



## School-based Audiology Advocacy Series Classroom Acoustics

*(Approved by the Board of Directors of the Educational Audiology Association September 2009)*

### Classroom Acoustics

Environmental and design factors in and around the classroom contribute to the ability of all students to hear and clearly understand speech. How well students hear impacts the reception and retention of information. Depending upon the classroom's walls, floor and ceiling surfaces, and size and configuration, the potential for loss of information as it is transmitted from the teacher or speaker to the student can be extremely high. This problem is most likely to occur as the distance increases between the teacher and student, when noise levels in the room are high and when the room is highly reverberant. Background noise refers to any undesired auditory stimuli that interfere with what a student needs to hear and understand. Noise sources can be in the classroom, in the school building and outside the school. Reverberation refers to the persistence or prolongation of sound within an enclosed space as sound waves reflect off of hard surfaces. Excessive reverberation times frequently cause distortion of speech sounds. Staff and classroom personnel must be provided with information about the negative effects of poor classroom acoustics on learning, strategies to improve classroom acoustics, and accommodations to improve communication access.

The educational audiologist is typically the most knowledgeable member of the school personnel team for assessing classroom acoustics and determining appropriate classroom modifications that will best address students' listening needs. Educational Audiologists should be actively involved in assessing background noise levels, reverberation time and the impact of these factors on a student's ability to access auditory information in the classroom. It is also important to know each student's individual speech-to-noise requirements so that appropriate accommodations can be determined. Educational Audiologists have an integral role in assuring that all students can hear and understand their teachers and classmates.

#### Resource:

American National Standards Institute (2002). *Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools [ANSI S12.60-2002]*. New York: Acoustical Society of American.

*This document is part of the School-Based Audiology Advocacy Series. Please see additional statements on School-based Audiology Services, Audiology Services Under 504, Auditory (Re)habilitation, Classroom Acoustics, Educational Audiology Services Under IDEA: Pertinent Regulations, 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.*