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ABSTRACT

The differential effects of the experimental revision of Level 1 of the Peabody Language Development Kits (PLDK) on the Illinois Test of Psycholinguistic Abilities (ITPA) profiles of disadvantaged first-grade children were studied. Contrasted with 203 control subjects were 529 experimental subjects who received a daily 30-minute oral language stimulation exercise from the PLDK throughout the school year. The study took place in schools located in a southern inner-city where over three-quarters of the pupils were black. The program was differentially effective, having its greatest effects on associative and expressive components of the ITPA. The greatest gains were on the subtest which measures the ability to express ideas in spoken words and on the subtest which measures the ability to reason with analogies. It was weakest in teaching receptive and automatic (nonmeaningful) aspects of language. The failure to improve the syntactical skills of the pupils suggests that the PLDK lessons need to be supplemented with grammatical exercises to correct a major oral language defect of disadvantaged children of the type studied in this investigation. (Author/TS)

Differential Effects on the ITPA Profile of the Experimental Version of Level #1 of the Peabody Language Development Kits with Disadvantaged First-Grade Children*

by

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One of the major efforts to develop programs designed to increase the oral language abilities of children has been the series of Peabody Language Development Kits. The lessons and materials comprising the experimental version of Level #1 of the series (Dunn & Smith, 1964) have been evaluated with a variety of subject populations. Formal research efforts have included studies of its effectiveness with the educable mentally retarded (Forgnone, 1966; Gibson, 1966; Dunn & Mueller, 1966; Dunn, Pochanart, & Bransky, 1967), the slow learner (Ensminger, 1966), the culturally disadvantaged (Carter, 1966; Dunn, Neville, Bailey, Pochanart, and Pfost, 1967; Bailey, 1966; Dunn & Mueller, 1966; Dunn & Pfost, 1967) and with the normal kindergarten child (Milligan, 1966; Ahlersmeyer & Dunn, 1967). In each of these investigations the Illinois Test of Psycholinguistic Abilities (ITPA, McCarthy & Kirk, 1961) has been included as a primary instrument for the assessment of linguistic abilities.

The PLDK was developed as a method of general oral language stimulation, as opposed to a means of stimulating specific language abilities. Therefore, most investigators have concerned themselves with measurement of overall language growth, as measured by the ITPA. However, several studies have investigated the relative effectiveness of this program in terms of the differential language skills represented by the ITPA subtests. Keehner (1966) found that a language development program based on the PLDK, but supplemented by additional activities,

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was equally effective in enhancing development in most of the areas measured by the ITPA. Mueller & Dunn (1966) found that the program was differentially effective in enhancing development among retarded children on the four ITPA subtests they utilized. The subjects tended to gain more on the Auditory-Vocal Association, and the Visual-Motor Sequencing subtests, than on the Auditory Decoding and the Auditory-Vocal Automatic subtests. Ensminger (1966), investigating the effectiveness of the PLDK with slow learning children who had school learning problems, also found that the program was differentially effective. His study suggests that increased language development tends to be reflected primarily on two ITPA subtests: Auditory-Vocal Association and Vocal Encoding.

The present study is based on data from an investigation (Dunn & Mueller, 1966) in which the language growth of culturally disadvantaged children was clearly enhanced by participation in a program utilizing the experimental version of Level #1 of the Peabody Language Development Kits.* In this investigation, the PLDK program was utilized in a total of 27 first-grade classes enrolling children primarily from slum neighborhoods, over three-quarters of whom were of the Negro race. The ITPA was administered to children in these classes and to pupils in 18 comparable classes not using PLDK. Pretests were given in August and September and posttests from late March through the end of May. The average inter-test interval was approximately 8 months. These test protocols were analyzed for differences in gains as measured by the nine subtests. Analysis was based on protocols of 529 subjects who took part in the PLDK training program and 203 control subjects. Group profiles of experimental and control subjects at time of pretest and posttest were examined.

Results

Mean language age scores for experimental and control groups at pretest and posttest, as well as gains, are reported in Table 1. These same data are presented graphically in Figure 1. (The types of subtests on the ITPA are described in Table 2.) It is apparent that, at pretest, the groups were essentially identical in their pattern of abilities, though the control group did tend to exhibit inferior performance on Motor Encoding and Auditory-Vocal Automatic. This same general pattern is replicated in the post-test profile of the control group. Over the inter-test interval of approximately eight months, the mean gains of the control group ranged from 7.50 months on Auditory-Vocal Sequencing to 15.80 months on Motor Encoding. This variability among gains on the various subtests did not materially change the pattern of scores.

In contrast to the controls, the PLDK lessons not only increased significantly the overall language age of the experimental group (see Dunn & Mueller, 1966), but it also changed their pattern of subtest scores. As will be seen in Table 1 and Figure 1, this was due primarily to the extra stimulation in two broad areas: (1) association, and (2) expression. The oral language stimulation program facilitated the ability of the children to deal with analogies (3), and

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* Revised versions of the kits are available from the American Guidance Service, Inc., Publishers' Building, Circle Pines, Minnesota, 55014.

Table 1

Mean Language Age Scores for Experimental and Control Groups on the Subtest of the Illinois Test of Psycholinguistic Abilities

Subtest	Group	Means (In Months) Pretest	Posttest	Gain	Difference
1. Auditory Decoding	Exp.	59.86	70.53	10.67	3.16
	Cont.	61.36	68.87	7.51	
2. Visual Decoding	Exp.	66.89	74.73	7.84	- .95
	Cont.	66.89	75.68	8.79	
3. Auditory-Vocal Assoc.	Exp.	58.71	78.53	19.82	7.72
	Cont.	58.27	70.37	12.10	
4. Visual-Motor Assoc.	Exp.	62.98	74.91	11.93	2.99
	Cont.	63.42	72.36	8.94	
5. Vocal Encoding	Exp.	58.42	79.40	20.98	10.85
	Cont.	58.88	69.01	10.13	
6. Motor Encoding	Exp.	59.25	74.26	15.01	- .87
	Cont.	54.83	70.71	15.88	
7. Auditory-Vocal Auto.	Exp.	54.77	62.55	7.78	-4.39
	Cont.	52.08	64.25	12.17	
8. Auditory-Vocal Seq.	Exp.	73.16	79.74	6.58	- .92
	Cont.	72.14	79.64	7.50	
9. Visual-Motor Seq.	Exp.	57.61	72.82	15.21	2.88
	Cont.	59.44	71.77	12.33	

Table 2

Types of Subtests in the Illinois Test of Psycholinguistic Abilities

Subtest Number and Name	Ability Measured and Item Example
A. Decoding (reception) 1. Auditory Decoding	Ability to understand the spoken word. Example: Do people sleep? Response is simply "yes" or "no".
2. Visual Decoding	Ability to classify pictures from memory. Example: Subject is shown a stimulus card such as a picture of a table which is then removed. His task is to find a picture of an object of the same classification from a group of four.
B. Association (relationships) 3. Auditory-Vocal Association	Ability to reason by analogies. Example: Soup is hot; ice cream is _____.
4. Visual-Motor Association	Ability to relate visual symbols in a meaningful way. Example: The subject selects from among four pictures the one which "goes with" a given stimulus picture, such as "sock" goes with "shoe".
C. Encoding (expression) 5. Vocal Encoding	Ability to express ideas in spoken words. Example: The subject is asked to describe a simple object such as a "ball".
6. Motor Encoding	Ability to express one's ideas in meaningful gestures. Example: The subject is shown a picture of a "violin" while the examiner asks: "Show me what you would do with this."
D. Automatic (grammar) 7. Auditory-Vocal Automatic	Ability to express future linguistic events from past experiences. Example: "Here is an apple; here are two _____."
E. Sequencial (memory) 8. Auditory-Vocal Sequencing	Ability to repeat correctly a sequence of symbols. Example: Subject is asked to repeat a set of digits such as 8-3-2-5-1.
9. Visual-Motor Sequencing	Ability to reproduce a sequence of visual stimuli from memory. Example: The subject observes the order of a series of pictures or geometric forms for five seconds, the pictures are then mixed, and the subject is asked to re-arrange them back in their original order.

to define words accurately (5). Smaller but substantial gains were made by the experimental subjects in understanding the spoken word (1), in seeing visual relationships (4), and in the ability to reproduce a sequence of pictures from memory (9). The lessons did little to improve classifying pictures from memory (2), expressing ideas by gestures (6), and repeating a series of digits from memory (8). On one test especially, grammatical-syntactical (Auditory-Vocal Automatic) (7), the control groups gained much more than did the experimental group.

Discussion

First, it is important to note that the findings of this investigation, in terms of initial patterns of linguistic abilities, are consistent with previous work in this area. Gray and Klaus (1965) found a highly similar pattern of abilities in their investigations of language abilities of young, disadvantaged Negro children. The primary features of this typical profile are consistently better performances on visual and motor than auditory and vocal tests. Too, these children score low on the encoding and automatic tests, and have a relatively adequate performance in Auditory-Vocal Sequencing.

Second, the remarkable similarity of the control group profiles on pre- and posttesting suggests that the regular language arts program, taught by the regular first grade teacher, in a regular self-contained classroom, is moving the children forward rather evenly in all areas. The data reported here suggest that patterns of language skills of culturally disadvantaged children do not change appreciably during their first year in school. The differences among gains exhibited by the control group on the various subtests were relatively small with the exception of particularly good gains on the Motor Encoding subtests. Examination of the profiles suggests that this may have been a result of spuriously low scores on the pretest. Though the pattern of language abilities of the control group remained essentially unchanged, school experience did appear to enhance overall language growth. With the mean I Q of the group approximately 85 at the outset of the experiment, one could predict (in terms of M A growth) about seven months of language growth in the experimental period; instead, the average gain in language age was 10 1/2 months. Since the home environments from which these subjects come were largely quite deprived, it was not surprising that the regular first grade program was stimulating linguistically for young children from the slums.

Third, the superior performance of experimental subjects who had experience with the PLDK was due primarily to the extremely high gains on the Vocal Encoding and Auditory-Vocal Association subtests. This result is inconsistent with the stated purposes of the PLDK which is to teach to all language skills. However, it is consistent with trends observed previously by Ensminger (1966). At least three hypotheses can be advanced to explain these findings: (1) inequalities in the educability of the children on the various linguistic skills measured by the ITPA; (2) unequal or inappropriate emphases on the various language functions in the PLDK program; or (3) differential sensitivities and reliabilities of the ITPA subtests. Since the PLDK was used in a relatively untested experimental form in this project, the possibility of unequal or insufficient emphases in the training program seems most promising. However, it remains for further research to test these hypotheses.

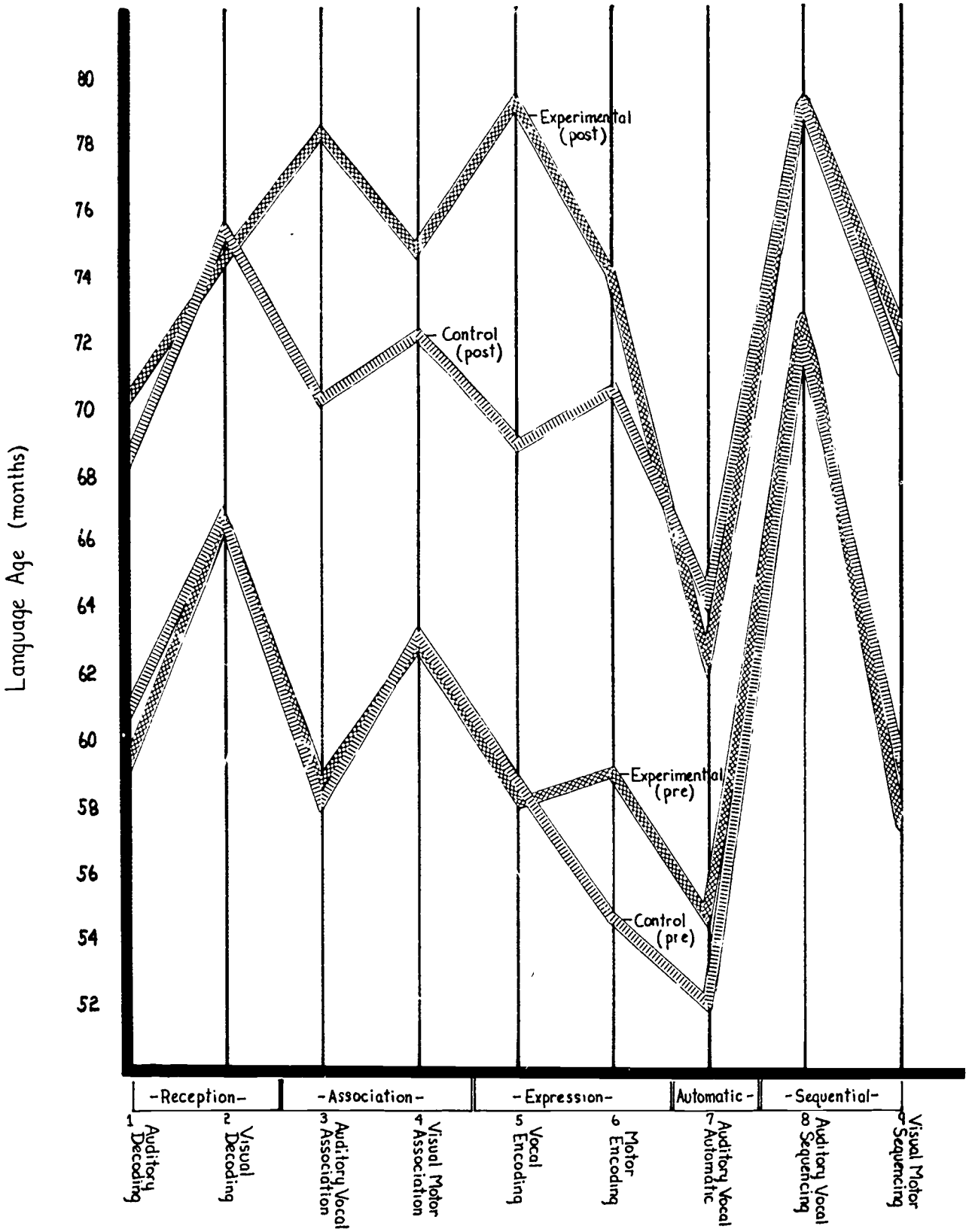

Figure 1. Mean Language Age Scores for Experimental and Control Groups on the Subtests of the Illinois Test of Psycholinguistic Abilities

The differential effectiveness of the PLDK lessons need not be viewed negatively. Within the broad purpose of stimulating overall language, the activities were designed to emphasize training in thinking and expressing. They did just that. The greatest gains were in the areas of association and expression, and not in the reception or the automatic (grammar) and sequencing (memory) areas (see Figure 1). The lessons were to provide a "talking time" for the pupils. The largest of all gains in Vocal Encoding suggests they carried out their function nicely. The gains in Auditory-Vocal Association, and Visual-Motor Association which measure the ability to see relationships bear a significantly higher relationship to academic ability than other ITPA subtests (Mueller, 1965), and the ultimate goal of the language development program is improvement of academic performance.

Clearly what is needed is a supplementary set of exercises to the PLDK which emphasize Auditory-Vocal Automatic. Disadvantaged children are especially weak in the grammatical and syntactical aspects of standard English. The PLDK in its present form does little to correct this. Thus, other elements need to be added to the first-grade curriculum to concentrate on correcting this deficiency.

Summary

The differential effects were studied of the experimental revision of Level #1 of the Peabody Language Development Kits on the ITPA profiles of disadvantaged first-grade children. Contrasted with 203 control subjects were 529 experimental subjects who received a daily 30-minute oral language stimulation exercise from the PLDK for each day in the school year. The pre- and posttests were actually given eight months apart. The study took place in schools located in a Southern inner city where over three quarters of the pupils were of the Negro race.

The program was differentially effective, having its greatest effects on associative and expressive components of the ITPA. The greatest gains were on the Vocal Encoding subtest (which measures the ability to express ideas in spoken words) and on the Auditory-Vocal Association subtest (which measures the ability to reason with analogies). It was weakest in teaching receptive and automatic (non-meaningful) aspects of language. The failure to improve the syntactical skills of the pupils suggests that the PLDK lessons need to be supplemented with grammatical exercises to correct a major oral language defect of disadvantaged children, the type studied in this investigation.

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