

# Disabilities and Instructional Strategies



**WHAT ARE THEY?**

# Background Information: What is the process or procedure when systematic problems in the classroom arise?



- **Prereferral Intervention:** Address needs of student who is displaying learning and/or behavioral problems prior to being referred for special education services.
  - Classroom-based problem exists.
  - Evidence or documentation of systematic problem/s
  - Develop intervention plan with strategies and/or support services such as reading remediation, speech/language therapy, guidance counseling, and/or tutoring to minimize the problem/s
  - Evaluate effectiveness of the interventions
- **Child Study:** Team of educational professionals reviews documentation including cumulative records, any available previous evaluations, observations, and interviews to determine the need to issue a referral for special education services.
  - Special and general education teachers, administrative staff, school psychologist, therapist, speech/language, occupational, social workers, school nurse, Student and parents
  - **Formal Referral:**
    - ✦ Prior written notice to parents documenting time, purpose of meeting, and parents' rights
    - ✦ Comprehensive evaluation: educational, psychological, social, medical
- **Individual Education Plan**
  - Present level of performance
  - Measurable annual goals
  - Special education and related services (self-contained classes, collaborative classes, speech/language therapy, etc.)
  - Classroom and standardized testing accommodations and modifications
  - Placement decision: explanation to which the student will not participate in regular education classes
  - Transition plan with interagency responsibilities or linkages depending on age of child
- **Behavior Intervention Plan**
  - Collect data/observations
  - Functional Behavioral Assessment: analyze relationship of the target behavior
  - Determine whether behavior is related to disability
  - Determine specific goals
  - Develop intervention strategies
  - Implement plan and evaluate its effectiveness
- **Section 504:** Eligibility is available to students with physical or mental impairments that result in extensive restrictions in one or more major life activities such as vision, hearing, learning, etc., but were not eligible for special education services under IDEA. (Services are limited to classroom and testing accommodations)

# ADHD: What is it, and what causes it?



- **Attention Deficit/Hyperactivity Disorder (ADHD)**: Deficits in attention and behaviors characterized by impulsivity and hyperactivity.
  - ADHD is **NOT** a sleep disorder, conduct disorder, or oppositional defiant disorder
  - Neurobiological based condition:
    - ✦ **Neuroanatomical**: related to brain structure
      - Small right frontal regions (smaller brain size and smaller cerebellum)
    - ✦ **Neurochemical**: associated to chemical imbalance in brain or deficiency in chemicals that control behavior
    - ✦ **Neurophysiological**: related to brain function/reduced brain activity
      - Reduced blood flow in the right frontal region (area that produces neurotransmitters) and helps regulate impulse control, attention, and planning.
    - ✦ **Neuropsychological**: dysfunction of the frontal lobes resulting in deficits in attention, self-regulation, impulsivity, and planning
      - “These differences result in the executive function deficits listed previously in addition to impairments in working memory, problem solving, motor control, and using internal speech to guide behavior” (Smith, Polloway, Patton, & Doudy, 2004, p. 130).
  - Causes:
    - ✦ Genetics: 57% of people with ADHD will have a child with ADHD (Smith, Polloway, Patton, & Doudy, 2004, p. 130)
    - ✦ Pre and postnatal events
      - Premature birth
      - Pregnancy complications
      - Fetal exposure to tobacco and alcohol
      - Head trauma
      - Lead poisoning
      - Strep infection
    - ✦ Additional factors currently being considered as possibilities, but with lack of evidence include: fluorescent lighting, soaps, disinfectants, yeast, preservatives, food coloring, aspartame, certain fruits and vegetables, sugar, social factors, poor parental management

# Identifying Characteristics



In order to be identified as a child with ADHD, at least six of the symptoms in either category must have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level (Smith, Polloway, Patton, & Douady, 2004, p. 130).

## Inattention

- Fails to give close attention
- Difficulty sustaining attention
- Does not seem to listen
- Does not follow through on instructions and fails to finish schoolwork, chores, or duties
- Has difficulty organizing tasks and activities
- Often avoids and strongly dislikes tasks that require sustained mental effort (schoolwork & homework)
- Often loses things necessary for tasks and activities (school assignments, pencils, books, tools, or toys)
- Easily distracted by extraneous stimuli
- Often is forgetful in daily activities

## Hyperactivity-Impulsivity

- Often fidgets with hands or feet or squirms in seat
- Often leaves seat in classroom
- Often runs about or climbs excessively in situations where it is inappropriate
- Often has difficulty playing or engaging in leisure activities quietly, always on the go or acts as if driven by a motor
- Talks excessively
- Bursts out answers to questions before the questions have been completed
- Has difficulty waiting in lines or waiting turns
- Often interrupts or intrudes on others

# Learning Disabilities: What are they, and what causes them?



- **Specific Learning Disability**: “...means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations” (Smith, Polloway, Patton, & Douady, 2004, p. 163).
  - ✦ Includes the following conditions:
    - Brain injury
    - Minimal brain dysfunction
    - Dyslexia
    - Developmental aphasia
    - Perceptual disabilities
  - ✦ Does NOT include deficits in the following categories:
    - Visual, hearing, motor, mental retardation, emotional disturbance, or environmental, cultural, or economic disadvantage
  - ✦ Causes:
    - Genetics: chromosomal abnormalities and structural brain differences
    - Before birth: injuries to embryo or fetus caused by mother’s use of alcohol, cigarettes, drugs
    - During birth: prolonged labor, anoxia, prematurity, use of forceps
    - After birth: high fever, encephalitis, meningitis, stroke, diabetes, AIDS, malnutrition, poor postnatal health care, lead ingestion

# Characteristics of Learning Disabilities



- ✦ Characteristics
  - Academic Deficits
    - Basic reading skills and reading comprehension, math calculations and math reasoning, written expression including deficits in writing, spelling, mechanics, creativity
  - Language Deficits
    - oral expression: difficulty retrieving words, slower response rate (behavior misinterpreted as failure to understand or refusal to participate), words just don't come easily
    - listening comprehension: use simple, undeveloped language, confuse structures, sequences, classifications
      - behaviors often misinterpreted as refusal to follow directions, oppositional, or unmotivated
    - Pragmatics: students with learning disabilities may be unsuccessful when communicating socially
      - Need extra time to process information, may not understand meaning or word sequences, may miss nonverbal language cues, may not understand jokes or laugh at wrong times, group work is difficult
  - Social-emotional Problems include deficits in the following:
    - resolving conflict, managing frustrations, initiating or jointing a conversation, listening, demonstrating empathy, maintaining a friendship, working in groups, lower self-concept in academics and social relations
  - Attention Deficits and Hyperactivity results in students' inability to do the following:
    - Respond appropriately to questions, follow directions, take notes, listen quietly to others, finish assignments
  - Memory: students have trouble retaining learned information
  - Cognition Deficits: students make poor decisions, frequent errors, difficulty starting tasks, delayed responses
  - Metacognition Deficits: students have difficulty focusing on the following:
    - Listening, remembering, connecting to prior knowledge, making sense out of information, lack strategies for planning and organizing, Difficulty prioritizing
  - Perceptual Differences: difficulty recognizing stimuli received through sight, hearing, or touch
  - Motor Skill and Coordination Deficits: students may have difficulty with clumsiness, clumsy gait, using scissors, buttoning clothing, handwriting, slow reaction time

# Learning Problems



## **Attention:**

easily distracted, lacks attention to detail and tasks, careless mistakes, difficulty changing activities, difficulty with multiple stimuli

## **Auditory Processing:**

difficulty hearing information presented orally, paying attention, discriminating between simple sounds

## **Executive Function:**

difficulty learning new activities, generating concepts, solving problems, sequencing, prioritizing, organization, initiation, pacing, emotions, self-monitoring

## **Fluid Reasoning:**

difficulty with higher-level thinking and reasoning, transferring information, making generalizations, deriving solutions, extending knowledge through critical thinking

## **Long Term Retrieval:**

difficulty learning new concepts, retrieving or recalling specific information

## **Processing Speed:**

difficulty processing information, working with time parameters, completing simple tasks quickly, disturbance in routines

## **Short Term Memory :**

difficulty remembering information long enough to apply information, following multistep oral and written instructions, sequencing, rote memorization, maintaining one's place

## **Visual Processing:**

difficulty recognizing patterns, reading maps, graphs, charts, attending to fine visual detail, recalling visual information, recognition of spatial characteristics and orientation (ex. size, length)

## **Motor Processing :**

**(Visual/Motor Integration)**  
Difficulty with handwriting, producing numbers, symbols, writes slowly, difficulty completing assignments in a timely manner, difficulty copying information correctly

# Instructional Strategies



## **Attention:**

Reinforce timely work completion, reduce repetitive seatwork, build in breaks for long assignments, provide quiet work place, highlight information

## **Auditory Processing:**

Clarify and supplement oral instructions, preview text for unknown words, enunciate clearly, choral repeated readings, increase “wait” time, books on tape,

## **Executive Function:**

Use visual schedules, graphic organizers, assignment checklists/agendas, assist with organization, break long assignments into smaller ones

## **Fluid Reasoning:**

Break down instructional steps, provide visual supports, highlight important information, pair learning with doing, repeated practice and review

## **Long Term Retrieval:**

Teach memory strategies, use multiple modalities for teaching new material, activate prior knowledge, use text previews, repeated practice

## **Processing Speed:**

Use repeated practice, online games/activities, extended time, reduce work quantity

## **Short Term Memory :**

Break down instructional steps, provide visual supports, interactive learning, highlight important information

## **Visual Processing:**

Provide oral explanations for visual concepts, highlight margins for writing tasks

## **Motor Processing : (Visual/Motor Integration)**

Reduce length of assignments, provide copies or notes, consider assessing student orally, provide ample working space on a page



# Memory and Recall



- ✦ Most people are good at remembering essential things such as locations of important places, daily skills like walking, eating, etc., emotional experiences like accidents or disasters, and conditioned responses (p. 127).
- ✦ “Encoding and strengthening multiple pathways gives your students a far better chance of retrieving a classroom memory” (p. 131).
- ✦ Because students will develop their recall of learned material more in the first hour as opposed to the next few days, teachers should use the “time wisely” through drama, partner sharing, acronyms, student-developed visual representations, partner reviews, quizzes, or rhymes” (p. 148).
- ✦ Explicit learning
  - Semantic memory: declarative, factual, linguistic (p. 132)
    - “Semantic memories commonly consists of the kinds of information we pick up from conversations, lectures, DVDs, reading, and visual aids” (Jensen, 2005, p. 132).
  - Episodic memory: autobiographical, spatial, event related
    - Daily experiences
    - “Curiosity, novelty, and expectations motivate it, and it’s enhanced by intensified sensory input, such as sights, sounds smells, taste, and touch” (Jensen, 2005, p. 134).
- ✦ Implicit learning
  - Reflexive memories: intense sensory input such as celebrations, trauma, or repetition
    - “In the classroom, reflexive retrieval can happen with flashcard repetition or other forms of ‘over learning’ which may explain why a student who struggles to retain information read in a textbook can often excel with content laden raps” (Jensen, 2005, p. 135).
    - The stronger the emotion experienced, the more likely one will recall the associated information
      - Norepinephrine, a hormone, will release with “increased risk, excitement, and urgency” (p. 135).
      - Jensen (2005) suggests that teachers “orchestrate emotions in the classroom” by “...introducing unusual aromas (from freshly baked cookies or bread...); emphasizing happy occasions, such as celebrations, positive rituals, and acknowledgements; incorporating “gross” things, such as wet, bubbly, slippery, gooey science displays; and mixing in storytelling and other experiences where suspense or surprise may be a feature” (p. 135).
  - Procedural memories: motor memory through bodily movements
    - Procedural memory has “unlimited storage” and it is “activated by physical movements, sports, dance, games, theater, and role-play” and also through “games, visual arts, music, puzzles, and learning stations” (Jensen, 2005, p. 136).

# What Would Jensen Say?



- Jensen would say that if you follow suggestions for brain-based teaching, many of the suggested instructional strategies for children with disabilities will be administered naturally through the process. Jensen (2005) suggests the following techniques to improve learning:
  - **Engagement**: Jensen (2005) encourages “engaging the mind and body” to raise levels of cortisol (hormone that supplies energy), dopamine (neurotransmitter that produces pleasure), or epinephrine (hormone that alerts all systems) to increase students’ aptitude for learning (p. 147).
  - **Framing**: Jensen (2005) suggests establishing background, activating prior knowledge, and mentally hooking the students to “activate neuronal assemblies” creating emotional invitations to learn (p. 147).
  - **Acquisition**: Students need to actively learn through active physical and emotional experiences.
  - **Elaboration**: Don’t wait to make corrections! They need to be made before connections made at the synapse solidify which is in the first hour after learning. “Helpful error-correction strategies include partner quizzes, checklists, peer editing, presentations with feedback, and competitions” (Jensen, 2005, p. 148).
  - **Memory Strengthening**: “In general, we have only three ‘chances’ to help students in learning: (1) the original encoding, (2) the maintenance of that memory, and (3) the retrieval of the learning” (Jensen, 2005, p. 125).
  - **Settling Time and Rest**: Let the content settle by taking time for breaks, walks, and lunch.
  - **Review and Revision**: “Incorporate some revision time into every day” (Jensen, 2005, p. 149).

# References



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