ASSESSING COGNITIVE AND INTELLECTUAL ABILITIES USING THE WISC-IV

The industry gold-standard test is the Wechsler Intelligence Scale for Children (4th Edition), also known as the WISC –IV. I consider that it is important to conduct my cognitive assessments using the Wechsler Intelligence Scale for Children (4th Edition) because this provides a full battery of 10 subtests, and is therefore more robust, rigorous, and sensitive, as a test instrument than either the BAS or the WASI. The Wechsler intelligence tests for preschool and primary children, school-age children and adults are used throughout educational practice as primary tests for ascertaining cognitive ability.

Children complete all the ten subtests from the WISC-IV to provide evidence of his current levels of cognitive functioning and intellectual abilities. The 10 subtests are listed below in table 1. There are three Verbal subtests (question and answer only), three non-verbal visuo-spatial and puzzle type items, two working memory subtests and two tests of speed of processing. Table 1 below shows which tests are clustered or grouped together for the purposes of ascertaining information about certain kinds of IQ. Scaled scores are derived from the raw scores obtained for each test, and are calculated according to the child's chronological age in years and months. This ensures that scores are for chronologically age-equivalent children only. When calculated, the scores of the subtests are entered into the grid below.

The following table shows the four main indices of the WISC-IV and what they measure

Verbal Comprehension Index (VCI)	Measure: Verbal concept formation. It assesses children's ability to listen to a question, draw upon learned information from both formal and informal education, reason through an answer, and express their thoughts aloud. It can tap preferences for verbal information, a difficulty with novel and unexpected situations, or a desire for more time to process information rather than decide "on the spot." Note: This index is a good predictor of readiness for school and achievement orientation, but can be influenced by background, education, and cultural opportunities.
Perceptual Reasoning Index (PRI)	Measure: Non-verbal and fluid reasoning. It assesses children's ability to examine a problem, draw upon visual-motor and visual-spatial skills, organize their thoughts, create solutions, and then test them. It can also tap preferences for visual information, comfort with novel and unexpected

	situations, or a preference to learn by doing.
Working Memory Index (WMI)	Measure: Working memory. It assesses children's ability to memorize new information, hold it in short-term memory, concentrate, and manipulate that information to produce some result or reasoning processes. It is important in higher-order thinking, learning, and achievement. It can tap concentration, planning ability, cognitive flexibility, and sequencing skill, but is sensitive to anxiety too. It is an important component of learning and achievement, and ability to self-monitor.
Processing Speed Index (PSI)	Measure: Processing speed. It assesses children's abilities to focus attention and quickly scan, discriminate between, and sequentially order visual information. It requires persistence and planning ability, but is sensitive to motivation, difficulty working under a time pressure, and motor coordination too. Cultural factors seem to have little impact on it. It is related to reading performance and development too. It is related to Working Memory in that increased processing speed can decrease the load placed on working memory, while decreased processing speed can impair the effectiveness of working memory.

Table 1 WISC-IV Scaled Scores

Subtest	**Scaled Scores**				
Block Design					
Similarities					
Digit Span					
Picture Concepts					
Coding					
Vocabulary					
Letter-Number sequence					
Matrix Reasoning					
Comprehension					

Symbol Search					
Sums of scaled scores					
	Verbal Comp'n	**Perceptual Reasoning**	**Working Memory**	**Processing Speed**	**Full Scale**

Further calculations are then done to show groups or clusters of abilities, called composites. These are shown below in table 2. From this I can calculate various IQ scores for the cluster of abilities and an overall IQ score.

Table 2. Sum of Scaled Scores to Composite Score Conversions

Scale	**Sum of Scaled Scores**	**Composite Score (IQ)**	**Percentile Rank**	**IQ Score at a 95% Confidence Interval**
Verbal Comprehension (VCI)				
Perceptual Reasoning (PRI)				
Working Memory (WMI)				
Processing Speed (PSI)				
Full scale (FSIQ)				

The WISC-IV can also calculate age equivalent scores, which indicate whether a child's abilities are in line with their chronological age, or in advance or delayed. These are set out in table form, as indicated below:

Table 3 WISC –IV AGE EQUIVALENTS FROM RAW SCORES OF SUBTESTS

Sub test	Raw Score	Age Equivalent
Block Design		
Similarities		
Digit Span		
Picture Concepts		
Coding		

Vocabulary		
Letter-Number Sequence		
Matrix Reasoning		
Comprehension		
Symbol Search		

*A note on **Centiles** or **Percentiles***

Centiles, or percentiles, represent values that indicate the percentage (%) of a population that is equal to or below a particular score. For example, a percentile of 56 means that 56% of individuals in the same age range of the standardisation sample scored at or below the examinee's score. Percentiles are a useful and easy way of representing and interpretting the significance of scores obtained on tests and sharing these test results with others, so that examinees and others can see their performance in comparison with the wider population. An average standard score is 100, and the average range runs from 85 to 115, and between the 16th and 84th percentile

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