BB

Terminology Describing Deaf Individuals

Deaf, hard of hearing

The current terms in use by the deaf community today are deaf and hard of hearing. In 1991, the World Federation of the Deaf voted to use the official terms deaf and hard of hearing. The National Association of the Deaf supports these terms, and they are used by most organizations involved with the deaf community. Support for the use of these terms is discussed in the Joint Committee of the American Speech-Language-Hearing Association and the Council on Education of the Deaf 1997 paper, *Hearing Loss: Terminology and Classification.* This paper details the importance of allowing individuals the option of choosing the terminology to describe themselves based on their hearing status, communication preferences, cultural orientation, and use of technology.

Hard of hearing usually refers to people who have enough hearing to communicate and feel comfortable communicating through spoken language. There are no specific hearing levels or personal characteristics that determine whether a person will function as hard of hearing. Each deaf or hard of hearing person is unique in his or her hearing status and ability to communicate using spoken language.

Hearing impaired

A commonly used term today is hearing impaired. While it is not as blatantly insulting as some of the older terms, many individuals dislike it because it describes deaf people based on what they cannot do.

Deaf and dumb, deaf-mute

Deaf people themselves have never adopted these terms or considered them acceptable. They have faded from use.

deaf, Deaf

deaf with a lowercase "d" is usually an audiological description of a person's hearing level. It most often refers to a person who is unable to use his or her hearing for the purpose of understanding everyday communication. Being deaf does not mean the person cannot hear anything at all. Not all people who are deaf identify themselves with, or participate in, Deaf culture.

Deaf with an uppercase "D" refers to deaf adults and children who share the use of American Sign Language and Deaf culture-common values, rules for behavior, traditions, and views of themselves and others (Padden & Humphries, 1988). People who identify with Deaf culture and describe themselves as Deaf may also have a range of hearing levels.

Prelingually deaf, postlingually deaf, and late deafened.

Prelingually deaf refers to individuals who were born deaf or became deaf prior to learning to understand and speak a language. Postlingually deaf or late deafened describes a person who lost hearing ability after he or she learned to understand speak a language. These distinctions are important as they may determine person's familiarity with and memory of spoken English. These terms do not relate to intelligence or potential.

Resources

National Association of the Deaf: *What is the difference between a person who is "deaf," "Deaf," or "hard of hearing"?and What is wrong with the use of these terms: "Deaf-mute, " "teaf and dumb," or "hearing impaired"?*

http://www.nad.orglissues/american-sign-language/community-and-culture-fag

American Speech-Language-Hearing Association: *Impairment, disorder, disability.*

http://www.asha.orglpublic/hearingldisorders/impair_dis_disab.htm

References

Padden, C., & Humphries, T. (1988). *Deaf in America: Voices from a culture.* Cambridge, MA: Harvard University Press.

Understanding Audiological Information

Audiology is the science of measuring and describing hearing and hearing loss. If an audiologist is available in your school system, he or she may help you understand a student's hearing abilities and needs. The audiologist is a professional who can interpret hearing test results and will be able to provide guidance for educational and classroom planning.

Measuring Hearing

Most hearing tests are recorded on an audiogram. The audiogram is a graph used to chart hearing thresholds. Thresholds are the quietest levels at which an individual can hear specific frequencies or pitches. While hearing evaluations may look different from each testing facility, the audiogram and the frequencies tested are usually the same.

Most audiograms have a key that explains the symbols and terms used. Here are some terms that you are likely to encounter:

Hertz (Hz)-The terminology used to describe the frequency or pitch of sound. The pitches measured on an audiogram are typically 250Hz (lowest pitch) through 8,000 Hz (highest pitch). These frequencies are measured because speech contains most of its energy in this range.

Decibel (dB)-The terminology used to describe the intensity or loudness of a sound. Zero dB is usually the quietest sound measured on an audiogram. The loudest sound typically measured is 120 dB.

"O" and "X"-The symbols used to record thresholds on an audiogram. "O" represents the right ear and "X" represents the left ear.

Pure Tone Average (PTA)-The average of the thresholds at 500 Hz, 1,000 Hz; and 2,000 Hz; for each ear. The PTA is often used to describe an individual's degree of hearing loss (see below). For example, when a hearing loss is described as an 80 dB loss, that number probably represents the PTA.

Speech Detection Threshold (SDT) or Speech Awareness Threshold (SAT)-The loudness level at which an individual begins to be aware of speech sounds, without understanding the sounds, words, or phrases used. When individual sounds are used, they are typically those chosen to represent various components of the frequency range often with "oo" and "aa" (low pitch), "ee" (mid-pitch), and "sh" or "s" (high pitch).

Speech Recognition Threshold (SRT)-The quietest level at which a person can understand words. This ability is measured by asking a person to repeat or point to pictures of two syllable words with equal

stress placed on both syllables such as hotdog or airplane.

Word Recognition Testing-Usually described by a percentage score or the terms excellent, good, fair, or poor. This test evaluates a person's ability to understand one-syllable words at a comfortable listening level. This test may be done at varying loudness levels, in quiet, or in the presence of background noise. While this test does not determine how well a person will understand speech in a more natural environment, it does help identify whether they have difficulty with certain sounds or in noisy versus quiet environments.

How Loud is Loud?

You may be wondering how loud everyday sounds are and how that compares with an individual student's hearing levels. Here are the decibel or loudness levels of some common sounds:

- 0-25 dB HL: Approximate threshold for normal hearing
- 30 dB HL: Whisper at five feet
- 50 dB HL: Average conversation
- 90-110 dB HL: Loud auto horn, a person nearby who is yelling
- I00-110 dB HL: Motorcycle engine
- 150-170 dB HL: Jet engine (painful for humans)

With noise from cars and trucks, lawn equipment, people, video games, MP3 players, and all the other parts of today's environment, the world is a noisy place. All of that noise can impact hearing. Prolonged exposure to loud sounds (sounds over 80 dB) can cause temporary or permanent damage to hearing. Hearing loss due to noise often does not become noticeable until a person is older. This is why it is important for individuals of all ages, whether they are hearing, hard of hearing, or deaf (with residual hearing), to use earplugs or other hearing protection around loud sounds. For more information, see WISE EARS® at http://www.nidcd.nih.gov/health/hearinglwiseears.asp.

Interpreting the Audiogram

Speech understanding is related to how many parts of the listening "puzzle" are available for someone to make sense of words, phrases, or sentences. The more parts that a person can hear, the easier it is to understand what is heard. Some sounds are more important than others for speech understanding. In general, consonants provide more information and are therefore more important for speech understanding than vowels. For example, "SP_C__L" is easier to understand than "__E_IA_."

Speech sounds have energy in different parts of the frequency range. For example, vowels have most of their energy in the low pitches, while many consonants have energy in the higher pitches. If a person has the pattern of hearing loss where he or she can only hear lower-pitched vowels and few consonants, he or she may have great difficulty understanding words. The more access an individual has to hear the consonant sounds in the higher pitches, the greater his or her potential to acquire and understand spoken language.

For some people, word understanding increases significantly when they have access to information from looking at the lips, face, and other body language cues. This is called speechreading. Sounds that are typically hard to hear may be more readily visible on the lips. For example, the "f' sound in leaf is difficult to hear because it is a high pitched, quiet sound, but it is easy to see on the lips. The combination of hearing some parts of a word and seeing complementary parts on the lips and face sometimes fills in the parts of the puzzle and promotes speech understanding for some people.

Speechreading is not easy. To better understand, have someone mouth the words bat, pat, and mat without using their voice. Can you tell the difference? Probably not since the words look the same. Speechreading may improve with practice, but not everyone is good at it.

Resources: Understanding Audiological Information

Internet:
American Speech-Language-Hearing Association: Hearing loss. http://asha.org/public/hearingldisorders/default.htm

Books:

DeConde Johnson, C., Benson, P. V., & Seaton, J. B. (1997). Educational audiology handbook. San Diego: Singular Publishing Group. Mahshie, J., Moseley, M. J., Scott, S., & Lee, J. (2006).

Understanding Hearing Ability

What does speech sound like to deaf and hard of hearing children? Do deaf children hear anything?

Some deaf children do in fact have no measurable hearing, but most children have some degree of residual or remaining hearing. Every child is unique in the sounds he or she can hear and his or her ability to understand them. No two children are alike. Two children who perform similarly on their hearing tests may understand or use sounds in very different ways. It is important never to assume how a student should or will communicate because of hearing test results.

Whether a student can use his or her hearing to understand speech or recognize sounds in the environment is influenced by many factors, including:

- *Age of hearing loss onset.* The situation of a child who has heard spoken language prior to the loss of hearing is different from that of a child who was born deaf or who became deaf prior to developing spoken language. The child who becomes deaf after spoken language is established is already familiar with the spoken language of the home. With appropriate hearing aids or a cochlear implant, these children are more likely to be able to maintain their spoken language abilities. Children who are born deaf and have never heard spoken language have varied outcomes in the development of spoken language based on how much benefit they get from a hearing aid or a cochlear implant, and a range of other factors.
- *Age at which hearing loss is diagnosed and communication and educational support are initiated.* Early identification of hearing loss, coupled with appropriate educational supports to promote the development of early language and communication (in sign language, spoken language, or both), will minimize delays in all areas of development.
- *Degree, type, and pattern of hearing loss.* There is no single description or profile of "deaf" or "hard of hearing" that fits all children. Even if two children have the same degree, type, and pattern of hearing loss, it does not mean they will hear and understand in the same way.
- *Educational and communication choices that families make for their children.*
- *Consistency with which the student uses assistive listening devices (hearing aid, cochlear implant, FM system).*
- *The extent to which the family is involved in developing the child's spoken language and speech skills.*

Characteristics of Hearing Loss

The characteristics of hearing loss include:

1. the degree (severity) of hearing loss,
2. the configuration (pattern) of the hearing loss on the audiogram, and

3. the type of hearing loss (where the hearing loss occurs in the auditory system).

Each degree, type, and configuration of hearing loss can impact the development of language, speech, and communication and the student's educational placement.

1. Degree of Hearing Loss

Hearing loss is typically described in decibels. For example, you may learn that a student has a 75 dB hearing loss. This usually refers to the student's pure tone average (average of thresholds to tones documented on the audiogram at the pitches/frequencies 500Hz;1,000 Hz; and 2,000 Hz). It is not acceptable terminology to describe hearing loss in percentages. For example, references to a 75 percent hearing loss have no audiological meaning. The varied degrees of hearing loss based on an individual's pure tone average are as follows:

- Normal range 0-15 dB HL
- Minimal 16-25 dB HL
- Mild loss 26-40 dB HL
- Moderate loss 41-55 dB HL
- Moderately severe 56-70 dB HL
- Severe 71-90 dB HL
- Profound 91 dB HL or greater

2. Types of Hearing Loss

The four common types of hearing loss are: sensorineural, conductive, mixed, and unilateral. Another less common type of hearing loss is auditory neuropathy. Each type of hearing loss is described below, alone with student profiles to help you understand how the type, degree, and pattern can influence the child's development of language and speech development. Educational considerations also are included.

Sensorineural Hearing Loss

Sensorineural hearing loss is caused by damage to the hair cells in the cochlea of the inner ear. Sensorineural hearing loss is permanent and cannot be reduced or eliminated by medication or surgery. There are many different causes of sensorineural hearing loss, some developing before or during birth and others having a later onset.

Onset before or during birth:

- Maternal infections such as rubella, herpes, toxoplasmosis, syphilis, cytomegalovirus (CMV)
- Heredity (genetics)
- Asphyxia or lack of oxygen at birth
- Possible association with birth weight of less than 1,500 grams
- Possible association with defects of the head and neck
- Possible association with maternal drug or alcohol abuse

Later onset (can occur any time after birth):

- Bacterial meningitis
- Ototoxicity (drug induced)

- Intense or excessive noise
- Physical trauma to the head or ear
- Aging (the most common cause in older adults)

The following characteristics are typical of sensorineural hearing loss:

Students with a sensorineural hearing loss may experience both distortion and decreased loudness of sounds. This occurs because some or all of the hair cells in the inner ear responsible for sensing sounds of different pitches are damaged or nonexistent or because the auditory nerve (the pathway for sound to travel to the brain) is damaged or nonexistent. The extent of damage to the hair cells in the cochlea and the auditory nerve will cause varying degrees and patterns of hearing loss.

Students with a sensorineural hearing loss may experience varying levels of benefit from assistive listening devices. For example, some children benefit from a hearing aid to understand spoken language, while others find hearing aids beneficial only for awareness of environmental sounds.

Conductive Hearing Loss

Conductive hearing loss is caused by a problem in the outer or middle ear. Sound is ineffectively "conducted" to the hair cells in the inner ear that are responsible for sensing sound. In a purely conductive hearing loss, the actual hair cells/nerves of hearing are intact and ready to accept incoming sounds. Sound, however, does not adequately reach these hair cells/nerves. Sounds therefore are heard at a reduced level. The degree of loss depends on what is causing the problematic sound conduction.

The following characteristics are associated with conductive loss:

- The hearing loss can usually be reduced or eliminated through medical treatment.
- The condition may be temporary, depending on the nature of the blockage.
- If the hearing loss is brief (less than two or three weeks and not frequently recurring), it should not affect language or academic development. If the blockage is chronic or repeated, it may influence speech, language, and educational performance.
  - Students who speak loudly, pull on their ears, frequently ask for repetition, or say, "Huh?" may be showing symptoms associated with a conductive hearing loss. A referral to the school nurse, speech-language pathologist, or audiologist may be appropriate even for a student who does not regularly receive special education services.

Use of a hearing aid or other assistive listening device may help overcome a long-term conductive hearing loss so the student does not experience problems in language development and education. A surgically implanted device called the Baha system is designed to overcome amplification obstacles of traditional hearing aids for permanent conductive hearing loss. Similar to a cochlear implant, but avoiding the cochlea and inner ear entirely, the Baha system combines a sound processor with a small titanium implant behind the ear. The system allows sound to be conducted through the bone rather than the ear. Surgery is minor, and many patients report a wide range of advantages over other hearing devices. (See http://cochlearamericas.com.)

Routine monitoring of hearing is recommended (ask the audiologist to determine how often) for children who have repeated conductive or middle ear problems. Children with ear infections or other middle ear problems who demonstrate ongoing behavioral problems or appear to not pay attention may have fluctuating conductive hearing loss.

Ear Infections, Fluid, and Hearing Loss

Many children experience episodes when fluid becomes trapped behind the eardrum in the space of the middle ear. When fluid is present in the middle ear, children suffer a temporary hearing loss since sound is not conducted adequately to the inner ear. This fluid may be thin or thick and may or may not be infected. If middle ear fluid/infection is suspected, the family should consult with the child's physician to determine necessary medical or audiological follow-up. If infected, treatment may include the use of antibiotics. Antibiotics may alleviate the infection, but fluid may remain in the middle ear for several days or weeks. If fluid becomes chronic and is not remedied with medication protocols, the surgical insertion of small tubes (PE tubes) in the eardrum to promote drainage of the fluid is sometimes recommended. For children with normal hearing, fluid in the middle ear places a strain on the hearing system. Even if not permanent, fluid in the middle ear, if repeated or chronic, can have a negative impact on the development of a child's language and education. For more information on ear infections, see http://www.nidcd.nih.gov/health!hearinglotitism.htm#what.

Mixed Hearing Loss

A child with mixed hearing loss will have a combination of characteristics associated with both conductive and sensorineural loss. The extent of the conductive and sensorineural components will determine the implications of the mixed loss.

In a mixed loss, the conductive component may be permanent or temporary. For example, the conductive component of a mixed loss may be permanent when there is damage to the ossicles (middle ear bones) or there is some anatomical malformation that blocks sound from reaching the inner ear. Usually, the conductive component in a mixed loss is temporary due to fluid or excess wax. Thus, the conductive component of the hearing loss resolves with medical attention, leaving only the permanent, sensorineural component of hearing loss. When the conductive component is temporary, hearing levels will fluctuate depending on whether the conductive component is present. Some characteristics associated with mixed hearing loss include the following:

- When hearing levels fluctuate, it can impact day-to-day listening and attending. Hearing aids may need to be adjusted or have multiple settings for times when hearing levels fluctuate.
- If the conductive component is significant, but there is very minimal sensorineural hearing loss, the student most likely will hear sounds softly but with little distortion.
- If the sensorineural component is more significant, and the conductive component is minimal, the sounds the student will hear will be distorted in addition to softer.
- Depending on the reason for the conductive component of the hearing loss, mixed losses may fluctuate and the child's listening experiences could vary from day to day.

Unilateral Hearing Loss

In unilateral hearing loss, hearing levels are normal in one ear and decreased in the other. This causes varying degrees of difficulty depending on how significant the hearing loss is in the single ear. Students with a mild hearing loss in one ear may or may not demonstrate linguistic, academic, or conununicative delays. Students with a significant degree of hearing loss in one ear may experience language or learning delays and also have difficulty attending in the classroom. Students with a unilateral hearing loss are considered to be at higher risk for academic failure, classroom behavior problems, and linguistic delays compared to students with normal hearing.

People often assume that students should have no problem listening with their "good ear," but hearing with one ear is not the same as hearing with two ears. Students with a unilateral hearing loss may not hear all of the sounds in a classroom, and they may have a harder time locating the source of a sound. This is especially true when there is background noise or a great distance between a student and the person speaking. As a result, the student may miss important information. Special attention should be given to students with unilateral hearing loss who also experience intermittent or chronic middle ear problems. Any fluctuating or temporary conductive hearing loss in a student's "good ear" can further impact his or her listening and attending skills.

Children with a unilateral hearing loss may need special accommodations to support them in the classroom, including:

- preferential seating for maximum accessibility to auditory information, • use of a sound-field FM system, and
- ongoing monitoring for linguistic, educational, or social gaps.

Auditory Neuropathy/Auditory Dyssychrony

Auditory neuropathy or, as some describe it, auditory dyssychrony (AN/AD), is a relatively new category of hearing loss. It is now identifiable due to improved diagnostic technologies available for audiological evaluation. AN/AD is a hearing disorder in which sound enters the inner ear normally, but the transmission of signals from the inner ear to the brain is impaired (See National Institute on Deafness and Other Communication Disorders, http://www.nidcd.nih.gov/health/hearing/neuropathy.asp).

Students with this disorder are often aware of sounds, but their ability to decode spoken language is hindered. That is, the students may "hear" sounds, but they may not necessarily make sense of them for communication.

There is still much to be learned about students with hearing loss characteristics consistent with AN/AD. Such students do not present themselves with a single profile. Just as there is a range of hearing levels with sensorineural hearing loss, there is also a range of levels with AN/AD.

AN/AD is sometimes confused with Auditory Processing Disorder (APD). Children with AN/AD and APD may demonstrate similar language processing difficulties. APD results from a dysfunction in the centers of the brain that process sound. AN/AD results from a dysfunction in the auditory system rather than the brain, thus making it a type of hearing loss. (See National Institute on Deafness and Other Communication Disorders, http://www.nidcd.nih.gov/health/voice/auditory.htm). Some students with *AN*/AD benefit from a hearing aid or personal FM system, while others do not. Some may be candidates for a cochlear implant. Others may benefit from sign language or Cued Speech. Educational professionals need to maintain a close working relationship with a child's doctors and audiologist in order to monitor a child's progress and treatment for AN/AD.

Language and Communication

Deaf and hard of hearing children vary widely in how they communicate at school and in the home. A common misconception about deaf children is that providing them with a sign language interpreter is enough to ensure that they have access to learning in the classroom. Another misconception is that if a deaf or hard of hearing child uses a hearing aid, the quality of "listening" will be sufficient for a child to acquire spoken language. (See "Understanding Hearing Ability" for more on this.) There are children who may best access language through American Sign Language (ASL) or children who may benefit more from using other visual supports to assist in their development of spoken English (i.e., cueing, speechreading).

The most important thing is to put supports in place as early as possible so children who are deaf or hard of hearing can learn language as early as possible in the most accessible, least frustrating, and natural manner possible.

There are many factors to consider when determining the most effective way to facilitate language development for a young deaf or hard of hearing child. Will the use of listening technologies provide the child with enough hearing ability to acquire language and access that language for learning? Can the child most readily and comfortably develop language through ASL? Is Cued Speech, a system to visually assist a child in clarifying English, beneficial? And why or why not use a combination of everything to assist a deaf child in learning language?

Beliefs within the medical and educational communities vary as to the most effective approaches to provide a deaf or hard of hearing child with access to language for learning and communication. Success with one strategy rather than another depends on the confluence of many factors. The most effective strategies and technologies for one child and family may not work for the next child and family. No matter which decisions are made, the timely development of communication and language must be at the heart of the decision. We know through research that cognitive development correlates with development of a strong early language foundation that is wholly and naturally accessible to a child. The most commonly used communication and language strategies are described here:

1. **ASL/English Bilingual Education**
2. **Auditory Modalities**
3. **Total Communication**
4. **Cued Speech**

As your school plans for a student who is deaf or hard of hearing, it is crucial to be aware of the student's language and communication competency. Some students may be competent in ASL, some may be competent in spoken English, and some still may be in the language development stages of ASL, English,

or another language used in the home. It is important to ensure that the student has complete and natural access to language both for continued language and cognitive development and for access to an academic information and social interactions. Keep in mind, also, that language and communication strategies may need to be reviewed and modified depending on how well a child is progressing.

Resources: Language and Communication

Boys Town National Research Hospital: *My baby's hearing: Language and learning.*
http://babyhearing.org/LanguageLearning/index.asp

Easterbrooks, S. R., & Baker, S. K. (2002). *Language learning in children who are deaf and hard of hearing: Multiple pathways.* Boston: Anyn & Bacon.

Mahshie, S. N. (1997). *A first language: Whose Choice Is It?* Washington, DC: Ganaudet University Laurent Clerc National Deaf Education Center.
http://clerccenter.ganaudet.edu/documents/clerc/Sl-AFirstLanguage.pdf

Raising Deaf Kids: *Communication choices.*

http://raisingdeafkids.org/communicating/choices/

Schwartz, S. (Ed.). (1996). *Choices in deafness: A parent's guide to communication options* (2nd ed.). Bethesda, MD: Woodbine House.

U.S. Department of Education: *Opening doors: Technology and communication options for children with hearing loss.*
http://www.ed.gov/about/offices/list/osers/products/opening_doors/index.html

ASL-English Bilingual Education

The goal of ASL-English bilingual education is language proficiency in both ASL and English. ASL, a visual gestural language with its own grammar and syntax, is a complete language that differs from sign systems used to clarify English. Fingerspelling (use of a manual alphabet to spell words) can be actively integrated into ASL for proper names and other terms for which there are no generally accepted signs. English can be addressed through both print and spoken English. Strategies to address the development of spoken English vary based on each child's potential to access auditory information.

ASL/English bilingual education includes "signacy" (developing proficiency in ASL), "literacy" (developing proficiency in English print), and "oracy" (developing English through both oral communication and finger spelling of English words). ASL/English bilingual education stresses the importance of keeping each language separate to promote growth and development in each language. It does not support simultaneous communication (the simultaneous use of signs with spoken language) as the concurrent use of both often results in a degradation of both ASL as a language and English as a language. Within ASL/English bilingual education, strategies are incorporated that help students make links between ASL and English.

Resources

Frequently Asked Questions: ASL/English Bilingual Programming and Early Childhood Education (PDF), from the Clerc Center.

Center for ASL/English Bilingual Education and Research
http://caeber.gallaudet.edu/

Cummins, J. (2006). *The Relationship between American Sign Language proficiency and English academic development: A review of the research.* Toronto: University of Toronto.
http://clerccenter.gallaudet.edu/Documents/Cummins ASL-Eng.pdf

Graney, S. (1997). *Where does speech fit in?* Washington, DC: Gallaudet University Pre-College National Mission Programs.
http://clerccenter.gallaudet.edu/documents/clerc/20090729-0003.pdf

National Association of the Deaf: *American Sign Language.*
http://www.nad.org/issues/american-sign-language

National Institute on Deafness and Other Communication Disorders: *American Sign Language.*
http://www.nidcd.nih.gov/health/hearinglasl.asp

Mahshie, S. N. (1997). *A first language: Whose Choice Is It?* Washington, DC: Gallaudet University Laurent Clerc National Deaf Education Center.
http://clerccenter.gallaudet.edu/documents/clerc/Sl-AFirstLanguage.pdf

Mahshie, S. N. (1995). *Educating deaf children bilingually.* Washington, DC: Gallaudet University Pre-College National Mission Programs. Available through the Clerc Center Products catalog.

Frequently Asked Questions

ASL/English Bilingual Programming
and Early Childhood Education

A. What is an ASL/English bilingual program?

An American Sign Language (ASL)/English bilingual program supports the acquisition, learning, and use of ASL and English to meet the needs of diverse learners who are deaf and hard of hearing.

B. Why consider an ASL/English bilingual program for young deaf and hard of hearing children?

- It is important for deaf and hard of hearing children to develop early linguistic competence.

- It is important for deaf and hard of hearing children to establish early communication with their parents and families, develop their cognitive abilities, acquire world knowledge, and communicate fully with the surrounding world.

- It is through language that children develop social/ emotional and cognitive abilities that are critical to timely development in all areas.

- Prime language learning time may potentially be lost while waiting for a child to "learn to listen" through his or her hearing aids and/or cochlear implant(s).

- Not all children demonstrate expected spoken language outcomes with their hearing aids and/or cochlear implant(s), even if they have "auditory access."

C. Is there research that supports ASL/English bilingual programming in early childhood education?

- Brain imaging suggests that the brain can readily handle dual language development (bimodal bilingual). (Petitto, Katerelos, Levy, Gauna, et al., 2001)

- "Being exposed to two languages from birth-and in particular, being exposed to a signed and spoken language from birth-does not cause a child to be language delayed and confused." (Petitto & Kovelman, 2003)

- "Having to wait several years to reach a satisfactory level in oral language that might never be attained, and in the meantime denying the deaf child access to a language that meets his/her immediate needs (sign language), is basically taking the risk that the child will fall behind in his/her development, be it linguistic, cognitive, social, or personal." (Grosjean, 2008)

- Early access to language (spoken or signed) is the best predictor of positive spoken language outcomes. (Yoshinaga-Itano & Sedey, 2000).

D. What are the components of an ASL/English bilingual early childhood program?

- ASL and English are each developed, used, and equally valued.

- Deaf and hard of hearing children with varying degrees of hearing levels and varied use and benefit from listening technologies (hearing aids, cochlear implants) are educated together.

- Teams of deaf and hearing professionals work together to support the development and use of both ASL and English. The team may include para-professionals and other support service professionals who provide purposeful use of each language based on the individualized goals of each child.

- Assessment to document each child's development in ASL and spoken English. An individualized bilingual plan for ASL and spoken English use is designed for each child.

E. What should be included in the development of an individualized bilingual language plan?

- Documentation of a child's proficiency in both ASL and spoken English.

- Recommendations to address strategies, materials, and resources to facilitate early language acquisition and literacy development.

- Recommendations to address family supports to promote language acquisition and language learning.

F. How is ASL development addressed in a bilingual program?

- Through the use of observational checklists and language samples, each child's development in ASL is documented as a component of an individualized bilingual language plan (baseline data and progress monitoring).

- Professionals proficient in ASL work collaboratively with teachers to provide instruction in the development of ASL as a language (i.e., ASL classifiers, grammar, facial expression, etc.).

- Proficient in ASL work collaboratively with teachers to provide instruction in the development of ASL as a language (i.e., ASL classifiers, grammar, facial expression, etc.).

- Children are provided with accessible and consistent ASL adult and peer language models to foster language acquisition and learning.

- Children are exposed to daily story signing.

- ASL is used for all activities when working with a group of students with varied levels of access to spoken English.

G. How is spoken English development addressed in a bilingual program?

- Spoken English can be an active and integral part of an ASL/English bilingual program. With purposeful planning, spoken English can be addressed specific to the goals of individual students. The following strategies to facilitate spoken English should be incorporated:

- Assessment to document each child's development in spoken English as a component of developing an individualized bilingual language plan (baseline data and progress monitoring).

- Speech-language specialists work collaboratively with teachers to facilitate the development and use of spoken English skills (i.e., listening, speaking, speechreading, phonics)

- Children are provided with accessible and consistent spoken English adult and peer language models to foster language acquisition and learning

- Opportunities are available to use spoken English in a natural context with adults and peers during structured spoken English activities

- Listening activities are integrated into the classroom (i.e., oral read aloud, Internet-based activities, DVDs, music, and tape recorded activities)

- Audiology services

- Daily hearing aid/cochlear implant troubleshooting

H. How is literacy addressed in a bilingual program?

- By ensuring early linguistic access

- Story signing for all children

- Oral read aloud specific to an individual child's access to spoken English

- Incorporation of literacy strategies recognized and used with all children

- Use of visual strategies to make letter/sound connections using fingerspelling and/or use of a visual-based phonics system such as Visual Phonics1

- Use of listening-based strategies when appropriate to individual child characteristics

- 1 See-the-Sound Visual Phonics is a system of 45 hand signs and written symbols that helps to make the connection between written and spoken language less confusing.

I. Are children encouraged to use amplification (hearing aids/cochlear implants)?

Yes, use of hearing aids and/or cochlear implants is encouraged. Audiological information related to amplification benefit is shared with families and incorporated into a child's Individualized Family Service Plan/Individualized Education Program and individualized bilingual language plan. At school, teachers are responsible for encouraging children to use their hearing aids and/or cochlear implants and conducting daily amplification checks.

J. How can deaf families support their child's development of spoken English?

- Teachers and speech-language specialists can work with families to provide strategies and materials that can be incorporated into the home (for carryover of spoken English skills). Some strategies include:

- Use of a card reader with recorded listening activities

- Internet-based listening activities

- Books on tape/DVD

- Visual Phonics

K. How can hearing families support their deaf or hard of hearing child's development of ASL?

- Attend family ASL classes

- Participate in the Shared Reading Project2

- Collaborate/connect with other families

The Shared Reading Project at the Clerc Center is designed to teach parents and other caregivers how to read to their deaf children using American Sign language. The Clerc Center works with programs nationally to establish Shared Reading Project sites in their areas. For more infor-mation, visit http://clerccenter.gallgudet.edu/Cierc Center /Information gnd Resources /Info to Go /lgogugge god litergcy /Litergcy gt the Clerc Center /Welcome to Shgred Reading Project.html

References

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Petitto, I. A., Katerelos, M., levy, B, Gauna, K., et al. (2001). Bilingual signed and spoken language acquisition from birth: Implications for mechanisms underlying bilingual language acquisition. Journal of Child lan-guage, 28(2), 1-44.

Petitto, I. A., & Kovelman, I. (2003, Spring). The bilingual paradox: How signing-speaking bilingual children help us to resolve it and teach us about the brain's mechanisms underlying all language acquisition. learn-ing languages, 8(3), 5-18.

Yoshinaga-Itano, C., & Sedey, A. (2000). Early speech development in children who are deaf or hard of hearing: Interrelationships with language and hearing. The Volta Review, 100(5), 181-211.

Including Deaf Culture

The deaf and hard of hearing students you serve may or may not have had exposure to, or be part of, American Deaf culture. Affiliation with Deaf culture is not based on degree of hearing loss, but rather on one's attitude, including the wish to be connected with others who are Deaf, and the acceptance of being Deaf as an integral part of one's lifestyle. By addressing the cultural aspects of being Deaf, the school can help the student who is deaf or hard of hearing feel proud of his or her identity and familiarize others with Deaf culture and traditions.

A school program needs to consider Deaf culture in order to support a positive self-image for deaf and hard of hearing students (who are themselves aware of Deaf culture) enrolled in the program and to expand multicultural awareness. However, it is important to be sensitive to the actual cultural environment in which the child who is deaf is being raised. Not all families (whether deaf or hearing) are involved in Deaf culture. This in turn may impact the degree to which you wish to involve Deaf culture within your school program.

This page is designed to help you do two things:

1. Understand the perspective of those of your deaf or hard of hearing students who are, or would like to be, involved in Deaf culture.
2. Learn about ways to incorporate information about deaf individuals and other deaf-related topics into instruction and the general academic experience, in order to increase the multicultural awareness of all your school's students.

Auditory Modalities

This information is part of an online guide,

When a child is educated with "auditory modalities," this means the program uses therapy approaches, educational placements, and lifestyle choices that promote the child's development of spoken language. Appropriate, consistently functioning hearing aids or other listening technologies such as cochlear implants are integral to the success of learning language through auditory modalities. Within the discussion of "auditory modalities," there are two differing methods, the Auditory/Oral method and the Auditory-Verbal method. The A.G. Bell Association describes these methods as follows:

Auditory/Oral Method-Children learn to maximize their residual hearing through the use of hearing aids, cochlear implants, and educational and therapeutic techniques that support the development of audition and spoken language. Some auditory/oral education and therapy programs also have a strong visual component. In other words, there is an emphasis on using visual techniques to teach speech. In some cases, speech (lip) reading skills are used as a supplement to hearing. However, because of the vast improvements in hearing technology (hearing aids, cochlear implants, FM systems), there has been movement away from teaching speechreading.

Auditory-Verbal Method-This method is similar to the auditory/oral approach in that there is a strong emphasis on maximizing a child's residual hearing and his or her ability to use it. The Auditory-Verbal method has a set of guiding principles. Certified Auditory-Verbal therapists provide individual therapy to a child and his or her parents or caregivers that coaches them how to teach their child how to communicate using spoken language. The primary goal is to provide adequate support of the child's development and integration of listening and spoken language into everyday life. The Auditory-Verbal approach also supports a child's participation in regular classroom placements as soon as possible.

Resources

Alexander Graham Bell Association
http://agbell.org/

Auditory-Verbal International, Inc.: *Principles of Auditory-Verbal practice.*
http://agbell.org//Page.aspx?pid=360

Educational Planning for Individual Children

Federal legislation governing programs and services for deaf and hard of hearing children (the Individuals with Disabilities Education Act or IDEA, http://idea.ed.gov/) requires public school systems to provide a "free and appropriate public education" for each child. It establishes the procedure for developing an individualized curriculum and identifying support services for individual children; it requires an annual review of its effectiveness. This process is called the Individualized Family Service Plan (IFSP) for children under the age of 3 or the Individualized Education Program (IEP) for all other children. Whether you are the child's parent, teacher, instructional aide, interpreter, audiologist, or other support person, it is likely that your input during the IFSP or IEP process can help to ensure that the child's education is effective and the program placement is appropriate.

Alternatively, some children with disabilities may make appropriate progress in the general curriculum without significant remediation or assistance. They continue to need services to ensure they have full access to classroom learning and activities. When children only need services that ensure they have that access, they may have 504 plans instead of IEPs.

Resources

American Speech-Language-Hearing Association: *IDEA action center.*
http://www.asha.org/advocacy/federal/idea/

Bodner-Johnson, B., & Sass-Lehrer, M. (Eds.). (2003). *The young deaf or hard of hearing child: A family-centered approach to early education.* Baltimore: Brookes Publishing Co.

Building the Legacy: Individuals with Disabilities Education Act (IDEA) 2004

Involving the Family

The success of a student who is deaf or hard of hearing is often attributed to the support and involvement of the family. Parents, teachers, and researchers alike agree that children whose families are actively involved in their education reap greater benefits than children whose families are not. In a collaborative relationship, all sides benefit:

- The school can help families understand their child's potential and provide them with support, information, and skills to promote their child's academic achievement, language, and social development.
- The family can provide the school with critical information about their child, family, and community. The information parents have is invaluable, especially when the teacher and school are less familiar with educating a deaf child.
- The student benefits from having all the adults in his or her life share an understanding and goals.

Below are considerations for sharing information, providing support to families with deaf or hard of hearing children, and helping families become active participants in their child's education. The success of these strategies largely depends upon each school's commitment to a truly collaborative relationship.

- Listen and take seriously the family's concerns about their child's development. Parents and caregivers stress the importance of being heard by professionals and respected for their knowledge and insights about their own children. Many hearing families who have been learning what it means to be deaf or hard of hearing and who have been advocating for their child over the years possess insights and information that may be helpful to professionals in inclusive environments.
- Be honest with parents. Provide families with all the information that is available; do not limit or censor the information provided. Encourage parents and caregivers to set high standards for their child, but do not create false expectations even if the information is not what they hope to hear. Effective relationships are built on trust, and parents and caregivers need to feel confident that the information they receive is complete, accurate, and honest.
- Be knowledgeable about resources and specialists available in the community or in the state that may be able to provide support to families and specialized services to their children. Check into state commissions that address issues relevant to deaf people as well as national or regional parent organizations and agencies for deaf and hard of hearing people.
- Provide ongoing communication and language skill development for parents and other family members. Schedule workshops and classes at times and places that are convenient and welcoming to all families. Language and literacy development is largely dependent upon the quality of communication in the home. Provide opportunities for families to connect with deaf or hard of hearing adult role models. Adults who are deaf or hard of hearing can help families develop positive and realistic expectations for their child's future.

- Survey families to identify information topics of interest to them. Plan workshops that include both topic experts and consumers. For example, vocational rehabilitation programs and services for deaf and hard of hearing individuals may be an area of interest to parents and caregivers of adolescents. Identify experienced vocational rehabilitation counselors as well as young adults and their families who have used these services to share information about opportunities that are available.
- Provide families with the opportunity to meet with teachers and other specialists on a regular basis. For example, establish monthly early morning coffee meetings and welcome parents and caregivers to stop in to share information or concerns or to ask questions. In these meetings, be specific about ways in which families can participate in their children's education and the school.
- Establish ways in which parents and caregivers can contact school personnel easily. Class web pages, voice and text mail messaging and e-mail are some options that invite family members to communicate directly with teachers and other school personnel.
- Provide interpreters for families whose primary language is different from the language of the school to assure full access to all information and school functions.
- Support and encourage families to advocate for their child's needs. Help families feel comfortable expressing their views even when those views differ from those of the teacher, school, or other professionals. Help families understand their legal rights, responsibilities, and the appropriate processes they need to follow to make changes in their child's program or services.
- Be familiar with the communities and cultures of the families of the children in your school. Arrange meetings in the communities in which families live to share information about school programs, resources, and services.
- Demonstrate respect for all families regardless of their economic situation, level of education, or ethnicity. For many families, having a child who is deaf or hard of hearing is a new and unknown experience. They may initially feel powerless or overwhelmed by new information they receive or the decisions they must make.
- Establish a program such as Hands & Voices' "A Guide by Your Side" (see http://www.gbys.handsandvoices.com) that connects new families with more experienced families with whom they share some commonalities (e.g., cultural or linguistic background, age of children). Encourage families to get to know each other or organize "buddy systems" to welcome new students and their families.
- Guide families in the use of telephone and video relay services (available phone operators who translate calls from voice to sign or text) so they can contact deaf adults for support and interaction. Parents and caregivers can use these communication devices to encourage their own children to connect with their deaf and hard of hearing peers.
- Prepare newsletters about both school and community events that may be of interest to families with deaf or hard of hearing children. These newsletters can be used to share information and serve as reminders for upcoming events. Provide translations in other languages to ensure full access to everyone.
- Plan special meetings at which a book or DVD/videotape on deaf issues is presented. This provides an opportunity for families to come together to share what they have found useful and to discuss ideas they have about raising and educating children who are deaf or hard of hearing. Encourage parents and caregivers to act as facilitators for these meetings.
- Identify "room parents" for each class or age grouping in the school. Encourage each class to have at least one "parents only" event during the year for families to get to know each other. Parents and caregivers whose children are deaf or hard of hearing may have fewer opportunities to get to know the other families if their children are not included in social activities. This "parents only" event will allow families to get to know the other families of the children in their child's school.
- Make available a family resource room or area in the school where parents and caregivers will feel

comfortable and where they can read, watch a DVD/videotape on educational issues, practice signing, borrow materials, or work on a school project.

- Show families that you value and welcome their involvement and that they are important enough to warrant their own space in the school.
- Offer opportunities for families from various language and ethnic communities to meet and form support networks. For example, organize meetings with Hispanic or Asian parents.
- Plan school events and programs in consultation with individuals from various communities associated with the school. Make it easier for families to attend school functions by scheduling them at times that are convenient for working parents. Provide transportation, child care, and refreshments.

Resources

American Society for Deaf Children http://www.deafchildren.org/

Benedict, B., & Raimondo, R. (2003). *Family rights, legislation, and policies: What professionals need to know to promote family involvement and advocacy.* In B. Bodner-Johnson and M. Sass-Lehrer (Eds.), *The young deaf or hard of hearing child: A family-centered approach to early education.* Baltimore: Paul H. Brookes Publishing.

Center on School, Family, and Community Partnerships, Johns Hopkins University http://www.csos.jhu.edu/p2000/center.htm

Hallau, M. (Ed.). (2002). We are equal partners: Recommended practices for involving families in their child's educational program. Washington, DC: Gallaudet University Laurent Clerc National Deaf Education Center.

Hands & Voices http://www.handsandvoices.org

Marsharck, M. (2007). *Raising and educating a deaf child: A comprehensive guide to the choices, controversies, and decisions faced by parents and educators* (2nd ed.). New York: Oxford University Press.

Meadow-Orlans, K., Mertens, D., & Sass-Lehrer, M. (2003). *Parents and their deaf children: The early years.* Washington, DC: Gallaudet University Press.

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Spencer, P., Erting, C., & Marschark, M. (Eds.). (2000). *The deaf child in the family and at school: Essays in honor of Kathryn P Meadow-Orlans.* Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Stewart, D., & Luetke-Stahlman, B. (1998). *The signing family: What every parent should know about sign communication.* Washington, DC: Gallaudet University Press.

General Considerations

The following is a list of general strategies that may make it easier for a deaf or hard of hearing student to adjust to a mainstream setting.

- If there is more than one deaf or hard of hearing student in a school, provide opportunities for those students to interact during elective activities.
- If the deaf and hard of hearing students in the school are sign language users, provide activities that encourage students and staff to learn ASL.
- Provide technology within the school that supports access for deaf and hard of hearing individuals such as videophones, TIYs, amplifiers for designated phones, portable paging/e-mail systems, and use of captioning on television shows and movies. (See Hearing Aids and Other Assistive Devices, p. 69.)
- Provide an orientation to deafness to hearing peers in the school. (See Orientation to Deafness for Students, p. 97.)
- Encourage deaf and hard of hearing students to participate in school-wide extracurricular activities through provision of necessary interpreting services or other supports.

Student Seating

Seating needs among deaf and hard of hearing students vary considerably, depending on the system of communication they use (sign language interpreter, FM system, speechreading, etc.). The following are some general guidelines for a variety of situations and settings within the school building.

- Seat the student so that he or she has a clear view of the teacher and the other students. This can be accomplished by arranging the desks in a circle or u-shape.
- If desks are in rows, many students prefer to be in a front corner so they are close to the teacher. However, don't assume that all students prefer front row seating. Give students flexibility in choosing their seats, and allow a student to move as needed to have the best access to information.
- When students use interpreters, ensure that the interpreter is almost in the student's direct line of vision to the object that the student also needs to be watching. Examples include:

    1. When watching non-captioned films or shows during class time, the interpreter should be next to the screen and there should be a clear line of vision between the student and the interpreter & screen.
    2. During classes such as math, chemistry or physics when a blackboard, whiteboard, or PowerPoint screen is being used to demonstrate a complex set of steps or other information that has to be read carefully, the interpreter should be placed next to the board or screen, with a clear line of vision between the student and the interpreter/board.
    3. When there is a large school assembly or a performance on a raised stage, the student should be seated facing the stage. The interpreter should be seated with his or her back to the stage but in the student's direct line of vision. With raised stages, consider seating students a little farther back than the front row so the student does not have to look at the interpreter, then raise his or her head directly up to watch the action on the stage, and back down again. Ideally, the interpreter will be on the same visual level as the people on the stage.

Reading Aloud

Students of all ages, whether they are deaf or hard of hearing, enjoy and can benefit from read-aloud time. Some students will be able to access read-aloud time through their listening. For other students, an interpreter will be an integral part of the read-aloud process. To promote successful read-aloud activities that include deaf and hard of hearing students, the following should be kept in mind:

- Use a large print book. Project the book on an overhead or display text on an electronic whiteboard or a projection device attached to a computer.
- Arrange seating in a circle or semi-circle.
- Prop books on an easel during reading.
- For younger children, use props to provide context to a story.
- Dramatize/act out parts of the story to support comprehension.

Story Listening

For students who can listen to stories using a hearing aid or cochlear implant, a traditional read-aloud approach in which the teacher or other students read the book aloud in English may be appropriate. Check in with the students to determine if they would like to read out loud themselves (or sign their part of the story with voicing through their interpreter). Some students may feel comfortable using their voice to read aloud, while others may not. Do not force a student to read out loud if he or she is not comfortable. Some additional strategies for story listening include:

- For those students who are experienced listeners, have them follow along in the book while they listen to the words on audiotape. It is best to choose books that are already familiar to the student. (Note: Many commercially available books on tape use a high-pitched tone to indicate when it's time to turn the page. These tones may be inaudible to some deaf or hard of hearing students. In addition, there may be distracting noises interspersed throughout the recorded story. If time permits, re-record stories on tape and use a drumbeat or other audible sound to note it is time to turn the page.)
- Obtain a card reader. This equipment allows a student to listen independently to words and sentences and to view associated text. For more information on purchasing a card reader, see http://www.califone.com/reading.php.

Dos and Don'ts

Supporting the Student... DO:

- Use as many visual aids as possible. Write instructions, summaries, key words, and concepts on the blackboard, overhead projector, or electronic whiteboards. Use captioned films when possible.
- Remind everyone to speak one at a time and make sure he or she has everyone's attention before proceeding.
- Have the teacher or other identified group member point to the next person to speak during group discussion. Allow time for an interpreter to complete a discussion point and the deaf or hard of hearing student to locate the next speaker.
- Use attention-getting techniques when they are needed: touch the student lightly on the shoulder, wave your hand (but not in front of the student's face), or flash the lights in the classroom.
- Establish a system so that students may obtain copies of notes from a qualified notetaker.
- Provide students with copies of any PowerPoint presentations, class summaries, or other supporting classroom documents.
- Ask questions and spend time with deaf or hard of hearing students individually to make sure they comprehend the instructions or material.
- Check in with the students often-both in more relaxed, individual meetings and in unobtrusive "mini-checks" during an activity to find out what is working and not working.
- Face the student when speaking or signing, giving frequent eye contact.
- Clarify information by using such strategies as rephrasing a message, saying it at a slower pace, or writing the message when appropriate.
- Decrease ambient noise in the environment through use of rugs in the room, tennis balls on the bottom of chairs, FM systems, preferential seating, etc. For more information on classroom acoustics, see http://pages.cthome.net/cbristoVcapd-frn.htrnl.
- Remove "visual noise." This includes a bottle on the table, an open door, a paper or pen in hand while signing, a signer's jewelry, bright lights or windows where there is a glare, an overhead projector in a student's line of vision, or anything that can distract or impair communication. Interpreters should wear tops that are not wear flashy or brightly patterned, and avoid excess jewelry around the wrists and garish color on long fingernails.
- Set established routines that are known to your class and give clear notice regarding changes in routines.
- Write agendas, assignments, notes, and other communications on the board or in handouts. For young children, draw pictures, use symbols or colors, and organize time and physical spaces in a way that is clear.
- Use a laptop attached to a projector, an electronic whiteboard, or an overhead projector to display information, pages from books, and web pages. Using a projector allows the teacher to continue to face the class without continually turning to a blackboard; this provides a richer visual environment for all students. Additionally, these pages can be printed and become notes for the

student.

- Begin a lesson or unit with visual supports-pictures, websites, books-to support key concepts and vocabulary.
- Involve other professionals or family members working with the student to familiarize students with new information to be presented in school. For instance, speech-language professionals providing speech services to students can practice vocabulary words with them. Resource Room teachers can introduce or review concepts.

Supporting the Student... DON'T:

- Treat the student as "different." The student is already trying to fit in and not appear different.
- Have lower expectations for a student based on his or her hearing loss alone. Having expectations based on a student's IEP is another matter.
- Make generalizations about the student in your class based on a previous experience with another deaf or hard of hearing individual. Keep in mind that each person is unique. (See Orientation to Deafness for Students, p. 97, for activities to facilitate student discussion on the diversity of deaf and hard of hearing individuals.)
- Change the topic of conversation quickly without letting the students know. Lead up to the change naturally, but make it very clear what is about to happen.
- Talk with a pencil in your mouth, your back to the class, or your face obstructed by a book. Address the class directly and with consciousness about your particular deaf or hard of hearing student's individual needs.
- Begin adding spoken instructions or information after students have started working on a written assignment, project, or test. The deaf or hard of hearing student may miss the instructions or lose valuable time while watching the interpreter or asking for clarification. Get all of the students' attention and ask them to stop and listen before proceeding with new information.
- Call attention to misunderstandings or speech errors in front of the class. It is important to maintain a close, open relationship with the students, which includes providing feedback or recommendations on an individual basis and being honest with the deaf or hard of hearing student in private if you do not understand his or her speech. Work with that student's family and other support personnel to design a program to help him or her develop effective communication strategies.
- Exaggerate mouth movements or shout. This may cause distortion of the message for students wearing hearing aids. It may also bring unwanted attention to the communication situation and cause embarrassment to the deaf or hard of hearing student.

Testing Accommodations and Spelling Tests

Deaf and hard of hearing students may benefit from a variety of accommodations and modifications. These are usually discussed as part of a student's IEP.

This page provides a sampling of possible accommodations for testing.

Accommodations for Testing

- When a test addresses attaining concepts rather than literacy skills, allow the deaf or hard of hearing student to ask the teacher for clarification of test questions he or she does not understand or to have the written test question interpreted in sign language to assure the question is understood.
- For tests (standardized and informal) that may specify only a single presentation of a question be read aloud by the teacher while a child reads along with the question, consider repeating the question a second time for the deaf student after he or she has had time to look at the item (as it is not possible to follow along in the text simultaneously with the presentation of the question).
- Provide extended time for those students needing it to adequately read and respond in writing to the test items. Since many deaf individuals learn English as their second language, they may take longer to read English print or to formulate their thoughts into written English.
- For tests measuring concept attainment rather than writing skills, determine just how much accommodation to allow in not penalizing a student for writing errors when concept attainment is demonstrated.
- Use performance-based assessment such as portfolios requiririg written work, artwork, videos, or computer slide shows to allow for a broad look at an individual's understanding of a particular unit or concept.
- If an accommodation is being made to have a standardized test administered via sign language, provide some time to practice using this strategy with the deaf student before the actual test.

Spelling Tests

Spelling tests can be a challenge for both children who use sign language and those who depend on listening. For students who use sign language, there are many words without formal signs that require fingerspelling (which gives away the spelling of the word). For students who depend on listening during a test, there are some words that are difficult to hear and understand, thus causing a problem. Below are a few strategies to use so that you can include these students fairly in this testing process:

- For signing students: Make a videotape for the deaf or hard of hearing student using the sign he or she will use for each spelling word with the fingerspelling of the word shown on the tape and an accompanying list of the printed words. The tape can then be sent home for the student to study for the test. For example, if there is a spelling test on names of flowers, generate a sign for daisy, violet, pansy, etc., to be used for the test.
- For students dependent on listening: Before the test, have the child practice listening for the words to be tested to ensure that he or she can hear and discriminate between the words. For words that are difficult to discriminate via hearing, consider establishing a visual cue or code related to those spelling words to prompt that word during a spelling test. For example, if the words are "display" and "displace," use a specific gesture to cue each of these words during the test.

Sign Interpreted Stories

For students using sign language, the interpreter can sign the story while the teacher reads the story aloud. Some considerations for interpreted stories include:

- Use appropriate pausing and allow the students to take in the book visually so they can see the English text and illustrations on the pages.
- Highlight key vocabulary or phrases within the story visually on the blackboard, overhead, or laptop connected to a projector or television.
- Give the deaf or hard of hearing student a copy of the book for reference during the read-aloud.
- For read-aloud time with student participation, have the interpreter confirm where the group is within the text to assure the deaf or hard of hearing student is in the appropriate place.

Other Strategies

Other strategies that support the development of literacy in deaf and hard of hearing students include:

- Use the closed caption feature on most DVDs/videotapes. Most televisions have this built-in feature. It may need to be activated via the remote.
- Use commercially available videos that translate popular children's literature to ASL. Use these for the deaf and hard of hearing students to build their understanding of these stories and for the entire class (with available voiceover) as a strategy to learn ASL. For stories, see http:// www.harriscomm.com.
- Incorporate Dolch Bridge lists. These lists are designed specifically to support the language and reading development of deaf students. The lists provide commonly used English words and phrases and correlate them to ASL. The lists assist students with the process of linking English and ASL. In addition to the lists, videotapes are available to demonstrate the bridges between ASL and English. For lists, see http://www.fairviewlearning.net/.
- Use commercial software programs that enhance students' sight-word vocabulary and reading of short passages and monitor student success with guided reading. For example, the Edmark Reading Program uses a whole word approach to build sight-word recognition skills in isolation and within sentences and stories. Accelerated Reader is reading management software that provides teachers with a way to monitor students' guided reading practice. Many reading programs provide software that allows students to practice their reading skills using a computer. However, be aware of the auditory nature of the software and whether or not any of the spoken directions are captioned.
- Evaluation of a student's reading comprehension skills should look beyond his or her ability to identify words in a sentence. Some students are skilled at identifying surface structure or word calling but do not understand deep structure. You want to be sure that the student is able to demonstrate that he or she understands what he or she is reading either in ASL or in English. If a deaf or hard of hearing student frequently fingerspells words for which signs exist, he or she may not be familiar with the vocabulary.
- Textbooks tend to be difficult for all students to read because of the style in which they are written and the amount of information contained in them. Deaf or hard of hearing students may need to be exposed to the topic-related vocabulary before they are required to read the chapter. Chapter outlines are helpful guides for all students.

Where does Phonics Fit In?

Developing skills in phonics can be challenging for deaf and hard of hearing students. They may not be able to hear the individual phonemes of speech. At the same time, knowledge and use of phonics can be beneficial for supporting the reading process. With the necessary supports, phonics may be considered one component of a reading program for deaf or hard of hearing students.

One such support to provide phonics to deaf students is called See-the-Sound Visual Phonics (see http://seethesound.org/). For students who cannot hear phonemes, it uses a combination of tactile, kinesthetic, visual, and auditory feedback to assist in developing phonemic awareness, speech production, and reading skills. Visual Phonics is a system of 45 hand signs and written symbols that help make the connection between written and spoken language less confusing.

Visual Phonics is being incorporated into a number of programs around the country and is seen by those who use it as extremely easy to use and effective when combined with a comprehensive reading program. While it typically represents just one small part of a comprehensive reading and language development program, those who use it feel it provides an excellent way to help deaf children "see" and internalize English phonemes and understand how they map onto English letters and onto words. People utilizing this system must obtain training from a certified trainer.

A second program to support development of phonemic awareness is Phono-Graphix (see http://www.readamerica.net). This program is intended to support phonemic development and reading and includes an instructional manual and materials. The program can be used as part of a reading and/or speech development program. It addresses skills to support children in "breaking the reading code." It teaches children that letters are pictures of sounds, that sound pictures can be one or more letters, that there is variation in the code, and that there is overlap in the code.

Cued Speech is a methodology that supports phonemic awareness and development of literacy skills. For more information about Cued Speech, http://www.cuedspeech.org.

Additional strategies that reinforce phonemic development are:

- Lindamood Phoneme Sequencing Program (LiPS), which focuses on development of phonics using visual/kinesthetic strategies. http://www.lindamoodbell.com/
- Touch Phonics, which provides 193 colored-coded magnetic tiles representing all of the English graphemes that can be manipulated by teachers and students to work on phonics and word structures. http://intervention.schoolspecialty.com/
- Fundations-Wilson Language Basics for K-3 is a phonological/phonemic awareness, phonics, and spelling program. It is based on the Wilson Reading System principles and supports development of reading and spelling in young children. This program was developed for the general education classroom but provides a visual component that may be successful with deaf or hard of hearing students as well. www.fundations.com

Written Language Development

As deaf and hard of hearing students develop their writing skills, you will see some of the same mistakes that are made by young hearing writers. Some deaf students may be able to tell a story beautifully in ASL but have difficulty expressing those same thoughts in English (similar to other students learning English as a second language). Some strategies to facilitate written language development include:

- Provide ample opportunities for deaf and hard of hearing students to write for practical purposes (to convey basic communications, to chat with friends online, to make clear requests). Develop students' understanding of the power of clear, written communication.
- Before writing, have students make use of webbing strategies either on paper or using software like *Kidspiration* and *Inspiration.*
- Encourage deaf students to tell their story in ASL or using a sign system on videotape. If a student is missing a clear beginning, middle, and end to the story, have him or her redo the signed version of the story. Have the student watch the video of the signed story and write or type the story in English. He or she can work with this written draft to edit the sentences and receive peer feedback regarding his or her English sentences. For further information about how this has worked in a school, see "Bilingual Students Publish Works in ASL and English" in the Spring/Summer 2009 issue of *Odyssey.*
- Incorporate a variety of writing software such as *Co: Writer* or *Draft: Builder* to support written English structure.

Reviewing the Placement

There are many factors in determining the most appropriate educational environment for a deaf or hard of hearing child. IDEA encourages all children with disabilities to be educated in the least restrictive environment. The law defines this as:

> To the maximum extent appropriate, children with disabilities must be educated with children who are not disabled. Special classes, separate schooling, or other removal of children with disabilities from the regular educational environment can occur only when the nature or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily.

However, the LRE for a deaf child may be different from the LRE for a child who is not deaf. The U.S. Department of Education has provided guidance as to what LRE means for a deaf child. It said "[R]egular educational settings are appropriate and adaptable to meet the unique needs of particular children who are deaf. For others, a center or special school may be the least restrictive environment in which the child's unique needs can be met." Center or special schools include county based regional programs and schools for the deaf.

The Department also said that there are cases when the nature of the disability and the individual child's needs dictate a specialized setting. A specialized setting can provide a structured curriculum or special methods of teaching. The Department noted, "Just as placement in the regular educational setting is required when it is appropriate for the unique needs of a child who is deaf, so is removal from the regular educational setting required when the child's needs cannot be met in that setting with the use of supplementary aids and services."

After the decision to place a child in a regular education classroom-as opposed to a school or program for deaf students-for all or part of each day has been made, it is important to review it regularly. The placement decision, and the type of services needed to make it a successful one, must be evaluated on an ongoing basis to determine whether the placement is working for the child and, if not, what must be changed.

Is Your Student Interpreter-Ready?

The article on this page appeared in the Spring 2010 issue of Odyssey. Cindy Huff of the New Mexico School for the Deaf contributed this article and the forms referenced within.

Prior to the passage of the All Handicapped Children's Act (Public Law 94-142) in 1975, signed language interpreting was a service reserved almost exclusively for deaf adults. Only when deaf students began attending their neighborhood schools at an accelerated rate did children become consumers of interpreting services in order to access their academic programming. In the 30-plus years since the passage of this law, the fields of deaf education and signed language interpreting have only recently begun to take a look at the implications of a student receiving the bulk of his or her school experience through third party communication.

Ideally, all students would experience direct, multidimensional communication in the K-12 setting. This experience is generally considered to be more efficient, effective, and empowering. Interpreted communication, because it involves a third party, tends to be more linear. This makes it critical that quality standards for interpreting services be in place when direct and multidimensional communication is not possible for all or part of the educational process for a deaf or hard of hearing student.

A common assumption is that providing a deaf or hard of hearing student in grades K-12 with an interpreter is enough for that student to access his or her total school experience in integrated programs. The reality is that innumerable factors have an impact on whether a student experiences success with an interpreted education. To address these factors, it is vital that an interactive and trained educational team carefully consider each child's individual needs, skills, and readiness for accessing learning through an interpreter. It is the collaborative work of this team that will lead to successfully serving each student according to his or her individual language and communication profile.

How do educational teams determine when, or if, a student is ready to effectively use interpreting services? Considering "student readiness" may seem like routine practice, although more often than not, placing a student in an interpreted setting happens without a systematic analysis of student competencies to guide program design.

Considering Student Readiness to Use an Interpreter

The Outreach Department at the New Mexico School for the Deaf has developed specific procedures to help programs determine the appropriateness of providing interpreting services to individual students. A crucial part of making this determination is deciding, based on solid information, whether or not the student is prepared to receive those services. Not all students are ready to access instruction through an interpreter. Before a student is placed with an interpreter for any part of his or her academic schedule, it is essential to consider and evaluate a spectrum of student competencies (Broad-Spectrum Student Competencies and Student Language Competencies).

This information will assist the educational team in determining the student's strengths and needs in accessing both the academic and non-academic components of his or her school program through an interpreter. Once this information has been gathered, the team can better determine if a student is "interpreter ready" and which aspects of his or her programming could be successfully provided via interpreting services. The examination of student competencies is applicable to ASL/English and to any type of transliterating (i.e., Cued Speech, Signed English, oral interpreting).

Gathering and Using Student Information

As educational teams select the measures they will use to gather information, a variety of formal and informal approaches should be used. It is possible that the behavioral and language assessments already used by programs will be a good starting point as teams determine what additional measures they will incorporate into their own process. Establishing a protocol for determining "student readiness" will give the educational team a way to effectively gather comprehensive information that will lead to quality decision making and program design for each student considered.

Educational teams may use the data they gather to identify where a student falls along a continuum of student readiness for using interpreting services. The determination of "student readiness" is not entirely black and white. While some students will use interpreters for accessing their entire academic programming, others will use interpreters for a portion of their school day and still others will not find success using interpreters. Students may move up or down the continuum at various points of their school career depending on factors such as classroom setting(s) and curricular requirements.

Identifying where a student falls along the continuum will subsequently impact implications for staff roles and student programming. It will also help Individualized Education Program (IEP) teams ensure that appropriate support services are identified as part of the IEP planning process.

When a Student is NOT Ready for Interpreting Services

When the educational team determines that the deaf or hard of hearing student cannot effectively access some or all aspects of instruction and/or interaction with peers and staff through an interpreter, the student should have:

- An environment where he or she can communicate directly and fluently with staff and peers
- An educational team that is formally trained in working with deaf and hard of hearing students
- An educational team that is able to meet identified student needs in all incidental and structured learning opportunities outside the classroom
- An educational team that has knowledge and skills in assessing student progress in communication and overall language and consistently incorporates assessment information into educational programming
- An educational team that can provide a parallel experience in the classroom, exposing him or her to the same concepts being introduced to all students
- An educational team that can simplify or expand concepts as appropriate
- An educational team that can develop a specific plan to monitor and assess the development of his or her language

In Conclusion

With escalating numbers of deaf and hard of hearing students using interpreters, many aspects of an

interpreted education have been explored. Interpreter skill and qualifications are frequently considered when determining whether a student is receiving quality access to the curriculum. As vital as this and other factors are, a student's readiness to effectively use interpreting services is independent of interpreter credentials. Student readiness should become a standard consideration for educational teams when planning and implementing programming that may include interpreting services.

Broad-Spectrum Student Competencies	
STUDENT COMPETENCIES	CONSIDERATIONS FOR THE EDUCATIONAL TEAM
Ability to maintain eye contact	• What is the length of time a student can attend to the interpreter? • Can the student navigate other visual supports in the classroom while watching the interpreter?
Ability to ask for clarification or repetition	• Is the student assertive? • Can the student proactively monitor whether or not he or she is receiving a clear message? • If a student is confused, does he or she have the ability to distinguish whether the interpretation is weak or the teacher's content or teaching style is unclear?
Social-emotional abilities	• How do student behaviors compare with their chronological age? • What is the student's emotional responses to stress, transitions in the daily schedule, discipline, and typical peer interaction? • What is the student's level of self-confidence and autonomy? • What are the student's social problem-solving skills?
Visual capacity	• Are there any vision issues that would impact the way an interpreted message is received?
Cognitive abilities	• What are the student's academic problem-solving skills? • Did the student have early language exposure and acquisition? • Will interpreted messages need to be adapted to ensure comprehension by the student?
Self-awareness	• Does the student know that he or she is deaf? • Does the student have a concept of how and when hearing people access auditory information and his or her own need to access that information visually?
Awareness of the interpreting process	• Does the student understand the concept of third party communication? • Can the student separate the message of the speaker from the interpreter delivering the message? • If applicable, does the student have the ability and flexibility to use a variety of interpreters who potentially have different linguistic signing styles?

Student Language Competencies

Educational teams are asked to consider student language competencies in three categories: signed language, spoken language, and other languages. Within each category, the following details should be examined.

Pragmatic Skills-Ability to use language across a variety of formal and informal settings and outside of the present and immediate environment, abstract reasoning and theory of mind, discourse skills, effectiveness of mode(s) or language(s) used to communicate in a variety of settings

Receptive Skills-Ability to understand questions, conversations, or dialogue, simple or connected communicative language; ability to understand references to the immediate and/or to the not present, abstract, or imaginative

Expressive Skills-Level of self-expression (i.e., questions, conversations, simple or connected communicative language; references to the immediate and/or to the not present, abstract, or imaginative)

Semantics/Vocabulary-Number and variety of vocabulary words or phrases that are understood and can be used competently both receptively and expressively

Syntax-Structure and complexity of the language(s) used by the student, metalinguistic ability across languages; for young children and delayed language users, type and variety of semantic relations between words and concepts

STUDENT COMPETENCIES	CONSIDERATIONS FOR THE EDUCATIONAL TEAM
Signed language skills	In addition to the detailed exploration described above: • Is the student considered fluent in signed language or is he or she still in the process of acquiring language skills? • What is the student's ability to read and understand fingerspelling?
Spoken language skills	In addition to the detailed exploration described above: • Will the interpreted message be supporting the spoken language message or replacing it entirely? • What is the functional use of amplification or cochlear implant(s) for the student regarding his or her understanding of spoken language? • What is the intelligibility of the student's spoken language? • Will the interpreter be needed to make the student's message clear to his or her peers and teachers?

Continuum of Student Readiness

READY —— NOT READY

Student is likely "ready"	Student may be "ready" with added support	Student may or may not be "ready"	Student is not "ready"
This student is developmentally on track in language, social · emotional and cognitive skills. He or she is able to handle the standard curriculum in an integrated setting with minimal support. He or she is familiar with the interpreter role and developmentally "ready" as determined by the educational team to receive interpreting services for some of his or her academic schedule.	This student is developmentally on track in language, social-emotional and cognitive skills. He or she is able to handle the standard curriculum in an integrated setting with added support. He or she is familiar with the interpreter role and developmentally "ready" as determined by the educational team to receive interpreting services for some of his or her academic schedule.	This student is lagging developmentally in language, social-emotional and/or cognitive skills. He or she may be able to handle the standard curriculum in an integrated setting with intensive support and supplemental instruction. He or she is familiar with the interpreter role and may be developmentally "ready" as determined by the educational team to receive interpreting services for some of his or her academic schedule.	This student is limited developmentally in language, social-emotional and/or cognitive skills. He or she is not able to understand an interpreter or handle the standard curriculum in an integrated setting. He or she is unfamiliar with the interpreter role and not developmentally "ready," as determined by the educational team to receive interpreting services for any of his or her academic schedule.
Implications for staff roles and student programming	*Implications for staff roles and student programming*	*Implications for staff roles and student programming*	*Implications for staff roles and student programming*
This student will likely do well in an interpreted setting. The educational team will need to monitor student progress, making adjustments to the interpreted programming as necessary to ensure ongoing success.	This student may do well in some interpreted settings with added supports such as pre-teaching or content review. The educational team will need to monitor student progress often, making adjustments to the interpreted programming as necessary to ensure ongoing success.	This student may or may not do well in some interpreted settings. Interpreting will require significant supports such as tutoring and supplemental instruction. The educational team will need to monitor student progress frequently, making adjustments to the interpreted programming as necessary to ensure ongoing success.	This student is not ready to receive interpreting services and requires direct instruction from an educational team trained in working with deaf and hard of hearing students and fluent in the student's language and communication mode.

This update to *There's a Hearing Impaired Child in My Class* reflects many changes ranging from terminology to changes in laws to technological advances.

- In 1988, the term *hearing impaired* was used and accepted by many in the field of deaf education to describe children with a range of hearing levels. Currently, many people who are deaf believe the term hearing impaired suggests a medical/pathological view of deafness and prefer the terminology *deaf* or *hard of hearing*. In addition, please remember that, like all children, students who are deaf are individuals with diverse learning abilities and challenges. The student's deafness does not come first; the whole child comes first.
- The change from "my class" to "mainstream programs" in the title indicates another important issue: inclusiveness. A successful mainstream experience involves more than a single teacher in a single classroom. When a student who is deaf or hard of hearing attends school, he or she interacts with the whole school-not just one classroom. This distinction emphasizes the extent of your responsibility in including a deaf student in your educational environment.
- The increased use of cochlear implants and other advances in hearing aid technology have changed how some deaf and hard of hearing children receive information auditorily.
- More technological advances have allowed students greater opportunities to receive information and communicate on a daily basis through written English (both standard and non-standard) using the Internet, e-mail, instant messaging, and text devices.
- In 1988, the Education for All Handicapped Children Act (PL 94-142) governed provision of a free public education for deaf and hard of hearing children. PL 94-142 was renamed the Individuals with Disabilities Education Act (IDEA) in 1990 and there have been reauthorizations since that time that have clarified how services are to be provided to deaf and hard of hearing students.
- The Americans with Disabilities Act (ADA), authorized in 1990, has expanded access for deaf and hard of hearing students outside of the school environment. Today's students need to learn how to ensure they receive the access they are legally entitled to by advocating for themselves.

The resource published in 1988 was a paperback manual. To make this guide readily accessible to the public, it is entirely online and there is no paper version.