Educators' Resource Guide

Supporting Students
Who Are Deaf and/or
Hard of Hearing

Manitoba

EDUCATORS' RESOURCE GUIDE

Supporting Students Who Are Deaf and/or Hard of Hearing

Any websites referenced in this document are subject to change. Educators are advised to preview and evaluate websites and online resources before recommending them for student use.

CONTENTS

P REFACE

Purpose

Educators' Resource Guide: Supporting Students Who Are Deaf and/or Hard of Hearing provides basic information to support educational programming and to help ensure successful school experiences for students who are Deaf and/or hard of hearing (D/HH). Teaching a student who is D/HH can be a challenging and rewarding experience.

Audience

This resource has been developed for educators working with students who are D/HH in Manitoba schools. The primary audience is classroom teachers, but other members of the support team (teachers of the Deaf and/or hard of hearing, educational assistants, administrators, resource teachers, counsellors, speech-language pathologists, audiologists, American Sign Language (ASL)-English interpreters, ASL specialists, etc.) will find the information useful.

Background

Educators' Resource Guide reflects the collaborative efforts of parents, professionals, and community members from across the province of Manitoba. Committee members had a diverse range of skills and experiences in working with students who are D/HH. The information in this guide reflects the range and diversity of services available to students who are Deaf and/or hard of hearing in Manitoba schools.

Document Organization

This document is organized into the following sections:

- Introduction
- Hearing Loss: This section describes how the ear works, how hearing loss occurs, and how testing reveals hearing loss. It also outlines the different types of hearing loss, as well as a variety of supports available for the different types of hearing loss.

- Identity: This section describes identity development and issues faced in the classroom by students who are D/HH.

- Communication: This section provides information about the importance of language development and how to facilitate that development and provide training in communication skills for students who are D/HH.

- Education: This section provides information about how to make classrooms more friendly and teaching practices more appropriate for students who are D/HH.

- Appendices: The handout "Relationship of Hearing Loss to Listening and Learning Needs" and information about hiring an ASL-English interpreter are provided in the appendices.

- Glossary: The glossary defines terms that have been printed in bold throughout the document. Glossary terms are printed in bold the first time they are used.

- Bibliography: The bibliography provides an overview of all of the sources consulted and cited in the development of this document.

In addition to these components, a Resources section providing contact information for a wide variety of services and agencies as well as many print, online, and multimedia resources will be online at <www.edu.gov.mb.ca/k12/specedu/documents.html>.

Sidebars and Graphics

This document uses sidebars and a variety of graphics to direct the reader.

This icon indicates a key idea.

This icon indicates a reference to the online Resources section that is available at <www.edu.gov.mb.ca/k12/specedu/documents.html>.

Term
definition

Terms included in the glossary are usually defined in the sidebar when first used if they are not explained in the main text.

Facts and quotes

Interesting facts and quotes are included as extra information.

References to resources

References to other resources, particularly other Manitoba Education, Citizenship and Youth materials, are provided.

This icon indicates a handout.

ACKNOWLEDGEMENTS

Manitoba Education, Citizenship and Youth gratefully acknowledges the contributions of the following individuals who graciously shared their impressive depth and breadth of knowledge and experience in the development of *Educators' Resource Guide: Supporting Students Who Are Deaf and/or Hard of Hearing.*

This endeavour reflects the willingness of individuals holding diverse philosophies to put aside professional differences and collaborate in the best interest of students who are Deaf and/or hard of hearing (D/HH).

> "Alone we can do so little; together we can do so much."
> Helen Keller

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Education Section

Philosophy of Inclusion

Manitoba Education, Citizenship and Youth is committed to fostering inclusion for all people.

Inclusion is a way of thinking and acting that allows every individual to feel accepted, valued, and safe. An inclusive community consciously evolves to meet the changing needs of its members. Through recognition and support, an inclusive community provides meaningful involvement and equal access to the benefits of citizenship.

In Manitoba, we embrace inclusion as a means of enhancing the well-being of every member of the community. By working together, we strengthen our capacity to provide the foundation for a richer future for all of us.

An Inclusive Environment

One exciting framework for making an inclusive environment and facilitating new ways to meet the needs of today's diverse student population is **universal design**. Universal design (UD) involves planning at the outset for the greatest accessibility and for the widest range of individuals so that retrofitting or adapting "after the fact" is not necessary. Seven guiding principles can be used as a framework to support planning and creating universally accessible learning environments:

- equity
- flexibility
- simplicity
- perceptible use
- tolerance for error
- comfort
- appropriate space

The better the learning environment adheres to the principles, the more universally designed it is. Universal design is widely accepted as best practice in planning for all students.

There are a number of factors that need to be considered in making an inclusive environment for students who are D/HH. The information in this resource will be helpful for teachers, professional staff, and parents* in understanding the following:

- the student's hearing loss
- the use of amplification and technology
- Deaf culture and identity
- the social, developmental, and educational implications of hearing loss
- classroom programming, strategies, and considerations
- agencies, schools, programs, options, and associations that support D/HH students

* In this document, the term *parents* refers to both parents and guardians and is used with the recognition that in some cases only one parent may be involved in a child's education.

A continuum of educational options is available for students who are Deaf and/or hard of hearing:

- Some students may receive educational programming within the context of the regular classroom in their neighbourhood school, supported by a variety of specialized supports.
- Some students may receive educational programming in a specialized classroom within the local school division.
- Some students will receive their educational programming in a specialized school, such as the Manitoba School for the Deaf.

School-Based Teams

A school team, including parents, is established for each student. The school-based team can include the school administrator, resource teacher, counsellor, and classroom teacher. Students with a hearing loss may require the support of additional team members, depending on the students' individual needs. These may include the following:

- an **educational assistant**, an **ASL-English interpreter**, a **signer**, or a **computerized notetaker**
- a **teacher of the Deaf and/or hard of hearing**
- an **auditory-verbal therapist**
- a **speech-language pathologist**
- an **ASL specialist**

The team is important in helping schools develop exemplary practice in inclusion and in promoting the planning, development, and monitoring of **individual education plans (IEPs)** for students in all aspects of their school life. In cases where students require an IEP, a member of the school-based team is generally designated as the case manager. The following diagram identifies some of the personnel who may be part of the IEP team.

Refer to the Glossary for definitions of bolded terms.

Acronyms in Deaf Education

ASL	American Sign Language
D/HH	Deaf and/or hard of hearing
EIC	educational interpreter consultant
SLP	speech-language pathologist
TD/HH	teacher of the D/HH

Figure 1   THE TEAM

Support Team

ASL Specialist

Social Worker   Deaf ASL
                       Instructor   Auditory Verbal
                                           Therapist

Educational
Consultant for   Reading Clinician
the D/HH or
Teacher of the
D/HH   **In-School Team**   Speech Language
                                                    Pathologist
                      Teacher(s)

Vocational
Rehabilitation   Principal   Parent(s)/
Services   Guardian(s)   Consultant for the
                                                             Blind and Visually
                Resource Teacher   Impaired

                              Student

Educational   Guidance Counsellor
Interpreter
Consultant   Teacher of the Deaf   Audiologist
                and/or Hard of   Signer(s)
                Hearing

Community   Physical Therapist
Resources   Educational Assistant   ASL English
                                       Interpreter

                                                  Occupational
                                                  Therapist

     Health Personnel

          Divisional Resources   Psychologist

                    Psychiatrist

Collaboration and flexibility among team members is essential in determining the best possible programming for the individual student. Establishing good communication with students, families, and community service providers will foster the student's social, emotional, communicative, and educational development.

H EARING L OSS

HEARING LOSS

Introduction

This section contains information about some of the medical aspects of hearing and hearing loss and information about audiology. It explains the following:

- sound
- how the ear works
- audiology and the audiogram
- the types and degrees of hearing loss
- the effects of hearing loss
- how to meet the needs of students with hearing loss

Questions about a student's hearing loss can be answered by his or her audiologist. A speech-language pathologist and/or teacher of the Deaf and/or hard of hearing will also be able to provide more information.

Hearing

Sound

Sound is an invisible vibration that begins from movement. Sound is measured in both intensity (loudness) and frequency (pitch).

Intensity is measured in decibels (dB). Frequency is measured in hertz (Hz). Most sounds are made up of a range of different frequencies.

An example of a high frequency, or high-pitched sound, is the noise made by a whistle. An example of a low frequency, or low-pitched sound, is the noise made by a big drum.

Speech is usually a mix of high, middle, and low frequency sounds. Consonant sounds, like /p/, /k/, and /s/, tend to be higher in frequency than some vowel sounds, like /aa/ as in *part*.

The Ear

The ear has two main functions. It receives sound and converts it into signals that the brain can understand. It also helps us to balance. The two functions are closely connected.

Figure 2	THE EAR
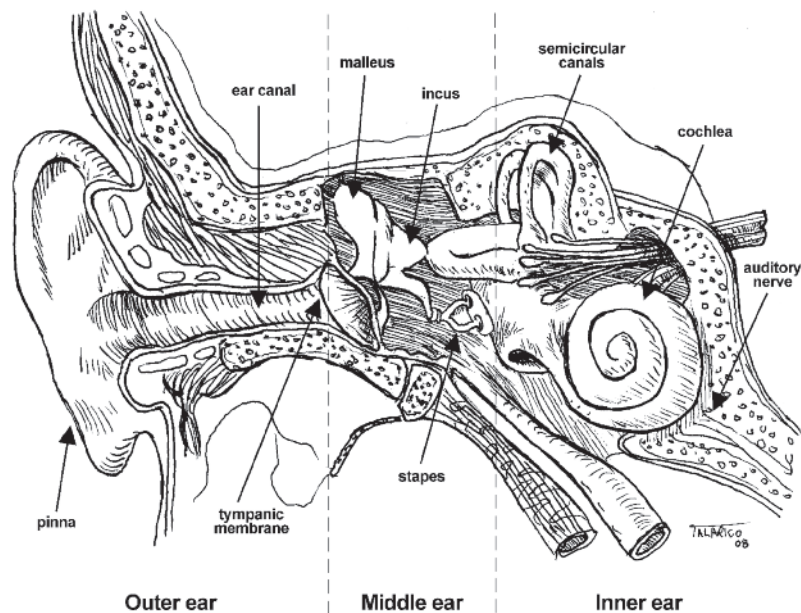
© 2008 Sean Talarico. Adapted with permission.

The ear is divided into three main sections:

- the outer ear
- the middle ear
- the inner ear

Sound passes through all three sections of the ear before it goes to the brain. The brain interprets the sound and tells us what we are hearing. It tells us if we are hearing music, noise, a voice, a car horn, a dog, or other sounds.

The Outer Ear

Sound goes into the outer ear. The part of the outer ear that we can see is called the pinna.

The outer ear picks up sound waves and directs the sound down the ear canal to the eardrum.

The eardrum (tympanic membrane) is a thin membrane stretched over the end of the ear canal that separates the outer ear and the middle ear. When sound hits the eardrum, it begins to vibrate much like the membrane of a drum when it is struck with a drumstick.

The outer ear

The Middle Ear

The middle ear contains the three smallest bones in the body, each about the size of a grain of rice. Together these bones are called the ossicles. Individually, they are called the malleus (hammer), the incus (anvil), and the stapes (stirrup).

This chain of bones is attached to the eardrum on one end and the inner ear on the other end. The ossicles form a lever mechanism that conducts sounds from the eardrum to the inner ear.

The middle ear

The Inner Ear

The inner ear is housed in the bone of the skull. This part of the ear contains the semicircular canals, the cochlea, and the auditory (hearing) nerve.

The semicircular canals are fluid-filled bony structures that are responsible for balance. When you feel dizzy on a fair ride, this is because the fluid in the semicircular canals has been disturbed.

The inner ear

The cochlea is shaped like a snail and is filled with fluid. It is lined with thousands of tiny nerve endings called hair cells. These hair cells are tuned somewhat like the keys on a piano. Some of the hair cells respond to low-pitched sounds, and some respond to high-pitched sounds.

These hair cells are connected to the auditory nerve that connects the cochlea to the brain.

Audiology

Audiology is the medical term for the study and measurement of hearing and hearing loss.

An **audiologist** is a professional who is qualified to assess hearing loss and to recommend and fit amplification systems (e.g., hearing aids, FM systems, cochlear implants).

An annual hearing assessment is recommended for students who are D/HH because not all hearing losses are stable.

The Audiogram

The **audiogram** is a graph that represents a person's responses to sound. It is used to document the softest sound a person can detect at a variety of different frequencies (pitches).

Frequency

The frequency or pitch of sound is shown by the numbers across the top of the audiogram. Low pitches are on the left-hand side of the graph and high pitches are on the right, somewhat like the keys of a piano, which range from low pitches on one end of the keyboard to high pitches on the other end. The whistle of a bird usually has a high pitch; the growl of a dog has a low pitch.

The frequencies included on an audiogram are chosen because they are important for understanding speech.

Different speech sounds have different pitches, so it is important to know how well a person hears across the frequency range. A good example of different frequencies is the word *moose*. The /m/ sound is a low-frequency sound, the /oo/ sound is a middle-frequency sound, and the /s/ sound is a high-frequency sound. In order to hear the word completely, a person must have appropriate levels of hearing at low, middle, and high frequencies.

Intensity

The intensity or loudness of sound is shown by the numbers down the side of the audiogram. The small numbers at the top are soft sounds (–10, 0, 10 decibels), and the large numbers at the bottom are loud sounds (90, 100, 110 decibels).

With a complete audiogram, an audiologist can determine the type, degree, and configuration (or shape) of the hearing loss.

The figure on the next page, "Frequency Spectrum of Familiar Sounds," shows the pitch and loudness of several environmental sounds as well as typical speech sounds. The shape these speech sounds make on this audiogram is commonly called the *speech banana*. The speech banana represents the area of pitch and loudness in which the majority of speech sounds will occur when a person is talking in a normal conversational voice.
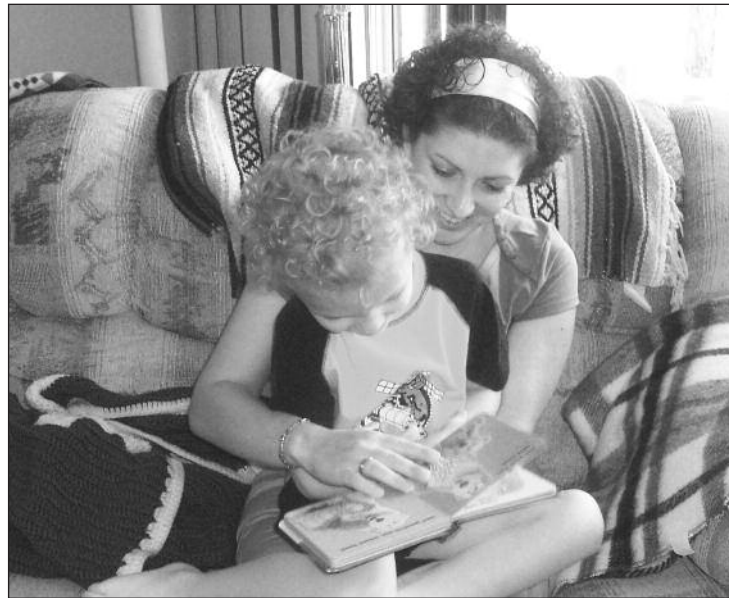
Figure 3 | FREQUENCY SPECTRUM OF FAMILIAR SOUNDS

Frequency Spectrum of Familiar Sounds
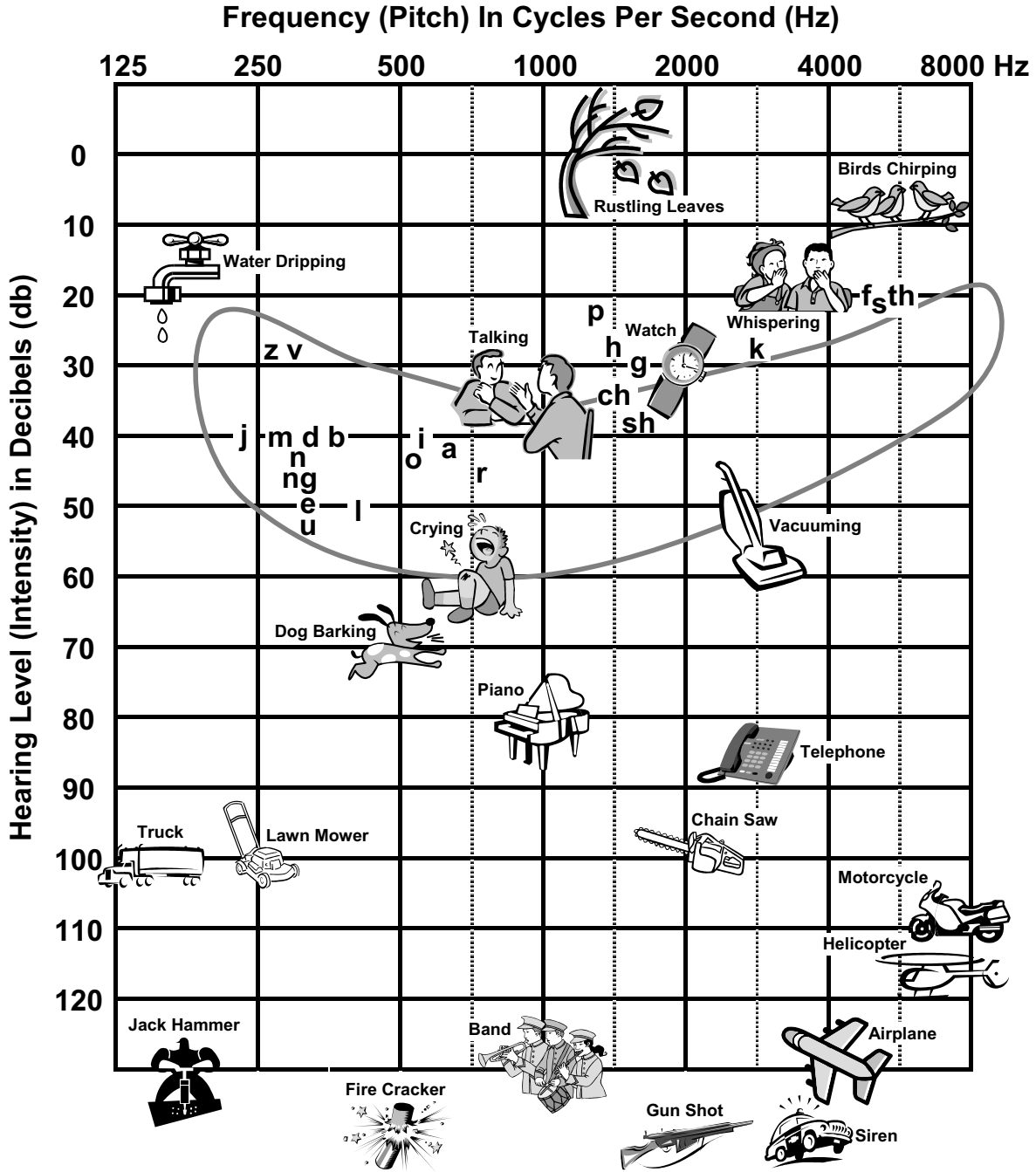
Frequency (Pitch) In Cycles Per Second (Hz)

125   250   500   1000   2000   4000   8000 Hz

Hearing Level (Intensity) in Decibels (db)

0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120

Rustling Leaves, Birds Chirping, Water Dripping, Whispering, f s th, z v, Talking, p h g, Watch, k, ch sh, j m d b, i a, o, r, n ng e l u, Crying, Vacuuming, Dog Barking, Piano, Telephone, Truck, Lawn Mower, Chain Saw, Motorcycle, Helicopter, Jack Hammer, Band, Airplane, Fire Cracker, Gun Shot, Siren

Hearing Loss

Types of Hearing Loss

Conductive Hearing Loss

A **conductive hearing loss** occurs when one or more of the structures of the outer or middle ear are not working properly. For example, conductive hearing loss may be caused by the following conditions:

- wax buildup in the ear canal
- a hole in the eardrum
- fluid in the middle ear
- problems with the bones of the middle ear

Having a conductive hearing loss is like wearing earplugs: you only hear loud sounds. Most types of conductive hearing loss can be medically corrected.

Otitis Media

Otitis media is a medical term that refers to middle ear infections or inflammation of the middle ear. Fluid in the middle ear is usually, but not always, found with this condition. This fluid may be watery or like mucus, and may or may not be associated with infection.

Otitis media is very common in children, especially young children, and is the most common cause of conductive hearing loss.

The symptoms of otitis media may include the following:

- fever
- ear pulling
- irritability
- inattentiveness
- earaches
- difficulty hearing in one or both ears

Frequent otitis media is cause for concern because of the long-term effects on a person's ability to listen, process sounds, communicate, and socialize.

Some individuals who have permanent, sensorineural hearing loss (see below) also get otitis media, resulting in additional loss of hearing sensitivity. It is advisable to check young children's hearing after they have been treated for otitis media.

Sensorineural Hearing Loss

A **sensorineural hearing loss** may result from problems in the following:

- the cochlea
- the auditory nerve
- the hearing centres of the brain

Damage to the hair cells in the cochlea is the most common reason for sensorineural hearing loss. If damaged, the hair cells cannot detect sounds.

Most types of sensorineural hearing loss are permanent and cannot be corrected by surgery or medication.

Mixed Hearing Loss

A hearing loss is classified as **mixed** when both conductive and sensorineural hearing loss are present. For example, someone with a permanent sensorineural hearing loss with a middle ear infection may have additional hearing loss (called "conductive overlay"). After the ear infection clears, and the conductive overlay disappears, the person would be said to have only a sensorineural hearing loss.

Unilateral Hearing Loss

If only one ear is affected with a hearing loss, it is referred to as a **unilateral hearing loss**.

A review of the literature indicates that some students with unilateral hearing loss may be at risk for speech and language delays and/or academic challenges. It is not known at precisely what age the unilateral hearing loss has an impact. While some students will never exhibit an effect from the unilateral hearing loss, others may experience some challenges.

Bilateral Hearing Loss

When both ears are affected, it is known as **bilateral hearing loss**.

Progressive Hearing Loss

A **progressive hearing loss** is one where, over time, the hearing becomes progressively worse in one or both ears. Some individuals have risk factors for late onset or progressive hearing loss (e.g., prolonged mechanical ventilation at birth, congenital diaphragmatic hernias, large vestibular aqueducts, certain syndromes).

> An annual hearing assessment is recommended for students who are D/HH because not all hearing losses are stable. An annual review helps the school team detect changes in hearing acuity and adjust hearing aids as needed.

Degree of Hearing Loss

The level of a person's hearing loss can be described in two ways:

- as a decibel (dB) hearing level
- as mild, moderate, severe, or profound hearing loss

Hearing loss is not described as a percentage (e.g., 60 percent Deaf).

The table below shows the terms used to describe levels and the decibel levels that they refer to:

Degree of Hearing Loss	Hearing Level in dB (Loudness)
Normal Hearing Sensitivity	0–15 dB
Minimal or Slight	16–25 dB
Mild	26–40 dB
Moderate	41–55 dB
Moderate Severe	56–70 dB
Severe	71–90 dB
Profound	91 dB or greater

Most individuals with a hearing loss will have some amount of **residual hearing**. The audiologist, SLP, or TD/HH will be able to give more information about a person's degree of hearing loss and can explain the sounds that the person may hear and the sounds that the person may not hear.

Please refer to Appendix A for information regarding the impact of these hearing losses.

Residual hearing is the amount of usable hearing.

Support organizations for students who are Deaf and/or hard of hearing are listed in the online Resources section.

A minimal hearing loss may not be a problem for an adult, but it can seriously affect the overall development of a person who is in the process of learning language, developing communication skills, and acquiring knowledge. In general, the more significant the loss, the greater the difficulty.
(Irwin)

Deaf, Hard of Hearing, and Deafened

Students who have a hearing loss are referred to as *hard of hearing* or *Deaf* according to their communication skills and cultural affiliation. Generally, students who use American Sign Language and who have identified culturally with members of the Deaf community are considered *Deaf*. (The word is capitalized to indicate a distinct cultural group similar to the capitalization of English, Spanish, or Hebrew.) Students who have a hearing loss but do not have a cultural affiliation with the Deaf community are generally referred to as students who are *hard of hearing*.

Individuals who had hearing and have subsequently lost their hearing, through illness or accident, are referred to as *deafened*. These individuals choose either Deaf or hard of hearing support organizations, based on the degree of their acquired hearing loss.

Effects of Hearing Loss on Speech and Language WITHOUT Intervention

Students with **minimal or slight hearing loss or unilateral hearing loss** may

- miss some consonants
- experience mild difficulty with auditory language learning
- experience difficulty listening at a distance or in noisy situations

Students with **mild hearing loss** may

- miss quiet speech sounds
- experience difficulty with auditory learning
- experience speech/language delays
- appear to be inattentive

Students with **moderate hearing loss** may

- hear almost no speech sounds at normal levels
- make speech sound errors
- experience language delays
- experience learning difficulties related to language delays
- appear to be inattentive
- need to be less than two metres away from speaker for best listening distance

Students with **severe hearing loss** may

- hear no speech sounds at normal levels
- speak, but their speech may be difficult to understand
- experience language delays
- experience learning difficulties related to language delays
- appear to be inattentive to verbal communication (may not realize that speaker is speaking)

Students with **profound hearing loss** may

- hear no speech or other sounds
- experience extreme difficulty understanding speech
- produce little or no verbal language
- experience learning difficulties related to language delays
- learn by visual cues or American Sign Language
- appear to be inattentive to verbal communication (may not realize that speaker is speaking)

Amplification

Amplification devices such as hearing aids, cochlear implants, and FM systems help to meet the needs of students with hearing loss. The goal of all hearing technology is to enhance the reception of speech.

When amplification has been recommended, consistent use is important.

The technology for a student is chosen, based on individual needs and school team observations, by the audiologist in consultation with the parents. Factors including the type of hearing loss, the degree of hearing loss, and the size and shape of the ears are considered in the decision-making process.

Information about the use and care of hearing aids and FM systems should be provided to the student's support team. As technology changes, ongoing information sharing is needed to support each student. For example, if a student gets new hearing aids, the FM system may require an upgrade.

Hearing aids

Ear mold

is the part of a hearing aid that is custom-made to fit into the outer ear.
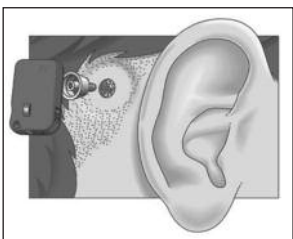
Bone-anchored hearing aid

Hearing technology should be checked daily, as young students often cannot report malfunctions in their amplification. Management of amplification is the student's responsibility, although support from the school team may be required in Early Years. See page 20 for information on listening checks.

Hearing Aids

Hearing aids are electronic devices that amplify sound. Speech and background noise are amplified by a hearing aid.

Hearing aids work best in a quiet listening situation where the distance between the person speaking and the student is six feet or less. As distance and background noise increase, the benefit provided by a hearing aid is greatly decreased.

It is important to keep in mind that hearing aids do not restore normal hearing. They amplify all sounds. They need to be kept in good working condition and worn consistently. A daily listening check is needed to ensure that hearing aids are working properly. Refer to Listening Check on page 20.

Bone-Anchored Hearing Aids (BAHA)

Bone conduction hearing aids are often used in cases where someone has a malformed ear with no ear canal, or has chronic ear infections that do not allow for the use of traditional hearing aids with **ear molds**. The bone-anchored hearing aid, or the BAHA system, is surgically implanted and conducts sound through direct bone vibration. The BAHA consists of a small titanium implant, an abutment, and a sound processor.

The surgery is very minor and is often done under local anaesthesia. There is a period of three to six months following surgery during which the sound processor cannot be worn, in order to allow the implant to be integrated with the bone of the skull.

The sound processor can easily be snapped in and out of the abutment but allows for secure attachment.

It is important that the area surrounding the abutment is kept clean to avoid infection. This can be done using a soft brush.

Implantation is not recommended for children under the age of five because of the thickness and development of the skull. A BAHA Softband can be used for these children until they are able to undergo surgery. The Softband is an adjustable elastic band with a snap to fit the sound processor into.

Cochlear Implants

Cochlear implant

A cochlear implant is a device that is surgically implanted into the inner ear and that stimulates the hearing or auditory nerve directly, bypassing the damaged cochlea. It can provide useful hearing for individuals who have a severe to profound sensorineural hearing loss and who receive limited benefit from hearing aids. A cochlear implant will not restore normal hearing, but it will greatly improve access to sound.

Components

There are two components of a cochlear implant: an internal device and an external device.

The internal device consists of a magnet, a receiver, and a band of electrodes.

- During surgery, an incision is made behind the ear, and the magnet and receiver are secured in place under the skin.
- A hole is drilled into the inner ear and the band of electrodes is inserted into the cochlea.
- The skin is then stitched and the implant remains under the scalp of the individual.

The external device consists of a microphone, a speech processor, a transmitter, and batteries.

- The microphone picks up sound, which is then converted to an electric signal by the speech processor.
- The transmitter sends the signal through the scalp to the internal device using radio frequency.
- When the signal reaches the electrodes, they send out a small electric current that stimulates the auditory nerve and is interpreted by the brain as sound.

Candidacy

Not all individuals with hearing loss are candidates for cochlear implants. Any decisions regarding candidacy are discussed by the cochlear implant team.

Bimodal Hearing/Bilateral Implantation

Individuals with cochlear implants often wear a hearing aid in the opposite ear. This is known as **bimodal** hearing. For many of these people, a hearing aid will provide only low frequency information, but this is information that a cochlear implant does not always pick up. The hearing aid and cochlear implant work together to provide as much speech information as possible.

It is also becoming more common to receive bilateral cochlear implants, or one in each ear. **Bilateral implantation** can provide advantages in sound localization and speech discrimination in noise. The candidacy criteria remain the same for bilateral implantation as for single-sided surgery.

Acoustical Issues within the Classroom

Understanding speech in noisy environments can be difficult for any student, but for a student with hearing loss, it is even more challenging. Students need access to speech to develop their listening, language, and learning skills. Background noise, distance from the person speaking, and reverberation (echo) are common obstacles that significantly reduce the student's access to crucial speech information. Although today's advanced hearing aids can improve the quality, audibility, and clarity of the speech signal, they cannot remove all obstacles to speech understanding.

Students with hearing loss, even a mild hearing loss, may not express their inability to understand family members or teachers. They may not even be aware that they missed a question or misunderstood directions. If they are young and still learning language, they may be unable to tell when speech is unclear or buried in background noise. Students with hearing loss, and sometimes students with normal hearing, demonstrate difficulty in understanding speech when there is background noise, increased distance between the speaker and the student, and/or reverberation or echoes.

Be inside your student's listening bubble!

Noise

Ambient noise is present in most listening environments including classrooms. Hearing aids cannot selectively amplify only the speaker's voice: they also pick up background sounds. In many difficult and noisy situations, hearing aids alone cannot make the speaker's voice clearer or even louder. With background noise present, the loudness level of the speech signal may be barely above, and often may be lower, than the loudness level of the noise.

The comparison of speech and noise levels is referred to as the **signal-to-noise ratio** (SNR) and it represents the difference in loudness between the primary signal (e.g., a teacher's voice) and the background noise. A student with a hearing loss needs the speech signal to be substantially louder than the noise—a higher SNR is required—even higher than the level required by his or her hearing peer in the same situation.

Distance

A student with a hearing loss has a reduced hearing range compared to a student with normal hearing. This hearing range can be referred to as a "listening bubble" (Anderson, *ELF*). As distance from the speaker increases (e.g., when listening to someone speaking from another room), loudness decreases. For the student with a hearing loss, distance becomes an obstacle to understanding speech. The greater the distance between the speaker and the listener, the less intense the speech signal becomes. This makes it more difficult for the listener to hear properly, since background noise often remains the same.

Figure 4	DISTANCE-LOUDNESS RELATIONSHIP*
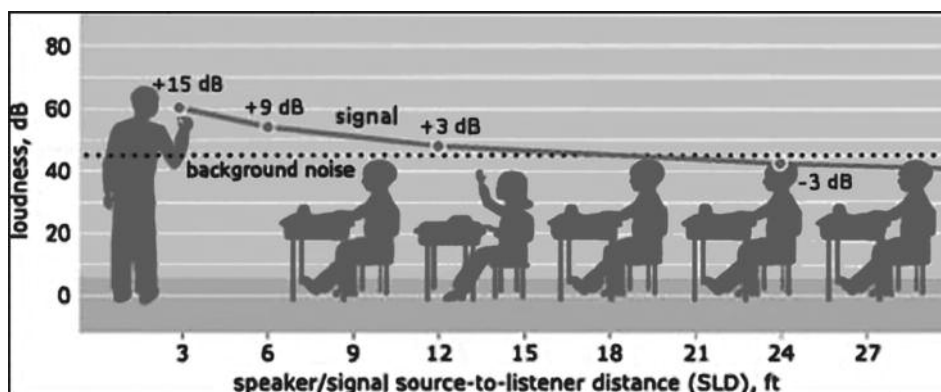
* Source: The Institute for Enhanced Classroom Hearing. "Problems: Poor Acoustics." <www.classroomhearing.org/acoustics.html> (27 Nov. 2008). Reproduced with permission.

Research has shown that a student should be within one to two metres of the speaker for maximum speech understanding. This is not always possible to achieve either in the classroom or at home.

Reverberation

Another obstacle to speech understanding is reverberation or echo. When sound "bounces" off a surface, it can actually mask, or muffle, the main signal. It can reduce the clarity of speech, decrease the signal-to-noise ratio, and make speech more difficult to understand.

Using ceiling tiles, small carpeted areas, and muffling devices on the feet of chairs improves acoustic conditions in the classroom.

FM Systems

As mentioned earlier, distance, background noise, and reverberation make hearing difficult in a classroom. FM technology can be used in addition to the hearing aid(s) or cochlear implant(s) to overcome these factors. FM technology can be a personal FM system or a soundfield system.

- A **personal FM system** uses a transmitter, microphone, and receivers to send the teacher's voice to the student's hearing aid(s) by FM radio wave. The teacher wears a microphone and transmitter. The receivers attach to the student's hearing aids directly or through an adapter called an AI boot or audio shoe. The student hears the teacher as if the teacher were standing right next to him or her, overcoming the problems of distance and background noise. Daily listening checks of the FM system are also needed. Refer to Listening Check on page 20.

- **Soundfield FM systems** use a microphone and transmitter to send the teacher's voice to speakers in the classroom. Students with mild hearing loss or unilateral hearing loss benefit from these systems because the teacher's voice is heard equally throughout the classroom and is louder than the background noise.

A soundfield system and a personal FM system can be linked to work together if both are needed in the same classroom.

The audiologist will select the correct hearing aids and FM system for the student. The teacher of the Deaf and/or hard of hearing (TD/HH) and the audiologist can provide support for the daily use of the hearing aids and the FM system.

See the online Resources section for information about muffling devices such as Floor Friends and Hushh-ups.

Personal FM system

Soundfield FM system

FM Use with Cochlear Implants

Personal FM systems are compatible with cochlear implants and are generally recommended for classroom use. Noisy environments such as classrooms can make communication more difficult for students with any hearing loss, including those with cochlear implants, and FM systems can help to make communication easier.

Care of Hearing Aids and FM Systems

Hearing aids and FM systems should be kept clean, dry, and away from heat sources. They can be worn all day during sports and play, but care must be taken not to drop them on hard surfaces during handling or cleaning.

Over time, students learn to independently manage their amplification needs. In the Early Years, students may require assistance. The following suggestions are for staff who are completing the listening check.

To care for a hearing aid, a listening tube or stethoset, a clean cloth, a battery tester, and an ear-mold blower are required.

To perform a daily listening check, become familiar with what the aid(s) should sound like to recognize a problem quickly if one should happen.

See page 20 for steps to follow to perform listening checks and to clean hearing aids.
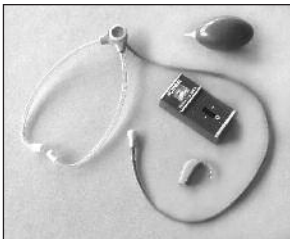
Stethoset, battery tester, and ear-mold blower

Care and cleaning recommendations and troubleshooting guides for hearing aids/amplification equipment are available online at the manufacturer's website. The TD/HH or the audiologist can provide printed copies or website addresses.

📄 Listening Checks

Hearing Aid		FM System
Listening Check	Cleaning	Listening Check
1. Test the battery with a battery tester before beginning the listening check. 2. Have a supply of spare batteries and replace batteries as needed. 3. Put the student's ear mold into the bell end of the listening tube and insert the other end into your ear. 4. Turn the hearing aid on. 5. Say the following sounds into the hearing aid: /ah/, /ee/, /oo/, /sh/, /sss/, and /mmm/.	1. Remove the ear mold from the hearing aid. 2. Wash the ear mold in warm water and mild hand soap. 3. Rinse the ear mold in warm water, and dry well. 4. Use the ear-mold blower to force air through the ear-mold tubing. Be sure no water is in the tubing. 5. Replace the ear mold on the hearing aid.	1. Once you have listened to the hearing aid, put the FM boot and receiver onto the aid. 2. Set the FM receiver to the "FM only" position. 3. Turn on the FM transmitter. Make sure the transmitter and receivers are on the same channel. 4. Listen to the aid through the listening tube while saying these sounds into the FM transmitter microphone: /ah/, /ee/, /oo/, /sh/, /sss/, and /mmm/.
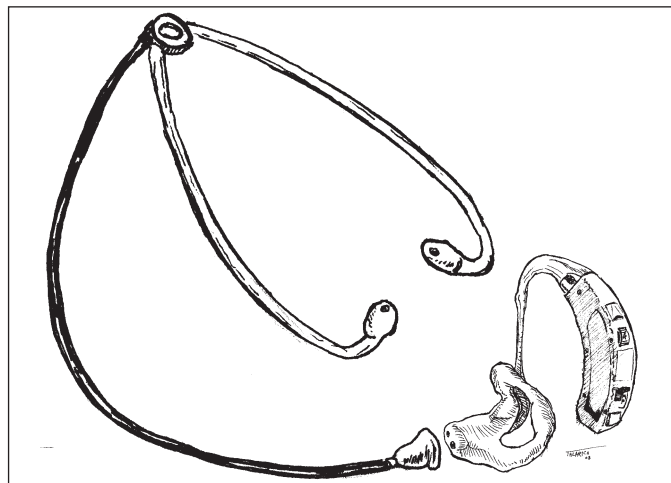
Stethoset with hearing aid and ear mold

I DENTITY

IDENTITY

Introduction

This section explains identity development and issues faced by students who are Deaf and/or hard of hearing.

> "The importance of building self-esteem in children who are deaf/hh is directly related to mental health, success in school, and ultimately success in life." (Janet DesGeorges, mother of a child who is Deaf)

Identity Development

Identity, or the representation of the self, is developed over time. Many factors contribute to the way students develop their identities: two important ones are their feelings and the feedback they receive from others. Communication (language) is also key in identity development. As students grow, they learn what it means to be Deaf and/or hard of hearing in the world around them.

The process of developing their D/HH identity is complex and will vary from student to student. Identities emerge as students interpret similarities and differences between themselves and others. An important factor is how students believe these similarities and differences are viewed by significant people in their lives (e.g., parents, siblings, teachers, classmates). When students interact with and observe the people around them, they receive direct and indirect information about what it means to be D/HH.

To illustrate, there are often two distinct viewpoints: the clinical perspective and the cultural perspective (Wixtrom; Cahen; Berke).

Clinical Perspective	Deaf Cultural Perspective
• views being deaf as a disability which distinguishes people who are Deaf from "normal" or hearing people	• views being Deaf as a difference, as a characteristic that distinguishes "normal" people who are Deaf from "normal" hearing people
• seeks a cure for deafness	• emphasizes the abilities of people who are Deaf
• places emphasis on speech reading and speech (oral skills) and avoids the use of sign language	• encourages the development of all communication modes
• places the mastery of spoken language as one of the primary educational goals and signed language as a communication tool	• focuses on learning subject matter while expanding all communication skills
• describes signed language as a strategy to access information	• views signed language as equal to spoken language
• views spoken language as the most natural language for all persons	• views signed language as the most natural language for people who are Deaf

Stages of Identity

Students may have many different identities, depending on the feedback about themselves that they have received from others (Glickman; Frasu). Some students may identify with the hearing culture, some with the hard of hearing, and some with the Deaf culture.

"It is culture that usually gives people their sense of identity, whether at an individual or group level." (Fitzgerald)

Hearing Identity

A hearing identity means that the student relates to the world just as people who can hear relate to the world. This is particularly true for students with a minimal or mild hearing loss. The students demonstrate an understanding of hearing culture and typically use speech as a primary mode of communication.

Hard of Hearing Identity

A hard of hearing identity can be adopted by students who communicate using speech as their main mode. They may move back and forth between the Deaf and hearing cultures.

Some students may feel caught between the hearing and Deaf worlds. They may have difficulty fitting in with the hearing world because they cannot use speech as a hearing person does. They may be left out of incidental conversation and not understand some of the sound-based humour or references. Students with this identity may not fully fit in with the Deaf world either. They may use a small amount of ASL or some form of signed language. They may have very little understanding of Deaf culture. Educators need to be alert to indicators of a low self-concept.

Deaf Identity

Students who view themselves as culturally and linguistically Deaf typically end up with a bicultural identity or an immersion identity. A student who uses ASL (who may also use some speech or speech reading skills) and who develops a healthy sense of pride about being Deaf or hard of hearing may also be involved in the hearing world and would have a bicultural identity. A student with a bicultural identity may be comfortable in both the hearing world and the D/HH world (e.g., may have friends who are D/HH, may attend events in the Deaf community, may have Deaf adult role models). Having a bicultural identity can contribute to the development of a high self-concept as an adult.

When a student identifies very strongly with the Deaf and/or chooses to interact primarily in the Deaf world, it is described as an immersion identity.

As Linda the Librarian on *Sesame Street*, Linda Bove played the longest recurring television role of a person who is Deaf. She started her role in 1976 and appeared on the 25th anniversary show, and still continues to appear as a guest on the program.

Figure 5 illustrates the factors that make up a healthy identity.

Figure 5	HEALTHY IDENTITY

culture + language + healthy pride ➡ healthy identity

What's in a Name?

Knowing what to call a student who is D/HH can be very confusing for teachers and service providers. It is important to note that saying "students who are Deaf and/or hard of hearing" is politically correct because it puts the student first and the exceptionality second. While it is true that we do not want to label a student with a disability, if the student has a cultural and linguistic identity, saying "Deaf/HH student" is acceptable because it recognizes the unique characteristics and culture of the Deaf.

Some common terms that may be encountered when working with students are defined in the following table (Frasu; Canadian Association of the Deaf; Schwartz; National Association of the Deaf).

Unsure what to call a student who is Deaf and/or hard of hearing? Ask the student what they prefer!

Deaf (with a capital D)	refers to participants in the Deaf community and Deaf culture; Deaf people feel that being Deaf is a vital part of their identity. Most Deaf people communicate using American Sign Language (ASL). Deaf people view not being able to hear as a difference rather than a disability.
deaf (with a lower case d)	refers to groups of people who do not identify themselves as part of the cultural Deaf community. People who are deaf tend to use speech and residual hearing to communicate and may be identified as an oral deaf person.
deafened	term used to describe people who have lost their hearing after having learned to speak
hard of hearing	a term often used to describe people with a mild, moderate, or severe hearing loss. People who are hard of hearing may use speech as their primary mode of communication. They may also identify themselves within the Deaf community.

Deaf Culture

Deaf culture is the heart of the Deaf community. Language (American Sign Language) is at the core of Deaf culture.

Language is the power to understand culture.

There are some commonalities that identify, in part, Deaf culture:

- communication—eyes, hands, teletypewriters (TTY), email, video phones, lights for doorbells and alarms, etc.
- language—American Sign Language
- Deaf history, folklore
- Deaf community—social groups, athletic teams, faith groups, service organizations
- Deaf Way—common behaviours, such as sharing information, problem solving, community consultation

Tom Humphries invented the word *audism* in 1975 to mean an attitude or belief that people who hear and speak or have good English are superior. This applies whether the person who hears and speaks is Deaf or hearing.

The Deaf community is made up of people who are Deaf and/or hard of hearing. Belonging to the Deaf community does not require a specific amount of hearing loss—it requires a way of knowing and experiencing the world as being Deaf.

Focusing on developing healthy self-esteem and self-advocacy skills is important. For suggestions on how to help students develop healthy self-esteem and self-advocacy skills, see pages 83 and 84 of the Education section.

The following diagram illustrates how a person who is D/HH may feel among a group of hearing people. The analogy could also be applied to a hearing individual at a signing-only event or a student who is hard of hearing in a noisy environment.

Figure 6	THE LONELINESS OF A DEAF CHILD

THE LONELINESS OF A DEAF CHILD

For a child, being deaf can be like living with a glass wall around him. A child who is deaf can see people talking but he cannot understand what they are saying.

People can interact with each other because they have learned a language to communicate with. But a deaf child cannot learn a language that he does not hear. This means many deaf children grow up not being able to learn or use a language to interact with others around them.

People have a strong need to communicate with each other and to build relationships. When a child does not have the communication skills to relate to other people, and when other people do not know how to communicate or relate with him, he may be left alone most of the time, even by the people closest to him. After a while he becomes socially isolated.

My neighbors don't like to look after Akhila when I have to go to the market. They say she doesn't understand anything they say.

Sometimes other children come running behind us and call Habib bad names. I wish I could protect him from all this meanness.

Source: Niemann, Sandy, Devorah Greenstein, and Darlena David. *Helping Children Who Are Deaf: Family and Community Support for Children Who Do Not Hear Well*. Berkeley, CA: The Hesperian Foundation, 2004. 2. Reproduced with permission of the Hesperian Foundation, <www.hesperian.org>.

Self-Advocacy

Self-advocacy is closely related to identity, self-esteem, and independence. Effective self-advocates are passionate and persuasive, knowledgeable and resilient, empowered and able to make informed choices that will affect their destiny.

Ideas for ways students can become strong self-advocates are available on page 84 of the Education section.

Family Support

The identification of a hearing loss in a child can be a time of stress and worry for a family. Feelings of grief, loss, fear, and denial are not uncommon.

Families will need both information and emotional support. These needs are ongoing and will change over time as, for example, families choose communication strategies, make transitions, and deal with changing technology.

Opportunities to meet other families who have experienced hearing loss can provide support.

Supporting Parents of Students Who Are D/HH

Parents of students who are D/HH will be part of the educational team and involved in the decision-making process for their child. When a child is born to hearing parents, they are often overwhelmed with information from the clinical perspective. It is natural for parents to go through a grieving process when they find out their child has a hearing loss.

If the child is to develop a healthy identity and self-concept, it is important that the parents move from grieving to acceptance. Parents may ask the classroom teacher for advice and support. The school team can provide information that supports the development of the whole student and helps parents understand the importance of having a strong language foundation. Language gives students the building blocks for social interaction and is the key to identity development. If a student learns language and meets developmental benchmarks for language at the same rate as their hearing peers, it is likely that they will develop on track in other areas of development as well.

Ideas about sharing information with parents are available on pages 83 to 84 of the Education section.

Counselling supports children and families in the development of self-confidence, self-worth, self-advocacy, risk taking, perspective, and sense of humour. (Edwards)

Seek out other families!

See the online Resources for information about networking with other families. The Society for Manitobans with Disabilities and Central Speech and Hearing Clinic provide a variety of opportunities.

The following story can be shared with hearing parents to help them to recognize their feelings and to accept their child who is D/HH.

Welcome to Holland
by Emily Perl Kingsley

I am often asked to describe the experience of raising a child with a disability—to try to help people who have not shared that unique experience to understand it, to imagine how it would feel. It's like this . . .

When you're going to have a baby, it's like planning a fabulous vacation trip—to Italy. You buy a bunch of guide books and make your wonderful plans. The Coliseum. The Michelangelo David. The gondolas in Venice. You may learn some handy phrases in Italian. It's all very exciting.

After months of eager anticipation, the day finally arrives. You pack your bags and off you go. Several hours later, the plane lands. The flight attendant comes in and says, "Welcome to Holland."

"Holland?!?" you say. "What do you mean Holland?? I signed up for Italy! I'm supposed to be in Italy. All my life I've dreamed of going to Italy."

But there's been a change in the flight plan. They've landed in Holland and there you must stay.

The important thing is that they haven't taken you to a horrible, disgusting, filthy place, full of pestilence, famine and disease. It's just a different place.

So you must go out and buy new guide books. And you must learn a whole new language. And you will meet a whole new group of people you would never have met.

It's just a *different* place. It's slower-paced than Italy, less flashy than Italy. But after you've been there for a while and you catch your breath, you look around . . . and you begin to notice that Holland has windmills . . . and Holland has tulips. Holland even has Rembrandts.

But everyone you know is busy coming and going from Italy . . . and they're all bragging about what a wonderful time they had there. And for the rest of your life, you will say, "Yes, that's where I was supposed to go. That's what I had planned."

And the pain of that will never, ever, ever, ever go away . . . because the loss of that dream is a very very significant loss.

But . . . if you spend your life mourning the fact that you didn't get to Italy, you may never be free to enjoy the very special, the very lovely things . . . about Holland.

Ninety percent of children who are Deaf are born to hearing parents.

COMMUNICATION

Introduction

Hearing loss affects a student's ability to communicate. There are many different approaches to and opinions about how students who are Deaf and/or hard of hearing (D/HH) should communicate, but everyone agrees that early language acquisition, whether that language is spoken or signed, is the most important factor for later learning and success.

During the critical stages of language development (from birth to five years of age), children pass through natural stages of language acquisition that do not occur in isolation, but that parallel development in the areas of cognition and socialization. Language acquisition, cognitive development, and socialization together form the organizational framework for the child's developing communicative competence (Roth and Spekman). For most students who are Deaf and/or hard of hearing, this process is hindered, which has an impact on learning potential because language is the tool we use for thinking and learning in social, academic, and other communicative situations.

The Importance of Language

Most people communicate through spoken language, so there may be an assumption that these two things—speech and language—are the same, but there are differences.

Speech is the ability to make certain sounds with the mouth and voice. **Language** includes words and grammatical rules for building words, as well as rules for putting words together into sentences—language is meaningful.

When a baby is babbling, it is an example of speech sounds without language—there is no meaning. When we read and write, we are using language but not speech.

Using signed language is another example of language that happens without speech. The signs connect to ideas or thoughts and help people to understand the world and other people.

The ability to have thoughts and ideas is connected to language. Students who are D/HH can develop ideas and thoughts through spoken language and/or American Sign Language. Language, whether it is oral or signed, allows people to connect with others.

Communication Options

Students who are identified with a hearing loss can learn to communicate using a number of different methods.

- spoken (oral) language
  - auditory-oral
  - auditory-verbal
- American Sign Language (ASL)
- a combination of both languages (English as an additional language)
- augmentative and alternative communication (AAC)

Spoken (Oral) Language

The two communication options for developing spoken language are **auditory-oral** and **auditory-verbal**. Both methods rely on the use of hearing aids or cochlear implants to maximize a student's residual hearing in order to access the sounds of speech.

The communication needs of each student are unique, and families choosing spoken language can obtain a range of services from the Society for Manitobans with Disabilities and the Central Speech and Hearing Clinic. Both programs support a family-centred approach, with parents/caregivers as a child's primary language model.

Most parents who choose either of these options wish for their child to be fully included in regular classroom environments with hearing peers in their neighbourhood schools.

Both methods are based on a developmental approach to acquiring speech and language skills, and share the ultimate goal of developing age-appropriate speech and language. In either method, goals for the student will also include developing pre-literacy skills, academic and cognitive skills, and social skills.

Every student is different in terms of ability to develop spoken language skills. It is important to note, however, that the earlier a student is identified with a hearing loss, the easier it is to develop spoken language closer to developmental norms.

Although both methods primarily rely on developing spoken language through listening, there are a few differences, as detailed in the chart on the next page.

Differences between Auditory-Oral Method and Auditory-Verbal Method

Method	Auditory-Oral Method	Auditory-Verbal Method
Emphasis/Goal	Using the auditory-oral method, students learn to speak by maximizing their residual hearing through the use of hearing aids or cochlear implants. Students use any natural ability they may have developed for using visual cues (e.g., lip-reading).	Using the auditory-verbal method, students develop spoken language, with an emphasis on maximizing a student's residual hearing through hearing aids or cochlear implants. The goal is to integrate listening into a student's personality. Speech (lip) reading is not emphasized or taught in developing a student's speech and language skills.
Preschool Experience	Students often have preschool experience in settings with other students who are Deaf and/or hard of hearing and/or in settings with hearing peers.	Students often attend neighbourhood daycares or preschools with hearing peers.
Service Providers	Individuals who provide early intervention services include speech-language pathologists, teachers of the Deaf and/or hard of hearing, and educational consultants.	Individuals who provide early intervention services are trained auditory-verbal therapists. Auditory-verbal therapists are speech-language pathologists, audiologists, and/or educators, who have received additional training in developing spoken language through listening.
Further Information	More information on the auditory-oral method is available at <www.oraldeafed.org>.	The auditory-verbal method has a guiding set of 10 principles that are used by professionals and parents who follow this method. More information on the principles of auditory-verbal therapy is available at <www.agbellacademy.org>.

American Sign Language (ASL)

ASL is a visual-gestural language created by people who were Deaf. ASL defines its expression through

- hand shapes and movements
- facial expressions
- body movements
- spatial relationships
- mouth movements

It is used mainly in the United States and Canada by people of all ages who are Deaf. It does not have a universally accepted written code to accompany it.

ASL uses movements and shapes of the hands instead of sounds, and "listeners," or receivers, use their eyes instead of their ears to understand what is being said.

ASL can express concrete concepts (such as food, toys, or actions) and abstract ideas (like feelings and jokes)—its range of expression is similar to any spoken language.

ASL is a very different language than English, and it has completely different vocabulary and grammar rules. ASL is also different from sign systems that attach signs to words and use English word order (Signed English or Signing Exact English [SEE]). It takes just as long to learn ASL as it would to learn any other language, like French or Spanish.

The following example illustrates the difference between ASL and English grammar:*

Spoken English	American Sign Language
A girl was sitting in a tree.	Tree, girl sit-on-branch
A boy walked up and stood.	Tree, boy walk-to-stand-by-tree
The boy was looking around.	Boy look-around
The boy looked up and saw the girl.	Tree, girl sit-on-branch, boy look-up, (face shows "saw")
The boy climbed up the tree.	Tree, girl sit-on-branch, boy climb-up (sit near girl)

* Source: Koskie, Mar, and Sandy Lysachok. *Differences in English and ASL Grammar*. Society for Manitobans with Disabilities Deaf and Hard of Hearing Services, Winnipeg, MB, 1985. Reproduced with permission.

ASL has regional variations in the signs used. For accuracy, consult *The Canadian Dictionary of ASL* or your educational interpreter consultant.

For detailed information about ASL grammar, visit the ASL University website at <www.lifeprint.com/asl101/>.

Examples of how ASL uses facial expression and gestures along with hand shapes and movements include those accompanying the signing of questions:

Type of Question	Facial Expression and/or Gesture
Yes/No	Raise the eyebrows and tilt the head forward.
Wh- (e.g., Why? Where?)	Furrow the eyebrows and tilt the head back while the body leans forward a bit.

ASL is not only a rich language, but it is also part of Deaf culture, which is a distinct lifestyle that connects people with hearing loss. There is a large body of ASL literature by and about people who are Deaf, as well as a folk heritage of Deaf culture passed down through generations that includes

- legends
- naming practices
- jokes
- word play
- tales

- games
- poetry
- customs
- rituals
- celebrations

American Sign Language (ASL) can be acquired as a first language. Spoken or written English could then be acquired as an additional language.

Research indicates that children exposed to ASL from a young age, through interactions with fluent users of ASL, develop language in the same manner as children acquiring a spoken language.

The pattern of language development in young children using ASL is similar to the development of spoken language in hearing children. This includes the following stages:

- babbling (signers babble with their hands)
- use of gestures and pointing
- first words are similar in type (predominantly nouns)
- multi-word combinations occur around the same time and carry similar intentions

Only five to ten percent of children who are Deaf are born to signing parents who are Deaf. The majority of children who are Deaf are born to hearing parents who have little or no exposure to ASL. As these families struggle to deal with this new situation, the child's exposure to language is often limited, delaying language development. In these cases, ASL is often introduced later in childhood.

> Children who are Deaf born to parents who are Deaf acquire their first language (ASL) in a normal developmental way.

> Fluency in a language typically takes an average hearing student seven years; therefore a signing student may only be emerging in their first language when entering school.

Metalinguistic knowledge

is the ability to think about and comment on language.

Acquisition of a second language is facilitated by establishing fluency in the first language.

For students whose primary language is ASL, learning academics in ASL is most effective. Content areas in academics such as science and social studies are best taught in ASL, where concepts can be fully explained in an accessible language. English language arts can be taught in written form through reading and writing, and ASL can be used to explain how English differs from ASL.

Information about supporting students who use ASL is on pages 83 to 88 of the Education section.

English as an Additional Language (EAL)

In the course of learning one language (ASL), a student acquires a set of skills and **metalinguistic knowledge** that can be drawn upon when working in another language (English). Conceptual knowledge developed in ASL helps to make input in English comprehensible.

For example, if the student already understands the concept of feelings or honesty in one language, all they have to do is acquire the label for these terms in English (written or spoken). They have a far more difficult task if they have to acquire both the label and the concept in the second language.

Often a focus on developing a student's ASL skills (e.g., vocabulary, grammar) and world knowledge is important in assisting the development of English language skills.

Information about supporting the development of English as an additional language in the classroom is available on page 70 of the Education section.

"One observation seems equally sure: Being exposed to two languages from birth, by itself, does not cause delay and confusion to the normal processes of human language acquisition." (Petitto et. al, qtd. in Nussbaum 56)

Augmentative and Alternative Communication (AAC)

Students who are Deaf and/or hard of hearing may require an augmentative and/or alternative communication system (AAC) to support their use of speech and/or ASL.

Augmentative communication refers to the use of aids or techniques that supplement an individual's existing verbal or ASL communication skills.

Alternative communication refers to the communication method used by an individual without any vocal ability.

An AAC system

- helps students with little or no speech to communicate
- provides the student with appropriate, efficient, and effective means to communicate with a wide range of partners in a variety of contexts
- may be provided for students to express their wants, needs, and ideas, and to engage in social interactions

An *unaided* AAC system can include the following:

- gestures
- signs
- body language

An *aided* AAC system can include the following:

- real objects
- photographs
- communication book with picture symbols
- speech-generated device

The student's AAC system and strategies are individualized for their learning and communication needs. The development of an AAC system is a team process. Information and support from the parents, the school team, and other professionals (e.g., teacher of the D/HH, speech-language pathologist, occupational therapist, audiologist) are needed to provide a complete assessment and plan for the student's communication needs and abilities.

The student's team will need to identify the level of symbolic functioning (e.g., real objects, photographs, picture communication systems, written language) to be used to facilitate the development of language, be it ASL or English.

Research indicates that the use of AAC facilitates spoken language, and possibly ASL, by increasing social interactions and language skills.

Information about supporting the use of AAC in the classroom is available on page 70 of the Education section.

Use of keyword signing simultaneously with speech would be an example of an unaided AAC system.

Language and Learning

Language provides an important foundation for **literacy** and learning skills for all students. The relationship between language and learning can be illustrated in a hierarchy, as in the figure below.

Figure 7   LANGUAGE AND LITERACY HIERARCHY *

* Source: Robertson, Shari. "Read with Me! Stress-Free Strategies for Building Language and Pre-literacy Skills." Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) Annual Conference. Winnipeg, MB. 3–6 May 2006. Available online at <http://student.plattsburgh.edu/derm2044/robertson readwithme.pdf>. Adapted with permission.

- The bottom block represents all the words or signs that the student can understand (receptive language), and it is the largest.

- Only a portion of these words make up the ones the student can speak or sign (expressive language).

- Again, only a portion of those expressive words will be the ones the student can read (receptive written language), and even less will be part of their writing (expressive written language).

- As the top block indicates, only a small portion of the student's receptive language is brought to the task of learning in other content areas (science, math, social studies, and so on).

If the student's receptive language base is limited, all other areas of language and literacy learning may be affected, including reading, writing, and other classroom learning.

Each level does not need to be taught separately. An integrated approach should be taken to developing reading, writing, and learning in the classroom, always considering the student's background knowledge and skills.

In cases where a student's receptive language skills are limited, the curriculum needs to be adapted to the student's level of understanding.

English Grammar Acquisition

Acquiring English grammar structures for students who are Deaf and/or hard of hearing is often a challenging process.

If the student has a functional and well developed first language (such as ASL or English), the difficulties may be somewhat lessened, but nevertheless will remain a challenge for the majority of students with a hearing loss.

The grammar of a language involves the set of "rules" utilized to string together words to form sentences (**syntax**) and to mark various **morphemes** appropriately.

Hearing students acquire English grammar through exposure and **incidental learning**. The finer points of grammar are taught in later grades, but the foundations are usually well developed by midway through elementary school.

For students who are D/HH, English grammar is developed through reading/writing or speaking/listening, depending on the degree of residual hearing, the communication mode, and/or individual learning styles.

Whichever is the primary mode, English is a difficult language to acquire without the support of the incidental learning that occurs with free and easy access to the language on a daily basis. Therefore, students who are D/HH often require direct instruction and practice drills on specific skill areas (e.g., using past tense verbs). Repeated exposure and opportunities to practise new skills are crucial.

Activities that focus on the printed word and reading literacy help to build skills. Contextual and **semantic** cues can then be used to process English sentence structures.

Syntax

is the set of rules for combining words into sentences.

Morphemes

are meaningful parts of words (e.g., suffixes, roots, prefixes).

Incidental language learning

has occurred when students develop the ability to learn words without direct instruction or numerous exposures.

Semantics

is the aspect of language concerned with meaning.

Typical areas of concern for students who are D/HH include the following:

- copula (or *to be*) verb (e.g., She *is* smart.)

- present progressive tense (*be* + *ing*) verb (e.g., He *is* runn*ing*.)

- past tense—regular and irregular (e.g., They walk*ed* to school. They *ran* to school.)

- article and pronoun use (e.g., *That* is *her* book.)

- subject/verb agreement (e.g., *He is* running. *We are* running.)

> Students with hearing loss tend to be stronger semantically than syntactically.

Difficulties in these areas are often reflected in the student's comprehension and expression of the printed English word in the classroom.

If the basic structure of a language is not fully understood, a student will not be able to "scaffold" or build on those skills to learn more complex features. As a result, explicit teaching of syntactic and morphologic rules will be required for many students.

Opportunities to apply new skills through exposure to a wide variety of literature are also important.

More information on strategies for helping students to acquire English grammar is available in the Education section on page 71.

Development of Communication Skills

Students with hearing loss may benefit from direct instruction in listening and speaking skills. This instruction could be in the areas of auditory training, articulation, oral motor therapy, and voice. In addition, students may demonstrate skills in speech reading. Yet other students may be involved in auditory-verbal programming and would need continued development of their prescribed auditory-verbal goals.

Auditory Training

Students with hearing loss ranging from mild to profound may benefit from auditory training. The degree to which a student who is hard of hearing can develop his or her auditory (listening) skills will vary, depending on a variety of factors, including the following:

- residual hearing

- age of onset

- age of diagnosis

- age of intervention
- use of appropriate amplification
- environment for listening (quiet, acoustically sound)
- exposure to a variety of speech and environmental sounds and experiences
- desire to develop auditory skills
- cognitive ability

Auditory training involves developing skills in the following areas:

- awareness of sound: discriminating and identifying environmental and speech sounds; localizing various sounds
- phonetic listening: discriminating the supra-segmental aspects of speech (pitch, duration, loudness); discriminating sets of words varying in difficulty from phonetically dissimilar words (e.g., *ball*, *elephant*) to phonetically similar words (e.g., *tap*, *tack*)
- auditory comprehension: increasing auditory memory, recalling information from a sentence/paragraph/story, sequencing information, listening for absurdities, and listening for critical information in the presence of background noise at various distances from the speaker

When planning for daily auditory training, it is essential to establish a quiet setting, with a minimum of extraneous noise and distractions. Development of the student's listening skills are emphasized, therefore it is beneficial to minimize speech-reading cues during auditory training sessions. The consistent use of appropriate amplification is essential for auditory training. Goals in the areas of language, vocabulary, and basic concepts can be reinforced during auditory training sessions.

For strategies to develop students' auditory skills, see the Education section, page 72.

Articulation

Articulation disorders are characterized by difficulty in producing speech sounds correctly. Common speech sound difficulties for students with hearing loss may include

- omissions (e.g., -*kool* for *school*)
- substitutions (e.g., *but* for *bus*)
- distortions (e.g., *shair* for *chair*)

Considerations

Students who are D/HH, depending on the degree and type of hearing loss, may have articulation or speech sound errors.

A high-frequency hearing loss is the most common type of hearing loss. Students with a high-frequency hearing loss may experience difficulty hearing and producing high-pitched sounds, including /s/, /th/, /f/, and /sh/ (Doyle and Dye 8).

The /s/ phoneme is the most frequently occurring speech sound in the English language and also carries the most meaning. The /s/ and /z/ speech sounds are grammatical markers for plurals (e.g., cat/cats), possessives (e.g., mom/mom's), and verb tenses (e.g., run/runs). Not hearing these sounds may affect the intelligibility of a student's speech, depending on the hearing loss and the benefit the student receives from amplification.

A student with articulation difficulties may have problems with the following areas of classroom learning:

- oral expression
- **phonological awareness**
- written expression
  - spelling
  - grammatical structures
  - editing

A speech-language pathologist will assess a student's speech sound production. Speech sound intervention may include direct therapy by the speech-language pathologist, indirect therapy, and/or a home program.

For classroom strategies to support accurate speech production, see page 72 of the Education section.

Oral Motor Therapy for Students Who Are D/HH

Some students lack the strength and muscle control for speech. Oral motor therapy may be used as a warm-up for the speech mechanism, increasing oral muscle strength, control, and range of motion. The speech-language pathologist can assist in determining the need for oral motor therapy.

Phonological awareness

is the ability to hear and manipulate the sound structure of language.

Awareness of mouth, lip, and tongue movements and placement can be crucial when auditory feedback is minimal or non-existent.

Oral motor approaches may be used

- with young non-verbal—and in extreme cases, non-vocal—students to develop the basic foundations of speech (e.g., an oral airstream, basic laryngeal movement on an airstream, tongue movement, lip shaping)

- in promoting speech sounds, when students are unable to imitate or follow verbal instructions to produce particular sounds, even at a single sound level. Muscle control for producing an individual vowel or consonant sound (e.g., lip rounding for vowels, placement of tongue for specific consonants) may be practised and then incorporated into speech. (Williams, Stephens, and Connery)

Strategies to use with students who are D/HH and who appear to be having difficulty acquiring speech are available on page 72 of the Education section.

Voice

Voice problems related to hearing loss vary considerably according to the type and degree of hearing loss. Typically, the more significant the hearing loss, the more likely that the student will have voice issues.

Students who are D/HH may not receive adequate auditory feedback to monitor their own voices. A voice problem may interfere with the intelligibility of a student's speech.

Voice difficulties may occur in the following areas:

- Timing, Rhythm, and Phrasing (word emphasis, pauses): Since the rhythm of English is especially stress-oriented, these dimensions are extremely important for speech intelligibility.

- Intensity (volume): Intensity problems can range from too loud to too soft, or there may be erratic changes in loudness levels. Students who are hard of hearing or Deaf may use a loud voice in a noisy classroom so they can hear themselves speak.

- Pitch and Intonation: Pitch and intonation may vary from insufficient pitch change, which may result in a monotone voice, to excessive or erratic pitch. The excessive variation may result from attempts by the student to increase the amount of feedback they are receiving from the activity of producing speech.

Some students who are D/HH may not have enough residual hearing to develop intelligible spoken language.

Hearing test results alone cannot predict success in developing spoken language.

With the improved sound of hearing aids and cochlear implants, students have less difficulty monitoring their own voice quality.

Appropriate pitch may be difficult to master because the student may not have a conceptual appreciation of what pitch is. Hearing people describe pitch in terms of high and low. Students who are Deaf may not have the same opportunity to learn by hearing high and low in the auditory domain. This is why a student who is Deaf may attempt to raise the pitch by increasing the loudness level of his or her voice.

- Resonance (hyper-nasality, hypo-nasality): Hearing individuals subconsciously learn to adjust resonance through the auditory channel and through trial and error. An individual who is Deaf may not have access to the auditory information required to develop appropriate resonance.

    Atypical resonance in some individuals who have a hearing loss can also be the result of structural abnormalities (e.g., cleft palate, syndromes).

The speech-language pathologist will diagnose specific problems in these areas and may give recommendations to promote their development.

Speech Reading

Speech reading was previously known as lip-reading, but now encompasses lip movement and facial expression. Speech reading provides some information when used in conjunction with residual hearing, amplification, and other strategies that assist in communication for a student with hearing loss.

Speech reading is not a reliable means of communication when used in isolation, as only 33 percent of speech sounds are visible on the lips (e.g., /b/, /m/, /l/); the rest are not visible (e.g., /k/, /g/, /ng/). The speech readability of words will vary within the sentence, due to the words or sounds that come before and after the word. It is also easier to speech read when the context of the conversation is known.

Misunderstandings occur when speech reading. Factors that may affect the student's ability to speech read for information include

- prior knowledge of the content
- predictability of the message
- familiarity with the vocabulary used
- the speaker's rate of speech
- visibility of the speaker's face
- distractions such as gum chewing, eating, moustache

Speech reading for information is a skill that may develop over time, as the individual grows in knowledge, reasoning, and language skills.

Language Knowledge and Skills Needed in the Classroom

All students, those who are hearing and those who are D/HH, need certain knowledge and skills to be successful in school. These include the following:

- vocabulary
- concepts
- following directions
- wh- questions

- storytelling
- critical thinking
- social skills

Vocabulary

Vocabulary is one of the essential components of language development and reading skills acquisition. Many students, including those who are Deaf and/or hard of hearing, have poorly developed vocabulary in both spoken and written language.

It is estimated that the average student hears approximately 30 000 words per day. A student who is D/HH may not have access to many of those words. We cannot, therefore, assume that students who are D/HH will learn language, including vocabulary, incidentally.

Learning Vocabulary

For the purposes of learning vocabulary, various groupings can be used:

- Association (how things go together)
- Function (what items are used for)
- Categories (name for a group of items that belong together)
- Attributes (descriptors)
- Comparisons (how are items the same/different)
- Synonyms (words that mean the same thing)
- Antonyms (opposites)
- Definition (how to define the word)
- Exclusion (how an item doesn't belong)
- Multiple-meaning words (words that have more than one meaning)

> Students may need to be taught explicitly and intentionally using specific word instruction, word-learning strategies, intensive work, repetition, and active engagement.

Classroom Connections

Students who are Deaf and/or hard of hearing may

- have a limited vocabulary
- not have made the associations that certain items go together and why
- be weak in identifying categories or in classification skills
- need vocabulary to be taught in multiple modalities (e.g., English print, ASL, spoken)
- need vocabulary to be intentionally linked to whatever background knowledge may or may not exist (in which case background knowledge would need to be taught)
- need vocabulary to be pre-taught and background information developed
- need links made to similar items and categories identified—in many cases, students have picked up words here and there and don't have anything to link these pieces of information to (linking vocabulary to a category and giving it a name will help students form concepts and vice versa)
- benefit from using graphic organizers such as semantic webs and maps
- need development of multiple-meaning words—students may learn a word in spoken language or English print and associate it with only the one meaning (this becomes especially difficult as language becomes more complex in the later years and directly affects comprehension and production of written and oral material)

Concepts

Basic concepts are the building blocks that students need to follow directions, engage in classroom routines, and provide descriptions. Acquisition of concepts occurs in a developmental sequence.

Concepts include the following:

- Colours (e.g., red)
- Numbers/counting (e.g., 3)
- Letters (e.g., A)
- Size (e.g., big, short)
- Comparisons (e.g., same, different)
- Shapes (e.g., circle)
- Direction/position/location (e.g., on, behind, near, next to)

When introducing a word, it is important to explore different meanings the word could have in order to enhance comprehension.

Students will increase their vocabulary skills if they have a wide range of experiences, sufficient number of exposures to the words, active engagement, consistent direct instruction, and useful word-learning strategies.

Understanding of these concepts is essential for classroom success and is necessary for performing everyday classroom activities such as reading, writing, arithmetic, listening, and speaking.

- Self-/social awareness (e.g., happy, mother, young)
- Texture/material (e.g., hot, smooth, clear)
- Quantity (e.g., many, enough, nothing)
- Time/sequence (e.g., night, next, before)

Concept development may be delayed in students who are Deaf and/or hard of hearing.

Classroom Connections

Students who are D/HH do not necessarily develop concepts in the sequential (developmental) order. They may have mastered higher-level concepts but have gaps in earlier concepts. Thorough assessment of all concepts may be necessary, and any gaps in development may need to be intentionally taught.

Hands-on experiences and actual objects are a great way to teach concepts and can easily be integrated into any lesson. Presenting pictures and the words in print on the board also facilitates learning.

More suggested strategies to help students develop vocabulary and concepts are available on pages 73 and 74 of the Education section.

Following Directions

Following directions in a noisy classroom can be very challenging for a student who is Deaf and/or hard of hearing.

Following a direction involves hearing, understanding, and remembering a set of instructions presented in a specific order or sequence. A student who is D/HH may not be able to follow a direction due to a breakdown in any one of the following areas:

- The student may not be able to hear the direction or only hear part of it due to the noise level in the classroom or the distance the student is from the speaker.
- The student may not understand the concepts, vocabulary, or the grammatical structures used in the direction.
- The student may not be at the developmental listening level to remember the number or sequence of directions.

Classroom Connections

Strategies that a teacher can incorporate on a daily basis in the classroom setting to aid a student who is D/HH are available on page 75 in the Education section.

Wh- Questions

Understanding and responding to wh- questions is a complex language task. Frequently, students who are D/HH have difficulty with wh-questions, especially if they are not familiar with the topic.

Understanding is improved if the question concerns

- an item that is concrete/visual in the room (e.g., "Who is that girl?")
- a topic that they have experienced directly (e.g., fishing) and that has affected them

Wh- questions vary in complexity. From simplest to hardest they are

- Who?
- What?
- Where?
- When?
- How?
- Why?
- Negative why?

Classroom Connections

The "why" questions require abstract reasoning skills and are crucial for success in the classroom, specifically for following directions and instructions. The most difficult wh- questions (e.g., Why? How?) are also the most frequently used in the classroom setting. Cognitive and/or language issues and the lack of an experiential base play a large role in this area of difficulty.

Strategies to help students with wh- questions are available on page 75 of the Education section.

Storytelling

A story or narrative is an account of an experience or event that is sequenced in a particular order to convey meaning. Stories are an integral part of everyday life and are an important source of information about language and our world.

Students are constantly exposed to stories and expected to comprehend them in a variety of forms, including signed storybooks or oral stories, television, movies, and cartoons.

Students who are unable to understand stories may have difficulty reading, telling, or writing stories, or even difficulty recounting events that have happened.

The student who is D/HH may be delayed in his or her understanding and use of narratives due to limitations in the following areas:

- vocabulary
- concept development
- grammatical language
- auditory memory
- overall background knowledge

Due to limitations in language, the student may understand the action but not the underlying intentions or beliefs of a story, which will affect his or her ability to understand or retell the story.

For example, in the preschool story of Little Red Riding Hood, the story is much more than a tale of action in which Little Red Riding Hood is just taking food to her grandmother. The content of this story is related to the desires and beliefs of the characters.

Little Red Riding Hood has a false belief, in that she thinks that the wolf is her grandmother, but the reader or listeners know that the wolf is deceiving her and intends to eat her. The student must see beyond the mere action of the story and understand that Red Riding Hood doesn't know what the listener knows.

Classroom Connections

Critical Thinking Skills

The development of age-appropriate critical thinking skills for students who are D/HH is complicated because there is often an overlay of language difficulties.

Higher-level language abilities are often missing due to lack of experiential language which, in turn, has an impact on reasoning skills. Many of these students are concrete thinkers who need direct assistance to develop more abstract reasoning skills. Direct therapy to teach problem-solving constructs may be necessary.

Developmentally, a student needs to acquire the following skills:

- classification skills
- comparing and contrasting skills
- answering true/false questions
- making and explaining inferences
- identifying causes of events
- identifying problems and solutions

Students with a hearing loss may experience difficulties developing these skills.

Classification Skills

The ability to classify is a basic cognitive function that enables students to organize ideas, sequence them, and think about them logically. These skills are the foundation for all abstract thought.

Comparing and Contrasting Skills

The ability to sort objects into sets based on attributes and to be able to look at the similarities and differences between the sets develops with classification skills.

Answering True/False Questions

Answering true/false questions requires taking in information and questioning its validity.

Students need to assess information based upon their prior knowledge and newly acquired data. They need to evaluate information, form opinions, know the difference between opinion and fact, and be able to express their understanding.

Making and Explaining Inferences

Making and explaining inferences involves combining old information with new, evaluating what is important, and analyzing the results from this logical process. This is a high-level language ability.

Identifying Causes of Events

To identify the causes of events, students look at a situation and determine the probable cause from a number of options. This skill moves from the concrete through to a highly abstract reasoning ability and requires flexible thinking processes.

Identifying Problems and Solutions

The ability to identify problems and solutions can be actively taught as a process. An effective tool in teaching the process is the use of external frameworks or visuals such as the one on page 76 in the Education section.

Social Skill Development for Students Who Are D/HH

Students who are Deaf and/or hard of hearing may experience difficulties in the development of appropriate social skills.

The Significance of Incidental Language Learning

Many social skills are acquired in the hearing population through incidental learning. This means that hearing students learn social nuances in their everyday interactions by seeing and hearing others around them. These skills help them navigate the social world.

Students who are D/HH may have limited access to this incidental learning, especially if they are in an environment where their primary mode of communication is different from that of their family and peers. As families begin to deal with alternative forms of communication or adjust to their child's hearing loss, often communication is basic and directive (e.g., "Go to bed"; "Time to eat").

Students who are D/HH need exposure to interactive communication so that they become aware of the grammar and use of their language. This also helps students develop social skills.

The teacher may need to provide a solid background in critical thinking skills to facilitate effective problem solving.

Using Language

Use of language can be broken into several categories reflecting maturation and language development. These categories are

- pre-language skills
- pragmatics or the functions of language
- social skills

Pre-language Skills

Pre-language skills are behaviours that a student must acquire in order to adequately develop language. They include the following:

- making eye contact
- taking turns
- being able to focus on the same task as another person
- paying attention to things and people
- being able to imitate and use gestures and sounds
- playing appropriately with toys
- understanding cause and effect
- communicating with intent

Pragmatics or the Functions of Language

Pragmatics delineates how a student uses their language to have an impact on the world around them. Pragmatics basically explains why a person communicates. These purposes include the following:

- making a request
- protesting about something
- greeting or saying goodbye
- responding to another person's communication
- asking for information
- thinking, planning, and problem solving
- sharing feelings, ideas, and interests

It is at the functional (pragmatic) level that the student who is D/HH may experience negative responses to his or her lack of knowledge.

It should also be noted that if a student uses ASL, Deaf culture has its own expectations for social behaviour that may or may not be the same as hearing culture expectations. These need to be taken into account. Exposure to both systems of relating is recommended.

Students who are Deaf and/or hard of hearing may have difficulty with paying attention, taking turns, and making eye contact if they are struggling to understand a hearing world without clear expectations of how they are to behave.

Social Skills

Social skills are the behaviours a student exhibits to survive in a social world. Grasp of social nuances is crucial as these students mature. These skills may include the following:

- social register (e.g., how a student addresses a teacher versus a peer)
- non-verbal conversational skills (e.g., body language, facial expression)
- ability to express opinion
- ability to express emotions
- conversational skills
- manners
- ability to resolve conflicts
- problem-solving skills

With higher-level social skills, the demand for language skills increases. Exposure to a variety of social situations is crucial for the student who is D/HH to grasp the often subtle cues that influence social appropriateness.

Issues most often seen with the D/HH population include poor problem-solving skills, difficulty with conversational skills, poor self-esteem, and difficulty with the higher-level language skills that go along with the social aspects of interaction.

A problem-solving process that can be taught in the classroom is provided on page 76 in the Education Section.

EDUCATION

Introduction

Hearing loss can affect the way

- the student communicates
- the student learns language
- the student receives information
- the student demonstrates learning
- the teacher assesses learning

Language skills often affect the student's ability to meet curricular outcomes. Students with language delays may require adaptations to accommodate their learning needs.

This section will provide information about how to make classrooms and teaching practices more friendly and appropriate for students who are Deaf and/or hard of hearing.

Assessment

Classroom-Based Assessment

Assessment is a regular ongoing process in every classroom. Effective assessment practices include using a variety of tools and methods, such as classwork, tests, developmental checklists, and portfolios of student work.

Assessments for students who are Deaf and/or hard of hearing will be similar, but may require adaptations. Examples of assessment adaptations are

- clarifying directions
- providing a quiet room for tests
- allowing a longer period of time for exams or tests
- providing verbal or signed tests and assignments
- providing alternative ways to test knowledge other than written

When assessing students who are D/HH, ensure that you are using language at the student's level. Test academic knowledge, not language skill. For example, the student may know the science concept but may not understand the complex English language sentence used in the test question.

Specialized Assessment

Assessments are often conducted with students who are D/HH in order to establish a baseline of receptive and expressive skills. Formal assessments in areas such as cognitive, language, speech, and auditory skills are done by a specialist such as a speech-language pathologist, a teacher of the Deaf and/or hard of hearing, an ASL specialist, an audiologist, or a psychologist. Any assessment of students who are D/HH includes consideration of their primary communication mode.

Standardized tests

are "carefully constructed measurement instruments that require specially trained individuals to ensure they are properly selected, interpreted, and used." (Manitoba Education, Citizenship and Youth, *AEP: Handbook for Student Services* 79)

All the areas of communication, speech, and language that were discussed in the Communication section can be assessed using specialized tests (e.g., vocabulary tests, language tests, reading and writing tests, and articulation tests). The purpose of this testing is to measure the progress students are making and, in the case of **standardized tests**, to compare them to how other students of the same age or grade level are functioning.

Generally, these tests are given by speech-language therapists, auditory-verbal therapists, or teachers of the Deaf and/or hard of hearing. In some cases, resource teachers or special education teachers might also do some testing with students who are Deaf and/or hard of hearing.

The specialists conduct an initial assessment to establish a baseline of skill level in specific areas. Follow-up assessments will reveal progress and areas requiring further development. Assessments are also used to

- identify gaps between curriculum goals and the student's skills
- identify specific skill areas requiring further development (IEP goals)
- measure the effectiveness of tutorial goals and the appropriateness of materials

Students with a hearing loss may require adaptations (e.g., the use of signed language, support of pictures or gestures) during standardized assessments to accommodate their learning needs. In addition, the results of testing must be interpreted with caution because the tests are not developed specifically for students who are D/HH.

The specialists in this area will interpret test results and provide information to help the classroom teacher work with students in the classroom and to help parents work with the students at home.

The school support team or specialists can provide further information regarding information about assessing communication skills in students who are Deaf and/or hard of hearing.

Individual Education Plans

An **individual education plan** (IEP) is a document that is tailored to the individual student's educational and socio-emotional needs in the school environment. When trying to decide which areas to address in programming for a student with a hearing loss, consider the following:

- educational implications of the student's hearing loss
- teacher observations/student's classwork
- verbal/ASL/written expression
- formal assessments (from speech-language pathologist, **psychologist**, ASL tutor, **occupational therapist** [OT], **physiotherapist** [PT])
- student's values and goals
- parents' values and goals for the student
- age appropriateness
- urgency of the need
- social development
- instructional time and available resources

Individual Education Planning: A Handbook for Developing and Implementing IEPs (Manitoba Education and Training) is available online at <www.edu.gov.mb.ca/k12/specedu/iep/>.

The focus of an IEP for a student who is D/HH is often on communication, language acquisition, and socio-emotional development. It is unnecessary to identify academic goals for students with a hearing loss if they are performing at the same level as their peers. Instead, teams keep records of adaptations that assisted the student in achieving curricular outcomes.

Student-Specific Outcomes

The student's current level of performance in each targeted domain is described in the IEP and is used by the team to

- select appropriate **student-specific outcomes**
- determine ways to adapt materials, instructional strategies, and assessment procedures
- assess student progress

The student's levels of performance when the IEP is developed serve as a baseline for assessment when the IEP is reviewed.

IEP Domains

Depending on the individual student, some or all of the following areas of need might be addressed in the IEP:

- language (English, ASL): for example, speech, vocabulary, grammar, pragmatics (social language)
- basic concept knowledge: for example, quantity, size, directions, time, prepositions
- academics: for example, reading comprehension, higher-level thinking, subject-specific concepts/vocabulary
- listening skills: for example, awareness/comprehension of sound, following directions
- social skills: for example, classroom routines, social rules, demonstrating responsibility, respect, problem solving, helping peers understand hearing loss
- independence, self-advocacy: for example, hearing aid use and maintenance, requesting repetition/clarification, stating needs as a D/HH person
- other domains as needed: for example, behaviour, occupational therapy, physical therapy

In developing the IEP, teams prioritize and categorize the identified needs into **domains**.

Student-specific outcome

is a term used for "goal" in an IEP for a student; it states what the student will learn, when this will be accomplished, and how the goal will be met.

Domains

are specific areas of development that might be targeted in the IEP. Examples of domains include communication, social, academic, motor, cognitive, self-management, community, vocational, and recreation/leisure.

Communication Domain

The communication domain is often the main area of need for students with hearing loss, regardless of the student's age. The speech-language pathologist, the auditory-verbal therapist, the teacher of the Deaf and/or hard of hearing, the ASL specialist, or the Deaf ASL instructor may suggest focusing on the following areas (these are suggestions—goals may vary, depending on individual student needs):

- Vocabulary
  - Early Years: directions and language of instruction, classroom, weather, holidays, adjectives/adverbs, basic concepts, curriculum
  - Middle and Senior Years: curriculum, language of instruction, current events, peer-related language, famous people

- Speaking Skills
  - All ages: speech sounds, voice quality, volume, intonation/pitch, rhythm/timing

- Grammatical Structures
  - Early Years: plurals, verb tenses, possessives, pronouns, question forms, adjectives/adverbs, different sentence types
  - Middle and Senior Years: clauses, passive voice sentences, hypothetical questions, writing paragraphs/essays

- Understanding/Use
  - Early Years: directions, idioms, multiple meanings, figurative language, humour, inferences, higher-level thinking skills, recognizing and correcting grammatical errors
  - Middle and Senior Years: opinion, sarcasm, persuasion, higher level thinking and reasoning skills

- Pragmatics (Social Skills)
  - Early Years: take turns, start a conversation, maintain a topic, seek and give clarification, use appropriate register, retell information, interrupt appropriately, participate in a group
  - Middle and Senior Years: use the "in" language of peers, respect others' opinions, converse with the opposite sex, participate in clubs and teams

- American Sign Language
  - An ASL specialist or Deaf ASL instructor may suggest development of the following areas: vocabulary, ASL grammar, Deaf culture

- Augmentative Communication
  - Students who are D/HH with additional needs may require a form of augmentative or alternative communication (e.g., PCS or PIC symbols)

Auditory Skills/Amplification Domains

The audiologist, speech-language pathologist, auditory-verbal therapist, or teacher of the Deaf and/or hard of hearing may suggest focusing on the following:

Auditory Skills

Develop listening skills in a variety of areas:

- awareness, discrimination, recognition, comprehension of sounds/voices
- ability to detect and understand directions/sentences of increasing length and complexity in quiet and in background noise
- ability to answer questions based on information provided orally only

Amplification

Develop an understanding of how the equipment works and develop skills in the independent use of the equipment:

- Put the hearing aid/cochlear implant/FM system on independently and adjust the controls as needed.
- Use and care for the equipment appropriately.
- Indicate malfunctions and fix if possible.

Deaf and/or Hard of Hearing Awareness Domain

The teacher of the Deaf and/or hard of hearing may suggest focusing on the following:

- Knowledge—Develop an understanding of own hearing loss and its implications, including
  - parts of the ear and how it works; cause of hearing loss
  - parts of the hearing aid/implant/FM and how they work, how they help, and their limitations
  - the audiogram; identify own hearing loss; understand that the audiogram does not always reflect communication ability

- Coping Skills/Self-Advocacy—Develop own independence and self-advocacy skills:
  - Use a variety of coping skills—request repetition/clarification, avoid/reduce noise, use amplification/appropriate seating/interpreter, cope with teasing.
  - Request communication accommodations as needed.
  - Become aware of and access community supports, agencies, and associations for individuals who are Deaf and/or hard of hearing (listed in online Resources section).
- Identity—Build own self-concept, identity, and self-esteem:
  - Identify personal implications of hearing loss.
  - Interact with others who are Deaf and/or hard of hearing.
  - Learn about Deaf culture.
  - Discuss self-identity—Deaf or hard of hearing? What is the difference?

Further information is available in the Identity section, pages 23 to 28.

Creating a D/HH-Friendly Environment

Students with a hearing loss may face many challenges in an educational setting.

> Classrooms are language-rich listening environments, but they are also large and noisy. Children with mild hearing loss may be able to understand their teacher or classmate on a one-on-one basis; they may be able to follow class discussions with the assistance of technology. Still, they cannot reliably access the incidental learning that takes place in every classroom. They may miss a response from a student across the room, a comment from the teacher about an incorrect answer, or a new topic raised as the teacher writes on the blackboard. (Meyer 20)

Students who are Deaf and/or hard of hearing may benefit from environmental adaptations and strategies for facilitating communication to meet their specific needs. The three handouts that follow give suggestions to help provide an effective learning environment for all students in the classroom.

📄 Environmental Adaptations

Target	Strategies
Minimize Noise Further information on muffling devices is given in the online Resources section.	■ Treat the room: use muffling devices (e.g., "Hushh-ups" or "Floor Friends") on chair and table legs, add carpet, add room dividers, hang cloth banners/crafts, and so on. ■ Encourage quiet in the classroom. ■ Reduce auditory "clutter" (e.g., no background music, close windows and doors). ■ Seat the student away from noise sources (e.g., fans, computers, outside traffic, pencil sharpener).
Maximize Speaker's Voice	■ Use an FM system if available. ■ Encourage peers and guest speakers to use the FM microphone. ■ Move closer to the student with a hearing loss.
Maximize Visual Access	■ Ensure good lighting—keep the room bright enough for students to see speaker's face. ■ Do not stand in front of a bright window when talking, as this will put your face in a shadow. ■ Face the class as much as possible, and minimize walking around the room while speaking. ■ Stop talking when turning to write on the board. ■ Face the students while giving notes—use overhead projectors or electronic whiteboards. ■ Preferential seating should be available—allow students who are D/HH to choose where they see and hear best. ■ Circular or semicircular seating arrangements facilitate visual access to information. ■ Use visual aids (e.g., maps, objects, pictures, charts, written lecture notes, daily schedules, lesson outlines) often. ■ Look for closed-captioned videos, DVDs, and TV programs. ■ Use flashing lights for safety alarms.

Circular or semicircular
seating works best.

📄 Facilitating Communication

Target	Strategies
Reduce Auditory Fatigue	■ Alternate heavy listening demands with quiet activities. ■ Keep instructions short and clear. ■ Speak at a normal volume and rate. ■ Pause between statements to emphasize key concepts. ■ Some students may require extra processing time. ■ Allow downtime privileges if needed (e.g., a quiet place to go).
Communicate Clearly	■ Get the attention of the student prior to beginning a lesson or group discussion (e.g., wave, turn lights off/on once, gently tap the table, or touch the student's shoulder). ■ Ensure that only one student speaks at a time. ■ Identify the person speaking—call students by name or point to indicate who is speaking. ■ Encourage all students to turn and look at the speaker when listening. ■ Repeat or rephrase other students' comments. ■ Students who are D/HH may become lost when rapid topic changes occur during the lesson—draw attention to changes in topic, so that the student can contribute to the discussion. ■ When talking about an object, or someone in the room, glance or point in that direction. ■ If a student is reluctant to ask for clarification, create a "secret signal" for the student to use. ■ A smaller group of students, in a quiet location, will allow students to have more opportunities to effectively access communication, to feel included, and to share ideas. ■ Use technology. Open, closed-, or real-time captioning can be helpful for all students. ■ Maintain good eye contact, speak clearly, and write down important information.

Locating the speaker in large classrooms is difficult—call students by name or point to indicate who is speaking.

Hearing children passively absorb essential daily information by overhearing conversations, as much as 90 percent of their learning.
(Chotiner-Sonalo)

Classroom Management

Classroom Management	
Strategy	Description
Professional Learning	■ Ask the teacher of the Deaf and/or hard of hearing to provide professional learning opportunities on hearing loss and communication strategies for peers and staff early in the school year.
Routines	■ Establish schedules and routines, notifying students of any changes.
Listening	■ Make listening a class issue rather than singling out the student who is D/HH.
Organized Material	■ Provide class material that is well organized and easy to follow, and that connects to a well defined goal.
Announcements	■ Jot down announcements on the board or request a printed copy from the office. Repeat intercom information for the class.
Interpreter or Computerized Notetaker	■ Use an ASL-English interpreter or a computerized notetaker as needed.
Hands-On Learning	■ Use visual aids and hands-on techniques.
Group Work	■ Teach in small groups.
Community	■ Develop strategies to promote friendships among students—this will help all students feel that they are valued members of the classroom community.
Test Preparation	■ Prepare students for test formats by providing sample tests for tutors and/or family to review. Do the same for difficult worksheets, particularly story problems in mathematics.
Team Communication	■ Keep the team apprised of progress by making a short comment or two at the end of the day using a notetaker and/or a communication home–school notebook for younger grades.
Awareness	■ Be sensitive to a lack of incidental learning opportunities. Lack of incidental language learning experiences is reflected in all aspects of the curriculum.
Openness	■ Be open and candid, and maintain a sense of humour.
Participation	■ Expect participation from students who are D/HH in the same manner as from other students in the class.

Write down key ideas.

Specific Strategies for the Classroom

Even in a D/HH-friendly environment, students with a hearing loss do not have access to the daily incidental language learning that hearing students have. Educators can be sensitive to this lack of incidental learning and provide more direct instruction whenever possible to help students in their acquisition of English grammar and to develop language knowledge and skills.

This section provides a variety of handouts outlining practical suggestions for developing different communication methods, helping students acquire English grammar, building various listening and speaking skills, and developing the everyday language knowledge and skills (such as vocabulary, following directions, and problem solving) needed to succeed in the classroom.

Lack of incidental language learning experiences is reflected in all aspects of the curriculum.

Expect participation from students who are D/HH in the same manner as from other students in the class.

📄 Supporting Communication Methods

ASL/EAL	AAC
To support the development of English as an additional language in the classroom, do the following: ■ Support the development of the students' first language. ■ Incorporate visual supports in the classroom and curriculum. ■ Make what is implicit explicit. ■ Provide background information along with any new topics. ■ Include teaching methods that encourage classroom conversations. ■ Have students work in small groups. ■ Hold one-to-one conferences with students. ■ Work collaboratively with the teachers of the Deaf and/or hard of hearing. ■ Allow translation between English and ASL to facilitate comprehension. ■ Maintain students' motivation and self-concept by ensuring that they frequently experience success in classroom activities. ■ Incorporate language and cultural role models (adult guests who are D/HH) within the classroom/school.	Consider doing the following to use AAC effectively in the classroom: ■ Encourage the use of the AAC system frequently and in all environments—at home, at school, and in the community. ■ Use AAC in the early stages of language development, ASL or English, to facilitate growth. ■ Use **aided language stimulation** techniques to enhance language growth. ■ Create materials with picture communication systems (e.g., PCS or PIC symbols) for the student to actively participate in all curriculum areas. ■ Classroom **adaptations** may include a labelled environment, adapted books, or adapted activities. ■ Enhance literacy skills by using picture communication systems with the words printed under them. ■ Encourage positive social interaction using an AAC system.

Aided language stimulation

is a naturalistic technique in which a facilitator models ways that symbols can be used for communication.

Adaptation

is a change made in the teaching process, materials, assignments, or student products to help a student achieve the expected learning outcomes.

For more information, see pages 37 to 40 in the Communication section.

English Grammar Acquisition

As described in the Communication section (pages 45 to 46), acquiring the grammar of the English language can be a challenge for students who are D/HH, and this acquisition is effectively done by focusing on semantics or meaning. This handout provides specific classroom suggestions for supporting the acquisition of English grammar. Related strategies are also provided on the following handouts:

■ Vocabulary and Concept Development, page 73

■ Home–School Connections for Developing Vocabulary and Concepts, page 74

■ Developing Language Skills—Directions, Questions, Story Telling, page 75

■ Suggestions for Reading with Students Who Are D/HH, page 80

■ Reading Goals, page 81

Strategy	Use
Provide missing background knowledge.	■ visual supports (e.g., use objects, photos) ■ hands-on activities ■ field trips
Engage in real-life experiences (language learning opportunities).	■ hands-on activities ■ field trips
Consider the use of simpler reading materials, with controlled levels of vocabulary and syntactic structures.	■ explicit instruction ■ a variety of levels of printed materials

Auditory Training	Articulation	Oral Motor Therapy
The development of the student's auditory skills should be encouraged during all school activities. To facilitate this, the educational team could do the following: ■ Enhance classroom acoustics. (See Environmental Adaptations handout on page 66.) ■ Provide an alternative (quiet) location for activities that involve increased background noise (e.g., group or partner work, lunch). ■ Identify and resolve barriers to communication (e.g., background noise, poor seating arrangement, multiple speakers, pace, lighting). ■ Encourage the student who is hard of hearing to use communication repair strategies (e.g., "I heard _____"; "Did you say_____?"; "Please repeat."). ■ Encourage the student who is hard of hearing to understand her or his own hearing loss and amplification. ■ Encourage the student who is hard of hearing to advocate for his or her communication needs.	Classroom strategies to support accurate speech production include ■ responding to the content of the message ■ modelling accurate sound production in conversation and reading ■ reinforcing correct sound production ■ using visual supports	The following are some general strategies to use with students who are D/HH and who appear to be having difficulty acquiring speech: ■ Auditory feedback is crucial. Amplification is required, as it plays a vital role in the acquisition of phonetic and phonological speech and auditory learning. ■ Daily speech practice is important for consistent progress. Structure therapy so that the student experiences success. ■ Therapy should be concrete. Set up situations to use the words in real settings. ■ Movement activities can often facilitate speech—combining large motor movements with speech can often help the brain organize and facilitate muscle coordination, phonation (uttering vocal sounds), relaxation, and/or activation of some muscles. Appropriate positioning of the body is also crucial. Occupational and/or physical therapists can be consulted for this input. ■ A multi-sensory approach is important. Auditory discrimination and mirror work is not enough. Use the following multi-sensory cues: — Auditory: The student listens to the therapist using an amplification system and imitates the therapist. — Visual: The student watches the therapist's mouth and uses visual cues, including hand signals and pictures. — Tactile: The therapist may use a tongue depressor to show the student proper placement for a speech sound. — Kinesthetic: The student is taught to make a hand signal together with the sound production, to pair large body movements or postures with words/phrases/sentences, and to touch pictures of words/phrases/sentences.

For more information about developing students' listening and speaking skills, see pages 43 to 47 in the Communication section.

📄 Vocabulary and Concept Development

Strategy	Description
Theme-Based Approach	A theme-based approach helps the student draw connections. Share goals and themes with the school support team to ensure a consistent approach.
Preview/Review	Preview/review concepts and vocabulary. Provide vocabulary lists in advance of instruction; give definitions with examples, jot down key words and new vocabulary on the board as it arises, and highlight important facts. Previewing provides a knowledge base for the student to link new information to previously mastered concepts. Encourage students to listen/watch for key words during instruction. Familiarity with the new words will help the students to follow classroom instruction/discussions. Frequently review the vocabulary/concepts in a variety of meaningful contexts (e.g., keep a word bank). Expose students to examples of new words that may have different meanings.
Visual Strategies	Use graphic organizers, semantic webs, and other visual teaching strategies. Semantic webs and graphic organizers help to link new information to known schema. New concepts are best taught in connection with known concepts. Attempt to discover what the student already knows about a concept. Refreshing past knowledge will help the student assimilate the new information. This helps the student create a category for the new concepts.
Rephrase	Rephrase information and new words in several ways and in different contexts.
Appropriate Language Level	Use language at the student's level; provide reading material on the same topic at a lower-language level if necessary.
Clarify	Provide clarification of assignment directions and test questions when needed. It is helpful to look at tests before the student takes them and troubleshoot for new vocabulary words or complex language structures.
Check Comprehension	Check student comprehension periodically. Ask the student to rephrase or summarize, and avoid using "yes/no" questions to judge if the student understood material.
Major Concepts	Focus on major concepts, rather than details, and on the quality of material rather than quantity.
Concrete to Abstract	Begin explanations with concrete examples, and work from them to the more abstract ideas.
Summarize	Develop the habit of summarizing salient points for the class.

For more information about developing vocabulary and concepts, see pages 48 to 50 in the Communication section.

Home–School Connections for Developing Vocabulary and Concepts

Strategy	At-Home Examples	At-School Examples
Categories Help students organize the words/signs they are learning by introducing, teaching, and reinforcing them within categories.	■ At home, an example might be naming all the clothes in the closet, or all the food in a cupboard, or all the colours of the crayons.	■ At school, an example would be grouping words/concepts into specific curricular topics (science, mathematics, social studies, physical education/health education, etc.).
Pre-teaching Pre-teaching can be done by selecting the key vocabulary or concepts from an activity or lesson and reviewing these with the student beforehand.	■ At home, this might mean discussing some of the important words in a story and making sure your child understands them before reading a bedtime story.	■ At school, this could involve reviewing the names of the chemicals and apparatus needed for a science experiment before conducting the lab activity.
Building Background Knowledge Always connect new information to the student's personal experiences. This will help to build background knowledge and make new information more meaningful.	■ At home, this could be reminding your child about the things you did at the beach while watching a television program that takes place near the water.	■ At school, it might involve getting students to talk about times when they were sad or upset in order to relate to how a character in a novel is feeling.
Visual Support Provide meaningful visual support.	■ At home, this could involve putting all the ingredients and the recipe book out on the table when you are making cookies.	■ At school, timetables and schedules can be displayed, charts or graphic organizers can be used to structure work, and written words and pictures can be added to help clarify spoken or signed messages.
Hands-On Activities/Exploration Many students learn best by being actively involved in the process. Incorporate real objects and hands-on exploration as much as possible.	■ At home, this might mean letting children do things for themselves under your supervision (e.g., cleaning, cooking, shopping, banking).	■ At school, this could include using manipulatives for mathematics, experiments in science, projects in social studies, and drama in language arts.

📄 Developing Language Skills—Directions, Questions, Storytelling

Following Directions	Wh- Questions	Storytelling
There are strategies that a teacher can incorporate on a daily basis in the classroom setting to aid a student who is D/HH: ■ First alert the student that a direction is going to be given by using a visual (e.g., flashing the lights) or verbal (e.g., "Listen, boys and girls") strategy. ■ Make sure the strategy you use is consistent so the students will learn to stop what they are doing and attend to the teacher. There are also strategies to help the students understand and remember the directions. These could include the following: ■ simplifying ■ demonstrating ■ using visual supports such as gestures, objects, or writing the instructions on the board or in an agenda book For example, a direction such as, "Everyone, I want you to finish what you are doing now, but before you sit down for story time, make sure your tables are tidy" may be very confusing for a student who is D/HH. The student may not understand the following: ■ the concepts used in the directions: before/after ■ the complex grammatical structure (embedded clause): "before x, do y." ■ the vocabulary: *everyone* or *tidy* The direction could be made easier by rearranging the order of the message, breaking it down into shorter phrases, and changing the vocabulary. For example, "Boys and girls, finish now. Put away your pens and paper. Sit down for story time." Use gestural and/or verbal cues to indicate the order of the direction (e.g., first, second, third). Hold an object that represents part or all of the direction (e.g., the box for the pens and paper) to give the students a cue indicating what they are to do.	The following strategies will help students with wh-questions: ■ use of visuals (e.g., pictures of objects/ people) to provide context for the question ■ paraphrasing the question or using a cloze technique for responses (e.g., "What did you do on the weekend?" or "On the weekend I _____.") ■ providing example responses to guide the student toward the expected answer (e.g., "Where is the dog? Is he under the table? Is he with the cat?") ■ direct teaching of how to respond to wh- questions and use of context as an assistive device ■ guessing games (e.g., "What's in my pocket?") ■ use of activities to build vocabulary and other language skills	Strategies to promote understanding and use of narratives for students could include the following: ■ Make photo or picture journals of their past experiences. ■ Act out or role-play stories. ■ Preview unfamiliar concepts and vocabulary within the story. ■ Provide visual cues such as objects, pictures, or a story outline to help tell a story in sequence. ■ Use appropriate questions and comments to assist students to comprehend a story or construct their own story.

For more information about developing language knowledge and skills, see pages 50 to 52 in the Communication section.

Critical Thinking Skills—Problem Solving

The ability to solve problems can be taught at a classroom or individual level. Instruction in identifying problems and solutions should have an experiential component to help students to generalize and transfer the skills to everyday situations. Role-playing and brainstorming activities are very effective with students who are D/HH.

An effective tool in teaching a problem-solving process is the use of external frameworks or visuals such as the Problem-Solving Framework below:

Problem-Solving Framework

Problem: _____

_____

_____

Possible Solutions (brainstorming component):

1. _____

2. _____

3. _____

Pick One Solution:

_____

Try it.

Did it work?

_____ Yes? Good!

_____ No? Pick another solution:

_____

_____

For more information about developing critical thinking skills, see pages 53 to 54 in the Communication section.

Reading and Writing

Hearing loss can add challenges to the already difficult jobs of learning to read and write.

The Laurent Clerc National Deaf Education Center has identified nine areas of literacy that should be used with students who are Deaf and/or hard of hearing for a balanced literacy program:

- reading to students
- language experience
- shared reading and writing
- guided reading and writing
- writers' workshop
- research reading and writing
- dialogue journals
- journals and logs
- independent reading

The research on students who are Deaf and/or hard of hearing indicates that "the most effective approaches are those that emphasize semantic elaboration techniques such as use of semantic maps, semantic feature analyses, word maps, and classroom discussions of words" (Loeterman, Paul, and Donahue).

Areas of Potential Difficulty in Reading and Writing

In both reading and writing, students who are Deaf and/or hard of hearing are often bound by the literal meaning of words and often have difficulty with semantics, syntax, morphology, and irregular rules of grammar. Difficulties in reading and writing may occur at various levels:

- word level (gaps in vocabulary concepts)
- sentence level (grammar and sentence patterns)
- paragraph level (sequencing, main idea, retelling)

Many resources for teaching English as an additional language (EAL) are available and suitable for students who are Deaf and/or hard of hearing. See the online Resources for EAL resources.

Additional areas of concern include

- understanding and using abstract concepts (e.g., time concepts, implied meaning, multiple meanings, inferences)
- figurative language (e.g., idioms, slang, metaphors)
- metacognitive skills (i.e., the ability to reflect and think about thinking)

Gaps in reading comprehension often increase over time, as the student's growth in language does not keep pace with the rapidly increasing language and abstract concept levels presented in curriculum content areas. The emphasis on paragraph comprehension and the need for higher-level thinking/reasoning skills further compound the situation.

Specific areas of concern are outlined in the chart on page 79.

Specific strategies to use to develop students' reading and writing follow on pages 80 to 82.

📄 Specific Areas of Potential Difficulty

Meaning (Semantics)	Grammar (Syntax)	Parts of Speech and Function Words	Irregular Rules of Grammar
A student may misunderstand word meanings and need direct teaching of the following: ■ words with multiple meanings (e.g., *bat, run, light*) ■ abstract verbal concepts (e.g., equality, judgment, friendship) ■ categorical language (e.g., hockey and swimming are *sports;* a *dog* could be a husky or a poodle) ■ vocabulary expansion (e.g., walk → trot, stagger, lope) ■ words denoting an auditory event (e.g., whisper, rustling leaves) ■ function words or words that have no meaning except in context (e.g., *then, so, because of, however*) ■ similar sounding words (e.g., *bluff, blush*) ■ intonation and stress (e.g., in the question, "Why don't you do your homework?" the tone could be angry, calm, or questioning)	Difficulty with syntax frequently interferes with the student's comprehension and production of English. The student may ■ use mainly subject-verb-object patterns ■ tend to write sentences that are simple, short, and rigid ■ join sentences excessively ■ primarily use concrete action verbs ■ insert several words where one would suffice (due to a lack of vocabulary) ■ read passive sentences as active (e.g., "Mr. White was chased by a dog" is read as "Mr. White chased a dog") ■ misinterpret embedded clauses (e.g., "The hunter who shot the moose ran toward the car" is read as "The moose ran toward the car" —the student focuses on the nearest subject-verb-object)	Students may ■ omit or incorrectly use markers for verb tense and number (e.g., "Yesterday we walk store" for "Yesterday we walked to the store") ■ omit or demonstrate confusion with possessives ("That my dad jacket" for "That's my dad's jacket") ■ omit auxiliary verbs such as *is* or *was* (e.g., "He my brother" for "He is my brother")	Irregular rules of grammar may also prove frustrating for students. These rules include ones around ■ language of quantity (e.g., "I looked at some water" is correct, yet "I looked at some sun" is not) ■ verb tense (e.g., "He was driven to the airport" is correct, yet "He has arriven at the airport" is not) ■ plurals: (*house* becomes *houses*, but *mouse* becomes *mice*)

> For fluent reading comprehension, the rapid access to the meanings of words during reading has to be automatic rather than conscious and deliberate. (Marschark, Lang, and Albertini 164)

📄 Suggestions for Reading with Students Who Are D/HH

Strategy	Explanation
Visual Organizers	Use semantic webs, story maps, and other visual organizers to build concepts and link language: emphasize development of schema and prior knowledge before reading.
Vocabulary in Different Contexts	Use targeted vocabulary words repeatedly in different contexts.
Meaningful Context	Teach skills in the context of whole and meaningful literature.
Sentence Patterns	Use repetitive sentence patterns—gradually introduce complex sentences.
Material Connected to Experience	Choose material that is based on concrete and familiar experiences to create a meaningful link between the text and the student's experience.
Appropriate Language Level	Provide individualized instruction using material at the student's language level: ■ Choose the same story written at a lower language level (e.g., *The Diary of Anne Frank*, plays of Shakespeare). ■ Use an alternate book on the same theme (survival). ■ Rewrite or adapt materials to an easier level if necessary.
Text-Based Factors*	Consider the following text-based factors: ■ Vocabulary level—Is the student familiar with the vocabulary in the story? ■ Sentence length and complexity ■ Figurative language, abstract concepts, inferential knowledge ■ Cohesion of text—Is the text organized and easy to follow (e.g., logical sequence of ideas)? ■ Illustrations—Are they used in agreement with the text to improve comprehension? ■ Familiar discourse structure or genres (e.g., "Once upon a time," poem, fable, song)
Reader-Based Factors*	Consider the following reader-based factors: ■ Interest and motivation ■ Prior knowledge or familiarity—Characters or settings that are familiar (e.g., camping) encourage comprehension. ■ Purpose—Direct purpose encourages comprehension.
Preview/Review	Preview and/or review vague or easily misunderstood phrases (e.g., "He broke off suddenly" means he stopped talking suddenly).
Study Skills	Provide direct instruction on how to study (e.g., know textbook formats, underline/circle main ideas).
Scaffold	Support students in using newspaper articles, the Internet, and other expository text that uses a high level of language.
Extend	Develop higher-level language and thinking skills.

*Source: Ward, Rita, Verena Krueger, and Judith MacDougall. "Adaptations of the Reading Program." *Adaptation of Language Arts Curriculum for Teaching Hard of Hearing Kindergarten to Grade 2*. Winnipeg, MB. 1981. 61–63. Adapted with permission.

Reading Goals

Area for Improvement	Strategies to Achieve Goals
Vocabulary Development	Provide background information, link new knowledge to existing knowledge, ensure students know the purpose for reading, and pre-teach new vocabulary and new language structures.
Comprehension	Help students to get the facts, read beyond and make judgments, recall word meaning from context, discuss word meaning, answer questions from the text, relate ideas in the text, and follow the parts of the story.
Drawing Conclusions/Making Inferences	Have students practise this important comprehension sub-skill that students who are Deaf and hard of hearing frequently miss—noticing subtleties and clues. Practise with abstract questions before, during, and after reading.
Sequencing Events	Choose events that are important to the story, teach sequential words, and practise sequencing with cartoons.
Using Context Clues	Use pictures to develop student understanding of the storyline.
Predicting Story Outcomes	Help students learn to use contextual clues through abstract questioning (the student needs knowledge and comprehension of the story to respond).
Paraphrasing	Help students to remember, choose, and sequence relevant information as they paraphrase material for various purposes, such as a book report.
Word Attack Skills	Help students to use language skills and context to unlock meaning—this may be difficult for students with hearing loss.
Identifying Problem and Solution	Use story mapping to help students to identify the problem and solution of the plot.
Identifying Main Idea	Teach students to identify the main idea by modelling how a good reader distinguishes key ideas from supporting details.
Discussing/Describing	Have students practise discussing and describing different elements of the story—literature circles provide a good context for this.
Identifying Different Story Types	Offer students a variety of literature (fiction and non-fiction) and demonstrate the differences among the genres.

📄 Suggestions for Writing with Students Who Are D/HH

Strategy	Explanation
Determine specific areas of need	Use the student's writing samples to determine areas of need.
Process approach	■ Focus on writing tasks that are meaningful/ purposeful and that integrate content, form, and use. ■ For first-draft writing, focus on ideas rather than correct grammatical structures. Students struggling with the difficult task of choosing the correct vocabulary and grammatical structures may become overwhelmed with the writing process.
Assist with organization	Help the student with sequencing, main idea, paragraph writing, maintaining topic, and editing.
Direct instruction	Provide direct instruction on how to write notes, outlines, essays, science reports, and so on, if needed.
Mechanics in context	■ Teach grammar and mechanics in context, at the editing stage, and as items are needed. ■ Draw attention to the conventions of written English. Students tend to omit word endings as these sounds may be out of their hearing range and are not meaningful in and of themselves (the final /s/ on plurals, possessives, and verbs or the /ed/ ending on past-tense verbs). ■ Remind the student to check work for consistent verb tense.
Read aloud	When doing self-edits, have the students read their work aloud. Often students can become aware of more grammatical and word usage errors with the support of auditory cues than when they read silently.

Working with Students Who Are Deaf/Using ASL

Students who are Deaf and/or who use ASL as their primary mode of communication may face particular challenges in the classroom. It is important to be sensitive to issues around self-esteem, and to provide an inclusive environment. Specific suggestions in each of these areas, as well as specific strategies for reading with students who are Deaf and/or using ASL, are provided in the handouts that follow.

Supporting the Development of a Healthy Self-Esteem

All students face situations where they have to deal with other peoples' beliefs. The following ideas can support students in developing a healthy self-esteem:

Instead of . . .	Try This
talking in front of a signing (ASL) student	ensure that an interpreter/notetaker is available for all classroom conversations and activities
telling a student "I'll tell you later" or "It's not important" if they have missed information or have been left out of a joke or a side conversation	ensure that the student understands the interaction in the moment it happens
whispering (putting your hand or other object in front of your mouth to prevent the student from seeing what you are saying)	leave the room or find a different location to have a private conversation
speaking to the interpreter rather than directly to the student (e.g., asking the interpreter to "tell him" or "tell her" something, or asking the interpreter why the student was late or absent)	communicate directly with the student and maintain eye contact (the communication is with the student— the interpreter is providing the visual translation)

Ideas on information for the classroom teacher to share with parents include the following:

■ Introduce parents to professionals who have experience working with students who are D/HH.

■ Be honest with parents about their student's language development. Early involvement is key for language development.

■ Connect parents with support available in the local school division.

■ Learn about Deaf and/or hard of hearing history, and share success stories.

■ Provide resources (see online Resources section for suggestions).

📄 Ideas for Students to Become Self-Advocates

- Be self-aware.
- Be assertive.
- Be knowledgeable regarding the history and culture of people who are Deaf and/or hard of hearing in Canada and worldwide.
- Understand own hearing loss and communication needs.
- Understand own rights within society and the law.
- Be knowledgeable regarding technology and assistive devices (e.g., hearing aids, FM systems, teletypewriter [TTY], video phone, etc.).
- Understand the difference between American Sign Language and English-based sign systems.
- Understand the roles of and provide feedback to service providers (e.g., interpreters, computerized notetakers, audiologists).
- Request appropriate access services (e.g., ASL-English interpreter, computerized notetaker, peer notetaker, FM system).
- Have frequent opportunities to discuss access issues with others who have shared the same experience.
- Have frequent contact with role models who are Deaf and/or hard of hearing, including adults in positions of leadership and influence.
- Connect with local organizations for the Deaf and/or hard of hearing, and have access to relevant publications.
- Have frequent opportunities to affect environment, make decisions, and experience leadership—at home, at school, with peers, in the workplace, and so on.
- Know the system (e.g., family, school, work, municipal, provincial, and federal networks) and appropriate avenues to effect change.
- Be a self-advocate—make your needs known to others.
- Identify barriers to access and equality.

Ask, if you don't understand.

Inclusion for Students Who Are Deaf/Using ASL

The following ideas can assist in providing appropriate educational programming for students who are D/HH:

- The school team members (e.g., classroom teachers, administrators) learn basic everyday signs such as "Hello" and "How are you?" so that they are able to communicate directly with the students who are D/HH.

- Students in the classroom/school learn sign language. A language is best learned from a native speaker of that language. If a student who is D/HH runs the Sign Club, an adult who is Deaf can work with the student to ensure cultural and linguistic accuracy. An interpreter (or another hearing person) does not have ASL as a first language.

- Regular interaction with peers and adults who are D/HH is important so that the student has positive adult role models who are D/HH to develop a healthy sense of self and to be able to transition successfully to adulthood.

- Bring Deaf and/or hard of hearing resources such as the *The Canadian Dictionary of ASL* or *Deaf Heritage in Canada: A Distinctive, Diverse, and Enduring Culture* into the classroom.

- Provide communication access (e.g., interpreters, notetakers) for all school-related activities including intramurals, field trips, guest speakers, meetings, clubs, sports activities, and so on.

Talking and signing at the same time can be very confusing for some students who have not developed full grammar or syntax in either ASL or English. For these students, it is best to either sign or talk but not both at the same time. Ask the students what they would prefer.

See the D/HH calendar of events and activities at <www.edu.gov.mb.ca/k12/dhh/index.html>.

Teach to the eye—use visuals and examples whenever possible.

Differentiated Instruction for Students Who Are Deaf/Using ASL

Students who are Deaf and/or hard of hearing are as capable of complex, abstract thought as their hearing counterparts. Many EAL (English as another language) teaching strategies are helpful for working with students who use ASL. The following excerpt from the 2006 *English as an Additional Language (EAL) and Literacy, Academics, and Language (LAL), Kindergarten to Grade 12, Manitoba Curriculum Framework of Outcomes, Draft* (11) describes how learners who use ASL fit into the variety of EAL students in Manitoba schools:

EAL and LAL Learners in Manitoba Schools		
Students who are Deaf or hard of hearing, and whose first language is a signed language	These learners may ■ have been born in Canada or elsewhere ■ have various levels of fluency in the signed language of their home country or in American Sign Language (ASL) ■ use ASL or a signed language as their first language and develop English through reading and writing as their second language ■ have language(s) other than English as their second language ■ attend a mainstream classroom, cluster program, or The Manitoba School for the Deaf	Students with a signed language as their first language will enter the Manitoba school system throughout K-12
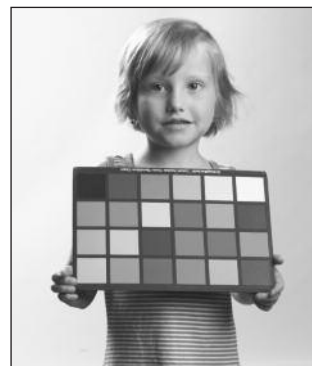
Some examples of differentiated instruction include the following:

- Use an interpreter scribe for assignments and tests, especially for students with emerging EAL skills but strong ASL skills.
- Use alternative assessment methods such as oral exams, mind mapping, and graphic organizers.

Note: Music and jokes based on English and sounds-like examples may be lost on the student who is D/HH.

Reading and Writing with ASL

A variety of investigations have indicated that readers who are Deaf, like hearing readers, use a combination of whole-word recognition, phonological or sound-based recoding, and orthographic (spelling-based) recoding to hold information temporarily in working memory. Some readers who are Deaf also recode English print into sign, at least some of the time (Marschark, Lang, and Albertini).

There may be a practical explanation for the writing difficulties students who are Deaf experience—students may be overburdening themselves with an effort to articulate thoughts in ASL and English at roughly the same time. Even if students know all the grammatical rules to be applied to an English draft, writing process theory suggests that preoccupation with language constraints in the early stages of writing can create a cognitive overload, adversely affecting the writer's ability to manage such other important writing concerns as what the writer wants to say. The writing process for students who are Deaf is further complicated by the need to code-switch (Mozzer-Mather).

The following handout provides suggestions for reading and developing vocabulary with students who are Deaf and/or using ASL.

Several studies have demonstrated that exposure to both English and sign language provides strong support for the acquisition of reading skills, and stronger vocabulary knowledge appears to be an important product of that combination.

📄 Suggestions for Reading with Students Using ASL

Strategy	Description/Example
Sign placement	Sign phrases on or with a book (e.g., sign tree beside a picture of a tree).
Pair text and sign	Point to the text, give an explanation in ASL, and then point back to the text.
Make connections	Make real-world connections between the text and the student's experiences.
Maintain attention	Encourage student involvement by maintaining eye contact with the student.
Use body language	Use facial expressions and body posture to demonstrate character changes.
Use non-manual signs	Use non-manual signs, such as raising eyebrows to indicate questions.
Use finger spelling	Finger-spell words you want to emphasize. Practise finger-spelling all new words even if there are signs for them.
Read student books	Encourage students to write or dictate books—the story can be read frequently by the student author.
Keep word banks or personal dictionaries	Students each keep their own file box of word cards or a personal dictionary. When new words are encountered in print, they can add them to the file.
Provide choice	Use a variety of books—allow students to choose books that are of interest to them.
Play with new words	New words should be addressed before students read the story. Students can play games such as Pictionary, Concentration, or Go Fish.
Monitor students' knowledge of concepts	Be sure the students know a concept before asking them to spell the word.
Spot-check students' spelling	Use pictures and signs to help them write down the correct spellings.

Supports for Students Who Are D/HH

In addition to a D/HH friendly environment and the use of appropriate instructional strategies, students who are D/HH often require other classroom supports. These supports can include tutorial sessions, ASL-English interpreting, oral interpreting, and/or computerized notetaking.

Tutorial Sessions

Students who are D/HH often benefit from regularly scheduled tutorial sessions, focusing on curriculum concepts and IEP goals, with the educational assistant, ASL-English interpreter, signer, or computerized notetaker under the direction of the school team. Support team members may be directly involved in providing remedial programming and/or modelling tutorial sessions, depending on the IEP goal (this could include the teacher of the Deaf and/or hard of hearing, the resource teacher, the speech-language pathologist, the ASL specialist, the auditory-verbal therapist, the psychologist, the behaviour specialist, the occupational therapist, and the physiotherapist).

The amount and frequency of tutorial support for the student with a hearing loss will depend largely on the student's needs and the teachers' goals. It is important for the tutor to meet regularly with the school team to review goals and upcoming classroom topics.

Tutoring a Kindergarten student can be entirely different from tutoring a Grade 12 student. Generally, as students progress in their education, they will become more responsible for the content of their tutorial sessions. An elementary tutorial session will likely be planned and led by the person conducting it. A high school tutorial session will focus and build on what the student wants to be supported in.

Working with Tutors: Information for Classroom Teachers

Tutorial sessions usually include

- daily previewing and reviewing of key vocabulary/curriculum concepts
- checking for comprehension and supporting expansion of ideas
- ensuring that the student understands assignment directions and is completing the work appropriately
- language development—modelling and expanding language, helping edit written work, and assisting with organization of thoughts

Students benefit from daily tutorial sessions to preview/review curriculum content, particularly in core subjects. Older students can receive tutorials during spares; younger students can have sessions built into the timetable.

A low-traffic area with few visual distractions/minimal ambient noise is ideal for tutoring. ASL is visual: a private tutoring space ensures that conversations are not accessible to observers. Ambient noise may interfere with the student's ability to use residual hearing/amplification.

- assisting the student in developing study skills and preparing for texts/exams by reviewing the format of upcoming tests and practising specific types of test questions
- using visual and concrete strategies when possible, such as adapting board games, to create a fun and motivating session

For more information on strategies, please refer to page 71 of this section.

ASL-English Interpreting

Students with significant hearing losses may require ASL interpretation for clarification of classroom information and curriculum concepts.

ASL-English interpreters are professionals who have successfully completed an ASL-English interpretation program (AEIP). This post-secondary training provides graduates with knowledge of interpreting skills, Deaf culture, and the national code of ethics.

Signers are people who have learned, or are learning, ASL. While signers have taken sign language classes, they have no formal training in ASL-English interpretation.

The Manitoba Association of Visual Language Interpreters (MAVLI) and the Manitoba Cultural Society of the Deaf (MCSD) formed a partnership, in conjunction with other stakeholders, to develop an educational DVD called *Best Practices in Educational Settings Making an Informed Choice: Trained Interpreters versus Signing EAs*. It is designed to illustrate best practices for interpreting in the classroom that will support the educational and social well-being of signing students who are Deaf and/or hard of hearing. Information on the *Best Practices* DVD and training requirements for ASL-English interpreting is available at <www.mavli.com>.

Access to language opens doors not only academically, but socially and emotionally as well. "Language is multi-dimensional. It is key to our understanding of culture, social understanding, self-awareness, perception of life chances and interpersonal communication. Given the importance of language, it is essential that careful consideration be given when hiring interpreters." (Family Network for Deaf Children and Westcoast Association of Visual Language Interpreters 11)

Educational interpreting consultants may offer an assessment tool which evaluates the level of interpretation skills. These screenings can assist administrators in completing school-based evaluations regarding interpretation skills.

ASL-English interpreters possess a language fluency that allows them to interpret smoothly and accurately.

Parents who are Deaf and ASL users may require interpreting services for events such as parent-teacher conferences, IEP meetings, and school concerts. To book an interpreter, contact your teacher of the Deaf and/or hard of hearing or the student services administrator.

For more information on accessing resources for signers and interpreters, see Appendix B, the online Resources section, and the Manitoba Education, Citizenship and Youth Deaf and Hard of Hearing Services Unit website at <www.edu.gov.mb.ca/k12/dhh/index.html>.

Working with Interpreters: Information for the Classroom Teacher

The following information about working with interpreters is useful for the classroom teacher:

- The primary function of interpreters in Kindergarten to Grade 12 settings is to provide communication access for people who are Deaf and/or hearing people who do not share a common language.

- Interpreters will interpret everything they can hear, including conversations, fire alarms, fights in the hall, sneezes, swearing, and any other audible sounds. Interpreters will also ensure that everything signed in a visible manner is also interpreted into English.

- The interpreter also interprets how things are said or signed (e.g., facial grammar conveys the tone of the message: pleased, disappointed, impatient).

- Interpreters either sit or stand at the front of the classroom, near the teacher and board so that the student has visual access to both at the same time. Discuss with interpreters where a good location might be based on personal teaching style.

- Speak at a normal pace. If interpreters miss something or need to ask for clarification, they will ask the speaker.

- Speak to the student who is D/HH directly in the first person and not "through" the interpreter in the third person.

- Interpreters need to be seen to be effective. Consider adequate lighting during events such as films, overheads, and concerts.

- Interpreters are not participants in the interaction in the sense that they do not express their own opinions or delete information with which they do not agree.

- Interpreters can more accurately convey your message if you prepare them well by providing them with information for class lectures, assemblies, and concerts, with as much notice as possible to allow for prep time. Textbooks, copies of class notes, copies of movies to preview, and so on, all help the student have access to the same curriculum as other students.

Students may not have full access to the curriculum if the interpreter is not available (e.g., assigned a non-interpreting task such as working with a reading group or photocopying). When interpreters are not actively interpreting or preparing, they may assist in other class activities.

Interpreters follow a code of ethics that binds them to professional behaviour and conduct. *Code of Ethics & Guidelines for Professional Conduct* is available at <www.avlic.ca/resources.php?coe>.

- Interpreters need processing time and are a little behind what is being signed or spoken. To facilitate groups well, keep this in mind and monitor the opportunities that the student who is D/HH has to answer questions that are posed or whether the student is being allowed to participate fully in group discussions.

- On occasion, some students may need translation from written English to ASL. Please note that this may occur during tests or exams but should be worked out collaboratively prior to the testing period so that you are aware of what is happening.

- Most interpreters in the Kindergarten to Grade 12 setting work alone for the entire day. This places them at risk for work-related musculoskeletal injuries (MSI) such as carpal tunnel or repetitive use syndrome. Interpreters need sufficient breaks and rest time in order to avoid MSI.

Working with Interpreters: Information for the Student

The following information about working with interpreters is useful for the student:

- Participate in class and pay attention to the teacher through the interpreter.

- Work with the interpreter and the teacher on the best seating arrangements, keeping in mind visual communication needs.

- Discuss any problems understanding the interpreter with the interpreter, and then with the teacher if necessary.

- Avoid conversation with the interpreter while he or she is interpreting information.

- Ask the interpreter for clarification of unfamiliar signs. Discuss with interpreters your language preferences and signing style (e.g., the amount of finger-spelled abbreviations).

- Let interpreters know in advance when you are going to be away, if possible.

- You are responsible for ensuring that you understand instructions and homework assignments. Interpreters can help you to talk with teachers if you are uncertain about something.

- Inform the interpreter if his or her clothing is visually distracting. If you are uncomfortable discussing this with the interpreter, talk to someone you trust about the situation in order to resolve it.

- Interpreters are not teachers. If you do not understand something in class, it is best to ask the teacher.
- Interpreters interpret into English everything you say if it is signed in a visible manner. Private conversations that are not visible to the interpreter and others will not be voiced (i.e., interpreted into spoken English).

Roles and Responsibilities

The responsibilities of the interpreter and student shift throughout academic life. More responsibility for various duties is placed on the interpreter in earlier grades, while the expectation is that the student will assume more independence as the academic years progress. The figure below illustrates this shift.

Figure 7   INTERPRETER-STUDENT RESPONSIBILITIES*
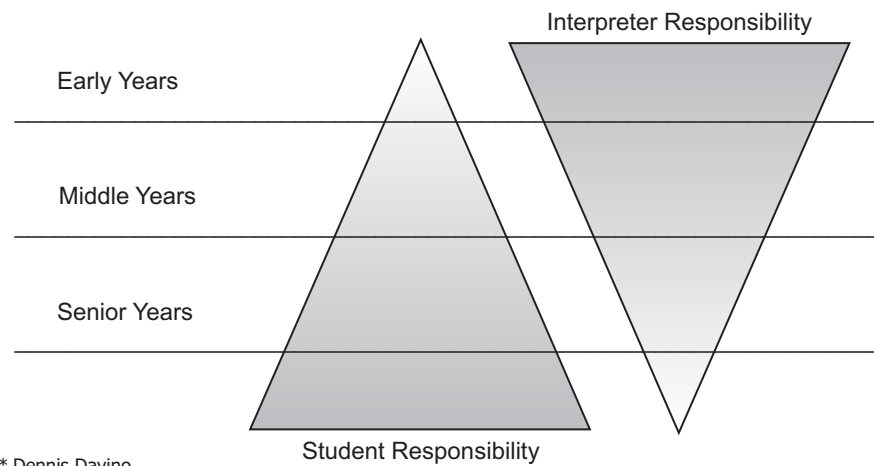
* Dennis Davino
  Orange County Department of Education
  Irvine, CA 1985

Young students or students transitioning to ASL as a primary communication code may be unfamiliar with how to use an interpreter. Students may need to be taught the roles of the adults in the classroom and given sufficient time to learn how to work with an interpreter. As the student progresses throughout the school year, the student should become more independent and self-reliant.

More non-interpreting roles, such as assisting students with dressing or keeping the student on task, will occur in the Early Years. In the Senior Years, interpreters often shift to having the primary function of interpreting with tutoring as necessary.

Oral Interpreting

Oral interpreters are professionals who facilitate communication between hearing students and students who are Deaf and/or hard of hearing who use speech reading (lip-reading and facial expression) instead of ASL. Oral interpreters are rarely employed by school divisions.

Computerized Notetaking

Computerized notetaking (also known as graphic interpreting) provides the student with a visual display of all verbal communication in the classroom. The computerized notetaker (CN) uses a laptop to type a summary of the information that is being spoken in a meeting or a classroom.

Working with Computerized Notetakers: Information for the Classroom Teacher

The computerized notetaker usually

- provides graphic notetaking for all school-related activities (including co-curricular activities, parent meetings, and any other occasions that may arise)
- paraphrases, summarizes, and modifies the language level of verbal information to meet student needs
- modifies and summarizes notes; adapts the layout of notes and the content of the subject to meet student needs
- prints copies for staff and students, as required
- prepares for graphic notetaking: becomes acquainted with subject-specific language and knowledge

The student who is D/HH can access this information in any of the following ways:

- Sit near the notetaker and read the information off the laptop monitor.
- Sit close to the notetaker and read the information off of an external LCD monitor that is connected to the laptop.
- Sit anywhere in the room and read the information off of a projected image. The laptop is connected to a projector and information is projected onto a screen or a whiteboard for all to see. Computerized notetakers can be beneficial to all students in the class, particularly to those who have English as an additional language and those who are visual rather than auditory learners.

Real-time captioning is another service that provides visual information, in a format similar to that of a court reporter. The spoken language is relayed verbatim through a laptop using a phonetic encoding system. Due to the high cost for both the service and equipment, it is almost never used in a school setting, but it is sometimes used in a university setting.

Ideas for Notetakers

The following approaches are effective:

- Label: Clearly label all sheets with the course name, date, and page numbers.
- Vocabulary: Use age-appropriate vocabulary and highlight new or difficult words to review later with the student.
- Handouts: Collect handouts and indicate that they are handouts and not part of the spoken lesson.
- Complete Sentences: Leave your notes in complete sentences so that students have the full picture when they refer to notes in the future.
- Classroom Chatter: Type all classroom communication even if it is off topic or inappropriate. If you hear it, the students who are Deaf and/or hard of hearing have a right to hear it too.
- Layout: Highlight key points and use indents, bullets, and numbers to visually enhance the meaning of the notes.
- Abbreviations: Use the auto-correct option on your word processing program to accept certain abbreviations to increase the speed of your notetaking (e.g., *USA* for United States of America; *ppl* for people).
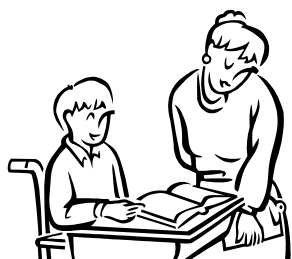
Supports for Students Who Are D/HH with Additional Needs

As in all student populations, some students who are Deaf and/or hard of hearing have additional needs. They may have a hearing loss plus one or more other challenges such as physical disabilities, autism, vision loss, learning disabilities, ADD/ADHD (attention deficit disorder/attention deficit hyperactivity disorder), FASD (fetal alcohol spectrum disorder), cognitive challenges, behavioural challenges, mental health issues, and/or neurological challenges.

Students with additional needs may require additional supports and adaptations in order to meet their needs, such as the following:

- services from an occupational therapist, physiotherapist, consultant for the visually impaired, psychologist, psychiatrist, doctor, or behaviour specialist
- specialized materials (e.g., picture schedules, communication devices or picture communication systems, large print, special cushions, wheelchairs)
- adapted, modified, or individualized lessons and assignments
- specialized teaching strategies
- environmental adaptations
- procedural/scheduling adaptations (e.g., movement breaks, frequent changes in activity)

Physical and cognitive challenges may prevent students from being able to speak or to use sign language for communication. Some students may require a picture communication system (such as PCS) or voice output device. Other students may be able to use sign language, but due to physical limitations, have uncontrolled, choppy movements when signing (e.g., students with cerebral palsy). Whatever the student's challenges, it is critical that an effective communication system be established. The communication system may need to be re-evaluated to reflect changes in the student's needs and changes in technology.

Supports for Students Who Are Deafblind

The term **deafblindness** describes a condition that combines in varying degrees both hearing and vision loss. Two sensory losses multiply and intensify the impact of each other, creating a challenge that is different and unique (Canadian Deafblind and Rubella Association—BC Chapter).

The more significant the degree of hearing and vision losses combined, the more limited the student's experience of the world will be.

Students who are deafblind experience problems with communication and with access to information and mobility. However, their specific needs vary enormously according to age, onset, and type of deafblindness.

Students who are deafblind face many challenges in connecting with the world around them. The educational plan, designed to meet the student's unique challenges and to reflect their skills, may include the following strategies:

- Conduct regular assessments to determine which teaching strategies are working.
- Emphasize development of communication skills.
- Provide initial training in basic self-help (e.g., dressing, feeding).
- Focus on exploration, orientation, and mobility.
- Develop connections with specific people.
- Include effective work habits and leisure skills in the plan as the student progresses.
- Provide learning opportunities for staff and classmates on the student's needs and build a community that is accepting and supportive.

Transitioning

Students who are Deaf and/or hard of hearing may face a number of challenges when they transition from school to post-secondary education or work environments. Students leave a school environment where they had supports such as an interpreter or notetaker and people who understood their communication needs. When students transition to work or further studies, they are often faced with challenges in the new environments.

The Laurent Clerc National Deaf Education Center of Gallaudet University suggests transition skills guidelines for students from Kindergarten to Grade 12. The *Transition Skills Guidelines* focuses on five areas:

- advocacy and empowerment
- education and career planning
- work habits, skills, and attitudes
- independent living
- community roles, responsibilities, and resources

The *Transition Skills Guidelines* are used with the Laurent Clerc National Deaf Education Center's educational standards and benchmarks for the student's communication, thinking skills, life planning, and emotional intelligence. It is available online at the Laurent Clerc National Deaf Education Center website at <http://ccdam.gallaudet.edu/pdf/TSG.pdf>. The following is an excerpt:

	Topic	Grade K	Grades 1, 2, 3	Grades 4, 5	Grades 6, 7, 8	Grade 9	Grade 10	Grade 11	Grade 12
STANDARD 1: Student demonstrates the skills necessary to advocate [for] and empower . . . him/herself.									
Self-Awareness		Identifies characteristics of self.	States positive traits and skills about self.	Identifies simple personal goals (academic, social, and career).	Identifies personal strengths and skills needed for family, school, and community success.	Links personal and academic skills to achieving personal, social, educational, and career goals.	Develops and implements a plan to strengthen skills needed for future goals.	Reflects on progress and updates plan to strengthen personal skills needed for future goals.	Implements and updates an always evolving post-secondary plan.

Transitions for students with hearing loss may include the following:

- initial transition into school (e.g., entering Kindergarten)
- transfer to a new school (e.g., progress to junior/senior high school or move to a new area)
- transition from school to post-secondary education or the community

A team approach involving all partners in the transition process—families, service providers (e.g., preschool, daycare), support agencies, and the school system—ensures a student's successful transition into a new placement.

Suggestions for transitioning to a new placement include the following:

- Explore potential placement options as early as possible (e.g., in the spring for a September transition).
- Family, student, and team members make visits to potential placements to learn about their available supports and programming.
- Family and student, with support from the team, make a decision on the setting that would best meet the needs of the student.
- Family (or adult student) register at the new school.

- The sending school and the receiving school meet to discuss student strengths/needs and successful supports.
- The student visits the new placement in May or June preceding the change to become familiar with the new environment, personnel, and classmates, and therefore facilitate a smooth transition (depending on age and functioning level of student).
- For very young students, take pictures at the new setting and make a picture book of the new school/classroom/teacher that they can read over the summer to help them comprehend the transition and prepare themselves for the change.
- Investigate transportation needs (e.g., Is busing needed? Is student transitioning from school bus to public transit?). Discuss and arrange bus training if needed.

Questions to ask at a transition meeting include the following:

- Tell me about the student (e.g, strengths and challenges as a student who is D/HH, other challenges).
- How does the student communicate?
- What supports/adaptations does this student require for communication, academics, and social skills?
- What is the student's current academic level (especially reading and math)? Is a recent report card available?
- Are there any medical issues?
- Are there any behavioural or social-emotional concerns?
- Does the student need any specialized/adapted equipment (e.g., hearing aids, cochlear implant, FM system, computerized notetaking equipment)?
- Are there any assessment/progress reports available (e.g., from the teacher of the Deaf or hard of hearing, the speech-language pathologist, the psychologist, etc.)?

Transitioning Students from Preschool to School

It is important to plan early for a child's transition into school. The planning typically occurs in the early spring prior to school entry and involves the preschool service providers and the school-based team, including the parents. This transition planning can assist the school in accessing the appropriate resources to support the educational programming.

Transitioning Students from High School to Post-Secondary Education

Students who plan to attend post-secondary educational institutions (e.g., university, college, apprenticeship programs) may require support to explore options and initiate applications.

Services for students who are D/HH are available from the disability services offices at a variety of post-secondary institutions. Please refer to the online Resources section for specific contact information. Students may also pursue study at schools specializing in education for students who are D/HH, such as Gallaudet University, the National Technical Institute for the Deaf (NTID), and the California State University at Northridge.

Students can receive assistance to help plan for post-secondary education from counsellors at the Society for Manitobans with Disabilities (e.g., social work supports, vocational rehabilitation funding).

Transitioning Students from High School to Community

As students enter the Senior Years, they begin to plan for their options in life after high school. Transition planning begins in the school year in which the student enters high school. The process concludes in June of the calendar year in which the student turns 21 or graduates. During this time, the support team and the student work together to provide the student with a coordinated transition from school to life in the community.

The support team assists the student in exploring and accessing community supports, agencies, and associations for individuals who are Deaf and/or hard of hearing (listed in the online Resources section). The Society for Manitobans with Disabilities (SMD) provides life skills training, job preparation, and work placement services. Assistance with resumé writing, interview skills, and exploring employment opportunities is available through Reaching E-quality Employment Services (REES). Staff at SMD and REES have experience in working with individuals who are Deaf and/or hard of hearing and can communicate in American Sign Language if needed.

For further information about transitioning, see the following:

- *Bridging to Adulthood: A Protocol for Transitioning Students with Exceptional Needs from School to Community,* available online at <www.edu.gov.mb.ca/k12/docs/policy/transition/bridging to adulthood.pdf>
- *Individual Education Planning: A Handbook for Developing and Implementing IEPs, Early to Senior Years,* available online at <www.edu.gov.mb.ca/k12/specedu/iep/>.

Appendices

Appendix A

Relationship of Hearing Loss to Listening and Learning Needs

16—25 dB HEARING LOSS		
Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
■ Impact of a hearing loss that is approximately 20 dB can be compared to ability to hear when index fingers are placed in your ears. ■ Child may have difficulty hearing faint or distant speech. At 16 dB, student can miss up to 10% of speech signal when teacher is at a distance greater than 3 feet. ■ A 20 dB or greater hearing loss in the better ear can result in absent, inconsistent, or distorted parts of speech, especially word endings (*s*, *ed*) and unemphasized sounds. ■ Percent of speech signal missed will be greater whenever there is background noise in the classroom, especially in the elementary grades when instruction is primarily verbal and younger children have greater difficulty listening in noise. ■ Young children have the tendency to watch and copy the movements of other students rather than attending to auditorily fragmented teacher directions.	■ May be unaware of subtle conversational cues that could cause child to be viewed as inappropriate or awkward. ■ May miss portions of fast-paced peer interactions that could begin to have an impact on socialization and self-concept. ■ Behaviour may be confused for immaturity or inattention. ■ May be more fatigued due to extra effort needed for understanding speech.	■ Noise in typical classroom environments impede child from having full access to teacher instruction. Will benefit from improved acoustic treatment of classroom and soundfield amplification. ■ Favourable seating necessary. ■ May often have difficulty with sound/letter associations and subtle auditory discrimination skills necessary for reading. ■ May need attention to vocabulary or speech, especially when there has been a long history of middle ear fluid. ■ Depending on loss configuration, may benefit from low power hearing aid with personal FM system. ■ Appropriate medical management necessary for conductive losses. ■ In-service on impact of "minimal" 15–25 dB hearing loss on language development, listening in noise, and learning is required for teacher.

26—40 dB HEARING LOSS		
Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
■ Effect of a hearing loss of approximately 20 dB can be compared to ability to hear when index fingers are placed in ears, therefore a 26–40 dB hearing loss causes greater listening difficulties than a "plugged ear" loss. ■ Child can "hear" but misses fragments of speech leading to misunderstanding. ■ Degree of difficulty experienced in school will depend upon noise level in the classroom, distance from the teacher, and configuration of the hearing loss, even with hearing aids. At 30 dB, can miss 25–40% of the speech signal; at 40 dB, may miss 50% of class discussions, especially when voices are faint or speaker is not in line of vision. ■ Will miss unemphasized words and consonants, especially when a high frequency hearing loss is present. ■ Often experiences difficulty learning early reading skills such as letter/sound associations. ■ Child's ability to understand and succeed in the classroom will be substantially diminished by speaker distance and background noise, especially in the elementary grades.	■ Barriers begin to build with negative impact on self-esteem as child is accused of "hearing when he/she wants to," "daydreaming," or "not paying attention." ■ May believe he/she is less capable due to difficulties understanding in class. ■ Child begins to lose ability for selective listening and has increasing difficulty suppressing background noise causing the learning environment to be more stressful. ■ Child is more fatigued due to effort needed to listen.	■ Noise in typical class will impede child from full access to teacher instruction. ■ Will benefit from hearing aid(s) and use of a desktop or ear level FM system in the classroom. ■ Needs favourable acoustics, seating, and lighting. ■ May need attention to auditory skills, speech, language development, speech reading, and/or support in reading and self-esteem. ■ Amount of attention needed is typically related to the degree of success of intervention prior to 6 months of age to prevent language and early learning delays. ■ Teacher in-service on impact of so-called "mild" hearing loss on listening and learning is needed to convey that it is often greater than expected.

Appendix A

Relationship of Hearing Loss to Listening and Learning Needs

41–55 dB HEARING LOSS

Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
■ Consistent use of amplification and language intervention prior to age 6 months increases the probability that the child's speech, language, and learning will develop at a normal rate. ■ Without amplification, understands conversation at a distance of 3–5 feet, if sentence structure and vocabulary are known. ■ The amount of speech signal missed can be 50% or more with 40 dB loss and 80% or more with 50 dB loss. ■ Without early amplification, the child is likely to have delayed or disordered syntax, limited vocabulary, imperfect speech production, and flat voice quality. ■ Addition of a visual communication system to supplement audition may be indicated, especially if language delays and/or additional disabilities are present. ■ Even with hearing aids, child can "hear" but may miss much of what is said if classroom is noisy or reverberant. ■ With personal hearing aids alone, ability to perceive speech and learn effectively in the classroom is at high risk. ■ A personal FM system to overcome classroom noise and distance is typically necessary.	■ Barriers build with negative impact on self-esteem as child is accused of "hearing when he/she wants to," "daydreaming," or "not paying attention." ■ Communication will be significantly compromised with this degree of hearing loss if hearing aids are not worn. ■ Socialization with peers can be difficult, especially in noisy settings such as cooperative learning situations, lunch, or recess. ■ May be more fatigued than classmates due to effort needed to listen.	■ Consistent use of amplification (hearing aids + FM) is essential. ■ Needs favourable classroom acoustics, seating, and lighting. ■ Consultation/program supervision by a specialist in childhood hearing impairment to coordinate services is important. ■ Depending on intervention success in preventing language delays, special academic support is necessary if language and academic delays are present. ■ Attention to growth of oral communication, reading, written language skills, auditory skill development, speech therapy, and self-esteem likely. ■ Teacher in-service is required with attention to communication access and peer acceptance.

56–70 dB HEARING LOSS

Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
■ Even with hearing aids, child will typically be aware of people talking around him/her, but will miss parts of words said resulting in difficulty in situations requiring verbal communication (both one-to-one and in groups). ■ Without amplification, conversation must be very loud to be understood; a 55 dB loss can cause a child to miss up to 100% of speech information without functioning amplification. ■ If hearing loss is not identified before age 1 year and appropriately managed, delayed spoken language, syntax, reduced speech intelligibility, and flat voice quality is likely. ■ Age when first amplified, consistency of hearing aid use, and success of early language intervention are strongly tied to speech, language, and learning development. ■ Addition of visual communication system is often indicated if language delays and/or additional disabilities are present. Use of a personal FM system will reduce the effects of noise and distance and allow increased auditory access to verbal instruction. With hearing aids alone, ability to understand in the classroom is greatly reduced by distance and noise.	■ If hearing loss was late-identified and language delay was not prevented, communication interaction with peers will be significantly affected. ■ Children will have greater difficulty socializing, especially in noisy settings such as lunch, cooperative learning situations, or recess. ■ Tendency for poorer self-concept and social immaturity may contribute to a sense of rejection; peer in-service is helpful.	■ Full-time consistent use of amplification (hearing aids + FM system) is essential. ■ May benefit from frequency transposition (frequency compression) hearing aids depending upon loss configuration. ■ May require intense support in development of auditory, language, speech, reading, and writing skills. ■ Consultation/supervision by a specialist in childhood hearing impairment to coordinate services is important. ■ Use of sign language or a visual communication system by children with substantial language delays or additional learning needs may be useful to access linguistically complex instruction. ■ Accommodations (notetaking, captioned films, etc.) are often needed. ■ Teacher in-service required.

Appendix A

Relationship of Hearing Loss to Listening and Learning Needs

71–90 dB and 91+ dB		
Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
■ The earlier the child wears amplification consistently with concentrated efforts by parents and caregivers to provide rich language opportunities throughout everyday activities and/or provision of intensive language intervention (sign or verbal), the greater the probability that speech, language, and learning will develop at a relatively normal rate. ■ Without amplification, children with 71–90 dB hearing loss may only hear loud noises about 1 foot from ear. ■ When amplified optimally, children with hearing ability of 90 dB or better should detect many sounds of speech if presented from close distance or via FM. ■ Individual ability and intensive intervention prior to 6 months of age will determine the degree that sounds detected will be discriminated and understood by the brain into meaningful input. ■ Even with hearing aids, children with 71–90 dB loss are typically unable to perceive all high-pitch speech sounds sufficiently to discriminate them or benefit from incidental listening, especially without the use of FM. ■ The child with hearing loss greater than 70 dB may be a candidate for cochlear implant(s) and the child with hearing loss greater than 90 dB will not be able to perceive most speech sounds with traditional hearing aids. ■ For full access to language to be available visually through sign language or cued speech, family members must be involved in child's communication mode from a very young age.	■ Depending on success of intervention in infancy to address language development, the child's communication may be minimally or significantly affected. ■ Socialization with hearing peers may be difficult. ■ Children in general education classrooms may develop greater dependence on adults due to difficulty perceiving or comprehending oral communication. ■ Children may be more comfortable interacting with peers who are Deaf and/or hard of hearing due to ease of communication. ■ Relationships with peers and adults who have hearing loss can make positive contributions toward the development of a healthy self-concept and a sense of cultural identity.	■ There is no one communication system that is right for all children who are hard of hearing and/or Deaf and their families. ■ Whether a visual communication approach or auditory/oral approach is used, extensive language intervention, full-time consistent amplification use, and constant integration of the communication practices into the family by 6 months of age will highly increase the probability that the child will become a successful learner. ■ Children with late-identified hearing loss (i.e., after 6 months of age) will have delayed language. ■ This language gap is difficult to overcome, and the educational programming of a child with hearing loss, especially those with language and learning delays secondary to hearing loss, requires the involvement of a consultant or teacher with expertise in teaching children with hearing loss. ■ Depending on the configuration of the hearing loss and individual speech perception ability, frequency transposition (frequency compression) aids or cochlear implantation may be options for better access to speech. ■ If an auditory/oral approach is used, early training is needed on auditory skills, spoken language, concept development, and speech. ■ If culturally Deaf emphasis is selected, frequent exposure to Deaf ASL users is important. ■ Educational placement with other signing Deaf and/or hard of hearing students (special school or classes) may be a more appropriate option to access a language-rich environment and free-flowing communication. ■ Support services and continual appraisal of access to communication and verbal instruction is required. ■ Notetaking, captioning, captioned films, and other visual enhancement strategies are necessary. Training in pragmatic language use and communication repair strategies is helpful. ■ In-service of general education teachers is essential.

Appendix A

Relationship of Hearing Loss to Listening and Learning Needs

UNILATERAL HEARING LOSS

Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
■ Child can "hear" but can have difficulty understanding in certain situations, such as hearing faint or distant speech, especially if poor ear is aimed toward the person speaking. ■ Will typically have difficulty localizing sounds and voices using hearing alone. ■ The unilateral listener will have greater difficulty understanding speech when environment is noisy and/or reverberant, especially when normal ear is toward the overhead projector or other competing sound source and poor hearing ear toward the teacher. ■ Exhibits difficulty detecting or understanding soft speech from the side of the poor hearing ear, especially in a group discussion.	■ Child may be accused of selective hearing due to discrepancies in speech understanding in quiet versus noise. ■ Social problems may arise as child experiences difficulty understanding in noisy cooperative learning or recess situations. ■ May misconstrue peer conversations and feel rejected or ridiculed. ■ Child may be more fatigued in classroom due to greater effort needed to listen if class is noisy or has poor acoustics. ■ May appear inattentive, distractible, or frustrated, with behaviour or social problems sometimes evident.	■ Allow child to change seat locations to direct the normal hearing ear toward the primary speaker. ■ Student is at 10 times the risk for educational difficulties as children with 2 normal hearing ears, and 1/3 to 1/2 of students with unilateral hearing loss experience significant learning problems. ■ Children often have difficulty learning sound/letter associations in typically noisy Kindergarten and Grade 1 settings. ■ Educational and audiological monitoring is warranted. ■ Teacher in-service is beneficial. ■ Typically will benefit from a personal FM system with low gain/power or a soundfield FM system in the classroom, especially in the lower grades. ■ Depending on the hearing loss, may benefit from a hearing aid in the impaired ear.

MID-FREQUENCY HEARING LOSS or REVERSE SLOPE HEARING LOSS

Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
■ Child can "hear" whenever speech is present but will have difficulty understanding in certain situations. ■ May have difficulty understanding faint or distant speech, such as a student with a quiet voice speaking from across the classroom. ■ The "cookie bite" or reverse slope listener will have greater difficulty understanding speech when environment is noisy and/or reverberant, such as a typical classroom setting. ■ A 25–40 dB degree of loss in the low to mid-frequency range may cause the child to miss approximately 30% of speech information if unamplified; some consonant and vowel sounds may be heard inconsistently, especially when background noise is present. ■ Speech production of these sounds may be affected.	■ Child may be accused of selective hearing or "hearing when he wants to" due to discrepancies in speech understanding in quiet versus noise. ■ Social problems may arise as child experiences difficulty understanding in noisy cooperative learning situations, lunch, or recess. ■ May misconstrue peer conversations, believing that other children are talking about him or her. ■ Child may be more fatigued in classroom setting due to greater effort needed to listen. ■ May appear inattentive, distractible, or frustrated.	■ Personal hearing aids important but must be precisely fit to hearing loss. ■ Child likely to benefit from a soundfield FM system, a personal FM system, or an assistive listening device in the classroom. ■ Student is at risk for educational difficulties. ■ Can experience some difficulty learning sound/letter associations in Kindergarten and Grade 1 classes. ■ Depending upon degree and configuration of loss, child may experience delayed language development and articulation problems. ■ Educational monitoring and teacher in-service is warranted. ■ Annual hearing evaluation to monitor for hearing loss progression is important.

Appendix A

Relationship of Hearing Loss to Listening and Learning Needs

HIGH FREQUENCY HEARING LOSS

Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
■ Child can "hear" but can miss important fragments of speech. ■ Even a 26–40 dB loss in high frequency hearing may cause the child to miss 20–30% of vital speech information if unamplified. ■ Consonant sounds /t/, /s/, /f/, /th/, /k/, /sh/, and /ch/ likely heard inconsistently, especially in noise. ■ May have difficulty understanding faint or distant speech, such as a student with a quiet voice speaking from across the classroom; will have much greater difficulty understanding speech when in low background noise and/or when reverberation is present. ■ Many of the critical sounds for understanding speech are high pitched, quiet sounds, making them difficult to perceive; the words *cat, cap, calf,* and *cast* could be perceived as "ca"; word endings, possessives, plurals, and unstressed brief words are difficult to perceive and understand. ■ Speech production may be affected. ■ Use of amplification is often indicated to learn language at a typical rate and ease learning.	■ May be accused of selective hearing due to discrepancies in speech understanding in quiet versus noise. ■ Social problems may arise as child experiences difficulty understanding in noisy cooperative learning situations, lunch, or recess. ■ May misinterpret peer conversations. ■ Child may be fatigued in classroom due to greater listening effort. ■ May appear inattentive, distractible, or frustrated. ■ Could affect self-concept.	■ Student is at risk for educational difficulties. ■ Depending upon onset, degree, and configuration of loss, child may experience delayed language and syntax development and articulation problems. ■ Possible difficulty learning some sound/letter associations in Kindergarten and Grade 1 classes. ■ Early evaluation of speech and language skills is suggested. ■ Educational monitoring and teacher in-service are warranted. ■ Will typically benefit from personal hearing aids and use of a soundfield or a personal FM system in the classroom. ■ Use of ear protection in noisy situations is imperative to prevent damage to inner ear structures and resulting progression of the hearing loss.

FLUCTUATING HEARING LOSS

Possible Impact on the Understanding of Language and Speech	Possible Social Impact	Potential Educational Accommodations and Services
■ Of greatest concern are children who have experienced hearing fluctuations over many months in early childhood (multiple episodes with fluid lasting three months or longer). ■ Listening with a hearing loss that is approximately 20 dB can be compared to hearing when index fingers are placed in ears. ■ This loss or worse is typical of listening with fluid or infection behind the eardrums. ■ Child can "hear" but misses fragments of what is said. Degree of difficulty experienced in school will depend upon the classroom noise level, the distance from the teacher, and the current degree of hearing loss. ■ At 30 dB, can miss 25–40% of the speech signal; child with a 40 dB loss associated with "glue ear" may miss 50% of class discussions, especially when voices are faint or speaker is not in line of vision. ■ Child will frequently miss unstressed words, consonants, and word endings.	■ Barriers begin to build with negative impact on self-esteem as the child is accused of "hearing when he/she wants to," "daydreaming," or "not paying attention." ■ Child may believe he/she is less capable due to understanding difficulties in class. ■ Typically poor at identifying changes in own hearing ability. With inconsistent hearing, the child learns to "tune out" the speech signal. ■ Children are judged to have greater attention problems, insecurity, and distractibility and to lack self-esteem. ■ Tend to be non-participative and distract themselves from classroom tasks; often socially immature.	■ Impact is primarily on acquisition of early reading skills and attending in class. ■ Screening for language delays is suggested from a young age. ■ Ongoing monitoring for hearing loss in school, communication between parent and teacher about listening difficulties, and aggressive medical management are needed. ■ Will benefit from soundfield FM or an assistive listening device in class. ■ May need attention to development of speech, reading, self-esteem, or listening skills. ■ Teacher in-service is beneficial.

Appendix B

Hiring an ASL-English Interpreter

Interviewing and Screening Interpreters

The Manitoba Education, Citizenship and Youth (MECY) Provincial Outreach Team, in collaboration with the school-based team and the teacher of the Deaf and/or hard of hearing, can assist school divisions in hiring signers and interpreters by offering an assessment tool that evaluates the level of interpretation skills. These screenings can also assist administrators in completing school-based evaluations regarding interpretation skills.

MECY is aware that there is a shortage of interpreters in Manitoba, particularly in rural and isolated parts of the province. Screening assists in choosing the best option in difficult situations.

For more information, please visit the Manitoba Deaf and Hard of Hearing Services Unit website at <www.edu.gov.mb.ca/k12/dhh/index.html>.

Qualifications of Interpreters

Qualifications of ASL-English interpreters include the following:

- graduation from an ASL-English Interpreting Program (AEIP)
- active dual membership in the Manitoba Association of Visual Language Interpreters (MAVLI) and the Association of Visual Language Interpreters of Canada (AVLIC)
- experience working with students who are Deaf and/or hard of hearing
- basic understanding of hearing loss and its effect on the social, physical, and psychological development of individuals who are Deaf and/or hard of hearing
- basic knowledge of language acquisition and development
- an awareness of Deaf culture specifically and cultural diversity generally, and their relationship to students' development and self-perception
- knowledge of community resources available to students and their families
- ability to establish and maintain effective working relationships and to work collaboratively as a member of an educational team
- strong interpersonal, organizational, and communication skills
- commitment to professional learning specific to interpreting
- knowledge of the basic aspects of students' educational, physical, social, and emotional development
- understanding of the basic principles of educational practices, the function of support services, and the role of interpreters as part of an educational team

AEIP programs from two to four years in length are offered on a full-time basis. ASL classes are offered in 40-hour blocks several times a year—these are the stepping stones to entry into the AEIP.

The skill level of signers and ASL-English interpreters has a great impact on the amount of curriculum that the student who is D/HH is able to access. To hire the most qualified candidate, administrators look for completion of an AEIP program.

When trained interpreters are unavailable, individuals who are fluent in ASL may be considered as temporary candidates if they have successfully completed a recognized screening, such as the one that Manitoba Education, Citizenship and Youth provides.

Job titles or job classifications for qualified interpreters tend to vary between school divisions. Professional standards support the accurate title of "ASL-English interpreter."

Interpreters follow a code of ethics that binds them to professional behaviour and conduct. To view this code, see the Code of Ethics and Guidelines for Professional Conduct at <www.avlic.ca/resources.php?coe>.

GLOSSARY

adaptation

A change made in the teaching process, materials, assignments, or student products to help a student achieve the expected learning outcomes.

aided language stimulation

A naturalistic technique in which a facilitator models ways that symbols can be used for communication.

ambient noise

"Background noise, which competes with the main speech signal" (Colorado School for the Deaf and Blind).

American Sign Language (ASL)

A visual-gestural language created by people who were Deaf and used by Americans and Canadians of all ages who are Deaf. ASL defines its expression through hand shapes and movements, facial expressions, body movement, spatial relationships, and mouth movements.

assessment

The systematic process of gathering information about what a student knows, is able to do, and is learning to do.

ASL-English interpreter

A professional who has successfully completed an ASL-English interpretation program (AEIP). This post-secondary training provides graduates with knowledge of interpreting skills, Deaf culture, and the national code of ethics.

ASL specialist

A professional who provides support to teaching personnel and support personnel in implementing ASL language plans through direct training, consultation, and ongoing programming evaluation.

audiogram

A graph that represents a person's responses to sound. It is used to document the softest sound a person can detect at a variety of different frequencies or pitches.

audiologist

A professional who is qualified to assess hearing loss and recommend and fit amplification systems (e.g., hearing aids, FM systems, cochlear implants).

audiology

The medical term for the study and measurement of hearing and hearing loss.

auditory-oral method

A method of teaching students to speak by maximizing their residual hearing through the use of hearing aids or cochlear implants. Students use any natural ability they may have developed for using visual cues (e.g., lip-reading).

auditory-verbal method

A method of teaching students to develop spoken language, with an emphasis on maximizing a student's residual hearing through hearing aids or cochlear implants. Speech reading is not emphasized or taught. Trained auditory-verbal therapists provide early intervention services.

auditory-verbal therapist

A speech-language pathologist, audiologist, and/or educator who has received additional training in developing spoken language through listening.

bilateral hearing loss

A hearing loss that affects both ears.

bilateral implantation

The implantation of cochlear implants in both ears.

bimodal hearing

A system in which a person with a cochlear implant in one ear wears a hearing aid in the other ear. The hearing aid provides low frequency information that the cochlear implant doesn't always pick up.

computerized notetaker (CN)

A person who uses a laptop computer to type a summary of the information that is spoken in a classroom or meeting, adapting the language level, the layout, and the content to meet student needs.

conductive hearing loss

A hearing loss that occurs when one or more of the structures of the outer or middle ear are not working properly.

Deaf

A term that refers to a person with a hearing loss who uses American Sign Language and who identifies culturally with the Deaf community.

deafblindness

A condition that combines in varying degrees both hearing and vision loss.

deafened

A term that refers to a person who had hearing and subsequently lost it, through illness or accident.

domains

Specific areas of development that might be targeted in the IEP. Examples of domains include communication, social, academic, motor, cognitive, self-management, community, vocational, and recreation/leisure.

ear mold

The plastic or vinyl part of a hearing aid that is custom made to fit into the outer ear.

educational assistant

A person hired by the school/division to provide support for teachers and/or students. This person is supervised directly by a teacher or principal.

educational consultant for the Deaf and/or hard of hearing and
teacher of the Deaf and/or hard of hearing (TD/HH)

A teacher with additional specialized training in the education of students who are Deaf and/or hard of hearing. An educational consultant or TD/HH supports the school team in the areas of assessment, IEP development, program planning, curriculum adaptations/modifications, and specific teaching/learning strategies. An educational consultant or TD/HH also provides support with amplification needs and special devices, modifications to the visual and listening environment, specific remedial materials, and development of the student's self-esteem and identity.

educational interpreter consultant

Provides support to the signing educational assistant or ASL-English interpreter by giving direct feedback, modelling interpreting, conducting assessments, orienting the educational team, and providing professional learning opportunities.

hard of hearing

A term that refers to a person who has a hearing loss but does not have a cultural affiliation with the Deaf community.

incidental language learning

Learning words and language structures without direct instruction or numerous exposures.

individual education plan (IEP)

A yearly written plan developed and used by a team to meet the individual learning needs of a student.

language

A system of symbols of communication (e.g., words) and the rules used to manipulate them.

literacy

In this document, "the ability to read, write, communicate, and comprehend" (Education Oasis).

metalinguistic knowledge

The ability to think about and comment on language.

mixed hearing loss

A hearing loss where both conductive and sensorineural hearing loss are present.

modification

Changing the number or the content of the learning outcomes that a student is expected to meet in the provincial curriculum. The student's teacher or school team makes these changes.

morphemes

Meaningful parts of words (e.g., suffixes, roots, prefixes).

morphology

Describes patterns of word formation, and changes in word meaning. For example, adding /s/ changes a word to a plural (cats) or possessive (mom's).

occupational therapist (OT) (clinician)

A professional trained to help people improve their ability to do activities related to their daily living, such as self-care, work, and leisure. The purpose of occupational therapy is to promote and maintain performance and health. An occupational therapist provides student-specific assessment, suggests student-specific adaptations and modifications to classroom equipment, and provides training of staff to help students participate as fully as possible in school programming and activities. Occupational therapists often work in conjunction with physiotherapists.

otitis media

A medical term referring to middle ear infections or inflammation of the middle ear.

personal FM system

A system which uses a transmitter, microphone, and receivers to send the teacher's voice to the student's hearing aid(s) by FM radio wave.

phonological awareness

The ability to hear and manipulate the sound structure of language.

physiotherapist (PT) (clinician)

A professional concerned with the assessment, maintenance, and improvement of physical function and performance of the body. Physiotherapists often work with students who have difficulties with movement, coordination, or balance. They provide student-specific assessment, recommendations, and staff training to meet a student's physical needs. Physiotherapists often work in conjunction with occupational therapists.

progressive hearing loss

A hearing loss where, over time, the hearing becomes progressively worse in one or both ears.

psychologist, school (clinician)

A specialist in psychology and education. School psychologists are qualified mental health professionals in the areas of psycho-educational assessment, childhood development, behavioural management, individual/group counselling, and consultation.

residual hearing

The amount of usable hearing. Most people with a hearing loss do not have a total hearing loss.

semantics

The aspect of language concerned with meaning.

sensorineural hearing loss

A hearing loss as a result of problems in the cochlea, the auditory nerve, and/or the hearing centres of the brain. The most common reason for sensorineural hearing loss is damage to the hair cells in the cochlea.

signal-to-noise ratio (SNR)

The comparison of speech and noise levels. It represents the difference in loudness between the primary signal and the background noise.

signer

A person who has learned, or is learning, American Sign Language. While signers have taken sign language classes, they have no formal training in ASL-English interpretation.

sound

The sensation perceived by the sense of hearing.

soundfield FM system

A system which uses a microphone and transmitter to send the teacher's voice to speakers in the classroom.

speech

Certain sounds made with the mouth and voice.

speech-language pathologist

A professional who supports the school team by providing specialized knowledge and skills in the area of communication development and difficulties and their impact on curriculum and social outcomes for students. A speech-language pathologist provides assessment, makes recommendations, provides therapy, and suggests modifications or adaptations in the area of communication.

standardized test

A carefully constructed measurement instrument that requires specially trained individuals to ensure they are properly selected, interpreted, and used. (Manitoba Education, Citizenship and Youth, *AEP: Handbook for Student Services* 79)

student-specific outcome

Another term used for "goal" in an individual education plan (IEP) for a student; states what the student will learn, when this will be accomplished, and how the goal will be met.

syntax

The set of rules for combining words into sentences.

teacher of the Deaf and/or hard of hearing (TD/HH) and
educational consultant for the Deaf and/or hard of hearing

A teacher with additional specialized training in the education of students who are Deaf and/or hard of hearing. An educational consultant or TD/HH supports the school team in the areas of assessment, IEP development, program planning, curriculum adaptations/modifications, and specific teaching/learning strategies. An educational consultant or TD/HH also provides support with amplification needs and special devices, modifications to the visual and listening environment, specific remedial materials, and development of the student's self-esteem and identity.

unilateral hearing loss

A hearing loss where only one ear is affected.

universal design

Planning the design of structures and products at the outset for the greatest accessibility and for the widest range of individuals, using these seven guiding principles as a framework: equity, flexibility, simplicity, perceptible use, tolerance for error, comfort, and appropriate space.

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