

Chapter 7 - Understanding and Assessing Academic Skills

Chapter 7 of *Integrating Neuropsychological and Psychological Evaluations: Assessing and Helping the Whole Child* provides an in depth discussion of various elements in the assessment of academic skills. This includes reading, writing and arithmetic. Each skill set is discussed in developmental terms. Various commonly used assessment tools are also discussed.

The following vignette describes a young boy during a testing scenario. His cognitive scores reveal that he is a bright boy, with some minor vulnerabilities, who lacks the emotional resources to manage stress, which further impedes his ability to develop skills necessary for academic success.

Ben was an eight year old boy in second grade at a private elementary school. His birth history and development were unremarkable. His older brother, however, had a genetic disorder that required a number of very stressful and life threatening surgeries over the course of Ben's early years. Ben began having significant anxiety around separations from his mother when he started nursery school at the age of three. His separation anxiety continued and, in kindergarten, Ben began displaying social and performance anxiety, avoiding new people and large groups and refusing to participate in presentations and plays. In first and second grades, it became clear that he both loved and did very well in math but was having considerable difficulty with reading comprehension and written expression. Nevertheless, Ben was extremely competitive and tended to place an inordinate amount of pressure on himself to do well and could resort to cheating or try to change the rules if he thought he might lose a game. Parents described Ben as a fun loving, smart and compassionate boy who loved to be active. He played golf, baseball, soccer, lacrosse, flag football, basketball, swam and did gymnastics.

Ben was very cooperative with testing and was most comfortable with structured tasks that had a clear right or wrong answer. He had considerable difficulty with any task that was ambiguous, open-ended or required that he deal with affect or draw on his imagination or creative process. At such times, he would tend to become withdrawn and appeared almost paralyzed. When then provided with a much more structured and cognitively based activity, he quickly rebounded and could then engage with the materials and make good effort. However, even when dealing with more structured, cognitively based materials, if he felt more challenged and less competent, his demeanor would again revert to a more withdrawn aspect and he would become nonverbal, having difficulty acknowledging that a task was difficult or that he did not know an answer. At such times, he would tend to fidget more, rock in his chair, play with his ears and hair, breathe more deeply or place his hand across his forehead to shield his eyes, all signs of stress.

On the WISC-IV, Ben's verbal abilities fell in the High Average range while his perceptual organizational abilities fell in the Superior range. His working memory tested

at the lower end of the High Average range while his processing speed fell in the Superior range. Assessment of executive functions revealed some moderate difficulties with cognitive flexibility, organization and impulsivity. His visual and auditory memory abilities were high average to superior. On tests of achievement, he demonstrated a significant strength and very superior ability in basic mathematical skills and math reasoning. His understanding of spoken language was high average. His reading fluency skills, while average, were impacted by his tendency to rush and substitute familiar for less familiar words. This also compromised his average comprehension of written passages. While Ben demonstrated a good understanding of the conventions of written language, such as syntax, grammar and mechanics, he struggled to generate material that was original and which required that he organize a more complex linguistic response and he scored below average on measures of written expression.

Tests of emotional functioning revealed that Ben lacked sufficient psychological and emotional resources to manage stress. He became particularly stressed when he had to manage any task that was open-ended, ambiguous, or required that he access his imagination or draw on his affect. His stress was further exacerbated by his need to appear consistently competent. Consequently, demands for academic performance on tasks of comprehension that required he interpret material or written expression that required he tap his imagination, left Ben feeling stressed and overwhelmed. To function academically, he required considerable structure and rules, something that math provided.

Decoding

Decoding is a skill required while reading. It involves the ability to associate sounds with letters or letter groups, combine the sounds, to make comprehensible words. The following vignette highlights that this specific skill can impact a student's ability to develop reading skills, despite the student's strengths in the verbal realm.

Jack was a 10 year old boy who arrived at a small therapeutic school refusing to sit at a table and participate in academic activities. Various learning disorders, as well as mood dysregulation, were well documented in previous testing and school settings. Over the course of several months, Jack developed the ability to attend to academic instruction without having a tantrum, but participation was limited. Jack loved books, fiction or non-fiction, grade level or lower, he would frequently ask a teacher to sit and read to him during free time. As the relationship between Jack and his teacher developed, it became clear he had an uncanny ability to remember events, details and underlying concepts within stories and he possessed an excellent vocabulary. But Jack struggled significantly with independent reading. During these reading sessions, his teacher used clear blue overlay strips of acetate to indicate the sentence she was currently reading so Jack could follow along. Occasionally the teacher would offer Jack a turn reading, just for fun, without any pressure. Typically he refused. However, the day

they were reading a 1st grade level story, he decided to try. As he sounded out simple three letter, monosyllable words, he struggled significantly. The teacher patiently waited. When he completed the sentence, his head hung low, he professed exhaustion, and he asked her to resume. She praised him for being courageous and a job well done. He simply grumbled.

Written Expression

Writing is a complex process, requiring the utilization of various skills. This vignette shares the experience of a boy who struggles with writing, despite high average verbal and processing skills and average scores on skills required for reading.

Dylan was a ten year old, right handed boy whose difficulties with decoding, reading fluency and written expression were not acknowledged until third grade. Also at that time, his difficulties with peers appeared to be worsening and his behavior was alienating even those who had formerly been friends. While parents described him as funny, engaging and sweet and supported his interest in sports, they were increasingly concerned about his social difficulties as well as his struggles with reading and writing.

Dylan was very cooperative during testing and took a perfectionistic approach to much of the material. On the WISC-IV, his verbal skills were high average and his perceptual reasoning skills were superior. His working memory and processing speed abilities were average. He evidenced vulnerabilities in executive functioning, including impulsivity, distractibility, variable attention and difficulties with planning and organization. His VMI Scaled Score was an 8, at the 21st percentile while his score on the Motor Coordination portion of the VMI was a 6, at the 10th percentile. He demonstrated difficulties with motor precision, with the negotiation of angles and the execution of circles. In fact, when asked to draw a circle, he commented "I hate drawing circles, I can't do it." On a task requiring him to draw a person, he remarked "I'm not good at drawing a person."

Regarding tests of achievement, Dylan scored in the Average range on the CTOPP for phonological awareness, phonological memory and rapid naming but he had some relative difficulty coding phonological information in working memory when the bits to be stored increased in length and were presented more rapidly. His decoding skills were at the lower end of the Average range on the WIAT-III and he struggled to reliably discriminate fine visual details imbedded in complex visual information. His Oral Reading Quotient on the GORT-4 was in the Average range but his accuracy was impacted by his tendency to substitute more familiar, similar appearing words.

When Dylan was asked to write an essay as part of the Test of Written Language (TOWL-4), he was initially reluctant and noted "I hate planning and I hate writing." In order to initiate this task, he required considerable encouragement and scaffolding, needing to check with me by verbalizing some ideas and receiving feedback that his

outline was acceptable. At that time, he became frustrated and appeared very discouraged. On the essay, Dylan's Scaled Score was a 7 at the 16th percentile, and reflected his difficulty managing the multiple tasks of planning, organization and graphomotor functioning. Furthermore, his Contrived Writing Score (a composite of the Vocabulary, Spelling, Punctuation, Logical Sentences and Sentence Combining subtests) was significantly higher than his Spontaneous Writing score (a spontaneously composed essay), a finding that underscored his need for structure and scaffolding.

Math Calculation

This brief vignette takes place in the classroom setting. It quickly relays how various cognitive vulnerabilities impact a child's ability to acquire and maintain mathematical information.

Susie, a happy 10 year old girl, sat down at the classroom table for math instruction. The classroom group had been solidifying retrieval of basic mathematical calculation, using manipulatives to add and subtract, with the intention of making basic calculation readily accessible in order to support learning of more complicated mathematical concepts. Susie struggled with this skill and was often unable to complete basic calculation without support. After the daily 10 minutes of practicing adding and subtracting, the teacher gave her a partially filled in 100's chart. This graph paper contained 100 boxes, some of which contained numbers, some of which did not. Susie cheerfully began filling in the blank boxes, but around 50, she looked at the teacher asking what came next. From prior experience with Susie, the teacher knew she had the ability to count to 100, but today, she had a hard time keeping track of the numbers, losing her place, and appeared to have difficulty accessing previously learned material. The combination of Susie's difficulty with numbers sense and executive functions made math instruction a slow arduous process.