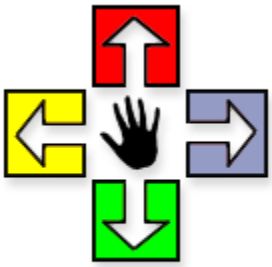
Meeting the Needs of Students Deaf and Hard of Hearing



Special Needs
Technology
Assessment
Resource Support
Team (START)

Annapolis Valley Regional School Board

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CLOSE-UP

MEETING THE NEEDS OF STUDENTS WHO ARE DEAF AND HARD OF HEARING

Robert is a twelve year old boy in grade seven. Although this is his eighth year in school Robert is only reading at a grade one level. In Mathematics he has reached a mid-grade two level. He has not repeated a grade at school. He receives special education services daily for both Math and Reading. He is not a behaviour problem at school except for occasional stubbornness. At home he likes to work with his father in the garage and outdoors. He has several friends in his neighbourhood that he hangs out with in the evenings and on weekends.

Robert's life is affected by a major factor which contributes to his difficulties with school and school related activities. He is profoundly deaf in both ears. He wears hearing aids in both ears which allow him to hear the language spoken in the classroom. He occasionally turns off his hearing aids at school or forgets them at home.

Robert's language has been assessed at an age six to seven level. Consequently the language used in the grade seven subjects is at a level which is difficult for him to deal with. This causes him to tune out whenever and wherever possible. Robert receives one to one help for one period daily from an itinerant teacher for the hearing impaired.

He has a supportive family who want what is best for their son. They did send Robert to an institutional school for the deaf and hard of hearing for one year but the move caused significant problems for Robert and his family. However, he did make progress in language and academics that one year with all the special help he received. He became very adept at using ASL (American Sign Language).

The itinerant programs to meet Robert's individual needs and works primarily on building his language skills.

Robert's dream is to become independent and self-sufficient in his community.

MEETING THE NEEDS OF STUDENTS WHO ARE DEAF AND HARD OF HEARING

Deaf and Hard of Hearing are terms used by many professionals to describe the degree of hearing loss. Students who are deaf have such severe hearing loss they cannot receive and understand auditory language with or without amplification whereas those students who are hard of hearing can process auditory information with their remaining hearing.

An audiologist determines hearing loss by measuring in decibels (dB) across a range of frequencies from low to high pitched sounds. All degrees of hearing loss can affect a student's development and two students with similar audiograms do not necessarily have the same language skills or learning needs. Vocabulary development, idiomatic and grammatical English, abstract understanding and reasoning, as well as social skill development may be delayed depending on the severity of a student's hearing loss. Table 3 on the next page lists five categories of hearing loss and the educational implications of each. A discussion of the amplification and educational technologies, classroom strategies and adaptations is also provided on the following pages. This information should help educators to better meet the needs of students with hearing impairments.

HEARING LOSS AND EDUCATIONAL IMPLICATIONS

TABLE 3

Range of Hearing Loss	Decibel Range	Educational Implications for Student
Normal	-10 to +15 decibels	• can hear all speech sounds in good acoustic environment
Minimal loss	16 - 25 decibels	• difficulty hearing faint/distant speech • may require preferential seating • needs assistance with language development
Mild loss	26 - 40 decibels	• hearing aids or FM system may be recommended by an audiologist • requires preferential seating • will likely need assistance in area of speech, language, reading, writing and social skill development • staff and students would benefit from an inservice on hearing loss
Moderate loss	41 - 55 decibels	• hearing aid and FM system are necessary • should understand conversation in quiet environment within three to five feet of person • will need help in areas of speech, language, reading, writing and social skill development • staff and students would benefit from an inservice on hearing loss
Moderate to severe loss	56 - 70 decibels	• hearing aids and FM system are necessary • most speech information is missed unless student uses amplification on a full time basis • will need help in areas of speech, language, reading and writing • requires preferential seating • will need special training in area of social skills • staff and students would benefit from an inservice on hearing loss

Range of Hearing Loss	Decibel Range	Educational Implications for Student
Severe loss	71 - 90 decibels	• hearing aids and FM system are necessary • relies mostly on vision rather than hearing for processing information • cannot hear speech without amplification • may hear loud sounds when near the sound source • requires preferential seating • difficulty with intelligibility of speech and voice quality • may have language and social delays • signing and speech may need to be taught • specialized programming is required • staff and students would benefit from an inservice on hearing loss
Profound	91 or more decibels	• hearing aids and FM system may not benefit the student • cannot hear any sounds without amplification • difficulty with intelligibility of speech and voice quality • will likely have language and social delays • requires preferential seating • specialized programming is required • staff and students would benefit from an inservice on hearing loss

TECHNOLOGY - RELATED STRATEGIES

Amplification Technology

Amplification devices are among the most common technologies for students with hearing impairments and are usually considered regardless of the severity of hearing loss.

Hearing Aids
They are miniature customized amplifiers worn by the students. These electronic devices amplify all sounds within close proximity of the student. Since all sound includes background noise, hearing aids function best in quiet environments. In noisier environments such as classrooms and outdoors, other amplification technology is required. (See personal FM system below) The region's itinerant teacher for the hearing impaired and/or an audiologist will recommend the most appropriate device(s) for the student and may teach the student, teacher and family members techniques for checking and troubleshooting hearing aids.

Cochlear Implant
An option for persons with profound hearing loss who have been unable to benefit from traditional hearing aids, the cochlear implant is partly surgically implanted into the cochlea.

Personal FM System
FM stands for frequency-modulated radio transmission. An FM system is an electronic device which transmits sound. The teacher wears a microphone to a student wearing a receiver which is connected by a cord to the his hearing aid(s). It allows the student to hear the teacher's voice in noisy environments where there is background noise. As with a student's hearing aid, the FM unit should be checked on a daily basis.

Sound Field FM Equipment on Freefield Amplification
These classroom systems send the speaker's/teacher's voice to four speakers mounted on the ceiling or wall. As with the personal FM system, the teacher wears a wireless FM microphone transmitter. This benefits students with minimal/mild hearing loss and tends to help students with auditory processing difficulties. For any students who have a personal FM unit, this can be connected to the freefield system.

Hard-wired Devices
These devices provide a small amount of amplification to a listener who is connected by wires to the speaker. The PockeTalker [Williams Sound] is an example of a hard-wired device appropriate for students who have difficulty focusing on auditory input and are easily distracted in one to one instructional situations

Other Technologies

The devices listed below can also help deaf and hard of hearing students gain access to curriculum and daily living experiences. The team should help determine the most beneficial technology.

Telecommunication Devices for the Deaf (TDD)
The text telephone is a communication device which can be attached to the telephone to send typed messages back and forth over telephone lines to other individual with TDDs. If a deaf person communicates with a person who does not have a TDD, he/she must call the operator who will place the call to a hearing person with a TDD who acts as a relayer.

Telephone Amplifiers
A telephone with a built-in amplifier allows the user to adjust the volume using a volume control on the hand set. A battery-operated portable telephone amplifier is attached to the receiver of any telephone and enables the user to adjust the volume of pay phones, friend's and hotel phones.

Closed Caption Decoder
New T.V.'s have closed caption decoders built in, enabling persons who are deaf or hard of hearing to read the spoken dialogue of a program which has captioning provided. A separate closed caption decoder can also be attached to a video cassette recorder so that videos with captioning provided can be accessed.

Laptop Computers or Stand Alone Wordprocessors
These are often used by hearing impaired students who need to watch the teacher speak as they write.

Overhead Projectors: Traditional and/or Computer Overhead Pallets
These allow the student to see the teacher while he or she is reading or explaining visual materials.

GENERAL STRATEGIES

- Be flexible with preferential seating. Depending on the class activity and competing noise surrounding or near the activity, a student may need to change his/her position in class to achieve maximum information.

- Ensure the classroom has optimal natural lighting . Do not stand in front of windows or bright lights as they obstruct your face.

- Do not speak too loudly or over-enunciate. Always use a natural speaking voice.

- When introducing new topics and concepts in class provide vocabulary lists and definitions of new words beforehand.

- Help the student achieve a sense of purpose for the class by providing an outline at the start of the class.

- After class discussions or group work, ensure that what has been presented is summarized.

- Use plenty of visuals in class (diagrams, charts, written text etc.)

- In laboratory and demonstration situations, always face the student when providing explanations.

- Have a peer with good penmanship and note-taking skills use NCR (non-carbon) paper to take notes for the student who is deaf or hard of hearing.

- Rather than repeating the same words, rephrase a sentence when the student does not understand you the first time.

- Repeat questions and comments of other students in class since the hearing impaired students may have missed what was shared.

- Keep hands and other objects away from the mouth when speaking.