School-based Audiology Advocacy Series
Classroom Audio Distribution Systems

(Approved by the Board of Directors of the Educational Audiology Association November 2011)

Classroom Audio Distribution Systems

A classroom audio distribution system (CADS), as defined by ASA/ANSI s12.60.2010, American National Standard Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools, Part 1 Permanent Classrooms, is a system whose primary design goal is to electroacoustically distribute the audio portion of spoken communications and curricular content throughout the learning space or targeted listening area. This content may include, but is not limited to, live voice sources from teachers and peers, as well as prerecorded and/or streaming media content from various sources, or both. The systems are not typically designed for public address purposes (such as building-wide announcements) or for the delivery of alert or warning signals, though they may include these capabilities. Classroom audio distribution systems may also include provisions to assist persons with low-amplitude voice levels or those with certain hearing conditions (p 4-5).

As more schools recognize the importance of improving the speech-to-noise ratio in the classroom, the use of CADS is increasing. While the desire to improve accessibility to teacher and student voices, and target sound sources is to be encouraged, installation of these systems in classrooms should be done in collaboration with an educational audiologist. This collaboration will ensure the consideration of the following issues:

- The emphasis is on sound distribution, not amplification. “Sound amplification increases rather than reduces overall classroom sound levels. Such increased sound levels may be excessive for comfortable listening. Also, unless classroom walls, ceilings, and floors are acoustically upgraded to improve their sound insulation, amplified sound may be heard in adjacent classrooms, interfering with learning there” (Acoustical Society of America).

- CADS are not substitutes for poor acoustics. If the classroom is excessively reverberant, some CADS may decrease the intelligibility of speech by increasing the volume of a reverberant signal. Maximizing classroom acoustics must be addressed before the installation of the CADS (EAA School-Based Audiology Series: Classroom Acoustics).

- CADS may be installed in rooms where students are using personal FM systems. The educational audiologist must address compatibility issues that may arise with the simultaneous use of these systems prior to selection and installation (American Academy of Audiology, 2011).

- Training in the use of a CADS is necessary to provide accessibility to all talkers and other relevant sound sources.

- Validation procedures must be conducted to document that the system is providing an appropriate speech-to-noise ratio, generally +10 to +15dB SPL depending on the classroom ambient noise levels and that speech is evenly distributed throughout the classroom (American Academy of Audiology, 2011).

References

Acoustical Society of America, Position Statement on the Use of Sound Amplification in the Classroom, www.acousticalsociety.org

ASA/ANSI s12.60.2010, American National Standard Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools, Part 1 Permanent Classrooms.

American Academy of Audiology (2011). Clinical Practice Guidelines for Remote Microphone Hearing Assistance Technologies for Children and Youth from Birth – 21 Years. Supplement B. Classroom Audio Distribution Systems: Selection and Verification.

This document is part of the School-Based Audiology Advocacy Series. Please see additional statements on School-based Audiology Services, Assessment, Auditory (Re) habilitation, Classroom Acoustics, Educational Audiology Services Under IDEA: Pertinent Regulations, Educational Audiology Services Under 504, Educational and Clinical Audiology Partnership, Hearing Assistance Technology, Hearing Screening, Noise and Hearing Loss Prevention, Role in EHDI and On-Going Hearing Loss Surveillance in Young Children, and References and Resource Materials.