Clark-Katz

Auditory Training

Multimedia Computer-Assisted Auditory-Phonemic Assessment and Training for Cochlear Implant Users: C-KATZ (Clark-Katz Auditory Training System)

Abstract

Cochlear implant and hearing aid users may benefit from phonemic-level discrimination practice but past training methods have been problematic. A CD-ROM program has been developed at NID that assesses and then adaptively trains persons with hearing loss on errors in speech feature perception. Exercises include: (1) phonemic synthesis and decoding techniques.

C-KATZ rationale:

- Other auditory IT methods may not engage higher level, auditory-memory processing used for word recognition. Katz training uses auditory memory to assemble phonemes and syllables into words.
- May result in more fluent word-recognition.

Some questions to be answered:

1. What phonemic features are available to the individual?
2. Can phonemic processing training improve?
3. Increase the number of discriminable features.
4. Increase correct performance.
5. Does it result in self-perceived gains for receptive communication?
6. What is the relationship between speech feature perception, phonetic synthesis, and word recognition?

Computer assistance enables auditory training by:

- Providing practical and motivating means for the necessary, intensive drill and practice.
- Providing controlled training conditions for research.
- Providing practical means for multiple talkers and presentations to enhance generalization of training results.

Program Features:

- Web-based registration and data storage
- Training soundtrack (auditory, visual, visual)
- Data upload
- Consonant and Vowel Assessment
- Lessons
- Parenting criteria

Lessons

Limited Set Phoneme Identification

Purposes:

- Confirm and expand phonemes recognition by practice.
- The instructor selects items based on the assessment.
- Up to 6 sounds can be evaluated. Typically, a combination of vowels and consonants are utilized. These speech sounds will be used later in the Phonemic Synthesis Lesson.

- If sound is not identified, the Same/Different Lesson is activated.

- If phonemic training is not used, the Same/Different Lesson is activated.

Impressions of Same/Different Lesson

Purpose:

- To round out the other lesson.
- Students return to Limited Set Phoneme Lesson. If sound is not identified, the Same/Different Lesson is activated.

Impressions of Same/Different Lesson

Purpose:

- To provide additional practice for sounds that are difficult.
- Students are presented with the same sound in different contexts.

C-Katz Summary

C-Katz, a new auditory training program, is designed to not only improve feature discrimination, but also improve word recognition fluency by improving sequential memory processing for phonemes. Preliminary data indicates that the program has led to significant improvements in speech perception and word recognition for individuals with hearing loss.