Theory-Based, Systematic Approach

Listening - the process of hearing, perceiving, and interpreting sound—is the most fundamental and valuable tool for language and learning. In the early years of life, much language learning is incidental for children. They learn language and concepts from overhearing and making sense of the sounds around them rather than by direct teaching.

The term ***auditory processing*** refers to how the brain perceives and interprets sound information. When an individual has auditory processing difficulties, the breakdown occurs beyond the physical ability to hear sound. That is, the individual hears sound normally, but is unable to make sense of that sound. Some children have normal hearing acuity—they hear and respond to pure tones within a normal range—however speech sound information "breaks-down" at the level of perception and/or interpretation. These children have difficulty with auditory processing and a doctor may diagnose them with an auditory processing disorder (APD)—also called central auditory processing disorder (CAPD).

Identifying APDs can be challenging because of their subtlety. Often, such difficulties or disorders go unnoticed until school age, when children must learn via oral/aural lessons, distinguish background noise from the teacher's voice, follow intricate verbal directions, converse in noisy areas—such as the playground or lunchroom—and participate in other intense auditory situations both socially and academically. Common characteristics of auditory processing disorders include:

- Difficulty listening with background noise
- Difficulty retaining verbal information (such as directions)
- Problems understanding and retaining multistep or multilevel verbal information such as directions
- Language difficulties—especially receptive and vocabulary building
- Low academic performance
- Behavioral Issues

- Difficulty attending to auditory information, especially in a noisy environment
- Needing extra time to process auditory information
- Difficulty with reading and spelling

Although listening becomes more difficult in noisy situations for everyone, some students may have specific difficulty being able to distinguish sounds that are important to an auditory message from the sounds in background noise—this is called an auditory figure-ground difficulty.

Identifying APDs can also be challenging because they are not independent of, nor easy to differentiate from attention, memory, and cognition. In fact, Teri James Bellis (2003) asserts that every auditory experience involves such components.

Auditory Processing Difficulties and Their Impact on Following Verbal Directions

Verbal directions are a part of everyday life for adults and children. Appropriate behavior, social interaction, and academic success are all dependent on the ability to give and carry out verbal directions. Parents may direct children to "look both ways before crossing the street." Siblings may direct each other to "knock on the door three times before entering." Neighbors may direct each other to "find the hidden key near the back door to the left of the grill under the fourth large rock." Teachers may direct students to "take this note to the principal's office, but if she is not there, leave it in the red tray on the front of her desk before you meet us in the library." Following verbal directions requires strong knowledge of basic concepts and the ability to process and retain auditory information.

Basic concepts are words that individuals need to comprehend to perform everyday tasks such as following directions, participating in classroom routines, and engaging in conversation. In fact, basic concepts are typically the foundation of verbal directions. Basic concepts may include, but are not limited to:

- Basic colors - red, blue, green, etc.
- Directions - through, around, etc.

• Quantities - few, many, etc.

• Sequences - first, next, last, etc.

• Shapes - round, square, etc.

• Size - big, little, etc.

• Social/Emotional States - happy, sad, etc.

• Characteristics - old, new, etc.

• Textures - rough, smooth, etc.

• Time - late, early, etc.

• Spatial Relationships and Positions - front, behind, top, bottom, etc.

Consider a first-grade classroom and a typical daily morning routine for a child. The bell rings and the children file into the classroom as the teacher announces:

*"**First**, put your lunch money **in** the **red** bowl **on** the **small** table **next to** my desk. If you brought your lunch, put it **into** the bin **by** the door. **Next,** hang your coat **on** the **lower** hook and your backpack **on** the **top** hook. Then, have a seat **at** your desk, get **out** your writing folder, and wait **quietly** for me to come **around** and check it."*

A child in this classroom needs to understand at least 17 early basic concepts to participate successfully in the first five minutes of this day. Even in a preschool or kindergarten classroom, teachers expect a child to be able to "sit in a ***circle***" or "pick ***one*** crayon" or "wash [his/her] hands ***before*** [he/she] sits at the ***big*** table in the ***front*** of the room."

Now consider a student in this classroom with an APD impacting his/her ability to understand and retain such information, especially with the background noise that is typical in a first-grade classroom during times of transition. Unfortunately, the students with APDs are not exempt from such transitions, routines, and verbal demands. Plus, these students are expected to perceive, interpret, and retain academic auditory-verbal information including assignment instructions, oral lessons, and classroom discussion.

Webber® HearBuilder™ Following Directions targets 40 essential basic concepts including:

- *Basic colors* - red, blue, green, yellow.
- *Quantities* – one, two, all, both, either, except, none, or, and, don't, not.
- *Sequences* – first, second, third, then, next, last.
- *Shapes* – circle, square, triangle, star.
- *Size* - large, small.
- *Time* – before, after.
- *Spatial Relationships and Positions* – first, second, third, last, between, beside, next to, above, below.
- *Condition* – hot, cold.

Remediation of Auditory Processing

Although much research on diagnosis, etiology, and treatment of auditory processing disorders is still warranted, experts believe that *neuroplasticity*—the brain's ability to reorganize—depends on sensory stimulation to the effected area—the auditory centers of the brain. Therefore direct, theory-based auditory training may influence the organization of the auditory centers of the brain, increasing its function (Flexer, 1999). In her book *Assessment and Management of Central Auditory Processing Disorders in the Educational Setting*, Teri James Bellis discusses deficit-specific auditory training:

> Despite these unknowns, however, simple logic (as well as available research on neurophysiology, neuroplasticity, and information processing) dictates that the most effective direct therapy techniques will be those that are (1) frequent, intense, and challenging; (2) require active engagement and participation on the part of the listeners; and (3) target the specific auditory deficit(s) present. Furthermore, the teaching of deficit-specific compensatory skills that focus on the use of these fundamental auditory processes in spoken language comprehension will help to bridge the gap between bottom-up and top-down processing levels and enhance generalization of skills learned to real-world listening environments (p. 349).

Webber® HearBuilder™ Following Directions is designed as a systematic, intense, challenging, and fun theory-based therapy tool. By providing sensory stimulation to the auditory centers of the brain, ***HearBuilder™ Following Directions*** helps students improve auditory attention, auditory memory, and auditory processing of verbal directions with the option of background noise to improve auditory figure-ground skills. This systematic approach to auditory training offers minimal increases of difficulty across the multiple levels in each activity. ***Webber® HearBuilder™ Following Directions*** requires students to actively engage their brains when listening and following basic directions, sequential directions, quantitative and spatial directions, temporal directions, and conditional directions.

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