R E P O R T R E S U M E S

ED 017 335 24 PS 000 454

AN APPROACH FOR WORKING WITH MOTHERS OF DISADVANTAGED PRESCHOOL CHILDREN.

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REPORT NUMBER BR-5-1161
CONTRACT OEC-6-10-235
EDRS PRICE MF-$0.25 HC-$0.80 18P.

DESCRIPTORS- *PRESCHOOL CHILDREN, *MOTHERS, *TRAINING, *TRAINING TECHNIQUES, PARENT TEACHER COOPERATION, PARENT WORKSHOPS, PARENT PARTICIPATION, PARENT ROLE, *ACHIEVEMENT GAINS, CULTURALLY DISADVANTAGED, COMPENSATORY EDUCATION, LANGUAGE SKILLS, INTELLECTUAL DEVELOPMENT, CONTROL GROUPS, INCENTIVE SYSTEMS, STANFORD BINET, ITPA,

A PRESCHOOL EDUCATIONAL PROGRAM WAS DEVELOPED IN WHICH THE ONLY TEACHER FOR THE CHILD IS HIS MOTHER. IT WAS HYPOTHESIZED THAT MOTHERS OF LOW SOCIOECONOMIC AND EDUCATIONAL LEVEL CAN CONTRIBUTE MATERIALLY, WITH MINIMAL BUT PROPER TRAINING, TO THE INTELLECTUAL AND LINGUISTIC DEVELOPMENT OF THEIR CHILDREN. THE TRAINING PROGRAM FOR THE MOTHERS CONSISTED OF 11 WEEKLY 2-HOUR SESSIONS IN WHICH EXPERIENCED PRESCHOOL TEACHERS WORKED WITH THE MOTHERS IN PREPARING SIMPLE, INEXPENSIVE PROJECTS AND MATERIALS TO BE USED WITH THE CHILD, AND INSTRUCTED THE MOTHERS IN HOW TO USE THE MATERIALS. THESE MOTHERS WERE PAID $3.00 PER SESSION. THIRTY CHILDREN WERE INVOLVED, RANGING IN AGE FROM 39 MONTHS TO 51 MONTHS AT THE TIME THE 12-WEEK PROGRAM BEGAN. THE CHILDREN, HALF OF WHOM WERE TO BE INSTRUCTED BY THEIR MOTHERS AND HALF OF WHOM WERE TO RECEIVE NO COMPENSATORY INSTRUCTION, WERE INITIALLY MATCHED ON SEX AND INTELLIGENCE QUOTIENT. ALL OF THE CHILDREN RECEIVED PRE- AND POSTTESTS ON THE STANFORD-BINET, WHICH MEASURES INTELLIGENCE LEVEL, AND ON THE ITPA, WHICH MEASURES LANGUAGE ABILITY. THE TEST RESULTS SHOWED THAT THE INSTRUCTED CHILDREN GAINED SIGNIFICANTLY MORE IN INTELLIGENCE LEVEL OVER THE 12 WEEKS THAN DID THE CONTROL CHILDREN AND ALSO IMPROVED IN LINGUISTIC FUNCTIONING MORE THAN DID THE CONTROL GROUP. THE HYPOTHESIS WAS DEMONSTRATED TO BE ACCURATE, BUT IS CANNOT YET BE CONCLUDED WHETHER OR NOT THE GAINS CAN BE SUSTAINED OVER THE FUTURE. (WD)

BR-5-1181
PA-24

An Approach for Working With Mothers of Disadvantaged Preschool Children*

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*This project is one of a number of research projects on culturally disadvantaged preschool children supported by a grant from the Bureau of Research of the U. S. Office of Education (USOE 5-1181, Contract 6-10-235).

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Abstract: This study investigated the effects of a short-term training program for mothers as reflected in the intellectual and linguistic development of their children. Fifteen pairs of disadvantaged preschool children were matched on appropriate variables. Neither experimental nor control subjects were enrolled in a preschool, nor were control mothers enrolled in a training program. During a weekly two-hour period mothers of the experimental children made instructional materials and learned methods for using such materials with their children at home. It was hypothesized that the children of the mothers in the training program would manifest significantly greater gains than the control children on measured intelligence and psycholinguistic skills. Analysis of the data supported the hypotheses.

Special programs for culturally disadvantaged preschool children have recently been recognized as one effective approach for helping these children compensate for deficits accruing from a lack of appropriate experiences conducive to fostering subsequent optimal academic growth. Conceptualization of intelligence as genetically fixed has given way to the idea that cognitive development occurs largely in response to a variable range of stimulation and experience (Ausubel, 1966; Hunt, 1964). Unless the developing child is exposed to a rather wide variety of stimuli and unless these stimuli are relatively well matched to the action patterns the child already has available, cognitive development is not maximized (Almy, 1964).

Characteristic of the social environment in low-income families with meager education is the limited range and less adequate and systematic ordering of stimulation and effective experiences. The adverse effects of this environment on the cognitive development of the child include inadequate perceptual habits (Riessman, 1962); poor orientation to information seeking (Ausubel, 1966; Deutsch, 1963); poor motivation for intellectual or school-related activities (Riessman, 1962); and retardation in the area of language development (Ausubel, 1966; Hess and Shipman, 1965; Irwin, 1948; Jensen, 1963; John, 1963; John and Goldstein, 1964). Hunt (1964), Ausubel (1966), and others (Deutsch, 1964; Goldberg, 1965) contend that the effects of cultural deprivation on intellectual development are cumulative. Furthermore, the plasticity of intelligence tends to decrease as the child grows older and thus is less amenable to change.

The particular cognitive style of the low-income, low-educational level family is perpetuated from generation to generation. To break this vicious cycle, intervention in early childhood is essential. Such intervention has

usually been thought of in terms of preschool programs; however, the recognition that parental involvement in the learning process is crucial to the child's early development has led to the initiation of programs for parents of culturally disadvantaged preschool children. These programs have generally provided parents with information regarding child-rearing practices, child development, and school readiness (Kirk, 1958; Brazziel and Terrell, 1962; Crow et al., 1966; Fusco, 1964; Liddle, 1963; Weikart et al., 1966). Typically these programs have been developed as an integral part of an overall preschool program; therefore, it has been difficult to determine the impact of parental involvement on the child's progress, and, as a result, there has been little objective evidence that such involvement actually enhances the growth of the child.

The general problem of this study was how to help mothers more effectively stimulate the growth of their preschool children. Specifically, this study was designed to determine the effects of short-term parent training as reflected in the intellectual and linguistic development of the children. In contrast to other parent programs, emphasis was placed on helping the mother make instructional materials and learn to use these materials to teach her child at home rather than to provide lectures and individual conferences or to have her serve as an assistant in a classroom. In this study neither experimental nor control children were enrolled in a preschool program. Only the mothers of the experimental children were enrolled in a training program.

It was predicted that preschool children of mothers involved in the training program would manifest significantly greater gains in the following two areas than would children whose mothers were not involved in a training program:

1. Intelligence as measured by the Stanford-Binet Individual Intelligence Scale, 1960 edition.
2. Linguistic skills as measured by the experimental edition of the Illinois Test of Psycholinguistic Abilities.

Subjects

Thirty children from an economically depressed neighborhood served as subjects for this study. Subjects were selected who ranged in age from three years and three months to four years and three months at the beginning of the study and who were not participating in a preschool program. The families of these children were known to the principal of the school which served the neighborhood and were judged to be among the most economically and educationally deprived. Although the study was not defined as one for Negroes only, all of the participants were Negro because the school used in the study had only one Caucasian pupil.

All subjects were administered the Stanford-Binet Individual Intelligence Scale, 1960 edition, and the experimental edition of the Illinois Test of Psycholinguistic Abilities prior to and upon completion of the twelve-week parent training program. To maintain a uniform testing environment, all tests were administered by qualified school psychologists in elementary school classrooms unfamiliar to both groups of children. The examiners were not aware of the subject's placement in either the experimental or the control group.

Subjects were matched on intelligence quotient and sex and were randomly

assigned to the experimental or control group. Initially there were fifteen matched pairs; however, two children were subsequently eliminated from the study. One of the experimental subjects was found to be attending a nursery school, and one of the control subjects moved from the community and was not available for posttesting. This made it necessary to eliminate two pairs of subjects, leaving thirteen matched pairs.

Procedure

The mothers of the experimental children attended eleven weekly two-hour sessions in the neighborhood elementary school. (In one case, a grandmother who was responsible for a child's care participated.) Three experienced preschool teachers conducted the meetings, and each teacher was responsible for a group of five mothers. As part of the teaching team, the mothers were paid $3.00 a session, an hourly rate of $1.50, which exceeded, in most cases, the usual hourly wage of such working mothers. They received no remuneration for the time spent working with their children at home. The teachers encouraged the mothers to feel that they were an important part of an educational team and that their assistance was needed to develop and to test educational activities for preschool children. The immediate benefits to their own children as well as the general benefits of the research to other children were stressed.

At the beginning of each session the mothers made educational materials to use during the following week in teaching their children at home. Inexpensive materials or items commonly found in the home were incorporated into these activities: a sock puppet; a homemade flannel board; lotto and matching games made with gummed seals, with geometric shapes, and with color chips; counting books made from magazine pictures; sorting and matching activities using miscellaneous household items and an egg carton for a sorting tray; classifying activities based on pictures cut from furniture and clothing

catalogues.[1] The teachers taught the mothers appropriate songs and finger plays and distributed copies as a teaching aid at home. In addition, books and puzzles were available for the mothers to take home for use with their children during the following week. Generally, materials were chosen to stress useful vocabulary and basic manipulative skills. Language development was the major emphasis of all activities which were designed to teach the child the words he needs to label the objects in his immediate environment, to make more precise verbal observations, to generalize, to use grammatically correct forms, to understand and to ask questions, and to formulate answers. In addition, some activities stressed the rather fine visual and auditory discriminations necessary for developing readiness to read.

A discussion of appropriate ways to use these materials at home followed each work period. The teachers attempted to achieve cooperative planning and to discourage the view that teachers are authority figures from whom all directions issue. During a coffee break, mothers informally reported on their success or difficulty with the teaching assignment of the previous week. They discussed differences among their children in connection with these activities, and the teachers made suggestions about how they might accommodate such differences. The teachers emphasized the importance of repeating and extending the use of materials made earlier in the program. For example, mothers taught their children the names of five geometric shapes by using cutouts and a felt board and later used these same materials for color and counting exercises.

Mean attendance was eight mothers a meeting. On the basis of information supplied by mothers, absences were for legitimate reasons. When a mother was absent, the teacher took the learning activities and the instructions for them to the home during the following week. In addition, the teacher visited

[1]A more detailed account of the educational activities constructed at the weekly meetings may be obtained by writing to the author.

each home at two-week intervals to become acquainted with the child, to offer further teaching suggestions, and to evaluate the appropriateness of the activities for these particular children.

Results and Discussion

Intellectual Functioning

The results of the study clearly confirm the hypothesis that the experimental subjects, in contrast to the control subjects, would evidence significantly greater gains in intellectual ability as measured by the Stanford-Binet Individual Intelligence Scale. In the three months that elapsed between pre- and posttesting, only the experimental group manifested a greater increase in level of intellectual functioning than would be expected on the basis of increased chronological age. The experimental group evidenced an MA gain of .56 years or approximately six and one-half months, while the control group gained an average of .26 years or approximately three months. These data are presented in Table I.

Table I.

Mental Age Means and Variances on Stanford-Binet Intelligence Scale, Form L-M

	$\bar{X}$	S^2	Difference Between Means	t^+
Pretest Scores				
Experimental	3.52	.22	-.14	-.70
Control	3.66	.27		
Posttest Scores				
Experimental	4.08	.21	.16	.84
Control	3.92	.26		
Gain Scores				
Experimental	.56	.14	.30	2.14*
Control	.26	.11		

*Significant at the .05 level

+One-tailed t test

In terms of IQ, the experimental subjects evidenced a mean gain of 7.46 points, while the mean gain for the control group was .07. These data are presented in Table II.

Table II.

IQ Means and Variances on
Stanford-Binet Intelligence Scale, Form L-M

	$\bar{X}$	S^2	Difference Between Means	t^+
Pretest Scores				
Experimental	91.31	63.42	-4.15	-1.03
Control	95.46	143.58		
Posttest Scores				
Experimental	98.77	71.67	3.24	.87
Control	95.53	108.08		
Gain Scores				
Experimental	7.46	83.25	7.39	2.12*
Control	.07	73.92		

*Significant at the .05 level
+One-tailed t test

The gain of the experimental group is especially encouraging since the program was of relatively short duration (12 weeks). Such results present evidence that training mothers to stimulate the intellectual development of their children at home can be beneficial to culturally disadvantaged children. Not only did the experimental subjects grow in intellectual skills, as could be expected from an increase in chronological age, but they also, on the average, increased their relative intellectual standing among like-aged peers.

These results suggest that mothers may be trained to help their children overcome the detrimental effects of past deprivation. Justified caution, however, prevents one from interpreting the results as a panacea for helping children to overcome the intellectually stunting effects of cultural deprivation. It remains to be seen whether children involved in a program of this type will maintain these gains over a period of time and whether their mothers will continue to use their newly-acquired skills in working with their children.

Linguistic Functioning

The experimental edition of the Illinois Test of Psycholinguistic Abilities (ITPA) was used to assess the linguistic functioning of these children. Specifically, the ITPA is made up of the following nine subtests:

1. The Auditory Decoding Test assesses how well the child understands spoken language.
2. The Visual Decoding Test measures how well a child can understand what he sees.
3. The Auditory-Vocal Association Test determines how well the child can relate elements of spoken language and respond vocally with the appropriate answer.
4. The Visual-Motor Association Test taps the child's ability to relate symbols presented through visual channels.

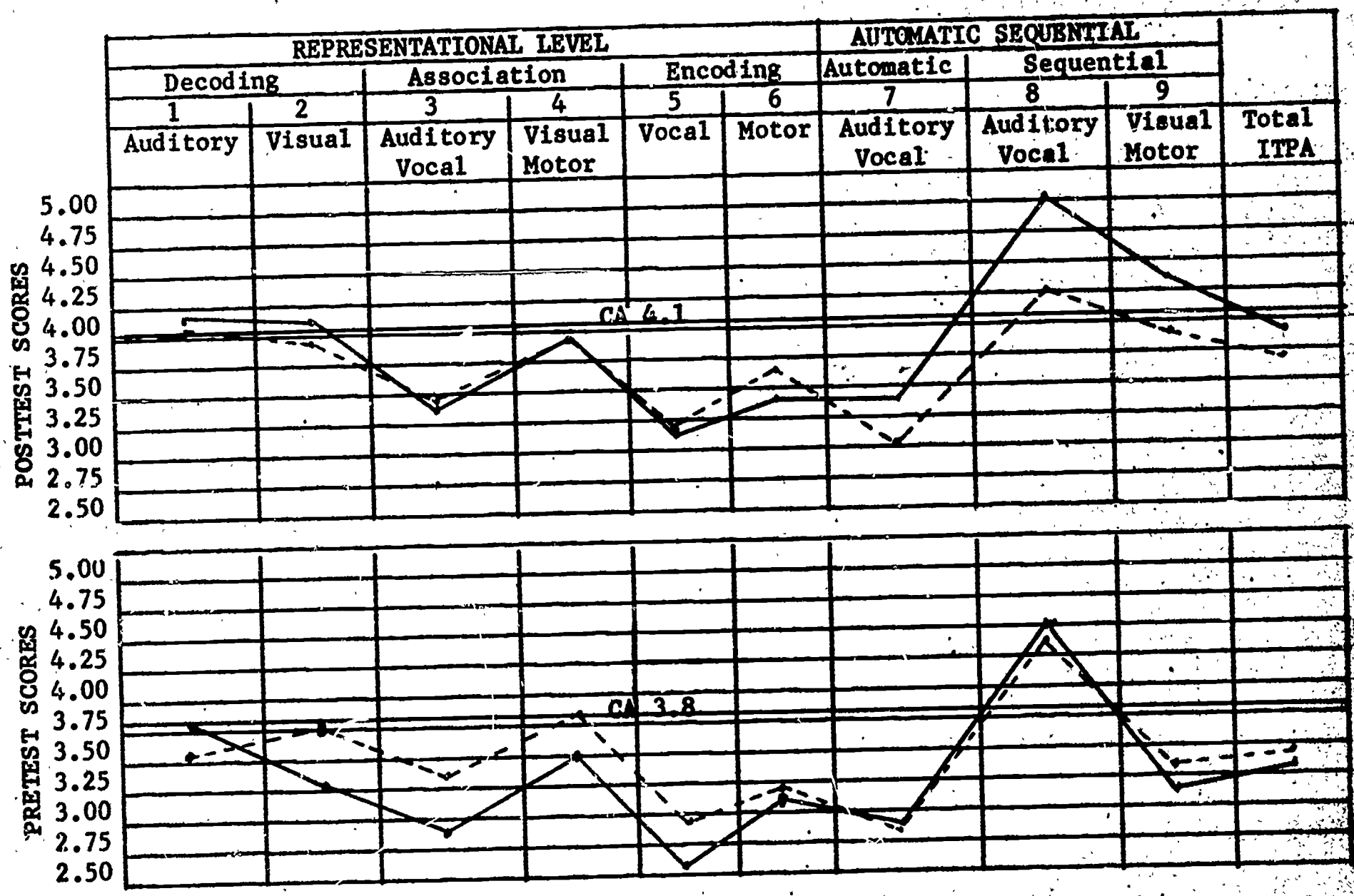
5. The Vocal Encoding Test determines how well the child can express himself vocally regarding objects which he sees and holds.
6. The Motor Encoding Test assesses how well the child can express himself with gestures or motorically.
7. The Auditory-Vocal Automatic Test measures how well the child has mastered the elementary grammatical and syntactical construction of language.
8. The Auditory-Vocal Sequential Test assesses the child's auditory memory.
9. The Visual-Motor Sequential Test measures the child's sequential visual memory.

A language age can be obtained for each of these subtests. In addition, the test yields a total language age which represents an overall assessment of the child's level of psycholinguistic functioning but cannot be construed as representing his proficiency in each of the nine subtests.

The second hypothesis of this study was that the experimental subjects would show significantly greater gains in linguistic functioning as measured by the experimental edition of the ITPA than would the children of mothers not involved in the program. Table III presents data which compare the pre- and posttest performances of the experimental and control groups. It can be noted that both groups fell below their initial

Table III.

Language Age Profile on ITPA Pre- and Posttest
Performances of the Experimental
And Comparison Groups



Exp.	4.16	4.15	3.35	3.90	3.20	3.42	3.36	5.05	4.30	3.90
Con.	4.09	3.88	3.42	3.90	3.22	3.67	3.00	4.26*	3.92	3.73
Exp.	3.73	3.28	2.82	3.50	2.57	3.19	2.87	4.50	3.20	3.32
Con.	3.54	3.70	3.32	3.80	2.92	3.22	2.82	4.32	3.30	3.47

3.28 / 3.70 +

2.82 / 3.32 *

Experimental = ———
Control = - - - - - - - - - -

\+ trend .10
* significant at .05 level

CA in all areas except the Auditory-Vocal Sequential subtest. The areas of greatest deficit were Vocal Encoding, Auditory-Vocal Automatic, Visual-Motor Sequential, Motor Encoding, and Auditory-Vocal Association. On those subtests both groups evidenced deficits of a magnitude greater than six months. The initial scores for both groups were comparable except on the Auditory-Vocal Association subtest where the control children scored significantly higher and on the Visual Decoding subtest where there was a trend in favor of the control subjects.

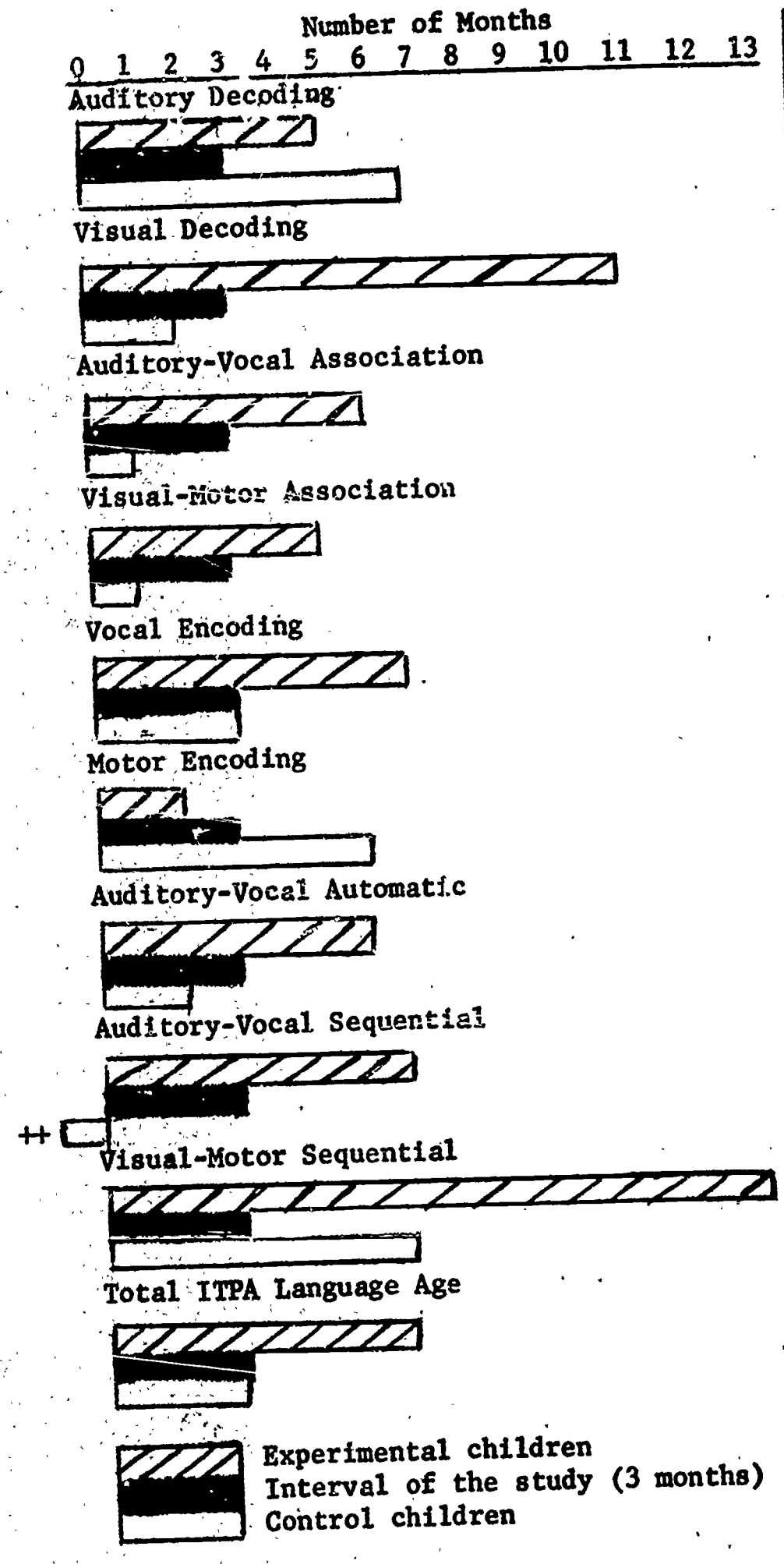
Although an analysis of posttest data reveals only one subtest where experimental subjects scored significantly higher (Auditory-Vocal Sequential), generally the experimental subjects reversed their position in relation to the control children. Initially the experimental subjects scored somewhat lower on six subtests than did the control children. At the time of post-testing, however, the performance of the experimental children equalled or surpassed that of the control children on eight subtests.

Initially the experimental subjects scored seven months below their CA expectancy of 3-10 on total language age. At the time of posttesting they had reduced this discrepancy by five months and scored only two months below their CA expectancy of 4-1. On the other hand, the control subjects initially scored three months below their CA expectancy of 3-9 on total language age. At the time of posttesting they had increased this discrepancy by one month, scoring four months below their CA expectancy of 4-0.

An analysis of gain scores reveals an even more encouraging picture. Table IV indicates that the mean gains of the experimental group were significantly superior to those of the control group on three subtests: Visual Decoding, Auditory-Vocal Association, and Auditory-Vocal Sequential. There was a trend in favor of the experimental group in Vocal Encoding and in total language age. In no instance were the mean gains of the control children

Table IV.

Gains on Subtests and Total Score of the ITPA



Group	$\bar{X}$	S^2	Difference Between Means	t**
Exp.	.42	.63	-.13	-.42
Cont.	.55	.61		
Exp.	.78	.62	.70	2.12*
Cont.	.18	.74		
Exp.	.53	.20	.43	1.87*
Cont.	.10	.45		
Exp.	.40	.79	.30	.94
Cont.	.10	.59		
Exp.	.63	.46	.33	1.32+
Cont.	.30	.34		
Exp.	.23	-.39	-.22	-.67
Cont.	.45	1.08		
Exp.	.50	.84	.32	.97
Cont.	.18	.63		
Exp.	.55	.49	.61	1.84*
Cont.	-.06	.91		
Exp.	1.10	.95	.48	1.07
Cont.	.62	1.67		
Exp.	.58	.32	.32	1.52+
Cont.	.26	.29		

+Significant at .10 level
*Significant beyond .05 level
++During the three-month interval, the control subjects regressed approximately one month in this area.
**One-tailed t test

significantly superior to those of the experimental subjects.

Since the interval between pre- and posttesting was three months, one might normally expect the subjects to increase their language age scores by three months. The experimental children, as can be noted in Table IV, exceeded their interval expectancy on eight of the nine subtests as well as on the total language age score. The control children, on the other hand, exceeded this expectancy on only three subtests. In only one instance the experimental subjects failed to progress in accordance with the interval expectancy, while the control children failed to reach this level on five subtests.

Implications

The findings of this study suggest that mothers of low educational and low income levels can learn to prepare inexpensive edustional materials and to acquire skills for using such materials to foster the intellectual and linguistic development of their children at home. Apparently the cognitive style of the low-income, low-educational level family can be altered to some extent. Contrary to popular opinion, these mothers are interested in acquiring improved methods of assisting their children in the development of school readiness. As a matter of fact, teachers reported that parents, relatives, siblings, and even neighbors sometimes assembled for the teachers' visits. Such interest might well have cumulative effects on others not directly involved in the training program.[2]

Four important factors seem to have contributed to the positive results of this program. First, mothers were paid for attending the meetings and were fully recognized as important members of the educational team. Second, as opposed to a lecture approach, the mothers were actively involved in developing materials to be used during the week with their children.

The training situation was not threatening and provided an opportunity for a positive relationship with school authority figures. Third, the teachers visited in homes, providing materials for mothers who had been absent, offering further teaching suggestions, and evaluating the appropriateness of the activities. Fourth, because the mothers had made many of the instructional materials and understood their use, they could approach the teaching of their children with confidence. They could readily observe the progress of their children and were immediately rewarded for their mutual efforts.

Subsequent studies with comparable groups of children and mothers might enable one to determine which factors contribute most significantly to positive results. For example, a group of mothers might be paid for attending a weekly meeting of a non-educational nature. Home visits without educationally oriented interactions would be scheduled. Another group of mothers might follow the design of the present study without being paid for attending the weekly meetings. Such procedures might help to determine the impact of non-educational incentives and rewards.

A combination of a parental training program and a preschool would seem highly desirable for disadvantaged children. However, when lack of adequate funds prohibits a preschool program, a parent training program is possible on a limited budget. Existing teacher personnel in a community can serve as part-time teachers while existing physical facilities can be made available in the evenings. If a short-term training program with mothers of culturally disadvantaged children can yield such promising results, one might anticipate that a program of longer duration could result in an even greater impact on the development of the children.

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