

Romski, Mary. A. (1981). *A comparison of the effects of speech and sign on the oral language learning of Down's syndrome children in early stage I*. Unpublished doctoral dissertation, University of Kansas, Lawrence. (K. Ruder, advisor): 65 pages of text, 38 references, 2 appendices, 11 tables, and 2 figures.

In recent years speech-language clinicians have utilized manual signs in their training programs for developmentally delayed children. It has served a variety of functions including an alternative to speech, an augmentative communication system and a facilitator of oral language learning. In its role as a facilitator of oral language learning, it may be used to initiate and/or enhance and refine oral language skills.

The purpose of this study was to specify manual sign's capacity to enhance and refine oral language learning in developmentally delayed children who were speaking. Specifically, it was designed to compare the effects of speech training paired with manual signs and speech training alone on comprehension and production generalization of action + object relational meanings.

Ten home-reared Down's Syndrome children in Early Stage I served as subjects. They ranged in age from 47 months to 94 months and received PPVT receptive vocabulary ages of 21 months to 40 months. None of the children used action + object combinations in their speech prior to training. They demonstrated normal hearing bilaterally, command following ability in context, no history of visual impairment or paralysis and comprehension of "What doing?" question.

A concurrent training paradigm was utilized to provide a basis for the assessment of generalization. Each child received training in speech and speech-sign. A third no training condition was included to control for the natural acquisition of vocabulary items. The children were trained to comprehend action + object combinations with in a miniature linguistic system matrix, using an object manipulation task. At the completion of training, comprehension and production generalization in two settings, (i.e., training room and classroom ) were probed. Then, a spontaneous language sample was collected to specify the extent of production generalization.

An analysis of variance with three trial factors (i.e., modes, conditions, settings) revealed significant main effects for modes (i.e., comprehension, production) and conditions (i.e., speech, speech-sign, no training) and a significant interaction for modes by conditions. A simple effects analysis of the interaction showed that there were significant differences between the training conditions and no training and indicated that the training procedures were responsible for the comprehension generalization findings. Significant differences were not found between speech training and speech-sign training in comprehension generalization. Comprehension generalization was better than production generalization. The production generalization data failed to yield significant differences between any of the conditions. Further descriptive analysis revealed that the training conditions resulted in more production generalization than no training.

A statistical comparison of the comprehension training data revealed no significant differences between speech and speech-sign. Inspection of the children's individual patterns of acquisition revealed that manual sign functioned in a variety of

ways ranging from interfering with comprehension learning to facilitating such learning. One child trained only in speech and one only in speech-sign. Three children took half as many trials in speech-sign than in speech, while one child took half as many trials in speech than in speech-sign.

Based on these findings, the following conclusions can be drawn. First, comprehension training alone does not result in complete generalization to production. Second, prior experience with speech may result in a preference towards the spoken mode. Third, the general inclusion of manual sign in oral language training programs is not warranted. Finally, however, caution is advised concerning the automatic adoption or rejection of manual sign as part of each child's language training program. Together the individual acquisition patterns and the group findings suggest that manual sign may have detrimental, neutral or facilitative effects on oral language learning. Further investigation is warranted to delineate the reasons for these findings.