Assistive Listening Systems:
Choosing the Right Technology for Your Campus

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Tip Sheet

Prior to reading this information it is recommended to read
Assistive Listening Systems: An Introduction.

Overview

For those who are new to assistive listening technology, selecting the right systems for a college campus can be daunting. Institutions should consider advantages and disadvantages of various types of systems, the legal requirements for providing access, and additional factors when selecting assistive listening technology for a college campus.

What are the benefits of the various types of systems?

In this section, we'll review the three major types of assistive listening systems and then consider advantages and disadvantages of each.

An induction loop is a permanently installed or less portable system that includes a wire loop that surrounds a room or a specific seating area within a room. The speaker speaks into a microphone that is connected to an amplifier that powers the loop. The loop sends an electromagnetic signal that can be picked up by anyone inside the loop who has a hearing aid or cochlear implant with a telecoil. Those without a telecoil can pick up the signal by using a portable receiver.

There are two types of portable systems, often referred to as assistive listening devices, or ALDs. These are FM systems, which transmit a radio signal and can be set to various channels, and infrared systems (IR), which send the signal by way of an infrared light. With both of these systems, the speaker wears a lapel mic connected to a transmitter. The listener wears a receiver with a coupling device, such as headphones or a neckloop.

There are tradeoffs with each type of assistive listening system. The induction loop is ideal for those whose hearing aids or cochlear implants are equipped with telecoils because, for those individuals, no portable devices are required. It allows the person to just come in, sit down, and enjoy the lecture like others. However, individuals who do not have hearing aids or whose hearing aids do not include a telecoil will need a portable receiver like those used with ALDs. Induction loops are most advantageous in public assembly areas—theaters or large lecture halls— where open events are held.

Due to the dynamic nature of a student's schedule, portable devices offer many advantages. FM systems and IR systems both offer the benefit of portability. IR systems are best in situations where privacy is of utmost concern. Because the signal travels by light, IR systems require a direct line of sight between the transmitter and receiver. Therefore, podiums or audio visual equipment can present obstacles. They are not effective outdoors as sunlight interferes with the signal. FM systems can be used indoors or outdoors and the signal travels well, even if there are posts, podiums, or other objects between the speaker and the listener. In a lab environment, in which the student is required to move around, the FM signal should remain strong. The downside of this is that in situations where more than one person is using an FM device in a building, the devices must be on different channels or the sound will bleed over.

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What does the law require?

In the Americans with Disabilities Act (ADA), colleges and universities will find the following guidance regarding assistive listening systems. First, Title III of the ADA stipulates that entities that have a public assembly area that seats 50 people or more, or that have an amplification system and fixed seating, must provide assistive listening systems. At least 25% of the devices provided must be hearing aid compatible. The ADA offers the following table for calculating the number of ALDs needed based on seating capacity.[1]

Seating capacity	Minimum number of receivers	Minimum number of hearing-aid compatible receivers
50 or less	2	2
51 to 200	2, plus 1 per 25 seats over 50 seats or fraction thereof	2
201 to 500	2, plus 1 per 25 seats over 50 seats or fraction thereof	1 per 4 receivers or fraction thereof
501 to 1,000	20, plus 1 per 33 seats over 500 seats or fraction thereof	1 per 4 receivers or fraction thereof
1,001 to 2,000	35, plus 1 per 50 seats over 1,000 seats or fraction thereof	1 per 4 receivers or fraction thereof
2,001 and over	55, plus 1 per 100 seats over 2,000 seats or fraction thereof	1 per 4 receivers or fraction thereof

If an induction loop is available, then the 25% of hearing aid compatible devices would not need to be provided. Signage should indicate the availability of ALDs and how to request them.

The ADA also requires that Title II entities (state and local governments) and Title III entities (businesses and nonprofit organizations that serve the public) communicate effectively with deaf people. This requirement of effective communication applies to other situations—such as meetings, tutoring sessions, or events—that would not be covered under the provision that pertains to public assembly areas. ALDs are considered an auxiliary aid or service and are not precluded by the section on personal devices and services.

How do I determine what and how many to purchase?

The number of ALDs needed for public assembly areas is well defined. These ALDs need to be available for loan at any time there is an event.

Therefore, it would most likely not work to loan these same ALDs to students because students may use the ALDs all semester. There is no specific recommendation for calculating the number of ALDs needed for students to borrow to take to classes. Basically, it is important to meet the demand with a few extras available in the event of additional requests or in case of breakage. The number needed will vary from campus to campus. If a campus purchases primarily FM systems, it is advisable to have at least one IR system for use in meetings where privacy is of utmost importance.

When purchasing portable devices—either FM or IR—is is important to consider durability and the availability of portable battery chargers that can also be checked out with the devices. In addition to

the transmitters and receivers, it is important to also have various types of microphones and coupling devices—neckloops, headphones, and earbuds. Finally, keeping the assistive listening technology in good working order, charged, and ready to use will allow for efficient use of the systems available.

What if a student requests a streamer or boot?

An audio boot is a very tiny device that attaches to a hearing aid and provides a way to connect a miniature wireless FM receiver to a hearing aid. A streamer is an external device about the size of a flash drive. Some streamers are also designed to accept a miniature wireless FM receiver. Both of these devices are specific to the individual hearing aid and are purchased through an audiologist. From a legal standpoint, some would argue that they fall into the category of a "personal device." However, some institutions do make the decision to purchase streamers or boots for students to use because these devices may be more effective at removing barriers for some students.
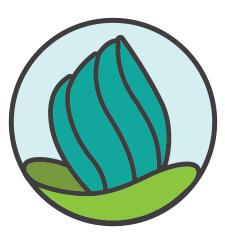
Related Resources

- Assistive Listening Systems: An Introduction:
  www.nationaldeafcenter.org/alsintro
- U.S Department of Justice Effective Communication:
  www.ada.gov/effective-comm.htm

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

References

[1] U.S. Department of Justice. (2010). *ADA standards for accessible design*. Retrieved from
       www.tinyurl.com/2010ADAStandards

[2] U.S Department of Justice. (2014). *ADA requirements: Effective communication*. Retrieved from
       www.ada.gov/effective-comm.htm