B4 - Auditory processing and strategies

Auditory processing explains what happens between the ear and the brain and describes the way the brain assigns significance and meaning to the sounds in the environment.

It follows that good listening cannot occur in the absence of effective auditory processing.

Auditory processing involves a relatively high speed of information transfer and also requires a good attention span, as well-as a functioning memory and sensitivity to the many subtleties of sound.

The long-term impact of early speech, language and communication difficulties can have a profound and lasting effect on children's lives.

For a small percentage of children their disability cannot be prevented, but early intervention is just as vital as for those with less severe difficulties to help give a child the best possible support that they need.

The impact of these difficulties will vary according to the severity of the problem, the support the child receives, the child's confidence and the demands of the child's environment.

The indicators of an auditory processing disorder may present with children displaying some or all of the following signs:

- delayed language development
- inability to listen effectively
- trouble in sequencing the sounds of words
- difficulty perceiving high frequency sounds: 't', 'f' 's', 'k', 'p', 'th', 'sh'
- confusion when faced with similar sounds: 'da' and 'ba'
- extremely poor comprehension in a noisy environment
- high distractibility, with short attention span
- poor speech comprehension, often asking 'what?'
- misunderstanding and poor memory for oral messages
- inconsistent responses to the same auditory stimuli
- inability to follow verbal directions/instructions
- difficulty in expressing desires, often blaming the other person for not understanding
- academic problems, particularly in spelling, reading or comprehension
- behaviour problems
- social difficulties

Auditory processing disorder can lead to frustrations, poor self-esteem or feelings of incompetence, which sometimes results in social isolation or withdrawn social interaction, depression or anxiety. Other times it presents as aggression, disruption of others and cynicism about learning.

The difference between hearing, listening and auditory processing

There is a necessary distinction to make between the passive act of hearing and the active intention of listening.

It is easy to overlook how many sounds we do not listen to because our attention is directed elsewhere. One of the best examples of listening as opposed to hearing is what happens when we sleep. Sound is still being transmitted to the ear (hearing), but the brain is not attuned to receiving the messages unless a sudden noise being transmitted is interpreted as dangerous (listening), at which point we wake up.

The ability to listen effectively is dependent on having normal hearing in the first place. Good listeners are able to concentrate on a task for an extended period of time, can focus on the given message despite background noise and can process information almost as quickly as it is given. They can also store a significant amount of recent auditory information in their short-term memory. This is not a function of the ear but a reflection of the ear's relationship with the brain.

Recognise that there is not a single way for children to learn as we all have different ways of thinking and processing information from an early age, by providing a wide variety of visual, auditory and tactile learning materials.

For example, consider that approximately 20-30% of children may be auditory learners; about 40% visual; while the remaining 30-40% could be either tactile learners or some combination of visual, auditory and tactile.

Therefore we need to structure what we do and how we do it to meet all of these demands.

Auditory learners

Use their listening and repeating skills to sort through the information heard by listening to audible signals like changes in tone and pitch of sounds more attentively. They are generally not afraid to speak in class and can't keep quiet for long periods. Encourage auditory learners to:

- talk through activities and what they are doing
- participate in discussion of the materials and games or play
- use mnemonics, rhymes and songs

Visual learners

Need something to help them learn the way they learn best, which is in pictures so they can capture information all at once, just like a camera snaps a photo.

NB. Students with learning disabilities and special needs are predominantly visual learners.

Encourage visual learners to:

- Draw or use picture information or explanations, rather than discuss them
- Organise their own learning materials
- Find a quiet, visually-appealing play or activity area

Tactile learners (sometimes referred to as kinaesthetic learners)
Actually carrying out a physical activity and they are also commonly known as **do-ers**.
Encourage tactile learners to:

- sit at the front to keep them focused
- write or draw while they are reading or talking
- stretch and move in the chairs or to walk around
- use computers to reinforce learning using their sense of touch
- use gestures when giving explanations
- use hands-on experience when possible
- make and use flashcards

Activities to develop auditory memory skills and generate auditory responses

Use additional cues to secure the child's attention when beginning to give directions or reading aloud. Eg, the teacher may clap their hands twice before verbal direction.

Repeat and use information – ask the child to repeat a sequence of two or three colours and then thread beads or arrange cubes using that sequence. The pupils could also complete card number or letter sequences in the same way.

Give directions in sequential steps. Allow the child to finish one step before giving directions for another step.

Reciting or **Use rhythm and beat to improve the child's memory**: Give directions or teach facts with a song 'Mary Had a Little Lamb,' sing while you instruct 'Now it is time to wash your face, Brush your teeth, Comb your Hair, Now it's time to put on clothes, so start with underwear' action rhymes, songs and jingles. Use the actions to aid the recall of key learning points.

Memory and sequencing songs – songs like Old Macdonald, Ten Green Bottles, One Man went to Mow.

Story recall – retell the main events of a story, using puppets and background scenery as additional visual cues. (eg, Little Red Hen, The Gingerbread Man).

I went to market and I bought... – using real shopping items or pictures. Pupils have to recall the sequence of items bought.

Recall simple sequences – of personal experiences and events and share with the group or class.

Recall verbal messages 1 – containing one or two elements and requiring a yes or no reply.

Recall verbal messages 2 – containing one or two elements and requiring a simple sentence reply.

Instructions – recall and repeat task instructions containing one, then two, then three elements.

Explain – the sequence of a simple activity.

Recall – days and events of the week.

Draw a time sequence – use visual flash cards of story events to order in sequence and discuss what comes first, next, last.

Ensure that learning materials have the following elements.

- **Rich** and engaging content
- Relevance to child's life experiences
- Reflects child's **culture**

Self-motivation is the magic ingredient for achieving success in whatever you do.

NB. Also note that jumping improves rhythm and helps to regulate the nervous system, and can stimulate the speech and language centres of the brain (you may notice greater articulation when jumping).

Therefore effective use of a Trampette may assist with providing greater sensorimotor sensations (movement stimulus) as well as a general feeling of wellbeing with increased communication.