

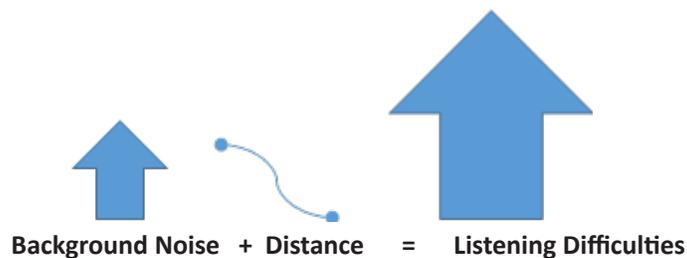
Digital Modulation (DM) Systems: Helping Students Hear in the Classroom

What is a DM system?

Digital modulation (DM) systems were previously known as personal FM systems. Students who use hearing aids/cochlear implants rely on DM systems to gain access to the auditory curriculum. DM systems are also used to gain access to speech in noisy environments.

Why use a DM system?

Children who have difficulty hearing or processing speech are at a significant disadvantage when listening in a noisy environment such as a classroom. "Children with mild to moderate hearing losses, on average, achieve one to four grade levels lower than their peers with normal hearing, unless appropriate management occurs." (SAC, n.d.). Additionally, the greater the distance between speaker and listener, and the greater the noise level, the more problems children have with listening and learning.



Hearing aids/cochlear implants do not actually "fix" a hearing loss. Unfortunately, they are unable to selectively amplify certain sounds and are limited in the distance from which they can pick up sounds. This combined effect of noise + distance makes listening and learning within a classroom environment extremely challenging and tremendously fatiguing.

The Research

Studies show that typical noise levels in a classroom can negatively affect speech perception, reading/spelling ability, behaviour, attention, concentration, and academic achievement. The use of classroom audio distribution systems (CADS) are extremely effective in decreasing the negative effects of distance and noise. However, research indicates that CADS actually do not provide enough benefit for students who make use of hearing aids or cochlear implants. Schafer and Kleineck (2009) reported that for these students, a digital modulation (DM) system is essential. Wolfe et al. (2013) indicated that the use of DM technology provided children with significantly greater improvement in speech recognition in noise than that obtained with CADS.

Equal Access

A DM System is not something that is 'nice to have'. It is an essential educational tool for children with hearing loss. The DM system is the access point for students with hearing loss – it allows the student access to the (auditory) curriculum.

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Getting Help

If you suspect a problem, consult a Registered Audiologist (R.Aud). To find a practitioner:

- Contact HEALTH LINK - Health Advice 24/7 at 8-1-1 or visit: www.MyHealth.Alberta.ca
- Enquire at a Public Health Centre or your child's school.
- Find a private practice audiologist:
- Search 'Audiologist' in the Yellow Pages.



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