

ED 028 845

By-Adkins, Dorothy C.; And Others

Development of a Preschool Language-Oriented Curriculum With a Structured Parent Education Program. Final Report.

Hawaii Univ., Honolulu. Educational Research and Development Center.; Hawaii Univ., Honolulu. Head Start Evaluation and Research Center.

Spons Agency-Office of Economic Opportunity, Washington, D.C.

Report No-OEO-4121

Pub Date [68]

Note-34p.

EDRS Price MF-\$0.25 HC-\$1.80

Descriptors-Language Development, Language Instruction, *Language Programs, *Parent Education, Parent Teacher Cooperation, Parent Workshops, Preschool Children, *Preschool Programs, Test Interpretation, Verbal Ability, Verbal Communication, Video Tape Recordings

Identifiers-*Head Start, Illinois Test of Psycholinguistic Abilities, ITPA, Peabody Picture Vocabulary Test, PPVT, School Readiness Tasks

The objectives of this project were to test (1) a structured language-oriented curriculum, used for an academic year in Hawaiian Head Start classes, and (2) a parent education program. Teachers in eight experimental classes used semistructured language-strengthening activities along with structured lessons and were guided by supervisors. Eight control classes used other methods of language instruction. Audio and video tapes stimulated periodic teacher discussions, which led to continual revisions of the program. The parent program taught parents to work as aides through staff-parent meetings. The Illinois Test of Psycholinguistic Abilities, the Peabody Picture Vocabulary Test, and the School Readiness Tasks were used as pretests and posttests. Although the test results did not show impressive relationships, the enthusiastic reports by teachers and parents regarding the increased verbal ability of the children indicated a lack of appropriate instruments to measure verbal communication skills. A curriculum outline is included. (JS)

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE
PERSON OR ORGANIZATION ORIGINATOR. POINTS OF VIEW OR OPINIONS
STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION
POSITION OR POLICY.

University of Hawaii
Head Start Evaluation and Research Center
Dorothy C. Adkins, Director

Final Report on

Development of a Preschool Language-Oriented Curriculum
with a Structured Parent Education Program

Dorothy C. Adkins and Doris C. Crowell, Co-Investigators
Phyllis Loveless, Curriculum Consultant
Karen Kelly, Curriculum Consultant
Marion Dunning, Parent Education Consultant
Mary Noyes, Parent Education Consultant

The research reported herein was performed pursuant to a
contract with the Office of Economic Opportunity, Executive
Office of the President, Washington, D. C. 20506. The
opinions expressed herein are those of the authors and should
not be construed as representing the opinions or policy of
any agency of the United States Government.

Contract No. OEO 4121

Education Research and Development Center
David G. Ryans, Director
College of Education
University of Hawaii
Honolulu, Hawaii

ED028845

PS001007

This project was conducted with the cooperation of the following teachers of experimental language classes:

Elizabeth Crooker, University of Hawaii Preschool
 Karen Kelly, University of Hawaii Preschool
 Kathleen Linn, Palolo Community Preschool
 Rodger Brooks, Palolo Community Preschool
 Leilani Nishimura, Kamehameha Housing Head Start Center
 Carol Kondo, Pope Elementary School
 Hilda Cobb, Waimanalo Elementary School
 Lillian Lau, Kaiulani Elementary School

The teachers of comparison classes were:

Maile Bartolome, Pearl City Elementary School
 Vivian Lai, Pearl City Elementary School
 Carol Hochfelson, Palama Community Preschool
 Fumiko Inouye, Harris Memorial Methodist Church Preschool
 Linda Ann Mulligan, Harris Memorial Methodist Church Preschool
 Miriam Ellison, Aiea Elementary School
 Janet Okuna, Aiea Elementary School
 Lianne Makahi, Hauula Elementary School
 Arleen Hee, Hauula Elementary School

The following members of the Head Start Evaluation and Research Center contributed to collection and analysis of data and to preparation of the final report: Fay Agena, Christina Anderson, Susan Arkoff, Betty Donahoe, Gail Fiel, Elizabeth Garrigus, Susan Kantowitz, Virginia Lerner, Christine Masters, Mildred Miyasato, Ann Pavelko, Yaeko Santoki, Diane Selser, Laura Shiro, Ruth Steegmann, and Louise Wohl.

The University of Hawaii Preschool Language Curriculum (UHPLC), which is designed to attack the linguistic and cognitive deficiencies of children from low income families in Hawaii, was developed in 1966-67. It included planned daily lessons influenced by the language programs of Carl Bereiter and Seigfried Engelmann, Teaching Disadvantaged Children in the Preschool (Prentice-Hall, 1966). These programs have been revised to teach the basic syntactic patterns as well as words and phrases that occur with high frequency in any standard dialect of English. The results of this phase of the study appear in the final report of the University of Hawaii Head Start Evaluation & Research Center for 1966-67.

During the summer of 1967 a group of teachers was trained in the use of the curriculum. Teachers from this group were selected to conduct experimental language classes in 1967-68, under OEO Contract No. 4219.

Objectives

The major objective of the Preschool Language Project in 1967-68 was to test a structured language-oriented curriculum for a full academic year in preschool classes for economically deprived children in Hawaii. The curriculum is designed to foster the development of cognitive skills using language as the vehicle. It teaches the child to use language as a tool for functional communication, thinking, and problem-solving, and in general provides him with a framework for categorizing his world symbolically.

The second major goal of this project was to prepare and test a new parent education program. It was designed not only to translate the curriculum of the child's classroom for the mother but also to encourage her to assume a teaching role with her own child in order to strengthen the concepts that the classroom curriculum attempts to convey. The relation between parents and school and the definition of a meaningful role for the parent within the school's operation were concerns in the development of this program.

Procedures

The over-all project for 1967-68 included 16 Head Start classrooms on Oahu. Eight experimental classrooms used the UHPLC, while eight others followed a variety of other nursery school programs and served as comparison groups. Teachers in the latter groups were equated with the experimental curriculum teachers on educational qualifications and amount of appropriate experience. Procedures for observing all of the classrooms and recording the content of the curricula were developed and applied. See Appendix A.

The experimental teachers met on a regular basis to discuss problems of curriculum content and techniques for achieving transfer of content presented in the programmed lessons to the unstructured parts of the school day. Feedback from the experimental teachers on the practicability of the materials provided a basis for continual revision of the manual.

Activities that the teachers found especially useful in conjunction with the language curriculum were incorporated in the manual. Revisions and additions were distributed to all experimental teachers in order to keep the content of the classes as comparable as possible. The curriculum was mimeographed and assembled as a manual that contains a carefully sequenced series of grammatical structures and is presented to the children in small increments. (See Appendix B, Outline of Sequence.) Mastery of the material is reinforced through operant procedures on a variable schedule. Pattern practice is used as the child's repertoire of syntactic structures is growing. Periodic questioning and dialogue tasks are included to help the children internalize the patterns as well as to test their understanding of them.

Semi-structured, language-supporting activities, which focus on extending the child's vocabulary and on strengthening the concepts presented in the structured lessons, have been prepared and integrated into the curriculum manual. Methods were also explored for introducing into the curriculum the phonemes of standard English that do not occur in the sub-standard dialect characteristic of the low-income population in Hawaii. Supplementary language-based, sensori-motor activities constitute another section of the manual. These are designed to parallel the language curriculum and to add more physical activities to the daily schedule.

One Center staff member supervised the experimental teachers, offered assistance on problems related to the use of the curriculum, and incorporated their recommendations into the revision. She also coordinated the work of the teachers so that the programs offered in each of the eight classes were as nearly comparable as possible.

During the first part of the school year, the supervisor made regular biweekly visits to each classroom, distributed materials, evaluated the lessons, and discussed problems with each teacher. Periodic audio-tape samples were made and analyzed. Lesson plans were reviewed, and an effort was made to coordinate both the rate at which the content was taught and the reinforcement procedure.

Packets of materials pertinent to language-strengthening activities were assembled and distributed for use during the language hour. Daily records of the activities that were actually adopted were made. Evaluations of these activities by teacher aides were reviewed and later used in the compilation of a final set of activities to accompany the language program.

Six series of prescribed physical activities were also used and evaluated. Generally, these were not so widely effective nor so consistently used as the language-strengthening activities. In several centers the physical activities were supervised by a volunteer mother; therefore, the procedures were highly variable. Each of these three components--the language lesson, the language-strengthening activities, and the physical activities--was presented daily to all children. The plan was facilitated by dividing each class into three subgroups and having the teacher present

the structured language lessons while the aide and a volunteer mother each presented one of the other coordinated activities.

Starting with the second semester, the supervisor scheduled regular bi-weekly taping sessions with each teacher. Each tape was analyzed and returned for review by the teacher the following week, with a commentary on techniques used and an analysis of the children's responses. Any further discussion concerning a presentation was held at this time, so that weekly contact with each teacher was maintained. Particular problems that became apparent during the evaluation of the lessons and review of the lesson plans were discussed at regular monthly meetings of the group. Also, the more successful techniques of the teachers were noted.

Starting in May a series of video-taping sessions began, and eventually all eight teachers with groups of children were taped in an actual language session. The supervisor coordinated this activity. These tapes were made into three films for demonstrating the language program and for training teachers who will participate in future projects.

One of the most vital functions of the supervisor was to lend continuous support to the teachers, who found the curriculum challenging but very demanding. Regular contact with consistent encouragement seemed to be a factor in keeping the program effective throughout the year.

At the beginning of the school year, the Parent Education Program was introduced in half of the experimental language classes and in half of the comparison classes. It was based on the assumption that the parents' teaching style influences the child's cognitive development. For many complex reasons, poor parents fail to perceive themselves as teachers of their children as do the majority of middle-class parents. This failure is thought to severely retard the development of linguistic and cognitive skills.

Intensive contact between parent education staff and parents was carried out during the early part of the school year in response to the need of the teachers to have parents trained to work in the classroom as volunteers. An intensive workshop met for one and one-half hours on four consecutive days for each of the eight classes in five different Centers. Emphasis in the meetings planned by the staff was placed on training the parents to be helpful in supervising classroom activities, translating the classroom curriculum to the parents, and developing positive attitudes toward school. In later, less frequent sessions the parents were encouraged to assume a teaching role in their relations with their own children. Instructional materials that were used in the classroom were presented and interpreted to the parents in such a way that they could be adopted for use at home. A variety of films and slides was presented and discussed. Another technique frequently applied was role-playing.

Parent attendance dropped appreciably in all the Centers after the well-attended orientation sessions. Some parents forgot the semi-monthly meeting dates or were forced to miss sessions because of family illness or clinic

PS 001902

appointments. Lacking satisfactory group cohesiveness, the staff designed three different experimental parent programs in the five Head Start Centers in an attempt to find one that would attract parents and sustain their interest:

(1) At the beginning of the spring semester the team held six intensive sessions over a two-week period at three Head Start Centers, and attendance increased as predicted. Several factors contributed to this improvement: specifically, daily meetings that sparked a feeling of momentum and accomplishment; concrete reinforcers (one piece of stainless steel flatware per parent per session) and individualized Certificates of Participation for attendance at five of the six concentrated workshop sessions.

(2) Another preschool parent group was divided into three smaller groups; two groups met in homes of the parents and the third group continued to meet at the Head Start Center. One staff member met with each group. The home meetings were not characterized by greater attendance in general.

(3) Three mothers from another group were trained to act as interpreters of content presented to them and then to inform other parents. The hope that attendance would be increased by absence of staff members did not materialize.

Another deviation from the original plan evolved in the manner in which the meetings were conducted. It was easier to set the stage for dialogue with two staff members working together than in the more traditional situation with one leader per group. Therefore, following the initial introduction of all three members of the staff to each group to permit more flexible scheduling, two participated at all regular meetings.

Subjective evaluation reveals that some techniques were notably more effective than others, namely, team-teaching, role-playing, and using concrete reinforcers.

Team-teaching (having two parent educators lead discussions) established a pattern of dialogue that encouraged parents to join in rather than to passively sit and listen to a lecture. Role-playing produced an informal, active learning situation. The staff never took the role of a teacher (expert), but instead took the role of a child learning, a child with a problem, a mother attempting to teach, or a mother struggling with a problem. When a staff member played the role of a mother teaching her child, she didn't attempt to do a perfect demonstration. She wanted parents to look critically at the demonstration and evaluate it, and to perceive an atmosphere for learning that not only permitted mistakes but expected them. Concrete reinforcers, such as food and a Certificate of Participation, were the most effective of the reinforcers used.

On the basis of this year's experience, the staff recommends that parent education workers should visit the classrooms occasionally and become acquainted with each community. Specific suggestions include: (1) taking pictures of each parent and child immediately to speed up the identification process; (2) devising an instrument to ascertain what are the most effective reinforcers for parents; (3) devising an instrument to pinpoint parents' attitudes regarding relevant aspects of the program.

A summary of the year's parent program follows:

Instrumentation

All children attending all 16 classes were evaluated early in the school year and again in May, 1968. The following battery was used to assess language facility: Illinois Test of Psycholinguistic Abilities (ITPA); Peabody Picture Vocabulary Test (PPVT); and School Readiness Tasks (SRT)*.

The ITPA purports to measure the ability to use language, the ability to understand language, and the ability to associate or relate linguistic symbols. Various subtests give separate measures of comprehension of both visual and auditory stimuli, of expression or verbal production, and of the ability to produce automatic linguistic sequences or frequently used syntactic structures.

The PPVT is a measure of receptive vocabulary in which the child can indicate by gesture the appropriate picture associated with the stimulus word presented by the examiner. This gives an indication of his ability to make the proper association between auditory symbols and pictures of familiar objects or situations apart from his ability to vocalize the association.

Relevant portions of the SRT were selected, and scoring procedures were adapted to provide a tentative measure of relative achievement of children who were exposed to the UHPLC as well as those from comparison classes who were not. The instrument was originally intended, however, as a diagnostic test to suggest the appropriate placement of children in a structured language program. Quantitative findings were of secondary interest in the construction of the instrument.

While it was hypothesized that the effect of the parent program would be reflected in the difference between the pre- and post-test scores of the children, few adequate standardized scales to measure changes in the attitudes and knowledge of the parents themselves are available. An instrument was constructed that included items relating to parent attitudes and information about child development. An experimental form was used for pre- and post-measures. See Appendix C.

*Experimental Edition by Barbara Bateman used with permission.

Results and discussion

Various analyses were applied to the data resulting from application of the test battery. A small number of children in each of the classes were untestable in the early part of the year in spite of repeated efforts on the part of the examiners. Most of these children could be tested in May, however. In the experimental group there were 22 untestable children at the beginning of the year, 16 of whom were testable in May. In the control classes, of 20 children who were untestable during the pre-testing, 16 were testable on the post-tests. While this definite shift in testability indicates qualitative improvement in the behavior of these children in both groups, their test results, of course, could not be included in the statistical analyses.

The pre-test and post-test scores for the testable children were subjected to an analysis of covariance, with the pre-test scores covaried out, in order to evaluate the effects of the experimental treatments. The first analysis was done on 16 classes for the PPVT and SRT* data and on 14 classes for the ITPA** data in order to reveal individual class differences. Additional analyses were conducted to compare all language classes versus all other classes, and also to compare children of parents who participated in the parent program and children of parents who did not.

Analysis of the PPVT data revealed no significant differences of means either among the 16 classes or between the experimental and comparison groups of classes (Tables I and II).

The need for an achievement test designed to parallel the curriculum more closely than the SRT became apparent as the project progressed. Dr. Bateman's SRT was designed to accompany the Bereiter-Engelmann language program and could not have been expected to take into account the particular characteristics of the UHPLC. Only 16 items of the instrument were relevant to the experimental treatment, leaving little room for variation. Secondly, observation of the comparison classes throughout the year revealed that several of the teachers of these classes were specifically concerned about the language deficits of the children and were emphasizing language training in their programs. While they did not have a systematic programmed curriculum to present, they were consistent in giving the children verbal material on a regular basis. When the adjusted mean SRT scores of the 16 classes were ranked from high to low, the highest six were means for

* Experimental edition by Barbara Bateman, used with permission.

** ITPA results for one experimental and one comparison class were not included because the examiner involved reported scores substantially higher than did other examiners, not only on the ITPA but also on other tests administered in connection with the Center's over-all evaluation and research program. Subjects whom this examiner tested have been discarded throughout the Center's studies.

experimental language classes. Ranks 7, 8, and 9 were for comparison classes in which language training was also emphasized.

In spite of these limitations, the adjusted mean score on the SRT for the experimental group was significantly higher than the adjusted mean of the comparison group at beyond the .01 level (Tables I and II).

TABLE I

Adjusted Means for PPVT and SRT Data
Experimental Group (1) and Comparison Group (2)

	<u>PPVT</u>	<u>SRT*</u>
1	86.93	21.96
2	89.75	20.62

$p \leq .01$

TABLE II

Analysis of Covariance for PPVT and SRT Data
for Experimental Language Group and Comparison Group

<u>Test</u>	<u>Source</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>
PPVT	Treatment (between)	1.0000	1	302.4570	
	Error (within)	33702.0000	157	158.5838	
	Treatment + Error	33703.0000	158		1.907
SRT	Treatment (between)	521.7500	1	84.8499	
	Error (within)	5432.8750	204	14.0280	
	Treatment + Error	5954.6250	205		6.049*

* $p \leq .01$

Results relating to the parent programs were evaluated both by grouping the children according to the classroom curriculum, i.e., whether language was presented or not, and whether or not a parent education program was available (Table III).

Table III

PPVT Adjusted Means for Groups with Parent Education
Programs and Groups Without

1. Language classes with parent programs	87.7
2. Language classes without parent programs	86.2
3. Comparison classes with parent programs	89.8
4. Comparison classes without parent programs	89.7

Since attendance at the parent meetings was variable, a second grouping of children was formed, based on those whose parents participated in more than one-third of the total number of meetings held and those who attended less than one-third of the meetings. Because of limited attendance in several of the Centers, the number of scores in the group whose parents participated is very small.

Vocabulary development appeared to be the area in which parents could do the most to aid their children. The parents had been most successful in constructing for home use games and activities that required labeling; hence the greatest gains were anticipated in the test scores which reflected increased vocabulary. While trends in this direction were evident, the scores are not significantly different (Table IV).

Table IV

Adjusted Means for Children Whose Parents Participated in Parent Programs (1) and Children Whose Parents Did Not Participate (2)

	<u>N</u>	<u>PPVT</u>	<u>N</u>	<u>SRT</u>	<u>N</u>	<u>ITPA</u>
1.	20	91.97	28	22.75	21	52.83
2.	40	88.04	47	21.60	44	53.63

Analysis of covariance was applied to scores from each test for the children of parents who participated in more than one-third of the parent education meetings and children of parents who participated in less than one-third of the sessions. No significant differences between the adjusted means of these two groups were obtained on any of the test data collected.

The pre- and post-scores from the parent questionnaires were also grouped according to amount of participation at the parent meetings. The adjusted mean score of parents who attended more than one-third of the sessions was significantly greater at the .01 level than the mean score of parents who attended less than one-third of the sessions (Tables V and VI).

Table V

Adjusted Means for Parent Questionnaire Data of Parents Who Participated (1) vs. Parents Who Did Not (2)

1.	12.46
2.	10.28
F = 9.980*	

*p = .01

Table VI

Analysis of Covariance for Parent Questionnaire Data
of Parents Who Participated (1) vs. Parents Who Did Not (2)

<u>Source</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>
Treatment (between)	47.2148	1	36.9785	
Error (within)	132.3164	31	3.7054	
Treatment plus Error	179.5312	32		9.980*

*p = .01

These results suggest that exposure to the parent education program exerted some influence toward improving attitudes of the parents toward school and increased the information they had regarding child development and nursery school procedures.

Analysis of covariance was applied to the ITPA scores for 14 classes on both the total language age scores and the scores on individual subtests. This analysis was done in order to examine the relative position of each class in relation to the kind of curriculum which was presented. No significant differences were found for total scores; however, significant F ratios at the .01 level were found on subtests 2, 3, 6, and 9. While the higher scoring classes were predominantly from the experimental group, the comparison classes that also emphasized language tended to score high. Only the Auditory-Vocal Association subtest, which tests the child's ability to comprehend verbal analogies and produce the appropriate missing words, showed a significant difference at the .01 level when all of the language classes were compared to all of the comparison classes. This subtest is a measure of comprehension of both lexical and syntactic structures as well as a controlled vocabulary test, and as such should be closely related to academic success.

The enthusiastic reports during the year of both school personnel and parents regarding the increased verbal ability of the children, especially their improved comprehension and improved fluency in the use of the primary standard English dialect, highlighted the lack of really appropriate instrumentation to measure functional verbal communication skills. On a follow-up questionnaire to the teachers who used the curriculum, all but one replied that they would use it again, and the teacher who would not objected to the demands of using it experimentally with inadequate staff. All teachers but one (a different teacher in most cases) reported improved vocabulary and articulation, more frequent use of complete sentences and questions, and improved comprehension of verbal material. They reported unanimously that their children developed the ability to monitor their own speech and correct themselves spontaneously.

Table VII

ITPA Adjusted Means for 14 Groups: Total and Subtests

	Total	Subtests									
		1	2*	3*	4	5	6*	7	8	9*	
Experimental Groups	1	49.10	53.60	67.60	49.78	60.65	57.22	52.71	41.25	51.18	50.83
	2	54.87	51.75	54.63	58.72	64.71	46.24	60.62	49.55	64.72	65.36
	3	51.20	51.80	48.32	55.43	62.78	49.80	45.30	45.80	59.85	56.34
	4	54.44	64.35	68.27	56.35	55.78	52.71	38.48	36.19	63.99	58.19
	5	52.12	66.72	61.10	65.81	49.34	50.93	52.84	39.39	62.05	56.20
	6	55.48	55.18	57.00	52.99	61.95	53.95	47.92	35.58	63.09	57.91
	7	52.66	59.97	49.66	46.81	70.19	64.62	45.86	36.22	58.95	54.74
Comparison Groups	8	53.35	52.25	52.80	56.78	61.32	48.45	56.77	41.36	63.76	61.49
	9	52.73	53.90	72.99	57.71	62.90	42.81	46.86	31.43	59.75	51.23
	10	53.39	60.96	50.52	54.83	56.39	42.10	38.06	41.70	61.66	54.60
	11	55.51	61.78	62.89	52.54	54.69	57.56	59.77	37.54	63.77	56.54
	12	53.12	58.71	59.95	51.85	58.06	56.24	44.33	49.71	58.21	49.28
	13	51.15	58.39	55.96	51.38	57.46	49.10	51.42	41.60	65.91	60.64
	14	50.30	51.90	51.68	43.34	53.99	56.13	50.35	32.16	60.06	55.45

* $p \leq .01$

Table VIII

ITPA Adjusted Means for 2 Groups: Total and Subtests

Total	Subtests								
	1	2	3*	4	5	6	7	8	9
52.95	57.59	58.37	56.24	59.60	52.51	48.80	40.60	61.24	57.75
52.82	56.77	57.51	52.06	57.62	50.87	51.05	37.66	62.20	56.85

* $p \leq .01$

Table IX
Analysis of Covariance for ITPA Data for 2 Groups

<u>Test</u>	<u>Source</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>
ITPA Total	Treatment (between)	235.3750	1	0.6367	0.021
	Error (within)	10878.3125	162	30.9466	
	Treatment plus Error	11113.6875	163		
ITPA Area 1	Treatment (between)	55.5625	1	20.4766	0.111
	Error (within)	23496.3750	123	184.6440	
	Treatment plus Error	23551.9375	124		
ITPA Area 2	Treatment (between)	14.9375	1	24.9336	0.110
	Error (within)	32416.1250	134	226.5808	
	Treatment plus Error	32431.0625	135		
ITPA Area 3	Treatment (between)	1428.3125	1	640.5078	6.762*
	Error (within)	22699.4375	148	94.7246	
	Treatment plus Error	24127.7500	149		
ITPA Area 4	Treatment (between)	281.3750	1	132.0742	0.468
	Error (within)	40698.8750	134	281.9233	
	Treatment plus Error	40980.2500	135		
ITPA Area 5	Treatment (between)	276.8750	1	104.4727	0.464
	Error (within)	37222.1250	156	225.3477	
	Treatment plus Error	37499.0000	157		
ITPA Area 6	Treatment (between)	310.8750	1	163.4297	1.078
	Error (within)	20384.7500	130	151.5783	
	Treatment plus Error	20695.6250	131		
ITPA Area 7	Treatment (between)	24.2500	1	143.7813	1.232
	Error (within)	12197.3125	74	116.7247	
	Treatment plus Error	12221.5625	75		
ITPA Area 8	Treatment (between)	125.1875	1	38.0820	0.350
	Error (within)	32452.3750	167	108.9424	
	Treatment plus Error	32577.5625	168		
ITPA Area 9	Treatment (between)	70.6875	1	29.7187	0.309
	Error (within)	15245.5000	148	96.2604	
	Treatment plus Error	15316.1875	149		

* $p \leq .01$

The notable differences in the children's spontaneous use of language strongly indicate the need for developing a technique to measure change in this variable. Preliminary exploration of the use of taped samples of children's speech and application of various types of linguistic analyses to these samples has begun and promises to result in a useful criterion measure for future research.

Among the data collected, the Vocal Encoding Subtest of the ITPA, which the examiners had recorded verbatim, offered samples of the verbalizations of each child in a standardized situation. Since these data more nearly reflected the observed effect of the curriculum on children's verbal behavior than did the data from other tests or subtests, several measures based on this subtest were considered. The number of words produced by each child on this subtest was tabulated. On the post-test the children in the experimental language classes produced a mean of 42.6 words, while the children from the comparison classes produced a mean of 25.7 words. The difference was significant at better than the .001 level. Differences on pre-test scores between experimental and comparison classes were not significant. This procedure, however, was exploratory and did not give assurance that the difference in the net change between the two groups would be significant (McNemar, Quinn, Psychological Statistics, 3rd Ed., New York: John Wiley & Sons, p. 87). Accordingly, a correlated t-test evaluating net change between pre-test and post-test word counts for the experimental and control groups was applied, using the following formula:

$$t = \frac{D_E - D_C}{\sqrt{s^2_{D_E} + s^2_{D_C}}}$$

where D_E and D_C refer to the differences in means for the experimental and control groups, respectively, and $s^2_{D_E}$ and $s^2_{D_C}$ are the squares of the standard errors of the differences in means for the experimental and control groups, respectively.

The difference in the net change between the two groups clearly was statistically significant in favor of the experimental group. The data are summarized in Table X.

Table X

Mean Number of Words and t-Test for Vocal Encoding Subtest

	<u>Pre-test</u>	<u>Post-test</u>
<u>Experimental</u>	27.0	48.5
<u>Control</u>	26.1	25.9

$$t = 3.11$$

$$p \leq .01$$

It was also observed that the children in the experimental classes used sentences or longer phrases in responding to the objects presented in the Vocal Encoding Subtest. Since pattern practice of complete sentences was emphasized and children were encouraged to respond using more elaborative phrases in the language program, it seemed appropriate to compute the mean word length of the utterances each child gave in response to this subtest. No difference was apparent between the two groups on the pre-test. The typical response in both groups was a one- or two-word utterance consisting of an article plus a noun. The same analysis to evaluate net change was applied to this measure as to total number of words and again the net change was statistically significant in favor of the experimental group (Table XI).

Table XI

Mean Length of Utterance in Number of Words and t-Test

	<u>Pre-test</u>	<u>Post-test</u>
<u>Experimental</u>	2.41	3.62
<u>Control</u>	1.95	2.20

t = 4.2

p < .001

A major implication for future research appears to be in the area of improved instrumentation for dependent variables. Measures which specifically reflect the improved verbal skills of children need to be defined and standardized. Measures based upon tabulation not only of quantitative counts but also of the frequency of improved or more nearly standard syntactic structures and ratings of the relevancy of each child's responses will be developed for future research efforts.

A systematic evaluation of the parent education materials and methods which evolved during the year is indicated. While the practicability of the techniques tried has been determined, the potential value in terms of changed attitudes, of increased involvement in the education of one's children, and of various effects on the child's performance, needs to be further assessed.

APPENDICES

related to the Preschool Language Curriculum

- A. Observation Forms**
- B. Sequence Outline**
- C. Parent Questionnaire**

OBSERVATION RECORD - UHPLC

Teacher:		School:				Date:			Observer:		
Group	#Chn.	Girls	Boys	#Absent	Kind of Reward	When given	#Rewards	Comments on Rewards	Start	Fin.	Time

Levels covered: successfully completed new materials introduced	Methods used (including props)	Interest	Comments

Language strengthening Language other

OBSERVATION PROCEDURE FOR CONTROL CLASSES (EXPERIMENTAL EDITION)

Center _____

Time of Observation _____

Teacher _____

Observer _____

I. Physical set-up

A. Inside Area--Number of rooms, size

Impression -

Bathroom _____

Share with others? _____

Equipment - (Utilization, out in the room)

Housekeeping Corner

Block Area and Related Toys -

Art -

Language Arts (books, tape recorder, phonograph, projector, etc.) -

Science -

Workbench (tools) -

Manipulative (puzzles, sorting games, etc.) -

Bulletin Board, Displays - (coordinated with curriculum?)

Other -

Comment -

B. Outside Area

Size and Impression -

Equipment -

Playground -

Wheel Toys -

Other -

II. Personnel

Adults - (how many, apparent responsibilities)

Teacher -

Aides -

Volunteers -

Other - (Social worker, % of time)

Children -

Boys _____

Girls _____

III. Activities

1- Daily Schedule (attach) posted? _____ from teacher? _____

2- Activities Observed - (how many participating, i.e., total group or divided)

3- Curriculum Theme - goal, content - overall objectives, specific objectives

4- Type of Reinforcement Used - (praise or material)

IV. Is this teacher concerned with language development and/or cognitive activities (Estimate percent of class participation in cognitive aspects of curriculum.)

Evidence -

Comments -

SEQUENCE OF THE BEGINNING LANGUAGE PROGRAM

The beginning language program starts at the very beginning, assuming the child knows nothing about mastery of English. The children will actually vary quite a bit in background and ability, but in order for the teacher to assess accurately where each child is, the start-from-nothing approach is advocated. Then progress may be made rapidly, or at whatever rate is needed to complete each part of the sequence.

An important point to remember is that these children are not simply learning to express already known concepts in a new language but are often learning the concepts and the language patterns concurrently.

This is why the sequence, starting from simple identity statements and then expanding to more difficult constructions needs to be clearly understood by the teacher, and carefully observed in her teaching. The teacher should move systematically from first order statements through classifications, introducing all topics on the outline. But (s)he need not teach every example at one time, i.e., (s)he need not teach all the polars before moving on to colors. However, (s)he should return to the omitted polars, colors, etc. until all of the program is covered.

UHPLC Sequence Outline

Beginning Language Program

- I. First Order Identity Statements
- II. Second Order Statements
 - A. Polar - Opposites
 - B. Colors
 - C. Prepositions
 - D. Multiple Qualifiers
- III. Second Order Identity Statements - Categories

Review Lesson

Advanced Language Program

- IV. Verbs
- V. Pronouns
- VI. Agents*
- VII. And, or, all, only, and deductions (five element model)
- VIII. What things are made of
- IX. Superlative and comparative adjectives
- X. Same and Different
- XI. Polar Changes and Deductions

* Last completed section - remaining sections are being prepared.

Outline of Sequence

I. First Order Statements

- A. Identity singular positive - This is a ball.
- B. Identity singular not - This is not a ball.
- C. Identity plural positive - These are balls.
- D. Identity plural not - These are not balls.

II. Second Order Statements

A. Polar discriminations

- 1. Singular positive - This ball is big.
- 2. Singular not - This ball is not big.
- 3. Multiple singular positive - This ball is big and this ball is soft.
- 4. Multiple singular not - This ball is not big and this ball is not soft.
- 5. Multiple singular positive and not - This ball is big and this ball is not soft.
- 6. Plural positive - These balls are big.
- 7. Plural not - These balls are not big.
- 8. Multiple plural positive - These balls are big and these balls are soft.
- 9. Multiple plural not - These balls are not big and these balls are not soft.
- 10. Multiple plural positive and not - These balls are big and these balls are not soft.
- 11. I don't know: only show ball.
 - Is this ball big? (Yes, this ball is big)
 - Is this ball hard? (I don't know)

12. Opposites

e.g., Big is the opposite of little.

Little is the opposite of big.

B. Colors

1. Singular positive - This ball is red.
2. Singular not - This ball is not red.
3. Multiple singular positive - This ball is red
and this ball is blue.
4. Multiple singular not - This ball is not red and
this ball is not blue.
5. Multiple singular positive and not - This ball is
red and this ball is not blue.
6. Plural positive - These things are red. These
balls are red.
7. Plural not - These things are not red. These
balls are not red.
8. Multiple plural positive - These balls are red
and these balls are blue.
9. Multiple plural not - These balls are not red
and these balls are not blue.
10. Multiple plural positive and not - These balls
are red and these balls are not blue.
11. I don't know: children close eyes, feel the ball.
Is this ball hard? (Yes, this ball is hard)
Is this ball red? (I don't know)

C. Prepositions

1. Singular positive - This ball is on the table.
2. Singular not - This ball is not on the table.

3. Multiple singular positive - This ball is on the table and this ball is in the room.
4. Multiple singular not - This ball is not on the desk and this ball is not on the floor.
5. Multiple singular positive and not - This ball is in the room and this ball is not on the desk.
6. Plural positive - These balls are on the table.
7. Plural not - These balls are not on the table.
8. Multiple plural positive - These balls are on the table and these balls are in the room.
9. Multiple plural not - These balls are not on the desk and these balls are not on the floor.
10. Multiple plural positive and not - These balls are in the room and these balls are not on the desk.
11. (I don't know)

Ball on table: Is this ball on the table?

(Yes, this ball is on the table)

Ball behind box out of sight, on floor:

Is this ball on the floor? (I don't know).

12. Opposites - On is the opposite of off.

D. Multiple qualifiers: (polars, colors, prepositions)

1. Singular:

Singular positive - This ball is big and this ball is red and this ball is on the table.

Singular not - This ball is not big and this ball is not red and this ball is not on the table.

Singular positive and not - This ball is big and this ball is not red and this ball is not on the table.

2. Plural:

Plural positive - These balls are big and these balls are red and these balls are on the table.

Plural not - These balls are not big and these balls are not red and these balls are not on the table.

Plural positive and not - These balls are big and these balls are not green and these balls are on the table.

III. Second Order Identity Statements

A. Categories

1. Group identity statement (positive) - These are animals.
2. Group identity statement (not) - These are not animals.
3. Statement of rule (if applicable) - If it takes you places, then it is a vehicle.
4. Second-order identity statement - (subclass names)
 - a. singular positive - This animal is a tiger.
 - b. plural positive - These animals are tigers.
 - c. distinguishing characteristics
 - d. singular not - This animal is not a lion.
 - e. plural not - These animals are not lions.
 - f. what kind questioning

B. Reversible Second Order Identity (singular positive) - A tiger is an animal.

1. Reversed Second Order Identity (singular positive) -

A tiger is an animal.

2. Reversed Second Order Identity (singular not) -

A truck is not an animal.

3. Reversed Second Order Identity (plural positive) -

Tigers are animals.

4. Reversed Second Order Identity (plural not) -

Cars are not animals.

C. Multiple subject

1. (positive) - A tiger and a lion are animals.

2. (negative) - A cucumber and a ball are not animals.

D. Multiple category statement: This carrot is a food and this carrot is a plant.

Outline of Sequence

IV. Verbs (3rd person)

A. Present progressive

1. Singular*

- a. Positive - This boy is standing.
or
The boy is standing.
or
John is standing.
- b. Not - This boy is not standing.
or
The boy is not standing.
or
John is not standing.
- c. Multiple (positive) - The boy is standing and clapping.
- d. Multiple (not) - The boy is not standing and not clapping.
- e. Multiple (positive and not) - The boy is standing but not clapping.
- f. Expanded (prepositional phrases) - The boy is laughing at the clown.
(at what? with what? to whom? where?)
- g. Expanded (objects) - The boy is eating food.
- h. Why - The boy is sitting on a chair because it is language time.

2. Plural

- a. Positive - The boys are standing.
- b. Not - The boys are not standing.
- c. Multiple (positive) - The boys are standing and clapping.
- d. Multiple (not) - The boys are not standing and not clapping.
- e. Multiple (positive and not) - The boys are standing but not clapping.
- f. Expanded (prepositional phrases) - The boys are running on the street
- g. Expanded (objects) - These boys are eating food.
- h. Why? - The boys are eating because they are hungry.

B. Present tense - sense verbs

1. Singular

- a. Positive - The box feels heavy.
- b. Not - The box does not feel heavy.
- c. Multiple (positive) - The box feels heavy and looks big.
- d. Multiple (not) - The box does not feel heavy and does not look big.
- e. Multiple (positive and not) - The box feels heavy but does not look big.

2. Plural

- a. Positive - The cans feel heavy.
- b. Not - The cans do not feel heavy.
- c. Multiple (positive) - The cans feel heavy and look big.
- d. Multiple (not) - The cans do not feel heavy and do not look big.
- e. Multiple (positive and not) - The cans feel heavy but do not look big.

*Three alternative subject forms are presented in 1a and 1b. Thereafter, only one form will be presented as examples, but the other two forms are implied.

- C. Present tense - verbs other than sense verbs.
1. Singular
 - a. Positive - John walks.
 - b. Not - The lamp does not walk.
 - c. Multiple (positive) - John walks and eats.
 - d. Multiple (not) - The lamp does not walk and does not eat.
 - e. Multiple (positive and not) - The boy eats but does not read.
 - f. Expanded (prepositional phrases) - John eats at school.
 - g. Expanded (objects) - John eats lunch.
 - h. Why? - John comes to school because he likes to learn.
 2. Plural
 - a. Positive - John and Bobby walk.
 - b. Not - Lamps do not walk.
 - c. Multiple (positive) - John and Bobby walk and eat.
 - d. Multiple (not) - Lamps do not walk and do not eat.
 - e. Multiple (positive and not) - The boys eat but do not read.
 - f. Expanded (prepositional phrases) - John and Bobby eat at school.
 - g. Expanded (objects) - John and Bobby eat lunch.
 - h. Why? - John and Bobby come to school because they like to learn.
- D. Past tense (to be) -
1. Singular positive - This bag was heavy.
 2. Plural positive - These bags were heavy.
- E. Past progressive tense -
1. Singular positive - The boy was walking.
 2. Plural positive - The boys were walking.
 3. Expansion -
 - a. Expanded by prepositional phrase - The boy was walking on the sidewalk.
 - b. Expanded by objects - The boy was eating a hamburger.
 - c. Why? - The boy was eating a hamburger because he was hungry.
- F. Past tense - sense verbs
1. Singular positive - This water looked yellow.
 2. Plural positive - The balloons looked big.
- G. Past tense - simple
1. Singular positive - The dog jumped.
 2. Plural positive - Bill and Jim clapped.
 3. Expansion -
 - a. Expanded by prepositional phrase - The dog jumped on the chair.
 - b. Expanded by objects - Bill and Jim dropped their books.
 - c. Why? - This boy clapped because he liked the show.
- H. Infinitives -
1. John likes to sing.
 2. The boy does not like to wear shoes.
- J. Future tense - The bears are going to walk in the woods.
- K. Variations -

Outline of Sequence

V. Pronouns

A. Subject pronouns

1. 1st person singular - I am clapping.
2. 2nd person singular - You are clapping.
3. 1st person plural - We are clapping.
4. 2nd person plural - You are clapping.
5. 3rd person singular -
 - a. Masculine - He is clapping.
 - b. Feminine - She is clapping.
 - c. Neuter - It is flying.
6. 3rd person plural - They are standing.

B. Object pronouns

1. 1st person singular - John is throwing the ball to me.
2. 2nd person singular - I am throwing the ball to you.
3. 1st person plural - Brian is asking us a question.
4. 2nd person plural - I am asking you a question.
5. 3rd person singular -
 - a. Masculine - I am touching him.
 - b. Feminine - I am touching her.
 - c. Neuter - I am holding it. (book)
6. 3rd person plural - He is holding them. (books)
He is giving the pencils to them. (people)

C. Possessive pronouns

1. 1st person singular - This hand is mine.
These hands are mine.
2. 2nd person singular - This dress is yours.
These slippers are yours.
3. 1st person plural - This ball is ours. Ours is big.
These circles are ours. Ours are red.
4. 2nd person plural - This ball is yours. Yours is little.
These circles are yours. Yours are blue.
5. 3rd person singular -
 - a. Masculine - This circle is his. His is red.
These slippers are his. His are yellow.
 - b. Feminine - This circle is hers. Hers is blue.
These shoes are hers. Hers are black.

6. 3rd person plural - This ball is theirs. Theirs is big.
These circles are theirs. Theirs are blue.

D. Possessive adjectives

1. 1st person singular - My dress is blue.
My slippers are yellow.
2. 2nd person singular - Your shirt is red.
Your shoes are black.
3. 1st person plural - Our ball is big.
Our circles are red.
4. 2nd person plural - Your ball is little.
Your circles are blue.
5. 3rd person singular
 - a. Masculine - His shirt is blue.
His slippers are red.
 - b. Feminine - Her dress is yellow.
Her hands are in her lap.
 - c. Neuter - Its cover is green. (book)
Its leaves are green. (tree)
6. 3rd person plural - Their ball is big.
Their circles are red.

Sequence Outline

VI. Agents.

VII. And, only, or and deductions, using the five-element model.

A. And.

1. Describing objects. These squares are big and white.
2. Enumerating objects - "all". You are thinking about all of the squares
3. Reversible element tasks.
 - a. Reversible subject. The big square and the little square are white. The little square and the big square are white.
 - b. Reversible predicate. These squares are little and red. These squares are red and little.

B. Only. Only the little squares are red.

C. Or.

1. Or: You are thinking of this one or this one.
 - a. General statement: I'm thinking about a square - This one or this one.
 - b. Specific statement: I'm thinking about a red square - this one or this one.
 - c. Not statement: I'm thinking about a square that is not red - this one or this one, etc.
2. Or vs. and: All the squares - this one and this one and this one; one of the squares - this one or this one.
3. Or used to decide group characteristics - It is red or white.

D. Deductions.

1. Plural summary statement - The big squares are white.
2. Singular summary statement.
 - a. Positive: The big square is white.
 - b. Negative: The square that is not white is not big.
 - c. Undetermined: The square that is not big is white or red.

Outline Sequence

VIII. Materials.

- A. Positive: This house is made of wood.
- B. Negative: This house is not made of wood.
- C. Multiple: This house is made of wood and glass.

IX. Expanded polars - superlatives and comparatives.

- A. Polar superlatives
 - 1. Positive: This square is the biggest, littlest.
 - 2. Negative: This square is not the biggest, not the littlest.
- B. Polar comparatives.
 - 1. One dimension: This square is bigger than this one, and not bigger than this one.
 - 2. Two dimensions: This square is bigger than this one, and littler than this one.
- C. Before - After.
 - 1. Before - positive and not: Harry is before Patrick, but he is not before Joey.
 - 2. After - Not before and positive: The 2 is not before the 1. It is after the 1.

X. Same - different.

- A. Same statement - singular.
 - 1. Positive: This ball is the same as this ball.
 - 2. Negative: This ball is not the same as this ball.
- B. Different statement - singular.
 - 1. Positive: This ball is different from this ball.
 - 2. Negative: This ball is not different from this ball.
- C. Same statement - plural.
 - 1. Positive: These balls are the same.
 - 2. Negative: These balls are not the same.
- D. Different statement - plural.
 - 1. Positive: These objects are different.
 - 2. Negative: These objects are not different.
- E. Opposites.

Same is the opposite of different and different is the opposite of same.

XI. Polar changes.

- A. Change statement.
 - 1. Positive: This line changed.
 - 2. Negative: This line did not change.
- B. Possible changes: He can grow.
- C. Causes for changes: If he eats, then he grows.
- D. Problems.
 - 1. Deductions: If the top line is longer, the bottom line is shorter.
If the ball goes through glass this way, the glass goes this way.
 - 2. Causes for changes: You made the top line longer.
You turned up the hot water.

Parent Questionnaire

Instructions: Read each statement and then check the word AGREE if you mostly agree with the statement or underline the word DISAGREE if you mostly disagree with the statement.

1. How fast a child learns something depends on whether he thinks he can do it or not. Agree _____; Disagree _____
2. Children who do poorly in first grade usually do better in the second grade. Agree _____; Disagree _____
3. The child who brags a lot thinks he is very important. Agree ____; Disagree ____
4. Since learning to talk is natural it doesn't take much practice. Agree _____
Disagree _____
5. How parents feel about school has something to do with how well a child does in school. Agree _____; Disagree _____
6. The kindergarten child who speaks one language at home and another at school learns just as quickly as the child who only knows one language. Agree _____;
Disagree _____
7. What a child learns before he starts to school doesn't affect how well he does in school. Agree _____; Disagree _____
8. Parents should leave teaching to the teacher at school because teachers are trained and parents are not. Agree _____; Disagree _____
9. Parents should ignore many of the children's questions since children are always asking questions. Agree _____; Disagree _____
10. Often it is good training for a child to try something that is too hard and fail. Agree _____; Disagree _____
11. A child who acts like a clown wants to be different from the other children. Agree _____; Disagree _____
12. When a parent helps in preschool he learns a lot about his child that will help him with his child at home. Agree _____; Disagree _____
13. A child's ability to learn is formed when he is born and cannot be changed. Agree _____; Disagree _____
14. When a child tries he should be praised even if he doesn't succeed in what he is doing. Agree _____; Disagree _____
15. Parents should reward a child who does well in school. Agree _____;
Disagree _____
16. It is important for a child to think he can do things. Agree _____;
Disagree _____
17. One can learn to think and solve problems without knowing many words. Agree _____; Disagree _____
18. A five-year-old child learns more from his parents than from the teacher. Agree _____; Disagree _____