a large discrepancy within the subtests that make up this overall score. George's ability to build sentences and paragraphs correctly using the appropriate structure and content fell across the broadly average range. However, her spelling fell significantly lower, at the 9th percentile and at an age equivalent of 7 years 4 months.** There was also a significant difference between many of her individual subtest scores compared to her Spelling score indicating Spelling as a stark area of difficulty for George.

Mathematics

The mathematics composite, assesses maths problems solving skills, and basic numeracy. George scored 105 (63rd percentile) which falls in the average range.

Ability vs Achievement Discrepancy

One of the most helpful applications of the WISC-V and WIAT-III is that a direct comparison can be run, looking at the predicted achievement levels and actual achievement levels of a child.

The following table highlights where George's actual WIAT-III score differs from the predicted WIAT-III score based on her WISC-V assessment. **As can be seen, George's actual Word Reading, Oral Reading Fluency and Spelling scores all significantly fall below the predicted score**. This indicates that she is working at a much lower level than would be predicted based on her true ability. **The differences are so large that, for her spelling and reading fluency, less than 2% of children would have such a vast difference between achievement level and ability (potential) level**. The WIAT-III composite scores also back up this finding, with both the reading scores lower in George's actual presentation, compared to her predicted scores. In particular, the Reading Comprehension and Fluency scores indicates that she is performing significantly lower than her ability matched peers. This is likely due to the speed of her reading and observable effort required for her to remain focused and process the visual information.

	Predicted WIAT-III Score	Actual WIAT-III Score	Significant Difference Y/N	Base Rate	Standard Deviation Discrepancy > 1.0 SD
WIAT-III Subtest					
Listening Comprehension	110	114	N	N/A	N/A
Reading Comprehension	110	109	N	>25%	N
Maths Problem Solving	110	103	N	>25%	N
Sentence Composition	108	106	N	>25%	N
Word Reading	109	89	Y	<=5%	Y
Essay Composition	106	112	N	>25%	N
Pseudoword Decoding	107	100	N	>25%	N
Numeracy	108	106	N	>25%	N
Oral Expression	110	114	N	N/A	N/A
Oral Reading Fluency	107	71	Y	<=2%	Y
Spelling	108	80	Y	<=2%	Y
WIAT-III Composite					
Oral Language	112	116	N	N/A	N/A
Total Reading	110	89	Y	<=10%	Y
Basic Reading	108	94	Y	<=15%	N
Reading Comprehension & Fluency	110	86	Y	<=5%	Y
Written Expression	109	98	N	<=25%	N
Mathematics	110	105	N	>25%	N

Dyslexia Checklist

A Dyslexia Checklist provided by the British Dyslexia Association, was completed by George's parents. This indicated that they felt that she had difficulties in the following areas:

- *Phonological awareness*
- *Reading fluency*
- *Decoding*
- *Reading aloud*
- *Spelling*
- *Mispronunciation of words*
- *Poor short-term memory*
- *Speed of written work*
- *Visual discomfort when reading*
- *Low self-esteem*

These highlighted areas of difficulties corroborated the observations and assessment results.

WIAT-III Dyslexia Profile

The WIAT-III provides a Dyslexia Profile which allows a standard score to be obtained that gives an overall likelihood of a Dyslexia Profile.

George's Dyslexia Profile Score fell at 82 (12th Percentile) with a range of 77-87. This range falls within the Moderate Likelihood of Dyslexia. However, as stated above George has been practising Pseudoword Decoding weekly with her Speech and Language Therapist. This means there is a possibility that her achievement score on this subtest is slightly inflated. Thus, because the Dyslexia Profile is made up of three subtests only, it is possible that her overall scores has also been influenced by this inflation.

A prorated score based on two subtests (not including pseudoword decoding) gives a score of 74 4th percentile), which falls within the High probability of Dyslexia.

Connors 3™

In addition to the school-based observation of George completed by Louise Fox, George's teacher was asked to complete the Connors Rating Scales. George's parents also completed the form. These questionnaires are a rating scale used to identify if there are any concerns regarding attention, concentration and some aspects of emotional behaviour both at school and home.

The Teacher Connors indicated no areas of concern in relation to concentration and attention, with no score areas over or near to clinical thresholds. The Parent Connors had a slightly more elevated score profile, with three areas above the clinical threshold; hyperactivity/impulsivity, learning problems and some more defiant/emotional behaviours. Despite these areas being elevated, the overall likelihood of meeting criteria for ADHD was around the 50% mark which does not indicate an ADHD presentation.

It is not uncommon for there to be a discrepancy between behaviour observed at home and school. Many children are able to contain their arousal and emotional regulation when at school, but can find that at home, especially after a long day at school, fatigue and the effort from learning can lead to a much higher incidence of inattention, hyperactivity and emotional behaviours. It is particularly

common for children who have an undiagnosed neurodevelopmental difficulty to exhibit such behaviour.

SPEECH AND LANGUAGE ASSESSMENT

George was assessed at her Junior School. She was observed during break time, in class and formally assessed using the Clinical Evaluation of Language Fundamentals (CELF-5). The following is a summary of that assessment.

Core Language Score

George was administered four tests of the Clinical Evaluation of Language Fundamentals® - Fifth UK Edition (CELF®-5 UK) from which her Core Language Score was derived. The Core Language Score is a measure of general language ability and provides an easy and reliable way to quantify George's overall language performance. The following tests were administered: Word Classes, Formulated Sentences, Recalling Sentences and Semantic Relationships.

George received a Core Language Score of 114, with a percentile rank of 82. This places George in the average range of language functioning.

Index Scores

Receptive Language Index

The Receptive Language Index is a measure of George's performance on three tests designed to best probe receptive aspects of language including comprehension and listening. The following tests were administered: Word Classes, Following Directions, Semantic Relationships.

George received a Receptive Language Index score of 100 with a percentile rank of 50. This places George in the average range of language functioning.

Expressive Language Index

The Expressive Language Index is a measure of George's performance on three tests that probe expressive aspects of language including oral language expression. The following tests were administered: Formulated Sentences, Recalling Sentences, Sentence Assembly.

George received an Expressive Language Index score of 122 with a percentile rank of 93. This places George in the above average range of language functioning.

Language Content Index

The Language Content Index is a measure of George's performance on three tests designed to probe vocabulary and word knowledge. The following tests were administered: Word Classes, Understanding Spoken Paragraphs, Word Definitions.

George received a Language Content Index score of 114 with a percentile rank of 82. This places George in the average range of language functioning.

Language Memory Index

The Language Memory Index is a measure of George's performance on three tests designed to probe memory dependent language tasks. The following tests were administered: Following Directions, Formulated Sentences, Recalling Sentences.

George received a Language Memory Index score of 120 with a percentile rank of 91. This places George in the above average range of language functioning.

Subtest Scores

Word Classes

The Word Classes test is used to evaluate the student's ability to understand relationships between words based on meaning features, function, or place or time of occurrence. The student chooses the two words (i.e. pictures or presented orally) that best represent the desired relationship. **George received a scaled score of 12 with a percentile rank 75 on the Word Classes test, which is in the expected range.** George listened to all of the test stimulus presented to her and considered her response before answering. She was presented with 4 words and had to identify which two of the four, best went together. She understood that some words had multiple meanings and would ask for clarification, for example C/sea and when the therapist was not able to clarify she used the context to work out the most likely meaning.

Following Directions

The Following Directions test is used to evaluate the student's ability to: (a) interpret spoken directions of increasing length and complexity; (b) follow the order of presented objects with varying characteristics such as colour, size, or location; and (c) identify several pictured objects that were mentioned. The student identifies the objects in response to oral directions. **George received a scaled score of 10 with a percentile rank of 50 on the Following Directions test which is in the average range.** She listened carefully to all instructions and waited until directed to answer. She also monitored her responses and on one occasion self-corrected and on another, realised as she turned over the page that she had answered incorrectly. There was an expected decrease in her ability to follow instructions as the sentences became longer and included more commands and greater linguistic complexity.

Formulated Sentences

The Formulated Sentences test is used to evaluate the student's ability to formulate simple, compound, and complex sentences when given grammatical (semantic and syntactic) constraints. The student is asked to formulate a sentence, using target word(s) while using an illustration as a reference. **George received a scaled score of 15 with a percentile rank of 95 on the Formulated Sentences test. This is above average.** She interpreted all of the pictures correctly, understanding implied meaning and produced well-structured complex sentences.

Recalling Sentences

The Recalling Sentences test is used to evaluate the student's ability to recall and reproduce sentences of varying length and syntactic complexity. The student imitates sentences presented by the examiner. **George received a scaled score of 15 with a percentile rank of 95 on the Recalling Sentences test. She had the most difficulty repeating sentences containing subordinate clauses, that is, a clause that is embedded within a complex sentence that cannot stand alone. This extra detail often made it more difficult for George to remember the sentence with accuracy. However, she remembered the main point of the sentence and her overall score fell within the above average range.**

Understanding Spoken Paragraphs

The Understanding Spoken Paragraphs test is used 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 student answers questions about a paragraph presented orally. The questions probe the student's understanding of the paragraph's main idea, memory for facts and details, recall of event sequences, and ability to make inferences and predictions. **George received a scaled score of 11 with a percentile rank of 63 on the Understanding Spoken Paragraphs test, placing her in the average range**. She listened well to the spoken paragraph and answered both concrete and inferential questions correctly.

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Word Definitions

The Word Definitions test is used to evaluate the student's ability to define words by describing their meaning features and referring to their class relationships and shared meanings. The student is orally presented a word, followed by an introductory sentence that includes the word. The student is then asked to define the word. **George received a scaled score of 14 with a percentile rank of 91 on the Word Definitions test, placing her in the above average category.** Sometimes her definitions did not contain as much detail as necessary but overall, she has a good vocabulary and semantic understanding.

Sentence Assembly

The Sentence Assembly test is used to evaluate the student's ability to assemble syntactic structures. The student produces two grammatically correct sentences from visually and auditorily presented words or phrases. **George received a scaled score of 11 with a percentile rank of 63 on the Sentence Assembly test placing her in the average range.** Interestingly, this test, although she scored in the average range, presented some challenges for George. The words are read out but also presented in the written form. Despite this, George repeatedly asked the therapist to repeat the words that had been read out, and also on a number of occasions, she would construct a sentence that made grammatical sense but that included determiners (e.g., a, the) that were not included in the written words presented to her. She was relying much more on the auditory presentation of the words that she needed to construct a sentence with, rather than those presented in the written form and made mistakes as a result. Her ability to manipulate words to produce grammatically correct sentences is good, however her ability to do that with the written word is more problematic.

Semantic Relationships

The Semantic Relationships test is used to evaluate the student's ability to interpret sentences that: (a) make comparisons; (b) identify locations or directions; (c) specify time relationships; (d) include serial order; or (e) are expressed in passive voice. After listening to a sentence, the student selects the two correct choices from four visually presented options. This test has a mean of 10 and a standard deviation of 3. **George received a scaled score of 8 with a percentile rank of 25 on the Semantic Relationships test placing her in the low average range.** This was the test that George found the most difficult. She had particular difficulty with interpreting sentences that identified location, direction or sequential order. She also took some of the questions literally. For example, when asked if G came after C in the alphabet, George tried to clarify whether it meant directly after, and when the therapist couldn't help her, she chose to pass, stating that she did not understand the question.

Speech and Language Conclusion

Overall, George's oral language skills are all within or above the expected range for a child of her age. She does however appear to have more difficulty with the written word and some literal semantic understanding. Her scores on the CELF-5 place in the average-above average range. **Her expressive language composite score is significantly better than her receptive language score.** However, this is because her expressive language score is above average, rather than her receptive language being poor. There was also a 7 point difference between her highest sub-test score and her lowest, which is also unusual. Her social skills, as observed in the playground, in the classroom and in conversation appear to be typically developing. The only difficulties that were indicated were with higher level semantic understanding, but this was in comparison to her other language skills rather than with the general population. There also appears from this assessment to be evidence of difficulty reading the written word.

NEURODEVELOPMENTAL CONCLUSIONS

George is a 10 year old young person who was friendly and charming in the service.

George's overall WISC-V assessment indicates that **the majority of her cognitive abilities lie within the Average – High Average range. George's FSIQ should be interpreted with caution due to the large variance in her subtests scores reported below. Viewing George's overall ability as "Average" minimises the strengths and difficulties she experienced across the subtests**.

George's Verbal Comprehension, Fluid Reasoning, Visual-Spatial and Working Memory Indexes all fall within the Average-High Average Range. However, **her Processing Speed was a relative weakness with less than 5% of the population showing such a large discrepancy between their overall ability score and PSI. Overall, this "spikey profile" is unusual and suggests difficulties with visual processing speed.** This means that George may find it more difficult than her peers to quickly, and accurately, interpret and remember visual or written information.

Results from the WIAT-III indicated that **George is achieving within the expected range for the majority of her learning. However, three aspects of learning stood out as significantly lower than would be expected based on her cognitive ability. George's Spellings, Oral Reading Fluency and Word Reading, were all found to be significantly below where she would be expected to be**. This indicates that her reading of single words, as well as her reading of sentences and paragraphs is significantly impeded by the speed at which she reads. When under no time pressure, George is able to read accurately, however when asked to increase her pace, her accuracy deteriorates and the effort required by her significantly increases.

Results from the speech and language assessment indicate that George has many strengths in her language skills. The overall assessment indicates that **she does not have a language impairment, however her receptive language skills were significantly lower her expressive language skills**.

The Dyslexia Profile from the WIAT-III, combined with the Dyslexia Checklist and reports from teachers and parents, strongly indicative that George meets criteria for a diagnosis of Dyslexia.

Dyslexia should never be diagnosed using one source of information only, however the combination of the Dyslexia Profile; the wider WIAT-III Assessment results, particularly the discrepancies between George's ability and achievement in relation to her Reading Fluency and Spelling; her WISC-V scores which indicate a relative difficulty in Processing Speed; and reports from her parents and teacher are highly indicative of a Dyslexia diagnosis.

Moreover, the Speech and Language Therapy Assessment indicates that George does not have an underlying language disorder which could have accounted for some of her challenges with aspects of verbal ability.

George's neurodevelopmental scores from the assessment should be considered as capturing her optimal level of ability and these indicate that she has some significant personal strengths. However, these scores were obtained in a sterile, distraction free environment where George had little time pressure, was motivated to do well and had the full attention of the assessing practitioner.

The following recommendations are suggested to help build George's strengths and manage her difficulties.

RECOMMENDATIONS:

- **George's neurodevelopmental profile indicates that <u>she meets criteria for a diagnosis of Dyslexia</u>**. She will require significant modifications to her educational curriculum in order to achieve her potential, and will need extra time and adult support to complete educational and vocational tasks that involve any of the following:

  1. Tasks involving reading text at speed or aloud
  2. Tasks involving reading fluently
  3. Tasks involving spellings – especially within written work, not simply spelling tests.
  4. Tasks involving processing written information quickly and accurately
  5. Tasks involving memory of written language

- **George's <u>verbal-visual memory</u> could be supported using the following strategies**:

  1. Use the "three R's": repetition, review and rehearsal.
  2. Ensure that previously learned information can be recalled over time before presenting new information.
  3. Use mental imagery or other mnemonics.
  4. Provide pictorial cues and prompts
  5. Provide information in small chunks.
  6. Present information in different formats to facilitate deeper encoding.

- **George's <u>processing speed was found to be within the Below Average Range</u>, and she may need more time to process complex information. She may benefit from strategies including**:

  1. Allowing extra time for reading and written tasks
  2. Allowing, and prompting, frequent breaks between effortful tasks
  3. An awareness that George may fatigue easily when working on tasks that require processing information quickly

- As with any child such as George who has a complex neurodevelopmental profile, any intervention work be it educational, psychological, social or vocational will need to be tailored to meet George's personal needs. Professionals working with George will need to consider her strengths and difficulties as outlined in this assessment.

- Tasks that George enjoys could be used to help engage her in areas of learning and development that she avoids and finds more challenging, such as non-verbal puzzles. Interspersing tasks she enjoys with tasks she finds challenging can be helpful in order to motivate her and will also aid her concentration.

- Moreover, it is imperative that people working with George consider their expectations around her behaviour and ability to engage with activities. Setting objectives that are too demanding for George will negatively impact her self-esteem and confidence. In contrast working towards achievable goals and results will help motivate and engage George, and help boost her sense of self-worth and self-esteem.

- **DYSLEXIA SPECIFIC RECOMMENDATIONS**

UP is not a dyslexic specialist service – therefore we cannot provide comprehensive recommendations based on individual presentations. However, we can recommend some broad interventions that may be helpful for George at school and home.

- o **Extra time for any task that involves reading**. Especially in pressured situations such as exams.

- o **Using coloured overlays for reading**. It would be beneficial for George to try using coloured overlays when reading. These can be bought in packs with different colours to try, as different colours suit different people. If this is beneficial, it may be useful to consider an assessment for Irlen Syndrome- this is a specific condition associated with visual processing and can be assessed by specialist opticians.

- o There are many different school-based interventions offered in UK schools with each school utilising different packages of interventions. **Thus our recommendation is that parents confer with school to find out what they offer, and collaboratively discuss which intervention would be suitable**. The following document provides a very helpful overview of the majority of interventions available. https://interventionsforliteracy.org.uk/wp-content/uploads/2021/08/What-Works-for-Literacy-Difficulties-6th-Edition-2020.pdf.

- o **Access to resources**. There are many different organisations the support people with dyslexia. Below are a selection that provide resources and advice.
    - http://www.thedyslexia-spldtrust.org.uk/
    - https://www.bdadyslexia.org.uk/
    - https://www.helenarkell.org.uk/

- o Consideration of specific Dyslexia Tutoring, especially as George enters Secondary/High School where expectations around independent working increase.

- o **Specific Y7 transitional work**. In terms of transition to secondary school, it will be imperative that George's current school (usually via the SENCO) liaise with the chosen secondary school in the lead up to the transition (Summer 2023) to ensure the new school understands her specific needs and has provision in place to offer support as required. We recommend starting this process early in order to a) find the right school placement, and b) allow as smooth a transition as possible.

- o **George may benefit from learning to touch type and use laptops in class to aide her spellings**. Starting this early whilst she is in primary school will likely assist her to feel confident using this type of adaptation at secondary school.

- o In time, George may benefit from having assistive technology such as an electronic Pen-Reader (C-Pen), software such as Dragon voice to text, digital notetaker, text to speech software.

Dr Alexandra Livesey

Clinical Psychologist, HCPC No. PYL25068

Louise Fox

Speech and Language Therapist

APPENDIX – DETAILS OF ASSESSMENT SCORES

The numeric data are presented only for use by appropriate trained psychologists. They should not be interpreted without consideration of all the information obtained in the report.

Note on numbers used in this report

In order to compare a child's performance on the standardised measures used in this assessment to the performance of other children of her or her age, the scores on the tests have been converted into Scaled Scores, Composite/Index Scores and Standard Scores. In some cases an age equivalent is provided.

Scaled Scores have a range of 1-19 and the average score in 10. About 50% of children score between 8-12, and about 68% score between 7 and 13.
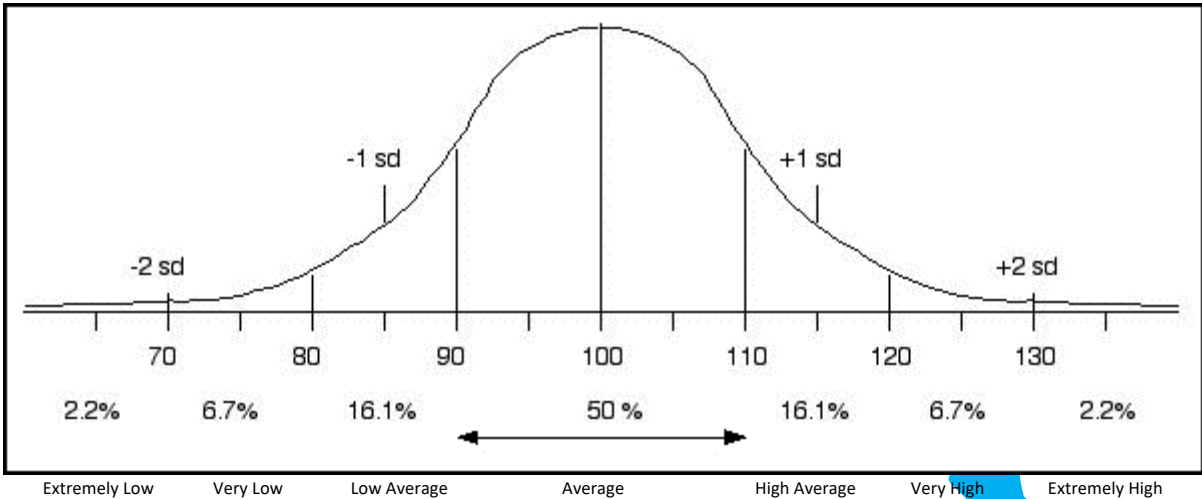
IQ, Composite and Index scores are Standard Scores which have an average score of 100, and most children (about 68%) score between 85 and 115: this is referred to as the Average Range. Verbal labels ranging from Extremely Low, Very Low, Low Average, Average, High Average, Very High and Extremely High have been used in this report to describe Standard Scores. Less than three out of one hundred children score in the Extremely Low and Extremely High Range. Please see the figure below for pictorial representation.

The report also contains "percentile scores". Percentile scores are quoted to provide more information about how a child compared to others of her own age. For examples the standard score of 84 would at the 14th percentile, meaning that 14 out of 100 people would get this score or lower.

Also quoted in the report are "% confidence intervals". Since no test is perfect there is always a possibility of mistakes in measuring ability. The confidence interval tells us how sure we can be that the test is a good measure of a child's true ability. For example, a standard score of 84 has a 95% confidence interval of 76-92, meaning that if we tested the same child 100 times, 95 times out of 100 their score would be between 76 and 92. Where there is a large degree of variation between subtests that make up a Composite/Index score it is sometimes only possible to provide the confidence interval score as the absolute score would significantly risk minimizing strengths and weaknesses.

Base Rates are also quoted in relation to discrepancy analyses. These indicate the proportion of people who have as large or larger differences between scores, thus how unusual it is. If the Base Rate is equal to or less than 5%, this indicates a very unusual pattern of scores.

| -2 sd | | -1 sd | | | +1 sd | | +2 sd |
| 70 | 80 | 90 | 100 | 110 | 120 | 130 |

| 2.2% | 6.7% | 16.1% | 50 % | 16.1% | 6.7% | 2.2% |

| Extremely Low | Very Low | Low Average | Average | High Average | Very High | Extremely High |

Please note that information highlighted in yellow below is indicative of particularly significant information.

Wechsler Intelligence Scale for Children: 5th Edition (WISC-V)

The WISC-V is used to assess the general thinking and reasoning skills of children aged 6 to 16 years. The test has five main scores:

Verbal Comprehension score: Subtests are designed to assess the child's ability for verbal expression and grasp of verbal concepts and abstract reasoning.

Visual Spatial score: Subtests consist of tasks which assess visual and spatial organisation.

Fluid Reasoning score: Subtests consist of tasks which assess the ability to detect the underlying conceptual relationship among visual objects and use reasoning to identify and apply rules.

Working Memory score: Subtests require the child to hold auditory information in their mind whilst working out a problem.

Processing Speed score: Subtests are timed paper and pencil tasks to assess the speed of information processing.

Full Scale IQ/ General Ability Index score: The Full-Scale IQ score is usually derived from the combination of specific subtests from the five indexes outlined above.

Table 1: WISC-V Subtest Scores

Domain	Subtest Name	Scaled Score	Percentile Rank
Verbal Comprehension	Similarities	11	63
	Vocabulary	15	95
Visual Spatial	Block Design	8	25
	Visual Puzzles	11	63
Fluid Reasoning	Matrix Reasoning	12	75
	Figure Weights	11	63
Working Memory	Digit Span	10	50
	Picture Span	15	95
Processing Speed	Coding	6	9
	Symbol Search	9	37

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Table 2: WISC-V Index Scores

WISC Index Scores		Composite Score	Percentile Rank	95% Confidence Interval	Qualitative Description
Verbal Comprehension	VCI	116	86	107-123	High Average
Visual Spatial	VSI	97	42	89-106	Average
Fluid Reasoning	FRI	109	73	102-115	Average
Working Memory*	WMI	115	84	105-122	High Average
Processing Speed	PSI	86	18	79-97	Low Average
Full Scale IQ**	FSIQ	-	-	97-109	Average

*This score should be interpreted with caution due to the significant variability in subtest scores that make up this overall score. Use of this in isolation may minimize strengths and weaknesses in an individual's cognitive profile.

**This score is not reported due to the very large difference between subtest scores that make up the overall score. Although this score is statistically reliable, it significantly increases the risk of relative strengths and weaknesses being minimized.

Table 3: Index Level Strengths and Weaknesses

Index	Score	Comparison Score	Difference	Critical Value	Strength or Weakness	Base Rate
VCI	116	104.6	11.4	9.96	S	<=15%
PSI	86	104.6	-18.6	11.62	W	<=5%

Table 4: Index Level Pairwise Difference Comparisons

Index Comparison	Score 1	Score 2	Difference	Critical Value	Significant Difference	Base Rate
VCI – VSI	116	97	19	15.95	Y	10.6%
VCI – PSI	116	86	30	17.31	Y	4.5%
VSI – WMI	97	115	-18	17.30	Y	13.0%
FRI – PSI	109	86	23	16.88	Y	10.3%
WMI – PSI	115	86	29	18.56	Y	3.9%

The Weschler Individual Attainment Test-Third Edition (WIAT-III)

The WIAT-III is used to assess the achievement levels of children aged 4 to 18 years. The test has seven main scores. The WIAT-III can be used alongside the WISC-V to ascertain differences between ability and predicted achievement levels. Such differences can be indicative of a specific learning difficulty.

Oral Language: Subtests include, Listening Comprehension and Oral Expression

Total Reading: Subtests include, Reading Comprehension, Word Reading, Pseudoword Decoding, Oral Reading Fluency

Basic Reading: Subtests include, Word Reading and Pseudoword Decoding

Reading Comprehension & Fluency: Subtests Include, Reading Comprehension and Oral Reading Fluency

Written Expression: Subtests include, Sentence Composition, Essay Composition and Spelling

Mathematics: Subtests include, Maths Problem Solving and Numeracy

Total Achievement: This is an overall score made up of 10 of the subtests.

Table 5: WIAT-III Composite Score Summary

Composite	Standard Score	90% Confidence Interval	Percentile Rank	Qualitative Description
Oral Language	116	109-123	86	High Average
Total Reading	89	84-94	23	Low Average
Basic Reading	94	90-98	34	Average
Reading Comprehension & Fluency	86	77-95	18	Low Average
Written Expression	98	92-104	45	Average
Mathematics	105	100-110	63	Average
Total Achievement*	103	99-107	58	Average

*This score should be interpreted with caution due to the significant variability in subtest scores that make up this overall score. Use of this in isolation may minimize strengths and weaknesses in an individual's profile.

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Table 6: WIAT-III Subtest Score Summary

Subtest	Standard Score	90% Confidence Interval	Percentile Rank	Age Equiv.
Listening Comprehension	114	104-124	82	12:6
Reading Comprehension	109	98-120	73	15:0
Maths Problem Solving	103	96-110	58	10:4
Sentence Composition	106	96-116	66	14:0
Word Reading	89	85-93	23	8:4
Essay Composition	112	104-120	79	12:6
Pseudoword Decoding	100	96-104	50	10:0
Numeracy	106	99-113	66	10:8
Oral Expression	114	104-124	82	13:1
Oral Reading Fluency	71	64-78	3	6:8
Spelling	80	75-85	9	7:4

Table 7: Subtest Component Score Summary

Subtest Component	Standard Score	Percentile Rank	Qualitative Description
Listening Comprehension			
Receptive Vocabulary	112	79	High Average
Oral Discourse Comprehension	110	75	High Average
Sentence Composition			
Sentence Combining	126	96	Very High
Sentence Building	86	18	Low Average
Essay Composition			
Word Count	107	68	Average
Theme Development and Text Organisation	115	84	High Average
Oral Expression			
Expressive Vocabulary	118	88	High Average
Oral Word Fluency	98	45	Average
Sentence Repetition	119	90	High Average
Oral Reading Fluency			
Oral Reading Accuracy	90	25	Average
Oral Reading Speed	67	1	Extremely Low

Table 8: Differences Between Composite Standard Scores

Comparison	Difference	Critical Value (Significance Level .01)	Significant Difference Y/N	Base Rate
Oral Language vs. Total Reading	27	12.71	Y	<=5%
Oral Language vs. Basic Reading	22	12.39	Y	<=15%
Oral Language vs. Reading Comprehension and Fluency	30	15.21	Y	<=5%
Oral Language vs. Written Expression	18	14.31	Y	>15%
Basic Reading vs. Mathematics	-11	9.40	Y	>15%

Note. A negative difference indicates that the second composite has a higher score than the first composite listed in the comparison.

Table 9: Differences Between Subtest Standard Scores

Comparison	Difference	Critical Value (Significance Level .01)	Significant Difference Y/N	Base Rate
Oral Reading Fluency vs. Oral Expression	43	16.36	Y	<=1%
Oral Reading Fluency vs. Listening Comprehension	43	18.41	Y	<=5%
Listening Comprehension vs. Word Reading	25	16.23	Y	<=15%
Listening Comprehension vs. Spelling	34	17.84	Y	<=5%
Reading Comprehension vs. Word Reading	20	15.52	Y	<=15%
Reading Comprehension vs. Spelling	29	17.20	Y	<=5%
Maths Problem Solving vs. Word Reading	14	11.98	Y	>15%
Maths Problem Solving vs. Spelling	23	14.09	Y	<=15%
Sentence Composition vs. Word Reading	17	13.23	Y	>15%
Sentence Composition vs. Spelling	26	15.17	Y	<=5%
Word Reading vs. Essay Composition	-23	12.32	Y	<=15%
Word Reading vs. Pseudoword Decoding	-11	7.65	Y	<=15%
Word Reading vs. Numeracy	-17	11.38	Y	>15%
Word Reading vs. Oral Expression	-25	13.86	Y	<=10%
Essay Composition vs. Spelling	32	14.38	Y	<=5%
Pseudoword Decoding vs. Spelling	20	10.65	Y	<=5%
Numeracy vs. Spelling	26	13.59	Y	<=10%
Oral Expression vs. Spelling	34	15.72	Y	<=5%

Note. A negative difference indicates that the second subtest has a higher score than the first subtest listed in the comparison.

Table 10: Predicted Difference Method

	Predicted WIAT-III Score	Actual WIAT-III Score	Significant Difference Y/N	Base Rate	Standard Deviation Discrepancy > 1.0 SD
WIAT-III Subtest					
Listening Comprehension	110	114	N	N/A	N/A
Reading Comprehension	110	109	N	>25%	N
Maths Problem Solving	110	103	N	>25%	N
Sentence Composition	108	106	N	>25%	N
Word Reading	109	89	Y	<=5%	Y
Essay Composition	106	112	N	>25%	N
Pseudoword Decoding	107	100	N	>25%	N
Numeracy	108	106	N	>25%	N
Oral Expression	110	114	N	N/A	N/A
Oral Reading Fluency	107	71	Y	<=2%	Y
Spelling	108	80	Y	<=2%	Y
WIAT-III Composite					
Oral Language	112	116	N	N/A	N/A
Total Reading	110	89	Y	<=10%	Y
Basic Reading	108	94	Y	<=15%	N
Reading Comprehension & Fluency	110	86	Y	<=5%	Y
Written Expression	109	98	N	<=25%	N
Mathematics	110	105	N	>25%	N

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Table 11: Discrepancy Comparisons

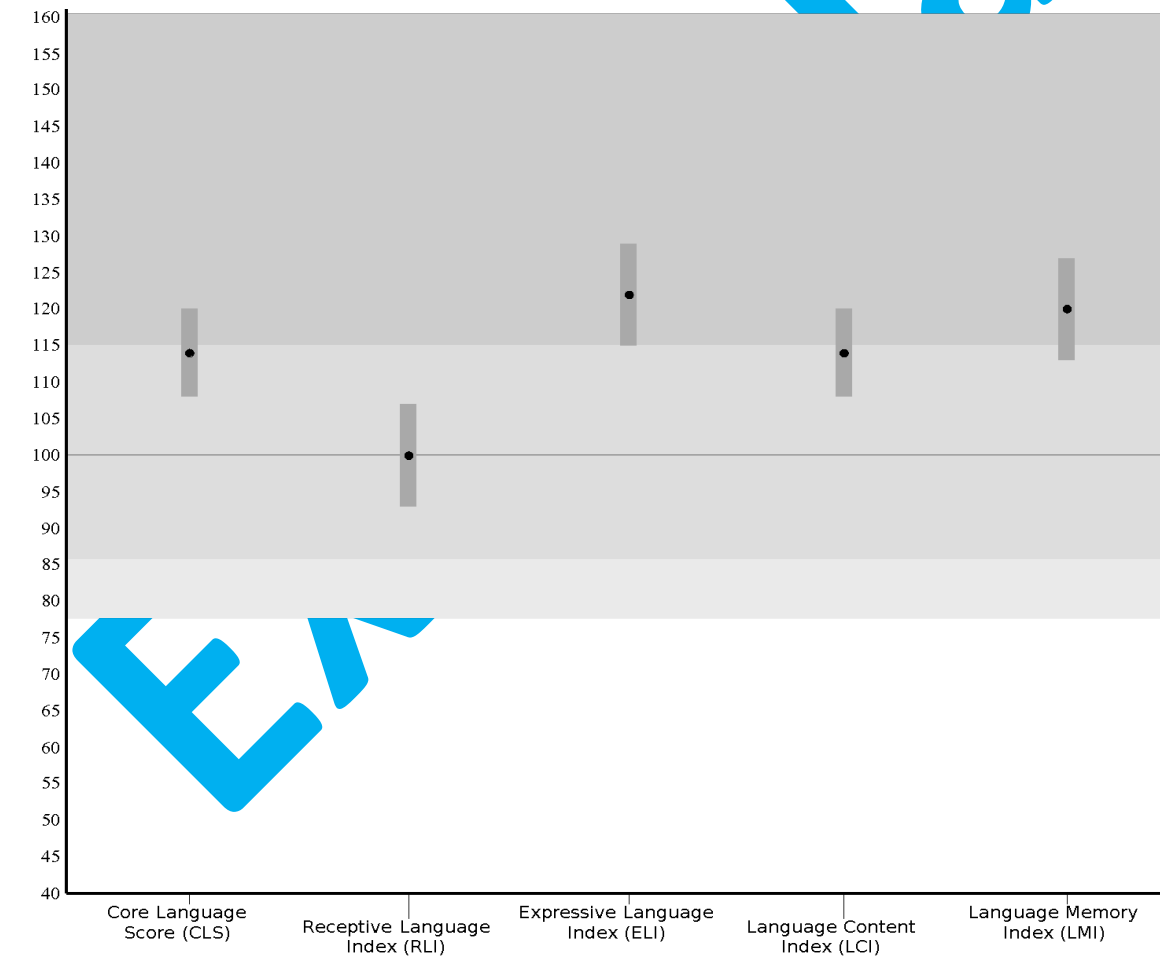|	Score 1	Score 2	Difference	Critical Value*	Significant Difference (Y or N)	Prevalence	Level of Significance
Receptive-Expressive Language Index	100	122	-22	9.00	Y	2.5	.05
Language Content-Memory Index	114	120	-6	9.00	N	30.4	.05

* Statistical significance (critical values) is based on age level.

Figure 1: CELF-5 Core language and Index scores

Table 12: Core language and Index Scores

Core Language Score and Index Scores	Standard Score	Confidence Interval 95% Level	Percentile	Qualitative Description
Core Language Score	114	108 to 120	82	Average
Receptive Language Index	100	93 to 107	50	Average
Expressive Language Index	122	115 to 129	93	Above Average
Language Content Index	114	108 to 120	82	Average
Language Memory Index	120	113 to 127	91	Above Average

Table 13: CELF-5 Subtest Scores

Tests	Scaled Score	Percentile Rank	Qualitative Description
Word Classes	12	75	Average
Following Directions	10	50	Average
Formulated Sentences	15	95	Above Average
Recalling Sentences	15	95	Above Average
Understanding Spoken Paragraphs	11	63	Average
Word Definitions	14	91	Above Average
Sentence Assembly	11	63	Average
Semantic Relationships	8	25	Average
Pragmatics Profile	---	---	