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Assistive Listening Systems: Choosing the Right Technology for your Campus

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 standards set by legal requirements for providing access, and additional factors when selecting assistive listening technology for a college campus. An overview of this technology is provided in the pn2 Fast Fact titled _Assistive Listening Systems: An Introduction._

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 which 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,** 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. Individuals who do not have hearing aids or whose hearing aids do not include a telecoil, however, 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 infrared systems both offer the benefit of portability. Infrared systems are best in situations where privacy is of utmost concern. Since the signal travels by light, they 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 down side 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.

What does the law require?

Looking to 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 has an amplification system **and** have fixed seating, provide assistive listening systems. At least 25% of the devices provided must be hearing aid compatible. The 2010 ADA Guidelines offered the following table for calculating the number of ALDs needed based on seating capacity.[1]

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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 1000	20, plus 1 per 33 seats over 500 seats or fraction thereof	1 per 4 receivers or fraction thereof
1001 to 2000	35 plus 1 per 50 seats over 1000 seats or fraction thereof	1 per 4 receivers or fraction thereof
2001 and over	55 plus 1 per 100 seats over 2000 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 people who are deaf or hard of hearing. This requirement of effective communication impacts other situations—such as meetings, tutoring sessions, or events—that would not be covered under the provision that impacts 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 anytime there is an event.

Therefore, it would most likely not work to use these same ALDs to loan to students since 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 infrared system for use in meetings where privacy is of utmost importance.

When purchasing portable devices—either FM or IR—important features to consider are 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.

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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 the hearing aid. A streamer is an external device about the size of a flash drive. Some streamers also are 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." Some institutions do make the decision to purchase streamers or boots for students to use; however, since these devices may be more effective at removing the barriers for a given student.

Resources

U.S Department of Justice
Effective Communication
http://www.ada.gov/effective-comm.htm

Pepnet 2: *Demystifying Hearing Assistance Technology: A guide for Service Providers and Consumers*
http://www.pepnet.org/sites/default/files/Demystifying.pdf

References

[1] U.S. Department of Justice, 2010 ADA Standards for Accessible Design. Retrieved from http://www.ada.gov/regs2010/2010ADAStandards/2010ADAstandards.htm

[2] U.S Department of Justice, Effective Communication. Retrieved from
 http://www.ada.gov/effective-comm.htm

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