Physical Education and Sport Adaptations for Students Who Are Hard of Hearing

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Learning to communicate with students who are hard of hearing is the first step to instructional success.

At a Fourth of July celebration three years ago, a man threw a firecracker; Leanne was nearby and this noise caused her to lose a significant amount of hearing. Leanne, now 16, tries to keep her hearing loss a secret, especially from the other students, as she does not want to be viewed as “disabled” or “hearing impaired.” Even though Leanne wears hearing aids, they are usually hidden by her long blond hair, and most of her classmates are not aware that she has a hearing loss. When she is not looking directly at the other students, she often does not respond to their comments and greetings, leading them to say that “Leanne is in her own world” or that she is “unfriendly.” Her hearing issues are compounded during physical education because during many activities she cannot wear her hearing aids for fear that they will get damaged by sweat. When Leanne’s teacher gives her instructions, she often misunderstands; when this happens, he will sternly ask her to “sit out of the game for not listening.”

Leanne is hard of hearing (HOH), not Deaf. There is no obvious visual clue that Leanne has a disability. Conceptualizing a student’s hearing loss is difficult and, to compound this, an instructor’s preconceived beliefs about how individuals with hearing loss typically behave can influence his or her perception of what the student is like.

It cannot be assumed that all people with hearing loss have similar needs. Deaf children develop their communication primarily through sight. On the other hand, children who are HOH receive their speech and language primarily through their hearing. Most individuals with hearing loss do not use sign language (Hearing Loss Association of America [HLAA], 1997), and people who are HOH are often grouped together with people who are Deaf and referred to as “deaf” or “hearing impaired” (Gallaudet University 2007; HLAA, 2006b). This can be confusing for teachers and other professionals because communicating with students who are HOH, like Leanne, can be vastly different from communicating with individuals who are Deaf.

The purpose of this article is to help educators to recognize and address the needs of individuals who are HOH. Incident rates of hearing loss, the terminology used to refer to individuals with hearing loss, and indicators that a hearing loss may exist are also examined. Most importantly, this article provides readers with a variety of instructional strategies for adapting physical education and sport activities to meet the unique needs of individuals who are HOH.
Demographics and Distinctions

Hearing loss is the most common disability in the United States (HLAA, 2007). Three in every ten Americans (Kochkin, 2005), and three school-age children per 100, have a significant hearing loss (HLAA, 2007). Physical educators will very likely instruct at least one student with hearing loss during their career.

The proportion of people with deafness is small (less than 1%) when compared to the number of individuals who are HOH (Holt, Hotto, & Cole, 1994). The term "hard of hearing," when used to refer to the degree of hearing loss, indicates a difficulty understanding speech through the ears either with or without amplification (Lieberman, 2005).

The proportion of children and adults who are HOH is growing rapidly (Grace, 2005; Kochkin, 2005) due to a noisy environment, young people listening to loud music, and the growing number of older adults (Grace). Niskar et al. (2001) found that 12.5 percent of children in the United States between the ages of six and 19 are estimated to have noise-induced hearing loss in one or both ears.

While the number of individuals who are HOH is increasing, the proportion of those with deafness is decreasing. Two major causes of deafness, maternal rubella and Rh incompatibility (American Speech-Language-Hearing Association, 2007), have been practically eliminated, and the growing number of cochlear implants is further decreasing the number of children and adults with deafness, thereby increasing the proportion of individuals who are HOH (Grace, 2005).

Many people assume that most people with a significant hearing loss know, or should know, sign language (Reich, 2007). Leanne, the 16-year-old student mentioned in the introduction, is constantly asked why she does not learn sign language. However, Leanne, like most people who are HOH, is assimilated into the hearing culture that uses speech to communicate.

American Sign Language (ASL) is a complete, complex language that employs signs made with the hands and other movements, including facial expressions and postures of the body. It is the first language of many Americans in the Deaf culture and is the fourth most commonly used language in the United States (National Institute on Deafness and Other Communication Disorders, 2000).

Although many people with hearing loss are part of the Deaf culture, the majority are not. Most people who are HOH, like Leanne, use spoken language as their primary language and consider themselves to have a disability because of their difficulty in hearing spoken words (HLAA, 2006a).

Terminology

According to the Hearing Loss Association of America, the umbrella term for all people who have hearing loss is "people with hearing loss." The subcategories, "people who are deaf" and "people who are hard of hearing," need to be used in their proper context. People is the optimum word. Do not categorize the individual by his or her disability (HLAA, 2006b). For example, do not say, "The hearing impaired, the deaf, or the hard of hearing."

However, Gallaudet University (2007) suggests using the words "deaf and hard of hearing" to describe all people with hearing loss:

The term 'hearing-impaired' as a descriptor for all individuals with hearing loss, for instance, has generally been replaced by the words 'deaf and hard of hearing.'...It is important to recognize that in some instances the term 'deaf and hard of hearing' may not be appropriate if the study, in fact, focuses only on deaf individuals (by some generally accepted definition) or only on hard of hearing individuals. When writing about deaf people as a cultural group, many writers have deliberately adopted the convention of capitalizing the 'd' in deaf....(Gallaudet University 2007, Writing Style ¶1)

The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA) uses the term "hearing impaired" when referring to students who are HOH. Hearing impairment is defined by IDEIA as "an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance" (Sec. 300.8c, 5). Deafness is defined as "a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification" (IDEIA, Sec. 300.8c, 3). When referring to individuals with disabilities, IDEIA promotes using "person first" terminology.

Instructional Strategies

This section provides specific instructional strategies to help physical educators to accommodate the needs of a student who is HOH. Included are programming suggestions that can be implemented before the school year starts; a plan for the first day of class; proactive ideas to help the student with HOH feel socially comfortable with his or her classmates; and finally, practical instructional tactics that can be used throughout the school year while teaching or coaching.
What to Do Before the School Year Starts

Learn about hearing loss. Physical education teachers and coaches need to familiarize themselves with the indications that a student in their program may have a hearing loss. Many times a mild or moderate hearing loss like Leanne’s can go undetected or is misinterpreted. For example, many people assume that Leanne is inattentive or “in her own world,” when in reality she does not respond because she cannot hear well. Listed in table 1 are indications that physical educators and coaches should be aware of to help determine whether a student may have a hearing loss.

Find out if your student wears hearing aids or has a cochlear implant. It is a common belief that hearing aids are like glasses and that they can totally correct hearing loss. This is not true. The United States Access Board states that excessive background noise and reverberation are additional educational barriers for children with a hearing loss, particularly for those who use hearing aids or have cochlear implants, since assistive technologies amplify both wanted and unwanted sounds (United States Access Board, 2003, 2007). It is important for physical educators and coaches to understand the needs of students who are HOH and that hearing aids, although they have greatly improved in recent years, do not bring hearing back to normal.

A cochlear implant is a small, complex electronic device that consists of an external portion that sits behind the ear and a second portion that is surgically placed under the skin that can help to provide a sense of sound to a person with profound deafness or severe HOH (Hilgenbrinck, Pyfer, & Castle, 2004). Children who receive a cochlear implant between the ages of 12 and 16 months—before a substantial delay in spoken language develops—are more likely to achieve age-appropriate spoken language (Nicholas & Geers, 2007; Schlumberger, Narbona, & Manrique, 2004; Wright, Purcell, & Reed, 2002). Early cochlear implantation has also been shown to improve motor abilities (Schlumberger et al.; Wright et al.).

Evaluate room acoustics. Many people with typical hearing are not aware of the room acoustics when they enter a gymnasium, weight room, or locker room, but poor acoustics can interfere with speech intelligibility (United States Access Board, 2007) and can make understanding conversations and instructions difficult or even impossible for individuals who are HOH and who wear a hearing aid (Reich, 2007; United States Access Board, 2003, 2007).

One simple and inexpensive way to test room acoustics is to clap your hands in the room when it is empty. If the clapping sound is unusually loud and echoic, this room has poor acoustics. A student who wears a hearing aid or has a cochlear implant will have particular difficulty hearing in rooms with poor acoustics or in the presence of loud music or other noise. Table 2 offers some possible changes or additions to help improve acoustics and reduce ambient noise.

Acquire information about the student’s disability. Consult with parents, classroom teachers, and the school nurse regarding the student. Also, if possible, meet with the student.

Create a visual reminder. Hearing loss is invisible, and it is easy for people who are not used to being around a person who is HOH to forget that someone has a hearing loss. A visual reminder in your notes or on the wall can help you remember that you have a student who is HOH. Let other instructors, aids, and substitute teachers know what these reminders mean.

<table>
<thead>
<tr>
<th>Table 1. Some Indications that a Student May Have a Mild or Moderate Hearing Loss</th>
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<tbody>
<tr>
<td>• Often does not respond to name when called</td>
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<td>• Has difficulty locating sounds</td>
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<td>• Misunderstands instructions (students may “bluff” and try to guess what you are saying rather than admit they cannot hear)</td>
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<td>• Seems like a slow learner</td>
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<td>• Becomes restless and bored easily in class or during group discussions</td>
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<td>• Often asks others to repeat words and sentences</td>
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<td>• Often waits and watches others first before attempting to perform an activity</td>
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<td>• Mispronounces words, especially consonants in new vocabulary</td>
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<td>• Appears uninvolved or withdraws when in a group</td>
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<td>• Suffers from frequent ear infections, which can also cause a fluctuating hearing loss</td>
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<tr>
<th>Table 2. Changes and Additions that can Improve Acoustics and Reduce Ambient Noise</th>
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<tr>
<td>• Add acoustic ceiling tiles or install a low, sound-absorbing, suspended ceiling in older, higher-ceiling rooms</td>
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<td>• Add carpeting, where practical (if carpeting is not available, then place mats or blankets on the floor to dampen sound and reverberation)</td>
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<tr>
<td>• Install double-paned windows (if possible, stay away from windows when giving instructions to your class if it is noisy outside)</td>
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<tr>
<td>• Use thick draperies over walls and windows (cardboard posters or decorations will also work. The glass in windows causes reverberation problems because the sound bounces off of the hard surface)</td>
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<tr>
<td>• Add rubber tips on chair, table, and desk legs (these can be purchased at most hardware stores and will help dampen ambient noise)</td>
</tr>
<tr>
<td>• Repair the heating and ventilation system, if noisy (or move away from noisy vents when speaking to class)</td>
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First Day of Class: Talk Privately

Gain trust and information. It is important for teachers to establish a connection and trust with the student. A good start is by privately talking with the student about his or her hearing loss in order to get to know the student better. It is a good idea to ask some questions about the cause of the hearing loss, the age of onset, and whether the hearing loss is fluctuating or permanent. If the loss was recent, sudden, and will be permanent, the student will probably not be able to adjust as easily as a student with short-term hearing loss, such as from a temporary ear infection or the flu. Also, ask the student, “Which do you hear more clearly, men’s voices or women’s voices?” If the student can more easily hear men’s voices, a female teacher will have to speak more clearly and accommodate the student’s hearing more actively than a male teacher. Another question to ask is “What consonants do you have the most difficulty hearing?” This is helpful to know when introducing new vocabulary.

Establish some procedures. Many people who are HOH may not be able to participate in a group, and some may simply “bluff,” that is, act like they understand when actually they are unable to follow the directions or conversation completely. The teacher can reassure the student that he or she is there to help and wants to know immediately when the student cannot hear something (Reich, 2007). If the student feels uncomfortable speaking up about his or her hearing loss in front of the class, the teacher could establish a private hand signal that the student can use to indicate that he or she cannot hear. Finally, the teacher should ask the student what hearing situations are most difficult. This open-ended question will help cover anything that was not asked about specifically.

Proactive Strategies to Promote Comfort

Modifying a physical education activity to accommodate a student with a disability entails more than altering equipment and revising rules (Sherrill, 2004). It requires creating an environment in which all students feel like valued members of the class. When a student has a hidden disability, such as mild or moderate hearing loss, he or she may not feel safe sharing information about the disability with the whole class. Modifications for individualizing instruction are counter-productive if the student feels humiliated and singled out.

Creating a climate of emotional safety that promotes a sense of belonging to the group is the first step toward full participation for all students (Tripp, Rizzo, & Webbert 2007). A student with any disability is vulnerable because he or she cannot change the disability to fit the instruction. The student has to trust that the instructor will modify the instruction to fit his or her limitations.

The following example of a basketball lesson shows one strategy that can be used to promote inclusion for a student who is HOH. Ask the student who is HOH (call her Leanne) to choose a group of classmates with whom she feels safe and is most willing to share. Break the class into groups to perform an activity or skill drill (e.g., a passing drill). Have Leanne’s group work out ways to perform the activity to incorporate her, such as making eye contact before passing the basketball. When Leanne feels comfortable, progress toward performing these activities with other students and in larger groups.

Adaptations for Students Who Are HOH

Assess the distance at which your student can hear you. Speak to your student from different distances to get a visual image of his or her hearing distance. This distance will change in different rooms and situations (Reich, 2007). Stand in the same position from which you are going to teach (with the music on), talk to the class, including the individual who is HOH, and ask questions to assess whether everyone in the room can hear clearly. A good rule is to remain consistently close to the student with HOH while providing instructions.

Face your student and make eye contact while speaking. If you speak while looking down at your notes, or while holding your clipboard up to your face, the sound waves will deflect, making your voice difficult or impossible to understand. Although many individuals with mild or moderate hearing loss are not proficient in speech reading, it is important for the student with HOH to see your facial expressions and gestures (not just your lips) to help him or her understand the content of what you are saying.

When teaching group exercise, face the class and lead the exercises in reverse so you can be their mirror. This will make it easier for an individual with hearing loss to follow when he or she cannot understand your verbal instructions. If you cannot face your class while demonstrating an exercise, get a volunteer to demonstrate while you explain.

A student with hearing loss should be encouraged to move to the front of the class. This way the student can see and hear you better, especially if the class size is large. Many individuals may be reluctant to move to the front during physical education class and prefer to remain anonymous in the back of the room. This includes students who are HOH. Stay in the student’s line of sight as much as possible.

Do not walk around the field or gym while giving instructions. This could put you out of your student’s hearing range or orient your mouth away from the class. Stay in front and face your students so they can position themselves where they can see and hear you.

Avoid being a silhouette. If your back is to the sun, then your face is probably shaded, especially if you are wearing a hat or visor. If necessary, remove your hat and reposition yourself to face the sun.

Allow your student to move around the gym or field during instructional activities. This way the student can easily choose a position where he or she can see and hear you (Sherrill & Hughes, 2004).

Repeat questions or comments from other students or incorporate student comments into your answer. A student with HOH who sits up front can often hear the teacher but cannot understand questions from students in the back of the room (Reich, 2007).

While giving verbal instructions turn off fans, air conditioners,
and music, if possible, or move away from the source of the noise. For example, music is often played in physical education class, and fans are often necessary in non-airconditioned gyms, weight rooms, and locker rooms. However, be aware that music and fans make hearing more difficult for everyone, particularly those with hearing loss. When giving verbal instruction remember to turn off the music, and if possible, any noisy fans. An MP3/CD/tape player with a remote control can make turning music off and on more convenient.

Keep verbal instructions short and to the point and demonstrate visually whenever possible. Shorter instructions are more comprehensible to a person with hearing loss because he or she can more correctly deduce what you are saying. For example, the instructions “slowly raise your arms to your sides until they are even with your shoulders. Face your palm up, fingers open and relaxed” may be more precise than “Arms up,” but the shorter directive is more comprehensible to a person who is HOH and will be understood even better if you demonstrate the movement.

Use only high-quality, clear-sounding microphones. Many people assume that a louder volume will make something easier to hear clearly. Microphones, however, do not necessarily make words more understandable; in fact, they can make words less understandable due to feedback, echoes, and other distortions.

Print new vocabulary. When introducing a new concept such as an exercise to your student, write it down. Preprint a list of common exercises or activities and label unfamiliar equipment so you can point to the words as you progress through your activities.

Keep discussion groups small. Limit discussion groups to two to three people so students can sit closely together, within hearing range of your student who is HOH (Reich, 2007). If the room or gym is noisy, move the discussion group outside or into another area where it is quiet.

Before you add more instructions to your activity, assess whether the class, including the individual who is HOH, is following you. For example, take time to watch the group perform the exercise routine. It is not productive to complicate an exercise movement when the class cannot perform the more simplified version first.

Use movies and instructional videos. By law, any videos that you play at school should be captioned (IDEA, 2004). Personal headphones will also help your student understand the words (Reich, 2007). However, ask your student what he or she prefers, as wearing headphones may make him or her stand out and feel uncomfortable.

If your student wears a hearing aid or a cochlear implant, be aware of situations where these need to be removed (Hilgenbrinck et al., 2004). These devices are usually not waterproof and are costly to repair or replace. They must be removed during swimming, contact sports such as wrestling, and in other situations where they might get damaged. Sweat can also damage hearing devices, and a student may choose not to wear a hearing aid at all during any physical activity. Electronic devices can be damaged by heat and sun, so set up a safe place for your student to store the hearing aid or cochlear implant, such as a shelf in a cool, shaded area by the pool, or in the student’s locker. Always be aware that the student will have more difficulty than usual hearing you while not wearing a hearing aid or cochlear implant.

Establish clear gestures for emergencies and have safety information printed (American Red Cross, 2004). Safety information and rules should be posted and clearly visible. Make sure all students know where the safety information is posted and that they are aware of safety procedures.

Provide instructions for substitute teachers. Make sure that substitute teachers are aware of your student’s hearing loss and of any adaptations you have made to accommodate that student.

Communicate with the student. Physical educators should never make open classroom announcements concerning any student who has a disability. After class, talk to your student in private and ask what worked and what situations were difficult for him or her.

When instructing individuals with hearing loss who also have other disabilities, it is especially important for an instructor to understand the unique needs and appropriate adaptations necessary for that particular individual. For example, an individual with Down syndrome or cerebral palsy may not be able to communicate the parameters of his or her hearing loss or preferred mode of communication (Reich, 2007).

Summary

In educational settings, people who are HOH are often thought of in the same way as those who are Deaf (HLAA, 1997). Physical educators and coaches need to be aware of the differences between Deaf people and individuals who are HOH, and that people who are HOH have unique needs. For example, a Deaf person without any residual hearing will not be concerned with background noise or poor acoustics, and an individual who is HOH usually does not know sign language and would not benefit from an American Sign Language interpreter. A better understanding of the needs of individuals who are HOH and good communication among all involved will enable physical education teachers and coaches to create a successful physical activity experience for students like Leanne.

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References


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