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ABSTRACT

A language training approach employing a multimodality receptive language program was used with eight retarded preschool children to increase receptive language development and to stimulate verbal (expressive) language behavior. Day activity center teachers worked with the Ss three times weekly for 7 months using the Minnesota Early Language Development Sequence (MELDS) curriculum in a program combining two visual language systems: rebuses (picture words) and the vocabulary of American Sign Language. Results showed substantial gains in receptive language for all Ss and notable expressive language gains for half of the Ss. (SB)

A MULTIMODALITY LANGUAGE PROGRAM FOR RETARDED PRESCHOOLERS[1]

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Overview

One of the important new trends in the education of handicapped children has been toward early identification and treatment of language based deficiencies. This is because of the recognition that language development is an essential facet of a child's overall cognitive functioning. More traditional language development programs for the preschool-aged child have been concerned primarily with language production rather than comprehension. Two exceptions to this emphasis have been reported in the Infant, Toddler and Preschool Intervention Project (Bricker and Bricker, 1972) and the EDGE Project (Rynders and Horrobin, 1975).

Wolf and Rynders (1975) suggest that the severe expressive language delay common in the preschool retarded child is one of the factors that later complicates the deriving of an accurate educational placement decision. They recommend that one solution should be the consideration of language training strategies for young retarded children that allow for nonverbal response and provide greater stress on receptive stimulation.

Other investigators (Schaffer and Gaehl, 1974) have also recognized the need for receptive language programming for young retarded children. They point out that a program offering manual as well as psycholinguistic approaches may be most desirable for the severely language delayed child. This interest in manual language strategies, more specifically the use of American Sign Language, has been apparent in the work of several special educators in programming for the retarded individual. Hoffmeister and

Farmer (1972) suggest the use of sign language as a strategy to promote functional communication skills in deaf retarded individuals. Hollis and Carrier (1975) report similar evidence that many severely retarded children can and do learn parts of a communication system when using a nonspeech response mode.

Study Setting

The language training approach employed in the present study represents a pilot of a multimodality receptive language program with retarded hearing children in a preschool setting. The goals or purposes of this project were to increase receptive language development and to stimulate verbal (expressive) language behavior. The Minnesota Early Language Development Sequence (MELDS)[3] curriculum was selected as the intervention treatment. MELDS emphasizes the use of repetition of concrete vocabulary as a learning strategy. It offers a program of structured lessons being used presently by teachers and parents to facilitate the development of language skills in young hearing impaired children who have little or no language. The program combines two visual language systems, rebuses (picture words) and the vocabulary of American Sign Language (ASL). Materials used in the program include a teacher's manual and lesson guide, rebus cards, sentence cards and a glossary of signs and rebuses.

The teaching procedure recommended is that rebuses be put into a pocket chart and the teacher use them in combination with signs and spoken language to label words or form sentences. In addition, the fact that MELDS is primarily an input program is consistent with existing literature suggesting that receptive language development precedes expressive language development in children (Myklebust, 1960).

Method

Subjects

Following initial referral by the teacher for inclusion in the project, all prospective subjects were seen by the language consultant and observed for level of sensory and motor ability, receptive and expressive language functioning and responsiveness to instruction. Letters were then sent to parents explaining the project and the cooperation of the speech clinician or language teacher in each DAC setting was requested.

Eight retarded preschoolers were subsequently selected by the following criteria to participate in the experimental multimodality language program called MELDS. Criteria of selection included: a delay in the comprehension of language as judged by the child's preschool teacher; an ability and willingness to vocalize (i.e., no hearing loss, no gross physiological or neurological damage, no emotional disturbance); an ability to maintain minimal eye contact; an ability to point to objects and/or pictures; and a pattern of nonverbal behavior which indicated early sensori-motor skills. Children ranged in age from 26 months to 37 months at the beginning of the project. Children selected for the study were attending five different day activity centers (DAC) for the preschool retarded, which are part of the East Metropolitan Day Activity Center Council (EMDACC) in St. Paul, Minnesota. Table 1 displays descriptive data of the group.

Procedure

Initially an attempt was made to locate twenty children to participate in the project, of whom ten would be randomly assigned to a MELDS group and ten randomly assigned to a general language stimulation group. Project limitations prevented this procedure due to an inability to identify and maintain a program for twenty children on a continuous basis. As a result,

Table 1

Descriptive Data on MELDS Project Children

Characteristics

Subject Number	CA	Gesell Developmental Quotient	Residence	Etiology	Other Handicaps
1	2.2	50	natural	D.S.*	none
2	2.4	60	natural	D.S.	none
3	3.9	73	natural	D.S.	nystagmus
4	2.3	57	natural	D.S.	congenital heart defect
5	3.0	68	foster	D.S.	none
6	3.1	63	natural	D.S.	muscular eye weakness
7	3.7	63	foster	D.S.	congenital heart defect
8	3.2	47	natural	unknown	extreme distractibility

*Down's syndrome

eight children were selected according to the criteria mentioned and all were enrolled in the MELDS project. It must be recognized that this decision makes the study a descriptive one rather than adhering to experimental design.

Each child was administered a pretest designed to sample receptive and expressive language ability. Children were tested individually by the language consultant in the therapy room designated by each DAC. A test was designed using vocabulary taken from the first twenty lessons of the MELDS manual. This test consisted of every third noun, five common verbs and one preposition, totaling 18 test items. Consideration was also given to the feasibility of picturing the item in question. Pictures were developed for each item[4] and nonproject children of similar CA were pilot tested using the pictures. Pictures were done in black pen and ink and drawn on 5" x 5" cards. Foils (distractor items) were common vocabulary items not necessarily drawn from the MELDS manual. Stimulus and foil items were randomly placed on each plate in an attempt to control for position bias. The receptive portion of the test required that the child "point to" the appropriate item, and included both semantic (label) and syntactic (verb, preposition) vocabulary. The expressive portion of the test, requiring that the child name the item, included only pictures depicting a semantic item.

The sequence inherent in the MELDS program prescribed the nature of the language stimulation offered each child. The same individual administered the MELDS program to a given child for the entire 20 week period except in one instance where the child transferred from one DAC to another and continued the MELDS program with a previously trained teacher in the new DAC setting. Children received training three times weekly for approximately 15 minutes each session. Children were generally seen on a one-to-one

basis (in one case on a one-to-two basis). Most children were able to complete the first 20 lessons of the MELDS program during 20 weeks although two children completed only 18 lessons.

Participating teachers were pretrained by the investigators in the use of the MELDS materials. Teachers were required to use response sheets for each lesson, summarizing pointing, sign and verbal behaviors occurring during the session. In addition, one hour monthly observations were conducted alternately by each of the investigators in the participating centers on each of the project children. The goal of the observation visit was to ensure as much as possible, that each child was receiving the same exposure to intervention. Response opportunities and stimulus offerings were counted for each teacher with each of the project children. Also, six memoranda were sent to the teachers to inform them of changes made in the program, to give them feedback on observations and to provide them with necessary information.

The details of intervention were as follows:

- Teachers presented the MELDS lessons to project children each Monday, Wednesday and Friday morning for approximately 15 minutes, individually or in groups of two.
- Teachers were instructed to present each section of a lesson several times. For example, lesson #1 introduces the words "table," "chair," and "box."
- Using real objects, the teacher pointed to the object, showed the rebus for that object, signed the word, said the word, matched rebus, object and sign to one another, (always verbalizing the label), and then asked the child for a receptive response, i.e., "point to box" (real or rebus). This sequence would be repeated for each vocabulary item in a lesson and was referred to as a "loop."

- Teachers were encouraged to do at least three loops for each item in a lesson.

In the initial lessons, receptive responses were encouraged from the children and no demand was made for an expressive response. As the lessons progressed, an expressive branch was added to the input portion of each session. This branch provided opportunities for the child to sign for an object, action or rebus, or verbalize the word. The desired outcome of the expressive branch was for the child to spontaneously offer the appropriate verbal label for the object or rebus. Teachers reviewed the rebus cards from the previous two lessons at the beginning of each lesson. This procedure served to orient the children to the situation.

Results

Pre- and posttest scores earned by program children on receptive and expressive portions of the test are shown in Tables 2 and 3. Due to the small N, usual tests of significance were not applied to the data. In terms of the goals of the project, to increase receptive language development and to stimulate verbal behavior, the eight project children show clear gains in meeting at least the first goal. As is shown in Table 2, all children made substantial change on receptive test items from November to May. Because MELDS is primarily an input program, receptive language gains such as these shown in eight retarded language delayed young children would seem to offer support for use of such an approach.

Expressive language results, shown in Table 3, are not conclusive. No child demonstrated verbal behavior on verbal test items in November. By May, on posttest, four children (50 percent) verbalized substantially and were also noted to have signed responses to several items. One other child signed several of the items, but did not verbalize. The remaining three children demonstrated no evidence of correct verbal response, although, in

Table 2

Results of Children in MELDS Program on Receptive Language Test Items, Pre- and Posttest Scores

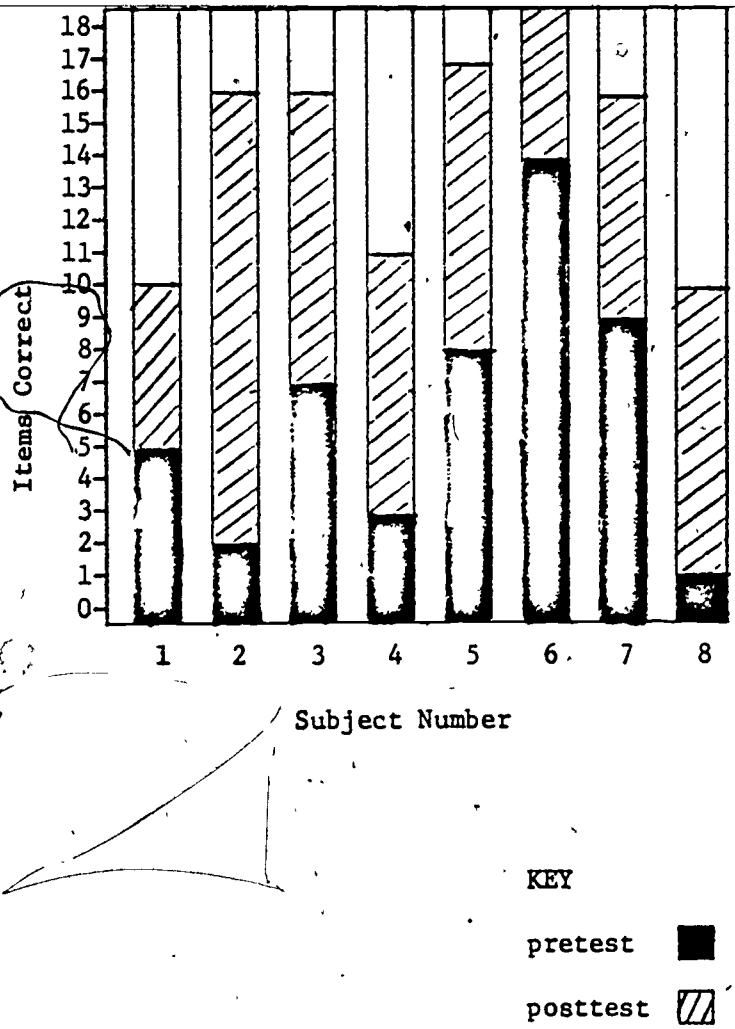
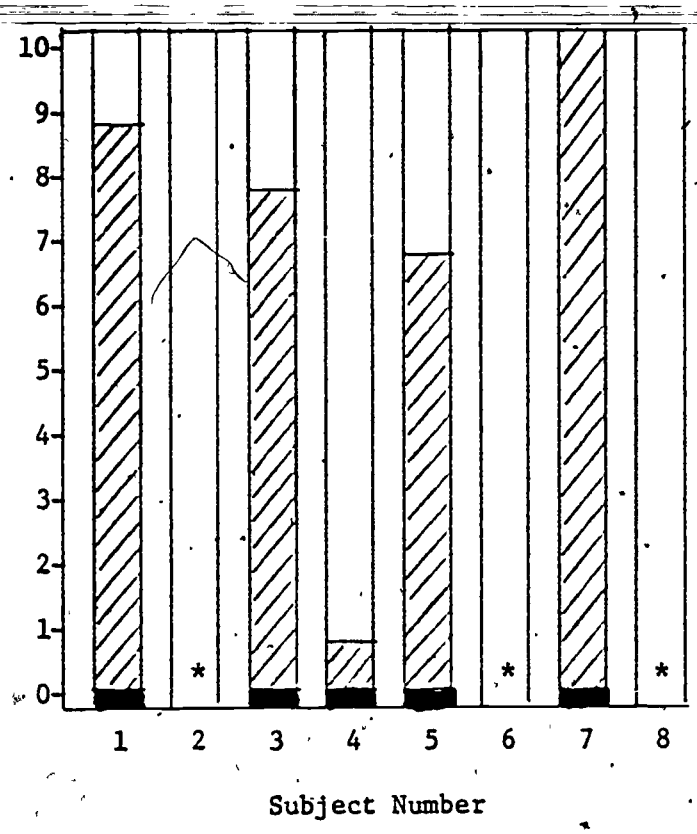


Table 3

Results of Children in MELDS Program to Expressive Language Test Items, Pre- and Posttest Scores



KEY

pretest

posttest

*child scored 0 on both pretest and posttest

each case the number of "no responses" decreased and the number of "incorrect responses" increased. It would appear that the expectation for a verbal response was present, but the child could not or did not produce an intelligible word.

Data were also collected from observation/count sheets filled out by the teachers. During lessons 1 through 9, teachers were required to count the receptive responses of the child. Children, in general, were reported to respond by use of verbal guidance and manual guidance. (These data should not be regarded as extremely reliable because it seemed to require several weeks before teachers could comfortably count and instruct simultaneously. Data were therefore not tabled for lessons 1 through 9.) In terms of expressive responses, teachers recorded verbal responses of children during lessons 10 through 20. Total number of verbal responses for the 11 lessons ranged from 2,030 responses recorded for subject number 7 to 8 verbal responses recorded for subject number 2. Data collected during the last 11 lessons, including total number of pointing responses per subject, total number of action responses, total number of signed responses, and total number of words, appear in Table 4. It seems clear that the range of performance within each facet of expressive behavior and total expressive responses of children during MELDS lessons 10 through 20 was extensive, as were opportunities for response and number of stimulus offerings recorded by the investigators during teacher observation. The number of stimulus offerings made by teachers during a lesson observation ranged from 17 to 231 offerings, with a mean of 89 offerings. The number of opportunities for response ranged from 12 to 95 with a mean of 56 opportunities.

Summary and Discussion

It is assumed by many special educators that a language training program for retarded preschoolers should emphasize direct manipulation of vocal-verbal

Table 4

Total Number of Responses

Over 10 MELDS Lessons

Subject Number	Points to Object or Rebus	Performs Motor Action	Signs	Says Word
1	326	27	172	566
2	317	10	340	8
3	348	33	302	360
4	329	45	77	36
5	235	53	190	253
6	118	none	107	117
7	540	45	1431	2030
8	452	89	407	335

output in order to modify expressive language functioning. This study was designed to pilot a language program, MELDS, which provides rich input experiences in an attempt to stimulate the development of expressive language ability as well as expand language comprehension.

Eight retarded preschoolers were placed in the MELDS program for seven months. Day activity center teachers worked with these children three times weekly using the MELDS vocabulary, i.e., real objects, rebuses, signs, and words representing the MELDS vocabulary. Data suggest that these eight children were able to make substantial gains in receptive language over the seven-month period. In addition, considering the nonverbal characteristics of the population at the onset of the study, notable expressive language gains were made by the end of the study by at least four of the eight subjects.

The results of the study offer tentative support for the usefulness of a multimodality receptive language program for stimulating language in severely language retarded preschool children. Results also suggest that nonverbal (manual) communication may precede and facilitate the acquisition of the first spoken words in a child's language development. Early programming emphasizing input but with every expectation of an expressive response on the part of the child seems to be a valid approach. These results must be regarded with the limitations of a descriptive study.

Footnotes

[1]This project was supported by the Minnesota Easter Seal Society and the East Metropolitan Day Activity Center Council (EMDACC).

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[3]Clark, C.R., Moores, D.F., and Woodcock, R.W. MELDS, Research, Development and Demonstration Center in the Education of Handicapped Children, University of Minnesota, Minneapolis, Minnesota, Developmental Papers #'s 7-10, 1975. The authors of this study are indebted to the staff of the MELDS project for their cooperation.

[4]The authors of this study wish to acknowledge the creative and thoughtful contribution of Ms. Vida Niedorf in the development of this test.

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