

Assistive Listening Systems: An Introduction

TS
Tip Sheet

Overview

In the classroom, background noise and distance from the instructor may present barriers to learning for some deaf students. Assistive listening systems can play a role in reducing or eliminating these barriers.

What are assistive listening systems?

An assistive listening system (ALS) is a variety of technology that reduces the barriers that result from distance and surrounding noise. Assistive listening technologies range from preinstalled systems that are built into an auditorium or classroom to small, portable devices that can be carried from class to class.

These smaller systems are often referred to as assistive listening devices, or ALDs. Sometimes described as “binoculars for the ears,”¹ assistive listening technologies allow the listener to tune directly into a speaker’s voice.

Although hearing aids have improved dramatically in recent years and can be very effective, they still do not compare to the ear’s natural ability to filter out extraneous noise. A person coughing, the hum of an air conditioner, people talking in the hall—all of these sounds can eclipse the voice of the speaker and result in the individual missing critical information. Imagine if you were in a noisy restaurant with a friend and you could turn up the volume of your friend’s voice without increasing the volume of all the people around you. In effect, this is what is accomplished through the use of an assistive listening system.

The process involved can be described as “catch, carry, couple.”¹ A microphone catches the speaker’s voice, a transmitter converts the voice to an electronic signal and carries it to a receiver, which is coupled to the student.

What is a telecoil?

A telecoil, or t-coil, is a small wire coil inside a hearing aid or cochlear implant that picks up the magnetic signal transmitted by assistive listening systems. It is activated by what is referred to as a t-switch. When the t-switch is on, the microphone that picks up environmental sounds is deactivated, thus the person only hears those sounds being transmitted by the ALS.

What are the different ALS types and how do they work?

There are a variety of types and configurations of assistive listening systems. The two types of portable systems are frequency modulated (FM) and infrared (IR) systems. Less portable systems, which are sometimes even permanently installed, are induction loops.

Portable systems, or ALDs, include four pieces: a microphone (usually a lapel mic), a transmitter, a receiver, and a coupling device. FM systems transmit a radio signal and can be set to various channels. The signal of a typical FM system can travel up to 100



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feet and through walls. IR systems, as the name implies, send the signal by way of an infrared light, so there must be a clear line of sight between the transmitter and receiver. With both of these systems, the instructor wears a lapel mic connected to a transmitter. The student wears a receiver with a coupling device (headphones or a neckloop).

An induction loop can be built into the infrastructure of a room or it can be installed to surround a specific seating area within a room. The speaker speaks into a microphone, which is connected to an amplifier that powers the loop. The loop sends an electromagnetic signal that can be picked up by anyone with a hearing aid or cochlear implant that includes a telecoil.

What do instructors need to consider when using an ALD?

The following considerations will increase an instructor's effectiveness in using assistive listening devices. A conversation with the student regarding what works best is also recommended.

- Check the transmitter before beginning the lecture. Perform a quick sound check with the student to make sure the transmitter and receiver are working properly.
- Make sure to turn the unit off when it is not in use. Instructors should turn the transmitter off when they are having private conversations. They should also turn it off when clipping the mic onto (or removing it from) their clothing.
- Students using the ALD will not be able to hear comments from classmates unless their classmates are speaking into the mic. Instructors should repeat brief comments or questions from other students or pass the mic to students who are making longer comments.
- If a student is using an IR system, make sure seating near the front of the room is available. The instructor will also need to stand so that objects, such as a podium or AV equipment, are not blocking the signal.
- When videos are being shown, the student may want to place the receiver near the audio speaker. When the instructor plans to show a video, it is ideal to discuss this with the student before class so the best arrangements can be made to provide access.

When disability service providers understand the basics of how assistive technology works, they can play a role in assisting students and the campus community as a whole in removing the barriers experienced by many deaf people. For a more in-depth look at making ALS choices on your campus, see *Assistive Listening Systems: Choosing the Right Technology for Your Campus*: www.nationaldeafcenter.org/alscampus.

Related Resource

- *Assistive Listening Systems: Choosing the Right Technology for Your Campus*: www.nationaldeafcenter.org/alscampus

Additional resources on this subject may be available at www.nationaldeafcenter.org/resources.

Reference

- ¹ Compton-Conley, C. (2015). *Comparison of large area assistive listening systems*. Retrieved from <http://hearingloss-nj.org/pdf/05.pdf>



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Additional resources can be found at www.nationaldeafcenter.org