

Chapter 3- Understanding and Assessing Cognition

Chapter 3 of *Integrating Neuropsychological and Psychological Evaluations: Assessing and Helping the Whole Child* provides an in-depth description of both verbal and perceptual functioning. In addition, it discusses several commonly used assessment tools for these functional domains.

The following vignette describes concerning behaviors of a seven year old boy that lead to his referral for an evaluation. During the evaluation, various behaviors related to verbal and perceptual functioning were observed.

Zachary was a seven year old boy who was evaluated at the request of his aunt, who was his guardian. At home, his behavior had regressed and he was delayed relative to his peers. Concerns included his difficulty attending, lack of interest in reading, lack of frustration tolerance, lack of organizational skills, difficulty following directions, difficulty with discipline, impulsivity, mood swings, lack of friendships, obsessive thoughts and repetitive behaviors, anxiety and fears, temper tantrums and excessive talking. His strengths included his endearing personality, his sincerity, his love of animals, his attention to and memory of details about his areas of interest and his numerous lovable qualities. Extended family history was significant for addiction, bipolar illness and suicide as well as dyslexia and PDD.

Throughout the evaluation, Zach had difficulty sustaining his effort and attention, filtering distractions, switching set and taking another's perspective. He demonstrated significant motor overflow and displayed sensory processing difficulties. He had difficulty processing language that was complex or lengthy in nature and unrelated to topics of special interest. He also appeared preoccupied with thoughts of a disturbing nature and frequently made comments that were seemingly random and served as a form of self stimulation. While he was able to attend and attempt most of the tasks presented, the findings on formal testing likely underestimated his potential, but represented an accurate measure of his current functional ability.

On the WISC-IV, Zach scored in the Extremely Low range on measures of Verbal Comprehension, Perceptual Reasoning, Working Memory and Processing Speed. While there was no significant difference between his verbal and nonverbal scores, qualitatively, he did appear to function better with nonverbal material. On the verbal level, he had difficulty reasoning abstractly, understanding and formulating complex language related to unfamiliar topics and filtering out emotionally laden material. Thus, his functional use of language was significantly compromised and he appeared to be anxiously preoccupied with thoughts of a disturbing nature. In the nonverbal area, Zach had significant difficulty processing complex visual information and integrating part to whole relationships.

While Zach's scores on the WISC-IV were all within the Extremely Low range, this is not always the case. At times, scores from various subtests can be discrepant, indicating relative strengths and vulnerabilities. As a result the individual may

feel frustrated, experiencing competence in one realm, and feeling inept in others. The following vignette provides an example of this situation.

Split Scores

Jeremy had a reputation for being bright, talkative and friendly. As a younger child, he enjoyed writing stories and enjoyed math. At the age of 11 he had already undergone significant testing over the years due to rigidity, emotional and behavioral reactivity, as well as violent thoughts and ideation. By the time he left public school, where he had received some support, and entered a highly structured therapeutic school, he had developed an aversion to academic instruction and had difficulty completing his homework. His parents were also frustrated, feeling as though his avoidance of homework was aimed at them, with the intention to elicit anger. A follow up neuropsychological evaluation revealed a split in his cognitive abilities on the WISC IV:

<u>Index Scale</u>	<u>Composite Score</u>	<u>Percentile</u>	<u>Descriptive Range</u>
<i>Verbal Comprehension</i>	<i>136</i>	<i>99</i>	<i>Very Superior</i>
<i>Perceptual Reasoning</i>	<i>110</i>	<i>75</i>	<i>High Average</i>
<i>Working Memory</i>	<i>102</i>	<i>55</i>	<i>Average</i>
<i>Processing Speed</i>	<i>75</i>	<i>5</i>	<i>Borderline</i>

In a therapeutic environment, it became clear that part of Jeremy's struggle, was a decreased self-esteem and negative perception of himself as a student. In previous grades, he had been able to rely on his verbal abilities to navigate concrete concepts, such as adding, subtracting, multiplying and dividing. However, as the curriculum grew increasingly abstract, including multistep math operations, ratios, percents and algebraic concepts, his frustration tolerance began to plummet. Jeremy struggled to grasp the underlying part-to-whole relationships of these operations. His ability to access math curriculum was further complicated by his difficulties with working memory and a slow processing speed. This impinged on his self-concept as a "math geek", striking at the core of what he had always considered a strength. His response was to avoid work by any means, becoming increasingly angry and agitated. In the therapeutic environment, Jeremy learned about his cognitive difficulties, developed greater self-awareness, and slowly was able to attend to specialized math instruction. He began to reassess his self-concept and became more confident, willing to take academic risks, with emotional support. His parents were also educated on his unique learning profile, changed their approach to homework, understanding his avoidance strategies were not intended to upset them, but the result of his frustration with himself.