WRAML™ 3

This webinar is being presented live on February 24, 2022. If you would like to view the recording later, click on the URL included with your reminder email.

Interpreting WRAML3 Performance

Presenters: Wayne Adams, PhD, ABPP and David Sheslow, PhD

Overview and Disclaimer

- The two Interpretive Report pdfs are linked in the chat box for the case studies being discussed
- If you would like to ask a question, please submit it using the Q&A box and not the chat box
- We will try to get to as many questions today as we can, but may need to follow-up via email

Structure of the presentation
- Overview of Interpretive Report layout
- 1st case will be discussed by the authors with a short pause to answer any questions
- 2nd case will be discussed by the authors
- Any questions about the 2nd case or any non-case specific questions will be answered as time allows

Overview and Disclaimer

Disclaimer:
Wayne Adams and David Sheslow are co-authors of the WRAML2 and WRAML3 and as such they receive royalties on the sales of test materials and scorings from Pearson.

Performance Validity Indicator

WRAML3's results on the Performance Validity Indicator were found to be acceptable. That is, WRAML3's scores on the Attention/Concentration Index and the sum of the first five items on the recognition subtests indicate that WRAML3 put forth acceptable effort during testing.

It is important to note the prevalence of low subtest and index scores in the normative sample when considering performance validity. For the WRAML3 28% of individuals in the normative sample achieved at least one subtest score of <= 4 and 13% of individuals achieved at least one index score of <= 70. The prevalence of subtest and index scores in the very low range suggests that interpretive caution should be taken if just one score indicates low effort or invalid performance. WRAML3 achieved 1 subtest score that is <= 4, and 0 index scores that are <= 70.

Validity Indicator
Acceptable

Index Score Summary

Index	Sum of Scaled Scores	Index Score	Confidence Interval (90%)	Percentile Rank
Visual Immediate Memory	25	115	105 - 121	84
Verbal Immediate Memory	16	88	83 - 95	21
Attention/Concentration	17	91	84 - 101	27
General Immediate Memory	58	97	91 - 103	42
Screener Memory	41	101	95 - 107	53
Visual Delayed	27	121	109 - 126	92
Verbal Delayed	11	73	69 - 83	4
General Delayed	38	97	91 - 104	42
Visual Recognition	25	114	104 - 120	82
Verbal Recognition	24	112	101 - 118	79
General Recognition	49	115	106 - 121	84
Working Memory	21	102	94 - 109	55

Subtest Score Summary

Immediate Recall (Core)					
		Scaled Score			
Subtest	Raw Score	Visual Immediate Memory	Verbal Immediate Memory	Attention/ Concentration	Screener Memory
Picture Memory	25	14			14
Design Learning	141	11			11
Story Memory	17		7		7
Verbal Learning	27		9		9
Finger Windows	13			11	
Number Letter	8			6	

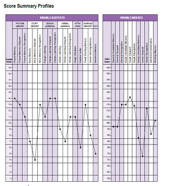
Delayed Recall (Supplementary)			
		Scaled Score	
Subtest	Raw Score	Visual Delayed	Verbal Delayed
Picture Memory Delayed	28	13	
Design Learning Delayed	61	14	
Story Memory Delayed	9		4
Verbal Learning Delayed	5		7

Recognition (Supplementary)			
		Scaled Score	
Subtest	Raw Score	Visual Recognition	Verbal Recognition
Picture Memory Recognition	31	11	
Design Learning Recognition	28	14	
Story Memory Recognition	28		13
Verbal Learning Recognition	17		11

Working Memory (Supplementary)		
Subtest	Raw Score	Scaled Score
Visual Working Memory	46	13
Verbal Working Memory	22	8

Additional Subtest (Supplementary)		
Subtest	Raw Score	Scaled Score
Sentence Memory	13	5

Score Summary Profiles



Index Discrepancy Analyses

Index Comparisons	Standard Score 1	Standard Score 2	Difference	Critical Value (.10)	Significant	Base Rate
Visual Immediate Memory vs. Verbal Immediate Memory	115	88	27	12.29	Y	<=5%
Verbal Immediate Memory vs. Attention/Concentration	88	91	-3	13.24	N	-
Visual Immediate Memory vs. Attention/Concentration	115	91	24	13.91	Y	<=10%
Visual Immediate Memory vs. Visual Delayed**	115	121	-6	13.69	N	-
Verbal Immediate Memory vs. Verbal Delayed**	88	73	15	13.24	Y	<=5%
Visual Delayed vs. Verbal Delayed	121	73	48	14.54	Y	<=2%
Visual Recognition vs. Verbal Recognition	114	112	2	15.36	N	-
Attention/Concentration vs. Working Memory	91	102	-11	13.69	N	-
General Immediate Memory vs. General Delayed	97	97	0	11.28	N	-
General Delayed vs. General Recognition	97	115	-18	12.54	Y	<=5%
Screener Memory vs. Working Memory	101	102	-1	11.54	N	-
Screener Memory vs. Attention/Concentration	101	91	10	12.78	N	-
Screener Memory vs. General Delayed	101	97	4	11.28	N	-

**Information about these analyses can be found in the WRAML3 Technical Report, July 2021.

Subtest Discrepancy Analyses

Subtest Comparisons	Scaled Score 1	Scaled Score 2	Difference	Critical Value (.10)	Significant	Base Rate
Picture Memory vs. Design Learning	14	11	3	3.11	N	-
Story Memory vs. Verbal Learning	7	9	-2	2.69	N	-
Finger Windows vs. Number Letter	11	6	5	3.37	Y	<=10%
Picture Memory Delayed vs. Design Learning Delayed	13	14	-1	3.40	N	-
Story Memory Delayed vs. Verbal Learning Delayed	4	7	-3	3.29	N	-
Picture Memory Recognition vs. Design Learning Recognition	11	14	-3	3.37	N	-
Story Memory Recognition vs. Verbal Learning Recognition	13	11	2	3.82	N	-
Visual Working Memory vs. Verbal Working Memory	13	8	5	2.99	Y	<=5%

- General Immediate Memory Index
  - Visual Immediate Memory Index
    - Picture Memory
      - Process Scores (Commission Errors)
    - Design Learning
      - Process Scores (Individual Trials/Learning Slope/Quadrant Analysis

Picture Memory

The Picture Memory subtest measures immediate recall of contextual visual information. WRAML3 earned a scaled score of 14 on this subtest, which is in the very high score range. It is important to examine the Commission Errors score along with the scaled score for this subtest.

Given this level of performance, WRAML3 is expected to remember meaningful visual information noticeably better than same-age peers, and this may be evident for everyday tasks such as immediate recall of the content of pictures or diagrams on a prior page or a computer screen. Comparing Picture Memory performance with Design Learning and Finger Windows performance may yield hypotheses as to WRAML3's recall of meaningful versus nonmeaningful visual information.

Process Scores - Picture Memory

	Raw Score	Mean (*SD*)	Base Rate
Commission Errors	9	3.4 (2.5)	<=5%

Commission Errors

The Commission Errors score provides a measure of disinhibited responding or random responding. Because the Picture Memory subtest does not penalize examinees for errors, overresponding can inflate the Picture Memory score.

WRAML3 made a total of 9 commission error(s), which is very high compared to same-age peers and warrants caution when interpreting the Picture Memory score, because it is likely inflated due to excessive guessing or impulsive responding.

Process Scores - Story Memory

	Raw Score	Scaled Score
Story A	12	9
Story B	5	5
Verbatim	5	4
Gist	12	8

Process Scores - Individual Story Comparison

	Scaled Score 1	Scaled Score 2	Difference	Critical Value (.10)	Significant	Base Rate
Story A vs. Story B	9	5	4	3.31	Y	<=10%

Story A vs. Story B Comparison

Scaled scores are provided for each of the two stories administered for the subtest, which allows examination of consistency of narrative recall.

The performance between the stories is inconsistent so interpret the Story Memory subtest cautiously as an estimate of WRAML3's immediate verbal contextual recall. Also consider inconsistent attention, verbal memory encoding, or effort as alternative influences when interpreting this relatively infrequent occurrence. This is particularly relevant when there are large sections of a story omitted.

- Structure repeated for Verbal Memory Index and its subtests (Story Memory and Verbal Learning)
  - Finishes off immediate subtests – Finger Windows/Number Letter/Sentence Memory

- General Delayed Memory Index
  - Visual Delayed Memory Index
    - Picture Memory Delayed and Immediate vs Delayed Recall comparisons
    - Design Learning Delayed and Immediate vs Delayed comparisons
  - Verbal Delayed Memory Index (with subtests and comparisons to Delayed Recall subtests)

- General Recognition Index which repeats Delayed Recall structure
- Working Memory Index
  - Visual and Verbal Working Memory and Discrepancy Analysis

Immediate/Delayed Recall Comparisons

Subtest Comparisons	Scaled Score 1	Scaled Score 2	Difference	Critical Value (.10)	Significant	Base Rate
Picture Memory vs. Picture Memory Delayed	14	13	1	3.69	N	-
Design Learning vs. Design Learning Delayed	11	14	-3	2.77	Y	<=5%
Story Memory vs. Story Memory Delayed	7	4	3	2.74	Y	<=5%
Verbal Learning vs. Verbal Learning Delayed	9	7	2	3.26	N	-

Note. Scaled scores for Verbal Learning Delayed and Design Learning Delayed may be restricted due to the skewed distributions of the raw scores for these subtests. Interpret significant discrepancies with Verbal Learning Delayed and Design Learning Delayed scores in the high average and above ranges with caution.

General Delayed Index

The General Delayed Index is an estimate of longer-term storage of the information WRAML3 learned on the four immediate memory subtests (i.e., Picture Memory, Story Memory, Design Learning, and Verbal Learning) and is derived from the scores earned on the Visual Delayed and Verbal Delayed Indexes.

WRAML3's performance on the indexes comprising the General Delayed Index was found to be inconsistent (indicated by a statistically significant difference and base rate of <=2%) so, consequently, the General Delayed Index should be interpreted with extreme caution as an estimate of overall longer-term recall. In general, the wider the discrepancy the more significant the difference between scores, clinical implications for these results are discussed in the Index Discrepancy Analyses section of this report. A more meaningful analysis may lie in examining the contributing index and subtest scores for forming hypotheses about WRAML3's relative strengths and weaknesses.

WRAML3 earned a standard score of 97 on this index, which is in the average score range. Examinees earning a General Delayed Index score within the average range typically demonstrate an ability to retain visual and verbal information over time comparable to same-age peers. This corresponds to an age-appropriate capacity to transfer information from short-term to long-term memory and retrieve it efficiently on demand.

Working Memory Index

The Working Memory Index provides an estimate of short-term recall in which executive functions are needed to use and modify the original information. The Working Memory Index is derived from the scaled scores earned on Verbal Working Memory and Visual Working Memory.

Performance between the Verbal Working Memory and Visual Working Memory was inconsistent (indicated by a statistically significant difference and a base rate of <=5%). Interpret the Working Memory Index as an overall estimate of working memory with extreme caution. Information at the contributing subtest level may be helpful in further characterizing WRAML3's working memory functioning.

WRAML3 earned a standard score of 102 on this index, which is in the average score range. WRAML3's overall performance on the Working Memory Index suggests abilities in retaining and mentally manipulating visual and verbal information to complete a task similar to same-age peers.

Visual Working Memory

The Visual Working Memory subtest provides an estimate of short-term visual recall in which executive functions are utilized and manipulate information. WRAML3 earned a scaled score of 13 on this subtest, which is in the high average score range.

Compared to same-age peers, WRAML3 demonstrates strengths in the ability to recall and manipulate visual information. This suggests good functioning with tasks requiring visual reasoning, including some areas of mathematics (e.g., geometry) and early reading skills.

Listing of Important Reported Findings

Index Comparisons	Standard Score 1	Standard Score 2	Difference	Base Rate
Visual Immediate Memory vs. Verbal Immediate Memory	115	88	27	<=5%
Visual Immediate Memory vs. Attention/Concentration	115	91	24	<=10%
Verbal Immediate Memory vs. Verbal Delayed**	88	73	15	<=5%
Visual Delayed vs. Verbal Delayed	121	73	48	<=2%
General Delayed vs. General Recognition	97	115	-18	<=5%
Subtest Comparisons	**Scaled Score 1**	**Scaled Score 2**	**Difference**	**Base Rate**
Finger Windows vs. Number Letter	11	6	5	<=10%
Visual Working Memory vs. Verbal Working Memory	13	8	5	<=5%
Immediate/Delayed Recall Comparisons	**Scaled Score 1**	**Scaled Score 2**	**Difference**	**Base Rate**
Design Learning vs. Design Learning Delayed	11	14	-3	<=5%
Story Memory vs. Story Memory Delayed	7	4	3	<=5%
Delayed Recall/Recognition Comparisons	**Scaled Score 1**	**Scaled Score 2**	**Difference**	**Base Rate**
Story Memory Delayed vs. Story Memory Recognition	4	13	-9	<=2%
Verbal Learning Delayed vs. Verbal Learning Recognition	7	11	-4	<=5%

Interpretations of Index Discrepancy Analyses

General Immediate Memory Index vs. General Delayed Index

WRAML3's performance on the General Immediate Memory Index and the General Delayed Index were comparable (indicated by a statistically nonsignificant difference and high base rate). This suggests that WRAML3's overall level of delayed recall is at a comparable level as overall immediate recall.

Screener Memory Index vs. Attention/Concentration Index

The difference between WRAML3's performance on the Screener Memory Index and Attention/Concentration Index was not found to be statistically or clinically significant. This finding suggests that, overall, WRAML3's level of immediate recall ability on sequential, rote visual and verbal tasks is commensurate to that on visual and verbal immediate memory tasks composed of more meaningful and complex material.

Screener Memory Index vs. Working Memory Index

WRAML3's performance on the Screener Memory Index and Working Memory Index is comparable (i.e., not statistically or clinically significant). This finding suggests that, overall, WRAML3's working memory skills are at a level commensurate with general immediate recall abilities.

Visual Immediate Memory Index vs. Verbal Immediate Memory Index

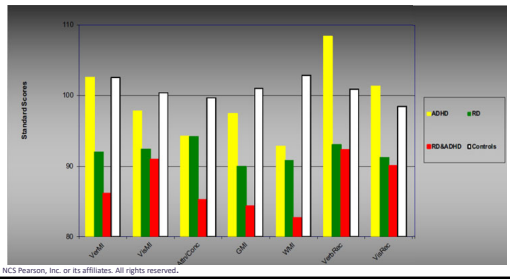
The difference between the Visual Immediate Memory Index and Verbal Immediate Memory Index standard scores is statistically and clinically significant with a base rate of <=5%. This relative strength for WRAML3 in visual memory may be due to weaker verbal memory or in other processes associated with verbal memory, such as language impairment or hearing difficulties. Examine the contributing subtests and process scores, the Verbal Delayed and Verbal Recognition Indexes, and the Sentence Memory subtest to substantiate the uniformity of this finding. Implications of this discrepancy will likely be apparent for academic, work, and home settings.

1st Case History

8 year 5-month-old male, who is starting 3rd grade.

Reason for Referral: The parents requested evaluation because of concerns expressed by teachers about inattention. Such concerns were noted since first grade but increased in second grade along with a lack of progress in reading. The child is relatively quiet but acting out has become more frequent, especially when completing homework.

WRAML2 Index Scores for Children with ADHD, RD, and both RD & ADHD, compared to Matched Controls (Weniger & Adams, 2007)



Performance Validity Indicator

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WRAML3's results on the Performance Validity Indicator were found to be acceptable.That is, WRAML3's scores on the Attention/Concentration Index and the sum of the first five items on the recognition subtests indicate that WRAML3 put forth acceptable effort during testing.

It is important to note the prevalence of low subtest and index scores in the normative sample when considering performance validity. For the WRAML3 28% of individuals in the normative sample achieved at least one subtest score of <= 4 and 13% of individuals achieved at least one index score of <= 70. The prevalence of subtest and index scores in the very low range suggests that interpretive caution should be taken if just one score indicates low effort or invalid performance. WRAML3 achieved 1 subtest score that is <= 4, and 0 index scores that are <= 70.

Validity Indicator
Acceptable

Table 4.23 Clinical Validity Statistics for Performance Validity Indicators

Indicator	Cut score	Sensitivity	Specificity	Percent correctly classified
Indicator 1. Attention/Concentration Index	≤70	.67	.98	.96
Indicator 2. First Five Recognition Items Raw Score	≤16	.59	.82	.81
Validity Indicator Total	2	.52	.99	.97
	≥1	.73	.82	.81

Index Score Summary

Index Score Summary

Index	Sum of Scaled Scores	Index Score	Confidence Interval (90%)	Percentile Rank
Visual Immediate Memory	25	115	105 - 121	84
Verbal Immediate Memory	16	88	83 - 95	21
Attention/Concentration	17	91	84 - 101	27
General Immediate Memory	58	97	91 - 103	42
Screener Memory	41	101	95 - 107	53
Visual Delayed	26	118	107 - 123	88
Verbal Delayed	11	73	69 - 83	4
General Delayed	37	95	89 - 102	37
Visual Recognition	25	114	104 - 120	82
Verbal Recognition	24	112	101 - 118	79
General Recognition	49	115	106 - 121	84
Working Memory	21	102	94 - 109	55

Immediate and Delayed Recall

Subtest Score Summary

Immediate Recall (Core)					
		Scaled Score			
Subtest	Raw Score	Visual Immediate Memory	Verbal Immediate Memory	Attention/ Concentration	Screener Memory
Picture Memory	25	14			14
Design Learning	141	11			11
Story Memory	17		7		7
Verbal Learning	27		9		9
Finger Windows	13			11	
Number Letter	8			6	

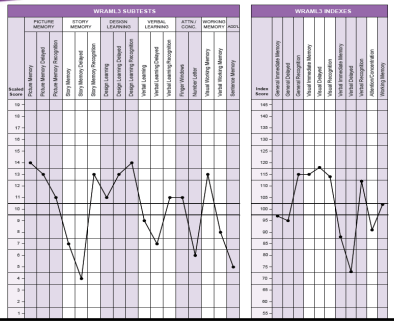
Delayed Recall (Supplementary)			
		Scaled Score	
Subtest	Raw Score	Visual Delayed	Verbal Delayed
Picture Memory Delayed	28	13	
Design Learning Delayed	55	13	
Story Memory Delayed	9		4
Verbal Learning Delayed	5		7

Recognition/Working Memory/Sentence Memory

Recognition (Supplementary)			
		Scaled Score	
Subtest	Raw Score	Visual Recognition	Verbal Recognition
Picture Memory Recognition	31	11	
Design Learning Recognition	28	14	
Story Memory Recognition	28		13
Verbal Learning Recognition	17		11

Working Memory (Supplementary)		
Subtest	Raw Score	Scaled Score
Visual Working Memory	46	13
Verbal Working Memory	22	8

Additional Subtest (Supplementary)		
Subtest	Raw Score	Scaled Score
Sentence Memory	13	5



Picture Memory – Commission Errors

Picture Memory

The Picture Memory subtest measures immediate recall of contextual visual information. WRAML3 earned a scaled score of 14 on this subtest, which is in the very high score range. It is important to examine the Commission Errors score along with the scaled score for this subtest.

Given this level of performance, WRAML3 is expected to remember meaningful visual information noticeably better than same-age peers, and this may be evident for everyday tasks such as immediate recall of the content of pictures or diagrams on a prior page or a computer screen. Comparing Picture Memory performance with Design Learning and Finger Windows performance may yield hypotheses as to WRAML3's recall of meaningful versus nonmeaningful visual information.

Process Scores - Picture Memory

	Raw Score	Mean (*SD*)	Base Rate
Commission Errors	9	3.4 (2.5)	<=5%

Commission Errors

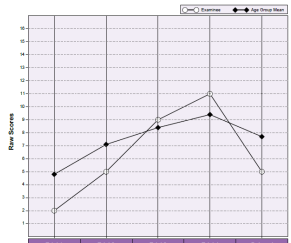
The Commission Errors score provides a measure of disinhibited responding or random responding. Because the Picture Memory subtest does not penalize examinees for errors, overresponding can inflate the Picture Memory score.

WRAML3 made a total of 9 commission error(s), which is very high compared to same-age peers and warrants caution when interpreting the Picture Memory score, because it is likely inflated due to excessive guessing or impulsive responding.

Subtest	Raw Score	Scaled Score			
		Visual Immediate Memory	Verbal Immediate Memory	Attention/ Concentration	Screener Memory
Picture Memory	25	14			14

Process Scores – Design and Verbal Learning

	Trial 1	Trial 2	Trial 3	Trial 4	Delayed
Raw Score	11	23	50	57	55
Mean (SD)	18.1 (8.5)	29.6 (11.1)	39.4 (13.5)	48.0 (12.8)	46.6 (13.8)



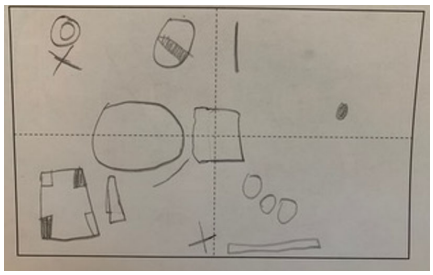
	Trial 1	Trial 2	Trial 3	Trial 4	Delayed
Raw Score	2	5	9	11	5
Mean (SD)	4.8 (1.5)	7.1 (1.8)	8.4 (1.9)	9.4 (1.9)	7.7 (2.0)

Process Scores – Design Learning

Process Scores - Design Learning

	Raw Score	Mean (*SD*)	Base Rate
Trial 1	11	18.1 (8.5)	<=15%
Trial 2	23	29.6 (11.1)	-
Trial 3	50	39.4 (13.5)	-
Trial 4	57	48.0 (12.8)	-
Delayed	55	46.6 (13.8)	-
Learning Slope (Trial 4 - Trial 1)	46	29.9 (11.0)	-
Upper Left Quadrant	57	31.7 (12.9)	-
Upper Right Quadrant	8	25.7 (15.1)	<=15%
Lower Left Quadrant	47	32.1 (13.9)	-
Lower Right Quadrant	11	28.0 (13.3)	<=15%

Design Learning – Trial 4

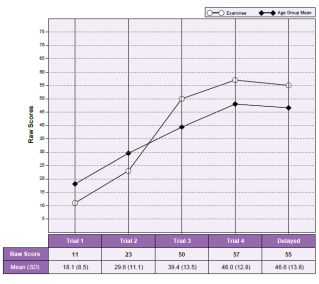


Process Scores –Verbal Learning

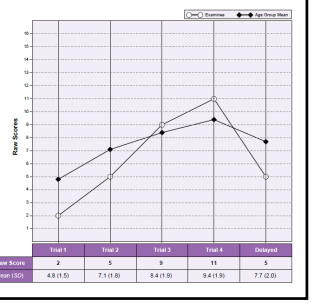
Process Scores - Verbal Learning

	Raw Score	Mean (*SD*)	Base Rate
Trial 1	2	4.8 (1.5)	<=5%
Trial 2	5	7.1 (1.8)	<=15%
Trial 3	9	8.4 (1.9)	-
Trial 4	11	9.4 (1.9)	-
Delayed	5	7.7 (2.0)	<=5%
Learning Slope (Trial 4 - Trial 1)	9	4.5 (2.0)	-
Intrusions	4	1.1 (1.9)	<=5%
Repetitions	3	1.7 (2.4)	<=15%
Primacy	30	30.5 (6.9)	-
Recency	30	29.2 (8.7)	-

Process Scores – Design and Verbal Learning



	Trial 1	Trial 2	Trial 3	Trial 4	Delayed
Raw Score	11	23	50	57	55
Mean (SD)	18.1 (8.5)	29.6 (11.1)	39.4 (13.5)	48.0 (12.8)	46.6 (13.6)



	Trial 1	Trial 2	Trial 3	Trial 4	Delayed
Raw Score	2	5	9	11	5
Mean (SD)	4.8 (1.5)	7.1 (1.8)	8.4 (1.9)	9.4 (1.9)	7.7 (2.0)

Process Scores – Story Memory

Process Scores - Individual Story Comparison

	Scaled Score 1	Scaled Score 2	Difference	Critical Value (.10)	Significant	Base Rate
Story A vs. Story B	9	5	4	3.31	Y	<=10%

Process Scores - Story Memory

	Raw Score	Scaled Score
Story A	12	9
Story B	5	5
Verbatim	5	4
Gist	12	8

First Case Questions?

2nd Case History

86-year-old who identifies as male.

Reason for Referral: Physician referred patient with early Alzheimer's, who was showing an increasing difficulty remembering things said to him even when reminded. Recently, even demonstrating new procedures have resulted in limited benefit. Was of average ability throughout adult life.

Performance Validity Indicator

Performance Validity Indicator

P's results on the Performance Validity Indicator were found to be indeterminate.That is, P's scores on the Attention/Concentration Index or the sum of the first five items on the recognition subtests indicate that caution may be warranted when evaluating the level of effort P put forth during testing. Low scores may be attributable to a variety of factors not related to effort and this should be considered when interpreting this indicator.

It is important to note the prevalence of low subtest and index scores in the normative sample when considering performance validity. For the WRAML3 28% of individuals in the normative sample achieved at least one subtest score of <= 4 and 13% of individuals achieved at least one index score of <= 70. The prevalence of subtest and index scores in the very low range suggests that interpretive caution should be taken if just one score indicates low effort or invalid performance. P achieved 8 subtest scores that are <= 4, and 8 index scores that are <= 70.

Validity Indicator
Indeterminate

PERFORMANCE VALIDITY INDICATORS					
Recognition Subtests	Picture Memory	Design Learning	Story Memory	Verbal Learning	Total
First Five Recognition Items Raw Score	0	1	0	3	4

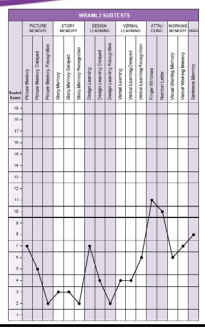
Indicator 1: Attention/Concentration Index	66–70	71–165
Score	1	(0)
Indicator 2: Recognition Raw Score Total	0–1	17–20
Score	(1)	0

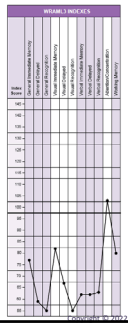
	0	1	2
Validity Indicator Total	Acceptable	Indeterminate	Questionable

Index Score Summary

Index Score Summary

Index	Sum of Scaled Scores	Index Score	Confidence Interval (90%)	Percentile Rank
Visual Immediate Memory	14	82	77 - 92	12
Verbal Immediate Memory	7	62	59 - 71	0.6
Attention/Concentration	21	103	94 - 111	58
General Immediate Memory	42	77	73 - 85	6
Screener Memory	21	69	65 - 77	2
Visual Delayed	9	67	64 - 81	1
Verbal Delayed	7	62	59 - 73	0.6
General Delayed	16	59	56 - 69	0.3
Visual Recognition	4	55	54 - 70	0.1
Verbal Recognition	8	63	61 - 79	0.7
General Recognition	12	55	53 - 68	0.1
Working Memory	13	80	75 - 90	9



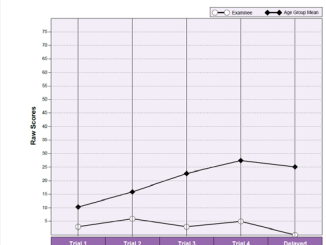


Immediate and Delayed Recall

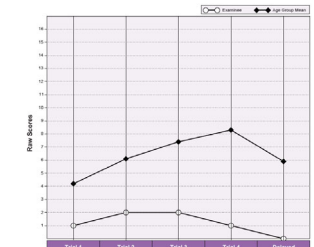
Immediate Recall (Core)					
		Scaled Score			
Subtest	Raw Score	Visual Immediate Memory	Verbal Immediate Memory	Attention/ Concentration	Screener Memory
Picture Memory	8	7			7
Design Learning	17	7			7
Story Memory	3		3		3
Verbal Learning	6		4		4
Finger Windows	13			11	
Number Letter	11			10	

Delayed Recall (Supplementary)			
		Scaled Score	
Subtest	Raw Score	Visual Delayed	Verbal Delayed
Picture Memory Delayed	5	5	
Design Learning Delayed	0	4	
Story Memory Delayed	0		3
Verbal Learning Delayed	0		4

Process Scores – Design and Verbal Learning



	Trial 1	Trial 2	Trial 3	Trial 4	Delayed
Raw Score	3	6	3	5	0
Mean (SD)	10.3 (6.0)	15.9 (9.0)	22.7 (12.3)	27.5 (15.5)	25.1 (15.6)



	Trial 1	Trial 2	Trial 3	Trial 4	Delayed
Raw Score	1	2	2	1	0
Mean (SD)	4.2 (1.3)	6.1 (2.2)	7.4 (2.6)	8.3 (2.7)	5.9 (2.8)

Delayed Recall/Recognition Comparisons

Delayed Recall/Recognition Comparisons

Subtest Comparisons	Scaled Score 1	Scaled Score 2	Difference	Critical Value (.10)	Significant	Base Rate
Picture Memory Delayed vs. Picture Memory Recognition	5	2	3	3.15	N	-
Design Learning Delayed vs. Design Learning Recognition	4	2	2	2.91	N	-
Story Memory Delayed vs. Story Memory Recognition	3	2	1	2.45	N	-
Verbal Learning Delayed vs. Verbal Learning Recognition	4	6	-2	3.04	N	-

Note. The scaled score range for the Recognition subtests are restricted due to the skewed distributions of the raw scores for these subtests. Interpret significant discrepancies with recognition subtest scores in the average range and above with caution.

Working Memory/Sentence Memory

Subtest	Raw Score	Scaled Score
Finger Windows	13	11
Number Letter	11	10

Working Memory (Supplementary)		
Subtest	**Raw Score**	**Scaled Score**
Visual Working Memory	6	6
Verbal Working Memory	7	7

Subtest	Raw Score	Scaled Score
Story Memory	3	3
Story Memory Delayed	0	4
Story Memory Recognition	11	2

Additional Subtest (Supplementary)		
Subtest	**Raw Score**	**Scaled Score**
Sentence Memory	18	8

Listing of Important Reported Findings

Index Comparisons	Standard Score 1	Standard Score 2	Difference	Base Rate
Visual Immediate Memory vs. Verbal Immediate Memory	82	62	20	<=10%
Verbal Immediate Memory vs. Attention/Concentration	62	103	-41	<=2%
Visual Immediate Memory vs. Attention/Concentration	82	103	-21	<=15%
Visual Immediate Memory vs. Visual Delayed**	82	67	15	<=5%
Attention/Concentration vs. Working Memory	103	80	23	<=5%
General Immediate Memory vs. General Delayed	77	59	18	<=2%
Screener Memory vs. Attention/Concentration	69	103	-34	<=2%
Screener Memory vs. General Delayed	69	59	10	<=10%
Subtest Comparisons	**Scaled Score 1**	**Scaled Score 2**	**Difference**	**Base Rate**
Story Memory Recognition vs. Verbal Learning Recognition	2	6	-4	<=10%
Immediate/Delayed Recall Comparisons	**Scaled Score 1**	**Scaled Score 2**	**Difference**	**Base Rate**
Design Learning vs. Design Learning Delayed	7	4	3	<=5%

Second Case and Final Questions?