

Critical Review: Is There a Benefit for School-Aged Children with Hearing Loss to Use Directional

Selection Criteria

Studies selected for this critical review were required to evaluate the performance of directional microphones versus omni-directional microphones in speech recognition tasks in the classroom of school-aged children. Additionally, those studies that investigated directional benefit and their potential in the classroom environment were also considered. No limits were set regarding the methodological design of these studies.

Data Collection

A review of the literature yielded the following types of articles that were consistent with the selection criteria: a within groups (repeated measures) with counterbalancing experimental design and a case control study (quasi-matched control groups).

Results

Ricketts, Galster, and Tharpe (2007) examined the objective and subjective performances of children in directional microphone mode and omni-directional microphone mode over a series of three experiments in a range of simulated classroom environments. Speech recognition performance of each participant was measured using the Hearing In Noise Test Children (HINT-C), City University of New York Nonsense Syllable Test (CUNY-NST), and the Northwestern University Auditory Test No. 6 (NU-6) in experiments one, two, and three, respectively (Ricketts, et al., 2007). Two questionnaires were used to evaluate subjective performance of each microphone setting in experiment one. Each participant and their parent completed the C (CHILD) along with a 16-question questionnaire developed by the authors specifically for this study, which noted the participants strengths and weaknesses in each microphone mode in different listening environments (Ricketts, et al., 2007). In experiment one, participants were counterbalanced and assigned to a microphone mode that they would wear for one month.

