

Sound System Disorders: Teaching Broad Versus Deep
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Abstract

A child with a severe sound system disorder was administered a motor learning-based treatment with minimal success. The treatment program was modified to employ the multiple-opposition approach. The client demonstrated substantial progress, when the phonemic-based approach was introduced. The implications of the treatment are discussed.

Introduction

There are two different theoretical positions that guide treatment for children with sound system disorders. Practitioners can use either a motor learning (phonetic) or a cognitive-linguistic approach (phonemic). In motor learning, the rationale is to teach practice units with the idea of generalizing a rule pertaining to the physical movements of the sound. There is an implicit assumption that the target is part of the child's phonological system, but it is not being used on the surface. With the cognitive-linguistic approach, one teaches in a way that facilitates the formation of phonological rules. While practice is the important component in motor learning, the presentation of meaningful material is the key ingredient in the cognitive-linguistic approach. Some writers such as Smit (2004) have dichotomized the difference in terms of teaching deep (motor learning) versus broad (cognitive-linguistic). The purpose of this poster session is to present a case study that incorporated teaching broad to a preschool youngster who exhibited a severe phonological disorder. The multiple-opposition approach developed by Williams (2003) was used.

Case Study

T. S. is a four-year-old female who was first seen at the West Virginia University Speech and Hearing Clinic in 2002 for an evaluation when two years of age. The youngster was referred to the clinic, because her mother was concerned about the youngster's lack of speech development and inability to be understood. According to the child's mother, T. S. talked very little and what few words she did say were unintelligible. Her primary mode of communication was through idiosyncratic signing and gestures. It was reported that she became frustrated and upset when not understood. Other developmental milestones in terms of cognitive, motor, and social skills were reported to be within the normal limits. T. S. lives at home with her mother, father, older brother and younger sister.

An independent phonological analysis revealed a consonant inventory of /b/, /m/, /h/ and the vowels /i, I, u, a, æ/. Deletion errors were predominant. Hypernasality was identified as a feature along with silent posturing of the articulators. Syllabic structure consisted of the simple syllable shapes V and CV and V-V in multisyllabic words.

For three months, therapy was conducted using a deep treatment with goals consisting of imitating and spontaneously producing one, two, and three word utterances. A clinical summary indicated that very little progress was made and the child remained unintelligible. The treatment for T. S. was modified, because of her lack of progress. The multiple-opposition approach (Williams, 2003) was selected to treat T. S.'s phonological impairment (See treatment steps). The goal for therapy was to eliminate phoneme collapse in the prevocalic position, since the youngster consistently deleted sounds. The features obstruent /p, s, d/, oral sonorant /w/, and nasal sonorant /m/ were introduced. When T. S. completed the multiple-opposition treatment for the allotted sessions, probe measures and post-treatment measures showed gains in her consonant inventory and intelligibility (See Appendix). Nasality was no longer perceived during the production of voiced sounds.

Treatment Steps

Phase 1-Introduce the rule by contrasting what the child does with what the child needs to do. Vocabulary is introduced, so that the child can match the pictures with the desired practice vocabulary. It is also an identification phase for the child so that she/he is totally familiar with the practice stimuli. The final part of Phase 1 is actual production of the stimuli in an imitative manner. The clinician provides an imitative model of the contrastive pairs (tip-sip), while also providing the pictorial references. Verbal feedback is provided to the child concerning the accuracy of the productions.

Phase 2- This phase is a production phase and carried out without the use of board games. The word pairs are introduced and then practiced. In addition to the contrastive word practice, interactive play with the targets is carried out following each practice session. Interactive play is utilized to provide a more naturalistic context for practice of the targets. For example, the clinician might read a book to the child and stress the production of words that contain the target words.

Phase 3-Once the child has achieved spontaneous production of the word pairs, practice shifts to interactive type activities. For example, the child and the clinician may take turns using board games to produce and generate word practice pairs.

Summary

It has been our experience that many young children with severe sound system disorders are often diagnosed with childhood apraxia of speech (CAS). In this case T. S. exhibited a number of diagnostic markers that would be consistent with such a diagnosis; however, we are hesitant to label before a period of treatment has been conducted. A deep teaching treatment was not effective, but a broad teaching treatment resulted in substantial change. The data suggest that the problem was phonologic and not a motor planning deficit. Diagnostic treatment is recommended for such cases until a reliable set of diagnostic markers is developed to identify the different subgroups of children with sound system disorders.

References

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Pre-therapy

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Post-therapy
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