

(Approved by the Board of Directors of the Educational Audiology Association June 2018)

Hearing Assistance Technology

Hearing assistance technology (HAT) continues to evolve and improve hearing accessibility for individuals with hearing and listening problems. As required by IDEA, audiologists must “determine the child’s need for individual amplification, including selecting, fitting, and dispensing of appropriate listening and vibrotactile devices, and evaluating the effectiveness of those devices” [34CFR300.34(c)(1)(vi)]. Therefore, to ensure appropriate services, educational audiologists must have an active role in candidacy determination, device selection, fitting, validation, and management of appropriate hearing instruments for children/youth.

Determination of individual signal-to-noise ratio requirements of relevant listening environments is necessary to select the appropriate hearing assistance technology option. Personal remote microphone HAT, whether fit directly or coupled to the child’s hearing aid or cochlear implant, requires verification procedures to establish that appropriate gain and output are being delivered to the student (Eiten & Lewis, 2008). Focused and wide area sound field distribution systems also require consideration of individual listening needs and acoustical characteristics of the classroom (Eiten & Lewis, 2008, Flexer, 2004, ANSI, 2010). Validation procedures are required by IDEA [34CFR300.6(a)] and must be administered with the student to confirm that the recommended instruments are providing the expected benefit in the classroom and other settings where they are used (Eiten & Lewis, 2008). The student, as well as school staff and classroom personnel, must receive orientation and training on function, appropriate use, and limitations of HAT devices to ensure that maximum benefit from the technology is available to the child/youth (AAA, 2011). IDEA further requires routine checking of hearing aids and external components of surgically implanted medical devices (34CFR300.113). Consequently, educational audiologists must establish and manage monitoring plans for students wearing hearing aids, cochlear implants, and bone anchored hearing systems as well as hearing assistance technology.

Educational audiologists are typically the most knowledgeable school personnel to measure classroom acoustics and to determine appropriate classroom audio distribution (CAD) system options. Accordingly, they must be actively involved in the evaluation/assessment, recommendation and subsequent installation process for appropriate CAD systems. Excessive classroom noise levels and reverberation times may result in recommending acoustic modifications that may be necessary prior to installation CAD systems for the control of background noise (ASHA, 2005). The determination of individual student signal-to-noise ratio needs is also necessary for the successful use of CAD systems (Smaldino & Crandell 2000). As with personal remote microphone HAT, the educational audiologist must ensure that verification of appropriate gain and output, as well as validation of benefit, has been completed with classroom systems.

References:

- American Academy of Audiology (2011). AAA Clinical Practice Guidelines: Remote Microphone Hearing Assistance Technologies for Children and Youth Birth-21 Years. www.audiology.org
- American National Standards Institute (2010). Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools [ANSI s12.60-2010]. New York: Acoustical Society of America.
- American Speech-Language-Hearing Association (2005). Acoustics in educational settings: Technical report. Available at <http://www.asha.org/members/deskref-journals/deskref/default>.
- Eiten, L. & Lewis, D. (2008). FM Verification for the 21st Century. *Perspectives on Hearing and Hearing Disorders in Childhood* 18, 4-9.
- Flexer, C. (2004). The Impact of Classroom Acoustics: Listening, Learning and Literacy. *Seminars in Hearing*, 25 (2), 131-140
- Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004), *Public Law* 108-446, 20 U.S.C. §1400 et seq. (2004).
- Smaldino, J. and Crandell, C. (2000). Classroom Amplification Technology: Theory and Practice. *Language, Speech and Hearing Services in Schools*, 31. 371-375.