

Using the Building Blocks of Brain Development to Understand and Assess Learning Disabilities

Module 2: The Fundamental Processes

- Module 2.1
 - Basic Blocks
 - Memory- long term storage of knowledge and experiences
 - Processing Speed- least specialized, but very sensitive. Indicates communication efficiency within the brain
 - Attention- Allows for input (neurocognitive doorway)
 - Inhibition- Control (part of executive function)
 - Sensory-motor- Allows access to environment
- Module 2.2 Memory
 - Neurocognitive perspective: Learning takes place in the brain when we merge what we “know” with new information
 - Behavioral Impacts
 - Appears to have an attitude/defiance issues
 - Can't repeat what was recently said
 - Doesn't remember recent events
 - Disorganized
 - Forgets to turn in assignments
 - Gets lost frequently
 - Learned helplessness
 - Looks spacey, scared, nervous
 - Repeatedly asks the same questions
 - Doesn't bring materials to class
 - Academic Impacts
 - Can't retell a story, low comprehension
 - Difficulty retaining new skills
 - Difficulty with multi-step directions/problems
 - Difficulty with spelling
 - Forgets assignments/homework
 - Forgets lectures and learning experiences
 - Forgets people and names
 - Inconsistent performance
 - Splintered learning/low grades

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- Assessment Suggestions for Memory
 - Formal
 - WRAML-2
 - TOMAL-2
 - WMS
 - NEPSY-2
 - DAS-2
 - Informal
 - Parent, student, staff interviews
 - Records review- social/family history
 - Medical history
 - Observations/Work Samples
 - Semi-Formal
 - Memory rating scales (Self-created, not normed)
 - NEF section on Memory (from CDE)
 - Structured interview
 - Structured/standardized observations
- Module 2.3 Processing Speed
 - Processing Speed is the speed at which information comes into the brain, processed, stored and then outputted
 - Behavioral Impacts
 - Appears confused, doesn't understand
 - Appears inattentive, lost
 - Delay in verbal and/or written response
 - Fatigues easily (cognitive fatigue)
 - Easily and/or chronically frustrated
 - Slow to follow directions
 - Academic Impacts
 - Delayed response when asked a question in class
 - Difficulty following lectures
 - Difficulty multi-tasking
 - Inconsistent learning of new information
 - Difficulty taking timed tests
 - Academic fluency
 - Incomplete work
 - Poor grades despite good effort
 - Slow at doing most schoolwork
 - Chronically need help "catching up"
 - Assessment Suggests for Processing Speed
 - Formal

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- Visual Motor and Verbal Processing Speed
- Rapid Naming (Verbal)
- Cancellation (Visual-Motor)
- Informal
 - Parent, student, staff interviews
 - Records review- social/family history
 - Medical history
 - Observations/Work Samples
 - Timed tasks, work completion
- Semi-Formal
 - Self-created processing speed rating scales
 - Symptom checklist
 - NEF
- Module 2.4 Attention
 - Attention is the ability to orient and focus on a task for other processes to work, first step in all learning
 - Attention and memory have dependent relationship
 - Without attention, information cannot be placed or endowed into memory in the first place
 - Behavioral Impacts
 - Space, not oriented to the speaker or task
 - Seems forgetful
 - Easily distracted
 - Difficulty with turn taking
 - fidgets/squirms in seat or does not stay in seat
 - Interrupts conversations, talks over people
 - Loses personal items
 - Low frustration tolerance
 - Off topic
 - Disorganization of thought/materials
 - Academic Impacts
 - Careless mistakes with schoolwork
 - Difficulty following directions
 - Does not follow through on tasks
 - Doesn't complete assignments/tests
 - Erratic recall
 - Inconsistent performance in school
 - Can't keep up with rest of class
 - Discipline issues (impulsivity)
 - Assessment Suggestions for Attention

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- Formal
 - CAS-2 Attention and Planning subtest
 - NEPSY-2 Attention subtest
 - CPT (computerized)
 - BRIEF-2/ CEFI-2
- Informal
 - Parent, student, staff interviews
 - Records review- social/family history
 - Medical history
 - Observations/Work Samples
 - Inconsistent Work
 - Poor Handwriting
- Semi-Formal
 - Attention Rating Scales
 - Executive Functioning Rating Scales
 - NEF
 - Vanderbilt Scales
- Module 2.5 Inhibition
 - Core Trait is behavioral and emotional control
 - Central to Executive Functioning
 - Behavioral Impacts
 - Impulsive, “acts without thinking”
 - Blurts thoughts out and can talk excessively
 - fidgety/squirmy/need for movement
 - Difficulty staying in seat, line, assigned area
 - Sensation seeking
 - Low self-monitoring/self-awareness
 - Interrupts; socially intrusive
 - Jumps into an activity rather than waiting
 - Physical with others
 - Disregard for boundaries
 - Social difficulties in general
 - Participation in unsafe behaviors
 - Academic Impacts
 - Can be disruptive in the classroom
 - Difficulty following multistep directions
 - Not slowing down to process directions
 - May complete assignments incorrectly/sloppy
 - May require a lot of redirection
 - Leads to poor academic outcomes/ undermines classroom

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- Assessment Suggestions for Inhibition
 - Formal
 - CAS-2 Attention and Planning subtests
 - NEPSY-II Inhibition, Statue subtests
 - Delis-Kaplan Executive Function System
 - BRIEF-2/ CEFI-2
 - Informal
 - Parent, student, staff interviews
 - Records Review- family history/discipline records
 - Medical History
 - Observation/Work Samples
 - Semi-Formal
 - Self-created Executive Functioning Rating Scales
 - NEF
 - Vanderbilt Scales
- Module 2.6 Sensory-Motor
 - Sensory entail information that is processed and used from our senses
 - Motor skills entail movement, muscle tone, balance, posture and visual tracking
 - Behavioral Impacts
 - Sensory- Over Stimulated
 - Appears overwhelmed, sensitive, defensive
 - May appear oppositional (wearing a hat/hood to cover eyes)
 - Clothes are disheveled due to tugging
 - Emotionally melt down, irritable, short tempered
 - Fidgety, nervous
 - Overly excited
 - Tunes out do to over stimulation
 - Covers ears, eyes, tries to block stimulation
 - Sensory- Under Stimulated
 - Seeks out more stimulation
 - Always touching people or things
 - Can appear clumsy
 - Constantly on the move
 - Seeks out touch or being held
 - Picky eater
 - Academic Impacts
 - Sensory- Over Stimulated
 - Difficulty completing worksheets
 - Difficulty shifting from various academic tasks

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- Difficulty transitioning
- Difficulty with group work and group discussion
- Difficulty reading due to visual stimuli
- Gets overwhelmed in overcrowded/ noisy classroom
- Incomplete work
- Messy, disorganized
- Poor handwriting
- Sensory-Under Stimulated
 - Difficulty following verbal directions
 - Difficulty registering pain or pressure
 - Difficulty with sustaining attention
 - Seeks stimulation in classroom
- Behavioral/Academic Impacts
 - Motor
 - Odd pencil grip
 - Clumsy gait
 - Balance problems
 - Eye-tracking issues, motor integration problems
 - Visual-spatial difficulties
 - Poor handwriting
 - Assessment Suggestions For Sensory-Motor
 - Formal
 - Sensory Profile- 2
 - Sensory Processing Measure
 - Sensory Integration Inventory
 - Dean-Woodcock Sensory Motor Battery
 - Nepsy-II: Sensorimotor Subtests
 - Berry VMI-6th
 - Peabody DMS
 - Informal
 - Parent, student, staff interviews
 - Records review- Family history/discipline records
 - Medical history
 - Observation in multiple settings
 - Work samples
 - Semi-Formal
 - NEF
 - Self-Created Rating Scales