

Hearing Impairments: Hearing Aid and FM System Simulations

Est. Time: 30 Minutes

Objective

Better understand the needs of students with hearing impairments who use listening devices.

Overview

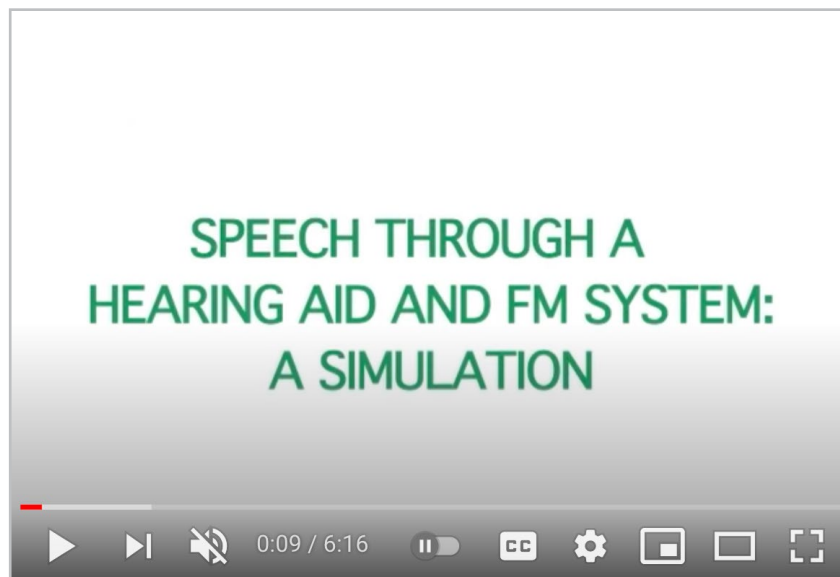
Students with hearing impairments typically require special services and supports to be successful in the classroom. Specifically, they often need to use devices designed to help them hear, or hear more clearly, what is being said in class. Two such devices are hearing aids and FM systems.

Hearing aid — A small electronic device, worn in or behind the ear, that amplifies sound. A hearing aid consists of three parts: a microphone that picks up sound and converts the sound waves to electrical signals before sending them to the amplifier; an amplifier, which magnifies the strength of the signal; and a speaker that transmits the signal to the ear.

Frequency modulated (FM) system — An assistive listening device that helps an individual hear more clearly. It uses a radio signal to transmit amplified sounds, which results in improved transmission. A speaker (e.g., the teacher) wears a small microphone that is connected to a transmitter while the student wears a receiver. The receiver is tuned to a certain channel, or frequency, and can receive transmitted signals from as far away as 300 feet. An FM system can be used with a hearing aid or cochlear implant.

Activity

Watch a video produced by the Vermont Center for the Deaf & Hard-of-Hearing Inc. at <https://www.youtube.com/watch?v=1137lzLlgQU>. Once you have done so, answer the questions below.



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Questions/Discussion Topics

1. What misconceptions did you have about the listening capabilities of students (or others, such as older individuals) with hearing impairments who use hearing aids? How did the video change those misconceptions?
2. Were you surprised to learn that optimal hearing conditions for a student with a hearing aid include a distance of only three feet with no background noise? How often is it possible to create this type of condition during a typical classroom lesson?
3. Is seating a student with a hearing aid in the row nearest the teacher an adequate accommodation? Why or why not? What would happen when the teacher walks to another location in the room?
4. Imagine how you would change your instruction if you had a student with a hearing impairment whose only support was a hearing aid.
 - a. How would you reduce or minimize background noise?
 - b. How far away from the student would you stand?
 - c. What could you do if you needed to move to different places in the classroom during a lesson?
 - d. Would you provide additional accommodations (e.g., a peer partner, guided notes)?
5. What were your thoughts about the student's ability to hear the speaker with the addition of the FM system?
6. After hearing the improvement in a student's ability to more clearly understand the teacher during class, what are your thoughts regarding school-provided FM systems as an assistive technology accommodation for students with hearing impairments?

References

- Center for Parent Information & Resources (CPIR). (2021, May). *Deafness and hearing loss*. Retrieved from <https://www.parentcenterhub.org/hearingloss/>
- National Institute on Deafness and Other Communication Disorders (NIDCD). (2017, 2019). *Assistive devices for people with hearing, voice, speech, or language disorders*. Retrieved from <https://www.nidcd.nih.gov/health/assistive-devices-people-hearing-voice-speech-or-language-disorders#2>
- National Institute on Deafness and Other Communication Disorders (NIDCD). (2017). *Hearing aids*. Retrieved from <https://www.nidcd.nih.gov/health/hearing-aids>