DOCUMENT RESUME

ED 042 511 PS 003 448

AUTHOR Adkins, Dorothy C.; Herman, Hannah

TITLE Hawaii Head Start Evaluation--1968-69. Final Report.
INSTITUTION Hawaii Univ., Honolulu. Head Start Research and Evaluation Center.
SPONS AGENCY Office of Economic Opportunity, Washington, D.C.
PUB DATE Jan 70
NOTE 192p.

EDRS PRICE EDRS Price MF-$0.75 HC-$9.70
DESCRIPTORS Attendance, Classroom Environment, *Cognitive Development, Demonstration Projects, Enrichment Activities, *Language Development, Parent Attitudes, Parent Child Relationship, *Parent Participation, *Preschool Programs, *Program Evaluation
IDENTIFIERS *Head Start, Preschool Language Curriculum, UHPLC, University Of Hawaii

ABSTRACT

The present study compared the developmental effects of two curricula (University of Hawaii Preschool Language Curriculum (UHPLC) and a general enrichment curriculum); two parent programs (one emphasizing the mother's role in fostering her child's cognitive development, P1, and one focusing on more general concepts of child development, p2); and two levels of parent participation (1/3 or better attendance at parent meetings and less than 1/3attendance). Dependent measures included classroom observations, pre- and posttesting on a wide variety of tests, and interviews with mothers held at the beginning and end of the program. The sample consisted of eight Head Start classes. Among the major results of the study was the significantly superior performance of UHPLC children compared to children in the enrichment classes on many of the tests, including the Stanford-Binet, the Preschool Inventory, and subtests of the Illinois Test of Psycholinguistic Abilities. The classroom atmosphere, as measured by the Post Observation Teacher Rating Scales, was significantly better in UHPLC classes. Mothers active in parent programs showed improved attitudes towards children's education and increased tolerance towards children's chosen companions. (MH)

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

Final Report

Hawaii Head Start Evaluation--1968-69

Hannah Herman, Assistant Researcher
Dorothy C. Adkins, Researcher

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

January, 1970

TABLE OF CONTENTS

Table of Contents (cont.)

LIST OF TABLES

PROCEDURE

List of Tables (cont.)

List of Tables (cont.)

List of Tables (cont.)

FOREWORD

The general supervision of the work reported here was the responsibility of Hannah Herman. Doris Crowell assisted in coordinating the work of the special teachers and leaders of parent groups. Renato Espinosa, who joined the staff in the fall of 1969, assisted in some of the final stages of data analysis.

The entire staff of the Center contributed to the project in one way or another. Special teachers who taught the language curriculum were Phyllis Loveless, Gayle Geiger, and Myra Kent. Gloria Daley and Fay Fehd taught the enrichment curriculum.

The leaders of the parent programs were Mary Noyes, Marion Dunning, Virginia Fine, and Mary Myers. Vidya Bhushan advised on much of the statistical work.

Assistants in research who contributed a variety of work, including examining, observing, interviewing, and some aspects of data processing, included Christina Anderson, Betty S. Elrod, Fay Fehd, Patricia Hart, Carole Hodges, Nancy Johngren, Virginia Lerner, Annette Okimoto, Ann E. Pavelko, Blanche Shigeoka, Aleida Snyder, and Annie Worth.

Others who worked on the project in one capacity or another were Carol Blair, Mary W. Choy, Elizabeth Crooker, June Kimura, Nina Lauritsen, Grace Diamond, Ann Garelick, Patricia C. Hiu, Betty Parker, Linda Matsuda, Katherine Payton, Martha Phillips, Georgia Sakai, and Laura Schafer.

The report was edited by Lynne Meyer and the typing and processing were done by Yaeko Santoki, Lynette Kapahua, Susan Fukumoto, Gail Jordan, and Louise Inouye.

The cooperation of the following persons is gratefully acknowledged:

Mrs. Gertrude Zane, Teacher, Palolo Community Center
Miss Pat Jellitich, Teacher, Palolo Community Center
Mrs. Miriam Ellison, Teacher, Aiea Preschool
Mrs. Janet Okuna, Teacher, Aiea Preschool
Mrs. Leilani Nishimura, Teacher, Susannah Wesley Center
Mrs. Georgianna Williams, Teacher, Susannah Wesley Center
Mrs. Kathy Stout, Teacher, Kalihi Valley Preschool
Mrs. Viola Brown, Teacher, Kuhio Park Terrace Preschool
Mrs. Kay Ericson, Center Director, Susannah Wesley Center
Mrs. Virginia Odem, Area Coordinator, Susannah Wesley Center
Mr. Kaoru Uto, Principal, Aiea Elementary School
Mrs. Georgia Holloway, Aiea Coordinator, Aiea Elementary School
Mrs. Jean Kumamoto, Leahi Area Coordinator

ABSTRACT

This study compared the effectiveness of the University of Hawaii Preschool Language Curriculum (UHPLC) and an enrichment curriculum and of two group parent programs. In three Head Start classes the language curriculum was paired with a parent program emphasizing the mother's role in fostering the cognitive development of her child (P_1). In three other classes the same curriculum was paired with a parent program focused on more general concepts of child development (P_2). The enrichment curriculum was combined with P_2 in two additional Head Start classes. Each of the three groups--Language and P_1, Language and P_2, Enrichment and P_2--was divided according to level of participation in a parent program. Mothers who attended one-third or more of the parent meetings were classified as high participants; those who attended fewer than one-third of the meetings were considered to be low participants.

A wide variety of tests were administered to all children on a pre- and post-test basis. Mothers were interviewed near the beginning and end of the program, and classroom observations were conducted five times during the course of the year.

Major results of the study were the significantly superior performance of children exposed to the language curriculum in comparison with children in enrichment classes on the Stanford-Binet, Preschool Inventory, the Verbal Expression and Auditory Association subtests of the ITPA as well as the total of eight ITPA subtests, and the number of descriptive categories included in responses on Verbal Expression.

The classroom atmosphere, as measured by the Post Observation Teacher Rating Scales (P.O.T.), was significantly better for the language classes as compared with the enrichment classes in terms of the quality of cognitive input and the management of individual emotional needs. Additionally, children in both curricula made significant pre- to post-test gains on the PSI and Gumpgookies, and those in language classes also gained significantly on the Stanford-Binet, ITPA, and WPPSI Animal House subtest.

Children in language classes whose mothers were high participants in P_1 performed significantly better on the Verbal Expression subtest and earned higher scores on language measures in general than those in the same curriculum whose mothers were active participants in P_2. Clear differential effects of the two parent programs as reflected in responses on the parent interview were not apparent. In general, mothers active in either program developed an increased sense of personal power, revealed higher educational and vocational goals for their children, and volunteered more frequently in the Head Start classroom than did inactive mothers. Difficulties inherent in evaluation of parent programs are noted, and suggestions for further study involving the UHPLC are made.

Within the framework of the 1968-69 national evaluation of Head Start, the University of Hawaii Head Start Evaluation and Research Center investigated the effectiveness of a language curriculum, an enrichment curriculum, and two experimental parent programs. The Hawaii E & R Center followed the general guidelines dictated by the national evaluation, using a specified battery of tests and observational procedures, and also introduced additional measures specifically relevant to the Hawaii study. Data collected were submitted to national OEO to contribute to the overall evaluation of Head Start programs. This report focuses on the evaluation of particular programs introduced by the Hawaii Center and presents the data most pertinent for that purpose.

Deficiences in the language development of children from low-income families in general and of Hawaiian children in particular have been well documented (Adkins & Crowell, 1968; Beadle, 1966; Crowell & Fargo, 1967). It has been suggested that these deficiences are at least in part determined by the nature of mother-child interactions, including the failure of low-income mothers to see themselves as teachers of their children or to use or have available to them the teaching strategies most effective for communicating information (Hess, Shipman, Brophy, Bear, 1968). The development of language skills and the direct involvement of parents in the education of their children were the areas of primary concern in the University of Hawaii intervention study. Specifically, the study involved the presentation of the University of Hawaii Preschool Language Curriculum (UHPLC) in three two-class Head Start Centers. The curriculum was taught daily to small groups

of children by a trained teacher from the E & R Center staff. Within each of the Head Start Centers, one class was offered a parent program paralleling the language curriculum, which concentrated on helping the mothers become more effective teachers of their children, particularly in the area of language skills (P_1); the contrasting program available to mothers in the second class covered a broader range of topics and emphasized general principles of child development and child-rearing practices (P_2).

Since the language program provided the children with regular and extensive contact with an adult, in addition to the classroom teacher and aide, attempting to assess the impact of an extra teacher in the classroom who was not teaching the language curriculum seemed desirable. For this reason, in two additional classes at separate locations, a general enrichment curriculum was presented each day to children in small groups by a teacher from the E & R Center staff. Material reinforcers were used consistently with both the language and enrichment programs. Thus the framework within which the two curricula were presented was essentially the same, but their content and focus were markedly different. Parents from both enrichment classes were invited to participate in Parent Program # 2 (P_2) only, since Parent Program # 1 (P_1) was specifically related to the language curriculum and therefore inappropriate for use with other programs.

The primary objectives of this study were to investigate (a) whether exposure to a structured, well-defined language curriculum (UHPLC), in contrast to a general enrichment program, differentially affects the performance of Head Start children on a variety of response measures; and (b) whether a parent program emphasizing language development (P_1)

is more or less effective than a program with a broader focus (P_2), when all children are receiving daily language lessons. An additional major variable, that of level of parent participation, was added to the study since all parents (i.e., mothers) did not regularly participate in either program. A third area of investigation, therefore, was (c) whether children whose mothers were actively involved in a parent program performed differently than those whose mothers were not, and whether active participation influenced mothers' attitudes and behaviors as measured by their responses on a standard interview.

PROCEDURE

Language Curriculum

Three special language teachers from the E & R Center were assigned to teach the language curriculum (based on the UHPLC manual, 1968 revision) to two classes each, in three different Head Start Centers. An outline of the manual is provided in Appendix A.

The lessons taught followed the sequence of the manual, which proceeded through six levels of difficulty. Each level contained labels, verbs, descriptions (colors, opposite words, and prepositions), and questions. By direct teaching, basic standard English sentence patterns were presented to small groups of five to seven children, for periods of approximately 20 minutes each day. A prescribed reinforcement procedure (Appendix B) was regularly used.

The language lesson took a third of the language hour. Each small group of children rotated from the language lesson to a prescribed language-strengthening activity and then to a supplementary school skills activity.

The Language-Strengthening (LS) activities, supervised by the classroom teacher, included informal games such as Language Lotto or Go Fish, which were used to strengthen the concepts and patterns being taught in the language lesson. A packet of LS-activity suggestions was provided for each teacher.

The Supplementary School Skills (SSS) activities were not so closely related to the language lesson, but included the learning of some basic skills, such as cutting, pasting, and the use of pencils, as well as some physical activity.

Regular meetings (bi-weekly) were held with the language teacher and her classroom teachers and aides. The purpose was to keep the classroom staff informed about what was being taught in the language lesson, so that the teachers and aides could relate what they did in the Language-Strengthening and Supplementary School Skills activities to the language curriculum. Five of the six teachers were fairly consistent in carrying out this plan.

The three language teachers worked together very closely. They met daily to plan lessons (Appendix C) and regularly to discuss the effectiveness of each lesson. Useful observations concerning the clarity or expansion of the manual were recorded. As a result of this intensive in-service analysis of the language curriculum by the special language teachers, together with reports from classroom teachers in 12 other classes field testing the UHPLC, a revised edition of the language manual was prepared for future use in August, 1969.

Enrichment Curriculum

For comparison with the classes that were exposed to the University of Hawaii Preschool Language Curriculum, two enrichment classes were selected to be exposed to a more general, nonlanguage curriculum in the same type of setting. The general question to be answered was whether or not any significant findings that might unwittingly have been attributed to a special language curriculum might instead be attributable to the setting in which this curriculum was presented, i.e., a small group managed by an attentive adult who used a variable reinforcement schedule.

The enrichment classes had a highly qualified supplementary teacher, a member of the University of Hawaii Head Start Evaluation and Research Center staff who taught daily lessons in the enrichment classes. She faithfully followed the general structure and schedule of the Preschool Language program. As with it, each class was divided into three groups and rotated between the enrichment teacher, the classroom teacher, and the teacher's aide. Each group worked for 15 to 20 minutes with each adult, using the same reinforcement schedule as for the Preschool Language Curriculum in the other classes. The content selected was a representative sampling of material that would ordinarily be part of a traditional preschool curriculum. It was not to include a planned language-oriented program, but neither should it avoid the usual language stimulation a competent preschool teacher would provide.

In order to facilitate planning, coordinating, and communication with the regular classroom teacher, the following schedule was prepared and followed:

Monday:	Music
Tuesday:	Literature
Wednesday:	Quantitative (counting, number concepts, colors, shapes)
Thursday:	Art
Friday:	Science

Music: Simple preschool songs, finger plays, listening experiences, rhythm instruments, dancing, and songs made up about the children's names and clothes were used.

Literature: Traditional children's stories, poetry, draw and tell stories, flannelboard stories, and "acting-out" stories with puppets were presented during this part of the program.

Quantitative: Counting games; songs; books; number Lotto; sequence card games; and identifying shapes, colors, and sizes were incorporated into this phase of the curriculum.

Art: Because the teachers in these classes had very structured art activities, the enrichment teacher offered the children a variety of materials to stimulate awareness of texture, form, size, color, and shape. "Messy" and raw materials were stressed, such as fingerpaints, clay, and play dough. Many media were introduced to familiarize the children with them and extensive experience with scissors, paste, tearing, collages, crayons, paints, and colored chalk was provided.

Science: The science activities included observation walks; seasons; weather and climate; and measurement, using rulers, clocks, scales, measuring tapes, and liquid measures. Cooking was introduced to demonstrate how heat and cold change the form of substances. The groups studied different animals and talked about different means of locomotion, what animals ate, and where they lived.

Materials were gathered from many sources, but among the most useful were:

Carson, R. A sense of wonder. Harper & Row Publishers, Inc., 1965.

McCall, A. This is music. Allyn and Bacon, Inc., 1967.

Pitcher, E. G.; Lasher, M. G.; Feinburg, S.; & Hammond, N. C. Helping young children learn. Charles E. Merrill Publishing Co., 1966.

Parent Program # 1 (P_1)

The primary purpose of Parent Program # 1 was to involve the parents in an ongoing program of teaching their own children language concepts that directly supported the content presented to the children in the classroom. The parents learned the language curriculum as it progressed, as well as techniques to use with their children that supplemented the language teacher's presentation to the class.

Program and activities. Parent Program # 1 began with a workshop held during a two-week period with five meetings for each of the three classes. Subsequent meetings were held every other week for a total of 18 to 20 meetings for each parent group during the school year.

The first five meetings served to orient the parents to the objectives and practices in preschool and to give them a better understanding of the program, so that they could participate more effectively and comfortably as volunteers. The teachers expressed particular appreciation for this part of the training, as shy or timid parents became more able to move into the classroom setting. The intensive workshop period also enabled the participating parents to get acquainted early in the program and developed an enthusiasm and esprit de corps among them that increased their self-confidence and effectively helped the whole program.

The general objectives for these introductory meetings were to provide a warm, nonthreatening learning situation; to motivate parents to participate in the classroom and in the parent program; to arouse

interest in the learning process; to present the role of the supervising adult in one typical preschool activity; to present the rationale for and a sample of the language curriculum; and to teach the parents how to use several language-strengthening games. The general subjects covered in the orientation meetings were the use of clay, the use of flour-and-salt dough, the doll corner, and painting and collage-making in the classroom. The language curriculum and other techniques for teaching language were also introduced. At each meeting the rationale for the activity was discussed, along with suggested procedures for its use with children. The adult's role in the classroom was explored, and ways in which the activities might be adapted at home were considered. The parents prepared and used the materials, and participated in role-playing, discussions, and demonstrations.

Subsequent meetings stressed specifically the parent's role as teacher for her own child at home. The parents made eight different language-supporting games or materials to be used at home with their children. The reasons for making each game or set of materials were discussed during each meeting, and ways the game could be played meaningfully to foster language learning were demonstrated with the parents. In addition to making materials, each parent group visited another Head Start Center and watched the language teacher working with one or more small groups of children with the UHPLC. One class visited the local library, and all three groups visited the University of Hawaii East-West Center. An excursion with just adults proved to be a very valuable and often a unique experience for these parents. The East-West Center was a highlight for all the groups, and the parents many times referred with enthusiasm to these trips.

Homework assignments. The parent consultants introduced homework for the parent and child at the sixth meeting. They visited each language class before this meeting, observed the language sessions, and conferred with the language teacher about specific language concepts being presented and the child's current needs for development. Three or four very simple activities that parents could do with their children at home were listed on a homework sheet, and each parent was requested to spend 10 minutes a day with her child performing one or more of these activities. Other general language activities, such as reading a story, talking, telling a story, taking an excursion, or playing a game, were included on the sheet as alternative activities. The parents were asked to return their homework sheets at the next meeting, and the time the parents spent with their children was charted on a group activities chart. It was hoped that the number of activities and time spent in each would increase as the parents saw and heard how others interacted with their children.

The parent's general response to homework initially was very positive, since they liked specific activities that they could do with their children. However, subsequently the number of forms returned decreased. As the novelty wore off, the staff dropped the specific homework assignments rather than allowing the tasks to become a burden for the

parents; but the parent consultants continued to visit the classes and presented the language concepts being taught to the parent group.[1] The homework had helped to focus the need for parents to spend some time daily with their children in a teaching role, and the parents continued to give reedback to the group by relating their experiences in teaching their Head Start children at home.

One very positive effect of sending language games to the homes was the interest in and use of these materials by both older and younger siblings. The young children played the games both alone and with their parents and older siblings.

Parent Program # 2 (P_2)

The design of Parent Program # 2 called for developing a situation within which it was possible to disseminate information on principles of child development and child-rearing practices.

Program and activities. Parent Program # 2 began with a workshop comparable to that described for Parent Program # 1. Following the workshop regular meetings were held every other week for a total of 18 to 20 meetings. Three phases were planned:

> Phase I: In the post-workshop meetings, the emphasis of P_2 was on the use of art materials to establish rapport and involvement in the program, in addition to providing parents with a means of sharing specific activities with their children. The first meeting

[1] The concepts were demonstrated to the parents in the same way that they were being taught to the children--complete with props--whenever possible. Being able to give a parent a verbatim account of what her child said or a descriptive account of what her child did served two functions. It not only kept the parent informed of her child's progress, but also demonstrated that the parent consultant was interested in and aware of the child as an individual, thus tending to enhance the child's value in the parent's eyes.

of this phase was the same for each of the five groups and included viewing and discussing the film "Eye of the Artist." This was followed by demonstrations of how to make and use feeling boxes, smelling trays, hearing bags, and seeing trays with the children. Subsequent meetings during this phase included: (a) making collages with colored tissue paper and liquid starch; (b) making wood sculptures with wood scraps and white glue; (c) making dried arrangements; (d) making bonsai gardens; (e) making Christmas decorations, presents, candles, and games for gifts; and (f) doing finger painting to music.

Phase II: The second part of the program used visual materials to stimulate discussions about child development and child-rearing practices. This method proved effective with three of the five groups, but less effective with a group that included many Samoan mothers and another group that had overwhelming immediate problems stemming from living in an enormous high-rise apartment building. Materials used included: (a) Films: Shyness, Jamie: The Story of Sibling Rivalry, Roots of Happiness, Palmour Street, Eye of the Beholder, Poetry for Me, The Way of Zen, and No One to Help Us; and (b) Schaftel's Word and Action Pictures.

Phase III: Parent Program # 2 was to proceed through three phases, starting at the doing or action phase, next moving to a phase using visual media to stimulate discussion, and finally arriving at a purely verbal level of problem-solving. The transition from phase I to II proceeded easily and on schedule, but progression from phase II to III cannot be said to have taken place. It is conceivable that shifting from the information-giving and comprehension level to the application level in a relatively brief period was an unrealistic expectation with respect to many of the parents in the program. Perhaps practice and application should have been included as an integral part of phase II. Readiness for this kind of integration was evident in one group as a response to the showing of the film, "Poetry for Me," when a group member suggested that each member write a poem for the following meeting. Poems were written, read at the next meeting, and listened to attentively by the whole group. One poem by a Parent Consultant included some evaluation of parents' behavior toward their children, and it seemed more acceptable to the parents in poetic form than would otherwise have been anticipated.

An additional deviation from the planned program was an outgrowth of the parents' interest in visiting other Head Start classes. These visits were so successful that additional excursions were planned to local thrift shops, the University Campus, the East-West Center, the State Capitol, Iolani Palace, and the Valley of the Temples.

It should also be noted that different interests of the two leaders of each meeting at times may have interfered with achievement of specific objectives. Two of the four staff members (from whom the two for each meeting were selected) were most interested in the affective domain, one in motivation, and one in cognition.

Procedures Common to Parent Programs # 1 and # 2

Payments to parents. The contract provided for a $3.00 payment to each parent who attended a parent meeting. The payment was to be given in cash at each meeting as an immediate reinforcement. The University's general practices do not provide for cash payments to individuals, however, and a system was adopted whereby the names of parents who had attended five meetings were submitted to the University for the processing of a $15.00 check. The processing took an additional three or more weeks, so that not only was there no immediate reinforcement but also the lack of payment had a negative effect on the program. In mid-November the University changed its procedures so that cash could be dispensed at each meeting. The cash payments dissipated resentment that had developed during the delayed payment period. The amounts due had accumulated to a sizable sum, and the parents were pleased to receive the immediate rewards.

The rationale for paying parents for attending meetings was to enable them to pay baby-sitters for care of smaller children during the meetings, to pay for transportation, or to forego other work for pay. The payments initially did attract parents who had not been interested and who did later attend, apparently not only for the cash

payment but also because of interest in the meetings. The parents did not, however, use the money for either baby-sitting or transportation. The $6.00 per month payment was important to the family's income and it was used for more basic needs.

Physical setting. The parent meetings were held in community halls fairly near to but separate from the preschool classes. In the case of five classes, parents could easily walk to the meetings but some or all of the parents in three classes needed transportation to the meetings. The Parent Consultants regularly picked up parents who needed transportation after this problem became apparent. In Centers 1 and 3 the parent groups in both programs met occasionally in a room adjoining the classrooms when space was not available in the community hall. The Head Start children were somewhat disrupting, as they tended to run in and out of the meetings from their own classes, and younger siblings wandered into the classrooms. The parents, however, seemed to enjoy particularly those meetings held at the schools. They felt more a part of the Head Start scene and liked to look in on their children while they were there. Space was very limited in both of these Centers, and the administrators did not want the parents to meet regularly at the school.

Communication. General communication with appropriate personnel in the CAP programs, housing complexes, and Head Start Centers, with classroom teachers, and with parents demanded ongoing effort to keep the program operating effectively. Initially there were misunderstandings of objectives and confusion of roles that hindered the program's early progress. These problems were largely solved through sustained efforts to clarify objectives and maintain communication,

both oral and written, with all interested persons. Every parent received an announcement of the next workshop meeting several days in advance. The Parent Consultants sent the teacher and area coordinator a summary of each meeting--list of participants, objectives, and activities. They met regularly with the teacher before meetings to discuss any classroom or individual problems that should be considered in the parent meeting and to elicit the teacher's reactions to the planned program. They also visited the classrooms to get acquainted with the children so that they could talk more meaningfully with the parents.

Description of Sample and Head Start Classes

The initial total sample for the studies reported herein consisted of 149 children attending eight Head Start classes. Nine subjects left the program during the course of the year, leaving 140. The age range of the children at time of enrollment in Head Start was from three years eight months to four years eight months. The sample contained 56 boys and 84 girls, none of whom had had previous Head Start experience. Approximately 60 per cent of the children were of part-Hawaiian or Samoan background, the remainder being distributed across various ethnic groups.

All of the classes in the study were located in essentially urban areas of Oahu. Two of the Centers in which the language curriculum was presented were CAP-affiliated; the third was under the jurisdiction of the Department of Education. The two sample classes in each of these Centers were housed at the same location. The two classes in which the enrichment program was introduced were administratively

associated with one of the CAP Centers exposed to the language curriculum, but each enrichment class met at a separate location.

Experimental Design

The study involved three experimental treatments, as follows: (a) a language curriculum (UHPLC) paired with a parent program emphasizing the role of the mother as a teacher of her child (P_1); (b) the same curriculum (UHPLC) paired with a parent program concerned with general principles of child development (P_2); and (c) an enrichment curriculum paired with Parent Program # 2. The first treatment was presented in three classes in three Head Start Centers; the second treatment was presented in three other classes at the same Centers; the third treatment was introduced in two classes at different locations.

Since not all of the mothers became actively involved in a parent program, each treatment group was divided according to level of parent participation in order to permit evaluation of the effectiveness of the parent programs. Those mothers who had attended one-third or more of the scheduled meetings were classified as high participants, and those attending fewer than one-third of the meetings as low participants. This division of the sample should, of course, be differentiated from the ideal situation in which individuals are randomly assigned to participating or nonparticipating treatments. Reasons for lack of participation are diverse. For example, 15 of the mothers placed in low-participating groups were unable to attend daytime meetings because of full-time employment. For the vast majority of mothers, however, daytime meetings were considerably more convenient. The average number of meetings attended by mothers in each of the high-participating

groups was 12.7 ($L + P_1$), 10.4 ($L + P_2$), and 11.8 ($E + P_2$); the corresponding figures for the low groups were 1.6 ($L + P_1$), 1.0 ($L + P_2$), and 1.1 ($E + P_2$).

A schematic representation of the design, indicating the number of subjects from each class contributing to each cell, is given in Table 1. The ratio of active mothers (those who attended one-third or more of the meetings) to inactive mothers is fairly uniform from class to class. The class in the third Center that received the $L + P_2$ treatment (3-2) had the largest difference between the number of high- and low-participating mothers and was also the only class in which the majority of mothers were active in a parent program.

Instrumentation

Assessment instruments included individually administered tests, observational procedures, and interviews.

Individual tests. The test battery consisted of a variety of instruments designed to assess cognitive and social-emotional functioning. The cognitive measures given by all Evaluation and Research Centers on a pre- post-test basis were (a) Stanford-Binet Intelligence Scale; (b) Preschool Inventory (PSI); and (c) Animal House subtest of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI).

The procedure for administration of the Binet was altered somewhat for the purpose of gathering comparative data on styles of responding to cognitive demands (i.e., Stanford-Binet items). Between basal and ceiling levels, all parts of all items were administered with the exception of Vocabulary, regardless of whether or not a child had clearly passed or failed an item before all trials were presented. In addition

TABLE 1

Experimental Design

Curriculum and Parent Program

Level of Parent Participation	L + P_1			L + P_2			E + P_2			
	1-1	2-1	3-1	1-2	2-2	3-2	4-1	5-1		
High	9	5 (N=23)	9	7	5 (N=24)	12	9	8 (N=17)		(64)
Low	10	9 (N=30)	11	11	6 (N=24)	7	11	11 (N=22)		(76)
		(53)			(48)			(39)		140

Note.--L = Language Curriculum; E = Enrichment Curriculum

P_1 = Parent Program # 1; P_2 = Parent Program # 2

to scoring the child's responses, the examiner recorded the manner in which the child handled the tasks presented, using a modification of a coding system developed by Hertzig, Birch, Thomas, and Mendez (1968). Final responses to each cognitive demand were classified according to whether the child engaged in task-relevant ("work") behavior or irrelevant ("not-work") activity. Further classifications within each of these dimensions were made, including an analysis of the "not-work" category into "verbal" (e.g., "I don't know," "I won't," "You show me") and "non-verbal" (e.g., complete passivity, shaking head, shrugging shoulders) responses. Hertzig, et al. (1968), in their study comparing the styles of responding of middle-class and low-income children, found that middle-class children gave significantly more "work" responses and that a significantly higher percentage of their "not-work" responses was verbal. One hypothesis that might be investigated is that exposure to Head Start should lead to an increase in verbal responsiveness and in work-oriented reactions to cognitive demands.

The Preschool Inventory is a test that may reflect the cognitive deficiencies of Head Start children and be sensitive to some of the types of learning that may occur in Head Start classes. The form of the PSI used in this study was the 1968 Experimental Edition, consisting of 64 items selected from an earlier version of the test, partly on the basis of results obtained in the 1966-67 national Head Start evaluation.

In the WPPSI Animal House subtest, a child demonstrates his ability to learn to associate four colors with four animals by placing the appropriately colored pegs in holes underneath pictures of the animals.

In addition to the tests forming the common, national cognitive battery, eight subtests from the Illinois Test of Psycholinguistic Abilities (ITPA) were administered to children in the Hawaii sample. The specific subtests were: Auditory Reception, Visual Reception, Auditory Association, Auditory Sequential Memory, Visual Association, Verbal Expression, Grammatic Closure, and Manual Expression. Responses on the Verbal Expression test, which requires the child to describe as fully as possible four familiar objects, were tape-recorded and analyzed for sentence length, total number of words produced, the ratio of qualifiers to nouns, and number of different types of descriptive categories (e.g., shape, color, function) for which credit was given. Taped samples of spontaneous classroom speech were collected twice during the year.

Measures of social-emotional functioning included the Inventory of Factors Affecting Test Performance, a rating scale dealing with a child's responsiveness to the Stanford-Binet test situation, and an experimental test of achievement motivation, Gumpgookies, developed at the University of Hawaii (Adkins and Ballif). The Inventory consisted of 12 factors adapted from the items on the face sheet of the Stanford-Binet record booklet that might interfere with optimal test performance (e.g., excessive distractibility, impulsiveness). The child was rated from 1 (no adverse effect) to 6 (seriously detrimental) on each factor. The test of achievement motivation centers around imaginary figures called Gumpgookies, presented in a variety of situations. In each item two Gumpgookies respond differently to the situation--one of the responses is assumed to reflect motivation to achieve. The examiner reads the caption associated with each

figure and the child is asked to point to his Gumpgookie, i.e., the one that is most like him. The total score on the test is the number of times the child chooses the Gumpgookie whose behavior reflects achievement motivation.

Observation procedures. The Observation of Substantive Curricular Input (OSCI) is a comprehensive record of ongoing activity in the classroom. During two-hour observations that were completed four times during the school year, the observer or team of observers recorded what took place during each of a series of three-minute units, using a series of predetermined codes.

Once separately, and four times following the OSCI, a 33-item teacher rating scale (Post Observation Teacher Rating Scale) was completed. The observers rated the teacher on a diverse set of items based upon their impressions of her behavior during the two hours in which they were using the OSCI.

Interviews. An extensive interview was conducted with the mother or guardian of each sample child at the beginning and near the end of the school year. The interview covered a range of topics including attitudes towards Head Start, education, and life in general; child-rearing practices; and extent of involvement in the community. Detailed information on the composition of the Head Start families and their educational and employment histories was also gathered. The head teacher of each sample class was interviewed at the end of the school year to obtain further information about the conduct of the program and about her opinions of the important aspects of Head Start. Information about classroom equipment was obtained from the teacher as well as from classroom observers.

RESULTS AND DISCUSSION

The description and analyses of the findings are presented separately for four clusters of tests. Within each section the procedures used to analyze the data were the same. Multiple comparisons among the adjusted means for the six treatment groups, using pre-test scores as the covariate, were carried out on the various response measures. Data were analyzed following the computer procedures outlined by Dixon (BMD 06V, General Linear Hypothesis with Contrasts, Biomedical Computer Programs, 1964). Nine comparisons among the six treatment means were of primary interest. Numerous writers have pointed to the problems inherent in procedures in which a large number of comparisons are made (e.g., Kirk, 1968). As the number of contrasts increases, the probability of erroneously declaring one of them significant also increases. Additionally, the comparisons of interest in this study were not uniformly independent. For the particular situation involving numerous nonorthogonal comparisons, Kirk recommends that the preferred level of significance be set for the collection of comparisons, rather than for the individual contrast.

In this study, each of the nine individual comparisons was tested at the .01 level, which is equivalent to setting an overall significance level for the collection of results at .09. A more conservative approach would have been to use Dunn's multiple comparison procedure (described in Kirk, 1968), setting the overall level of significance at .05, and consequently using the .005 level, approximately, for each of the nine comparisons. Such a stringent criterion for rejection of the null hypothesis seemed unwarranted, considering the still essentially

exploratory nature of this research. It should be noted, however, that all results for which significance levels of .005 or higher are reported would have reached significance had the Dunn procedure been employed.

In addition to the comparative analyses, data for the primary measures for the combined language groups [L + P_1 (hi), L + P_1 (lo), L + P_2 (hi), L + P_2 (lo)] and the combined enrichment groups [E + P_2 (hi), E + P_2 (lo)] were analyzed for overall pre- to post-test changes.

Stanford-Binet and Related Measures

Pre-test, post-test, and adjusted means for the six treatment groups on a variety of measures related to the Stanford-Binet are presented in Table 2. Gains in IQ's occurred for all groups, with statistically significant pre- to post-test increases found for the combined language groups ($df = 90$, $F = 21.4$, $p < .001$) but not for the combined enrichment groups. With the exception of the L + P_2 (lo) group, there was a general increase in the percentage of "work" responses to the Binet tasks. The modification of the procedure for assessing response styles to cognitive demands produced uniformly high "work" percentages, possibly not reflecting differences in "work" performance that may have existed among the groups. There was no consistent pattern for the measure of "verbal not-work" responses on the Binet, half the groups earning higher "verbal not-work" percentages on post-tests and half, lower. All groups earned better (i.e., lower) scores for the post-test than for the pre-test on the Stanford-Binet Inventory of Factors Affecting Test Performance,

TABLE 2

Pre-Test, Post-Test, and Adjusted Post-Test
Means for the Stanford-Binet and Related Measures

Tests		Language + P_1 Groups				Language + P_2 Groups				Enrichment + P_2 Groups			
		N	L + P_1 (hi)	N	L + P_1 (lo)	N	L + P_2 (hi)	N	L + P_2 (lo)	N	E + P_2 (hi)	N	E + P_2 (lo)
1. Stanford-Binet	Pre $\bar{X}$	21	97.19	28	95.57	21	89.05	21	92.52	16	91.38	22	89.27
	Post $\bar{X}$	21	99.81	28	99.04	21	95.29	21	98.19	16	93.56	22	90.68
	Adjusted $\bar{X}$	21	97.04	28	97.26	21	97.52	21	98.29	16	94.37	22	92.78
2. Stanford-Binet "Work"%	Pre $\bar{X}$	21	87.57	26	89.00	19	88.67	19	91.24	16	86.75	20	87.23
	Post $\bar{X}$	21	90.62	26	93.68	19	88.81	19	89.57	16	87.94	20	89.05
	Adjusted $\bar{X}$	21	90.86	26	93.55	19	88.76	19	88.85	16	88.39	20	89.38
3. Stanford-Binet "Verbal Not-Work"%	Pre $\bar{X}$	21	36.18	28	42.85	21	38.85	21	19.17	16	19.06	22	34.68
	Post $\bar{X}$	21	45.78	28	30.96	21	23.74	21	40.32	16	27.51	22	29.40
	Adjusted $\bar{X}$	21	44.71	28	27.76	21	21.82	21	44.69	16	31.92	22	28.81
4. Stanford-Binet Inventory of Factors Affecting Test Performance[a]	Pre $\bar{X}$	21	16.38	28	17.96	21	18.05	21	15.57	16	19.13	22	19.68
	Post $\bar{X}$	21	13.81	28	16.68	21	17.00	21	14.81	16	14.44	22	15.23
	Adjusted $\bar{X}$	21	13.99	28	16.65	21	16.96	21	15.09	16	14.26	22	14.98

[a]Lower scores reflect more adaptive test behavior.

indicating improvement in adaptive behavior. The enrichment groups showed the most improvement in this area.

Table 3 provides the t values based on the adjusted means for the Stanford-Binet and related measures for the nine comparisons of primary interest in this study. Negative t values occur when the mean for the second grouping within a comparison is higher than that for the first. For the Inventory of Factors Affecting Test Performance, the signs were reversed since low scores reflect better performance.

An explanation of the nine comparisons follows. The reader may wish to refer back to the schematic presentation of the design (Table 1) for a clearer understanding of the groups forming each comparison. The first three contrasts are concerned with the relative effectiveness of the language and enrichment curricula. Specifically, the comparisons are:

1) Language curriculum versus enrichment curriculum, with different parent programs and different levels of participation.

2) Language curriculum versus enrichment curriculum, with different parent programs and the same level of participation (lo). Since the mothers in the low-participating groups attended virtually no parent meetings, the contrast essentially is between the two curricula without parent participation.

3) Language curriculum versus enrichment curriculum, with the same parent program and the same level of participation (P_2, hi).

The fourth and fifth comparisons highlight the differences between the two parent programs:

4) Parent Program # 1 versus Parent Program # 2, with different curricula and the same level of participation (hi).

5) Parent Program # 1 versus Parent Program # 2, with the same curriculum and the same level of participation (L, hi).

TABLE 3

t Values for Comparisons Involving
the Stanford-Binet and Related Measures

Comparisons	Response Measures			
	Stanford-Binet	Stanford-Binet "Work"%	Stanford-Binet "Verbal Not-Work"%	Stanford-Binet Inventory of Factors Affecting Test Performance
Curriculum				
1. $L + P_{1,2}$ (hi & lo)--$E + P_2$ (hi & lo)	2.75*	1.17	.70	-.87
2. $L + P_{1,2}$ (lo)--$E + P_2$ (lo)	2.63*	1.00	.89	-.56
3. $L + P_2$ (hi)--$E + P_2$ (hi)	1.30	.16	-.95	-1.32
Parent Program				
4. P_1 (hi) + L--P_2 (hi) + L,E	.54	1.18	2.07	.96
5. P_1 (hi) + L--P_2 (hi) + L	-.21	.96	2.33	1.56
Parent Participation				
6. hi $P_{1,2}$ + L,E--lo $P_{1,2}$ + L,E	.15	-.99	-.16	.46
7. hi P_1 + L--lo P_1 + L	-.10	-1.32	1.86	1.50
8. hi P_2 + L--lo P_2 + L	-.34	-.04	-2.24	-.98
9. hi P_2 + E--lo P_2 + E	.66	-.42	.30	.36

*$p < .01$

The remaining comparisons focus on effects of level of participation in parent programs:

6) High participation versus low participation, with different parent programs and different curricula.

7) High participation versus low participation, with the same parent program and the same curriculum (P_1, L).

8) High participation versus low participation, with the same parent program and the same curriculum (P_2, L).

9) High participation versus low participation, with the same parent program and the same curriculum (P_2, E).

For the Stanford-Binet, some differences at the adopted significance level were obtained. Overall, children in the language classes earned significantly higher IQ scores than did children in enrichment classes (comparison #1); significant differences between the curricula were also obtained when only those children whose parents did not actively participate in a program were compared (comparison #2). This is the purest curriculum comparison in the design, since essentially it examines curricular differences when there is no planned parent involvement. Differences between language and enrichment classes were no longer significant, although still in the same direction, when there was active involvement in Parent Program # 2. There were no significant Binet IQ differences for comparisons specifically focused on parent programs or level of parent participation.

The general trend for the Binet "work" per cent was that higher scores were earned by children in language rather than in enrichment classes, and by those whose mothers were actively involved in P_1 rather than P_2, although these differences were not statistically significant. Examination of the data for percentage of "verbal not-work" responses produced indicates again that those children with parents active in

P_1, rather than P_2, earned higher scores. In this case the differences between the groups closely approach the adopted level of significance. The picture relative to parent participation for the Binet "work" and "verbal not-work" percentages is not consistent. The strongest finding (although the difference is not significant at the .01 level) was the tendency for children exposed to the UHPLC to earn higher "verbal not-work" percentages when their parents did not participate in P_2 than when they did (comparison #8). This same effect did not occur when children were in the enrichment program. Children exposed to the UHPLC whose parents participated in P_1 tended to achieve higher "verbal not-work" responses but lower "work" percentages than the children of the inactive P_1 mothers.

Although the Binet scores for the language groups were significantly higher than those for the enrichment groups, the latter demonstrated somewhat more adaptive behavior in the Binet testing situation as measured by their ratings on the Binet Inventory of Factors Affecting Test Performance. Differences between the groups, however, were not significant.

Preschool Inventory, Gumpgookies, and WPPSI Animal House

Table 4 provides the pre-test, post-test, and adjusted post-test means for three independent measures, including both raw scores and scores transformed by age norms for the PSI and Gumpgookies. Raw scores on these tests were transformed to age "norms" through use of the pre-test data of all Head Start E & R Centers. This was possible because of the fairly wide range in the ages of the samples from the different Centers. For both tests norms at one- or two-month intervals were developed, with a mean of 100 and a standard deviation of

TABLE 4

Pre-Test, Post-Test, and Adjusted Post-Test Means for the Preschool Inventory, Gumpgookies, and WPPSI Animal House Tests

Test		Language + P_1 Groups				Language + P_2 Groups				Enrichment + P_2 Groups			
		N	L + P_1 (hi)	N	L + P_1 (lo)	N	L + P_2 (hi)	N	L + P_2 (lo)	N	E + P_2 (hi)	N	E + P_2 (lo)
1. Preschool Inventory (transformed scores)	Pre $\bar{X}$	21	106.67	28	105.29	23	96.87	22	105.45	15	101.20	20	101.20
	Post $\bar{X}$	21	126.76	28	124.93	23	120.43	22	122.32	15	113.47	20	109.75
	Adjusted $\bar{X}$	21	124.30	28	123.38	23	124.43	22	120.66	15	114.61	20	110.89
2. Preschool Inventory (raw scores)	Pre $\bar{X}$	21	29.05	28	28.68	23	24.87	22	28.59	15	26.27	20	26.25
	Post $\bar{X}$	21	43.86	28	42.54	23	41.74	22	41.45	15	36.67	20	34.75
	Adjusted $\bar{X}$	21	44.55	28	43.61	23	39.85	22	41.64	15	36.55	20	34.57
3. Gumpgookies (transformed scores)	Pre $\bar{X}$	21	99.81	27	95.52	22	98.41	21	103.90	16	98.88	17	99.12
	Post $\bar{X}$	21	109.90	27	101.96	22	101.32	21	105.19	16	107.75	17	106.41
	Adjusted $\bar{X}$	21	109.68	27	103.11	22	101.54	21	103.65	16	107.82	17	106.41
4. Gumpgookies (raw scores)	Pre $\bar{X}$	21	35.67	27	33.48	22	35.95	21	37.90	16	35.38	17	35.71
	Post $\bar{X}$	21	42.53	27	38.67	22	39.27	21	40.62	16	41.88	17	41.41
	Adjusted $\bar{X}$	21	42.73	27	39.54	22	38.72	21	39.92	16	41.94	17	41.30
5. WPPSI Animal House	Pre $\bar{X}$	23	8.83	28	8.57	23	7.35	23	8.52	17	8.65	22	8.73
	Post $\bar{X}$	23	9.48	28	9.36	23	9.22	23	9.04	17	9.06	22	9.45
	Adjusted $\bar{X}$	23	9.31	28	9.30	23	9.67	23	9.01	17	8.97	22	9.33

approximately 15. (See copies of the PSI and Gumpgookies norms and descriptions of the procedures for deriving them in Appendixes D and E, respectively.) Since these particular age norms, developed at the Hawaii E & R Center, may not be readily available, raw score means for the two tests are also presented.

Large gains were made by all groups on the PSI. For the combined language groups there was an average gain of approximately 20 points, using transformed scores, which was significant at better than the .001 level ($df = 93$, $F = 254.96$). The average gain of about 10 points for the enrichment groups was also significant at better than the .001 level ($df = 34$, $F = 29.87$).

All groups earned higher post-test scores on Gumpgookies. The average gain of about five points (transformed scores) for children in the language classes was statistically significant ($df = 90$; $F = 8.72$, $p < .005$), as was the average gain of eight points for the children in enrichment classes ($df = 32$, $F = 13.48$, $p < .001$). Although the overall gain for the combined enrichment groups was somewhat larger than that for the combined language groups, the language group coupled with Parent Program #1 had the largest pre- to post-test increase in Gumpgookies scores. Both the two $L + P_1$ and the two $E + P_2$ groups gained about a half of a standard deviation or more in terms of age-transmuted scores.

There had been no definite prior convictions or hypotheses as to which type of curriculum or which type of parent program would have more effect on the motivation measure. The results suggest that a more structured parent program coupled with a more structured curriculum (in language) has about the same effect on children's motivation to achieve in school as a less structured parent program coupled with a less structured curriculum. Since each of the two formal curricula

takes only 15-20 minutes, there is no theoretical reason (although there may be practical, logistical, and economic reasons) not to combine the language curriculum with an enrichment curriculum and to incorporate the salient elements of the two parent programs into one more intensive program or one with more varied emphases.

There was a small but consistent increase for all groups on the Animal House subtest of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI). At the end of the year, all groups were performing close to the average level for their ages (a scaled score of 10 on WPPSI subtests is equal to the mean performance for each age group). The average increase for the combined language groups was .95 scaled score points and the average gain for the combined enrichment groups was .56 scaled score points. Although the magnitude of the difference between the average gain for the language groups and the average gain for the enrichment groups was very small, only the increase for children in the language classes reached statistical significance ($df = 96$, $F = 12.68$, $p < .001$). Interpretation of these results should take into account the relatively small size of the enrichment sample ($N = 39$).

Data on the nine comparisons for this group of instruments are presented in Table 5. Values for the PSI and Gumpgookies are based on the transformed scores. Highly significant differences in favor of the language curriculum as compared with the enrichment curriculum were obtained on the PSI. This was true for the overall curriculum comparison, which includes variations in parent program and level of participation; for the second comparison, which essentially eliminates both these variables; and for the third comparison, which is limited to the two curricula when each is associated with active participation in Parent

TABLE 5

t Values for Comparisons Involving the Preschool Inventory, Gumpgookies, and WPPSI Animal House Tests

Comparicons	Response Measures		
Curriculum	Preschool Inventory	Gumpgookies	WPPSI Animal House
1. L + $P_{1,2}$ (hi & lo) -- E + P_2 (hi & lo)	5.12**	-1.05	.44
2. L + $P_{1,2}$ (lo) -- E + P_2 (lo)	4.11**	-.87	-.34
3. L + P_2 (hi) -- E + P_2 (hi)	2.90*	-1.56	1.06
Parent Program			
4. P_1 (hi) + L -- P_2 (hi) + L,E	1.70	1.49	-.01
5. P_1 (hi) + L -- P_2 (hi) + L	-.04	2.17	-.59
Parent Participation			
6. hi $P_{1,2}$ + L,E -- lo $P_{1,2}$ + L,E	1.53	.87	.30
7. hi P_1 + L -- lo P_1 + L	1.61	1.83	.03
8. hi P_2 + L -- lo P_2 + L	1.10	-.56	1.09
9. hi P_2 + E -- lo P_2 + E	.31	.33	-.55

* p <.01
** p <.001

Program #2. No significant PSI differences were found for comparisons focused on parent programs or parent participation, although there was a tendency for children of active mothers to earn higher scores than those of inactive mothers.

There were no significant differential results of the programs on Gumpgookies. Overall, the curriculum comparisons favored the enrichment groups, as was true for the only other "social-emotional" measure in the study, the Stanford-Binet Inventory of Factors Affecting Test Performance. The data also showed a tendency for children exposed to the UHPLC whose mothers actively attended P_1 to earn higher Gumpgookies scores than their classmates and than children exposed to the same curriculum but whose mothers actively participated in P_2.

Comparisons among the adjusted post-test means for the Animal House subtest produced no significant results for either the curriculum, parent program, or level of parent participation variables. Children in the language classes, however, made significant pre- to post-test gains on Animal House.

Illinois Test of Psycholinguistic Abilities

Pre-test, post-test, and adjusted means on eight ITPA subtests for each of the six groups are presented in Table 6. Group means for the sum of the scaled scores for these eight tests are also shown. A graphic representation of the pre- and post-test data is given in Figures 1, 2, and 3, for the L + P_1, L + P_2, and E + P_2 groups, respectively. The mean performance of the normative group at each age level (three-month intervals) on the ITPA subtests is equal to a score of 36 with a standard deviation of 6. At the time of initial testing, only on the Auditory Sequential Memory and Manual Expression subtests did the entire sample consistently perform at approximately an average level of functioning for their ages. The Manual Expression subtest involves no verbalization, but rather requires the child to demonstrate an action (e.g., dialing a telephone) through the use of gestures. Auditory Sequential Memory is a test of digit span. In general, in the other areas measured by the ITPA, and most dramatically on the Grammatic Closure subtest, there were discrepancies between the pre-test level of performance and the chronological ages of the children for all treatment groups.

There was an increase in the total of the ITPA scaled scores for all groups on the post-test. This increase was significant for the language groups combined ($df = 85$, $F = 50.46$, $p < .001$), but not for the two enrichment groups. The range in the amount of overall change

TABLE 6

Pre-Test, Post-Test, and Adjusted Post-Test Means for the Eight ITPA Subtests and the Total of the Scaled Scores

Test		Language + P_1 Groups				Language + P_2 Groups				Enrichment + P_2 Groups			
		N	L + P_1 (hi)	N	L + P_1 (lo)	N	L + P_2 (hi)	N	L + P_2 (lo)	N	E + P_2 (hi)	N	E + P_2 (lo)
1. Auditory Reception	Pre $\bar{X}$	23	32.83	27	34.41	21	31.62	20	33.35	16	29.19	22	30.82
	Post $\bar{X}$		33.74		34.41		31.33		33.20		31.13		30.36
	Adjusted $\bar{X}$		33.49		33.48		31.60		32.73		32.44		30.98
2. Visual Reception	Pre $\bar{X}$	23	35.26	27	36.30	21	31.95	20	34.40	16	32.31	21	33.33
	Post $\bar{X}$		35.87		37.30		34.19		36.45		37.50		34.05
	Adjusted $\bar{X}$		35.61		36.80		34.68		36.39		37.91		34.23
3. Auditory Association	Pre $\bar{X}$	23	31.87	27	33.93	21	29.00	20	31.60	16	32.56	22	28.00
	Post $\bar{X}$		40.65		38.26		34.81		35.20		31.19		28.50
	Adjusted $\bar{X}$		40.23		36.49		36.25		34.95		30.31		30.60
4. Auditory Sequential Memory	Pre $\bar{X}$	21	38.43	27	37.26	21	39.67	19	37.68	16	35.56	22	36.09
	Post $\bar{X}$		38.52		37.67		38.43		39.95		35.25		36.91
	Adjusted $\bar{X}$		37.95		37.82		37.09		39.83		36.45		37.78
5. Visual Association	Pre $\bar{X}$	23	33.74	27	32.26	21	32.48	19	30.53	16	32.06	22	30.50
	Post $\bar{X}$		35.26		35.33		33.86		35.63		34.31		31.55
	Adjusted $\bar{X}$		34.53		35.22		33.65		36.23		34.28		32.16
6. Verbal Expression	Pre $\bar{X}$	23	29.91	27	32.30	21	32.57	19	32.11	16	31.63	22	31.09
	Post $\bar{X}$		39.87		38.74		35.57		39.95		32.94		32.14
	Adjusted $\bar{X}$		40.88		38.32		34.98		39.64		32.92		32.44

TABLE 6 (cont.)

Test		Language + P_1 Groups				Language + P_2 Groups				Enrichment + P_2 Groups			
		N	L + P_1 (hi)	N	L + P_1 (lo)	N	L + P_2 (hi)	N	L + P_2 (lo)	N	E + P_2 (hi)	N	E + P_2 (lo)
7. Grammatic Closure	Pre $\bar{X}$	22	28.18	27	28.59	21	26.19	19	27.26	16	24.50	22	24.91
	Post $\bar{X}$		29.36		29.04		25.48		28.58		24.25		23.50
	Adjusted $\bar{X}$		28.44		27.84		25.86		28.26		25.74		24.72
8. Manual Expression	Pre $\bar{X}$	22	39.23	27	37.67	20	36.90	19	35.58	16	34.63	22	36.36
	Post $\bar{X}$		38.59		39.78		35.20		39.05		34.06		36.05
	Adjusted $\bar{X}$		37.81		39.52		35.20		39.49		34.82		36.22
9. Total of Scaled Scores	Pre $\bar{X}$	20	271.35	27	272.89	20	263.75	19	262.37	16	252.44	21	250.81
	Post $\bar{X}$		292.35		290.52		272.75		287.37		260.63		251.90
	Adjusted $\bar{X}$		286.40		283.46		272.28		287.89		268.31		260.76

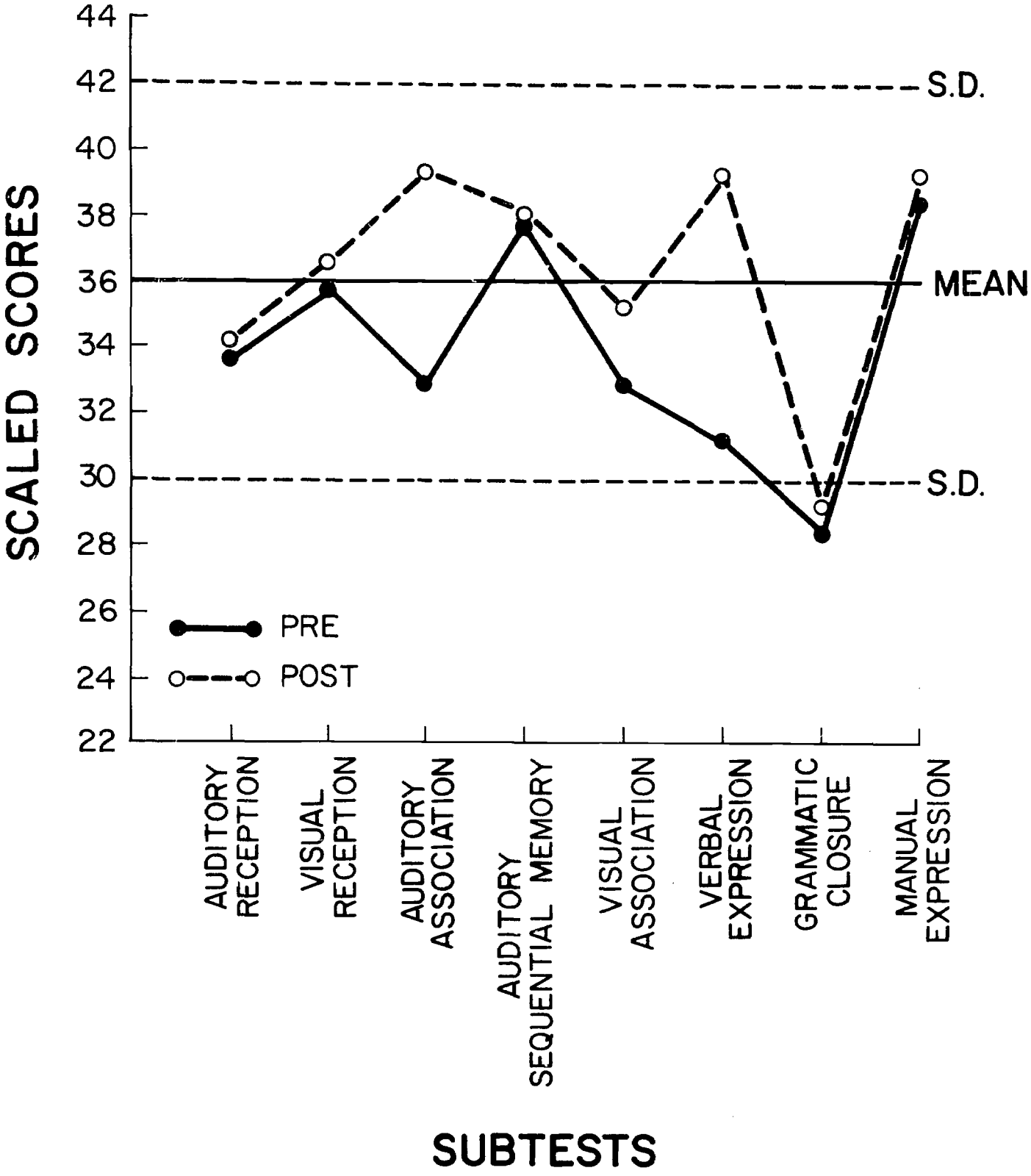

Fig. 1. Mean Scaled Scores on the ITPA for Two Language Groups $L + P_1$ (hi) and $L + P_1$ (lo)

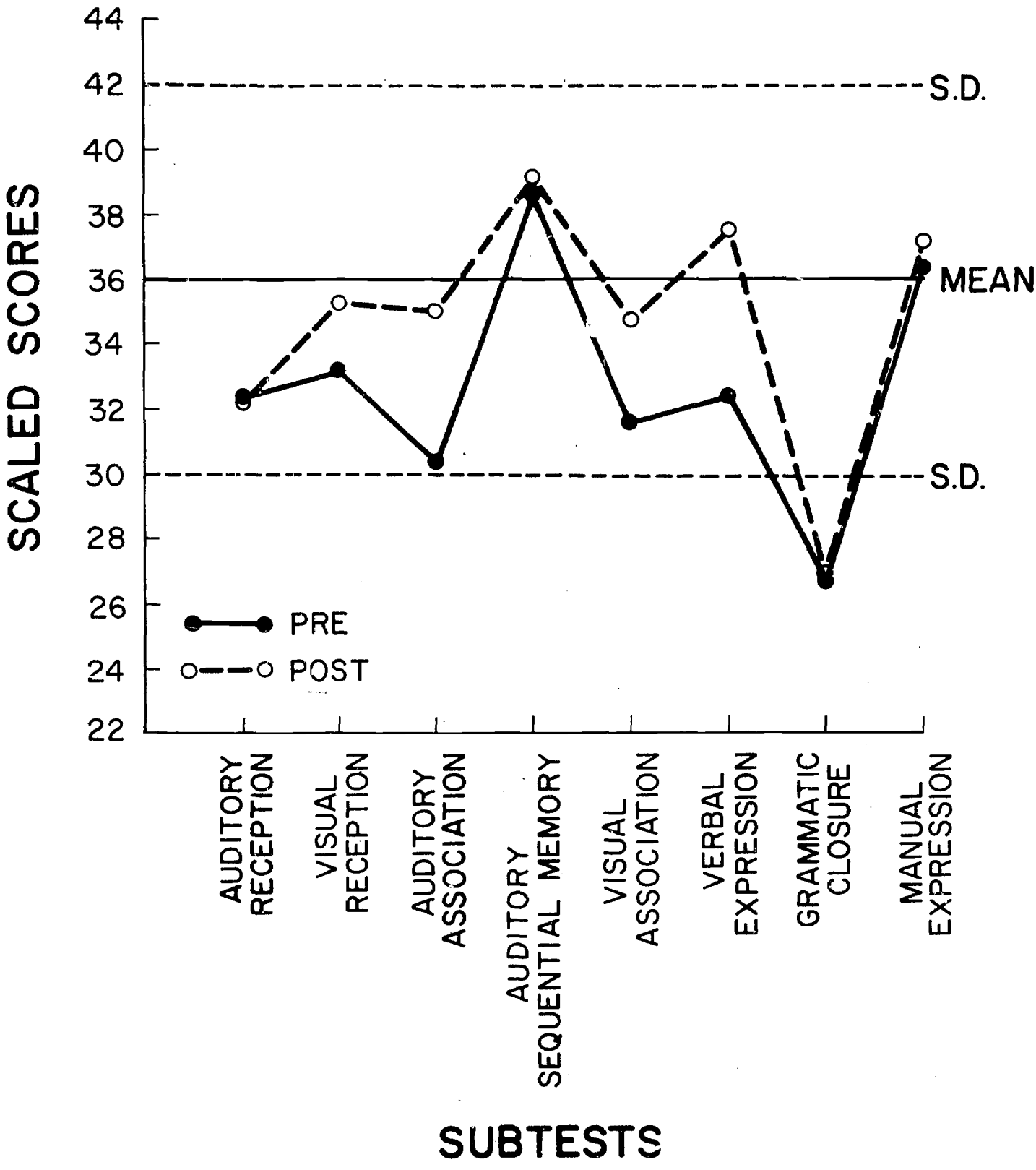

Fig. 2. Mean Scaled Scores on the ITPA for Two Language Groups $L + P_2$ (hi) and $L + P_2$ (lo)

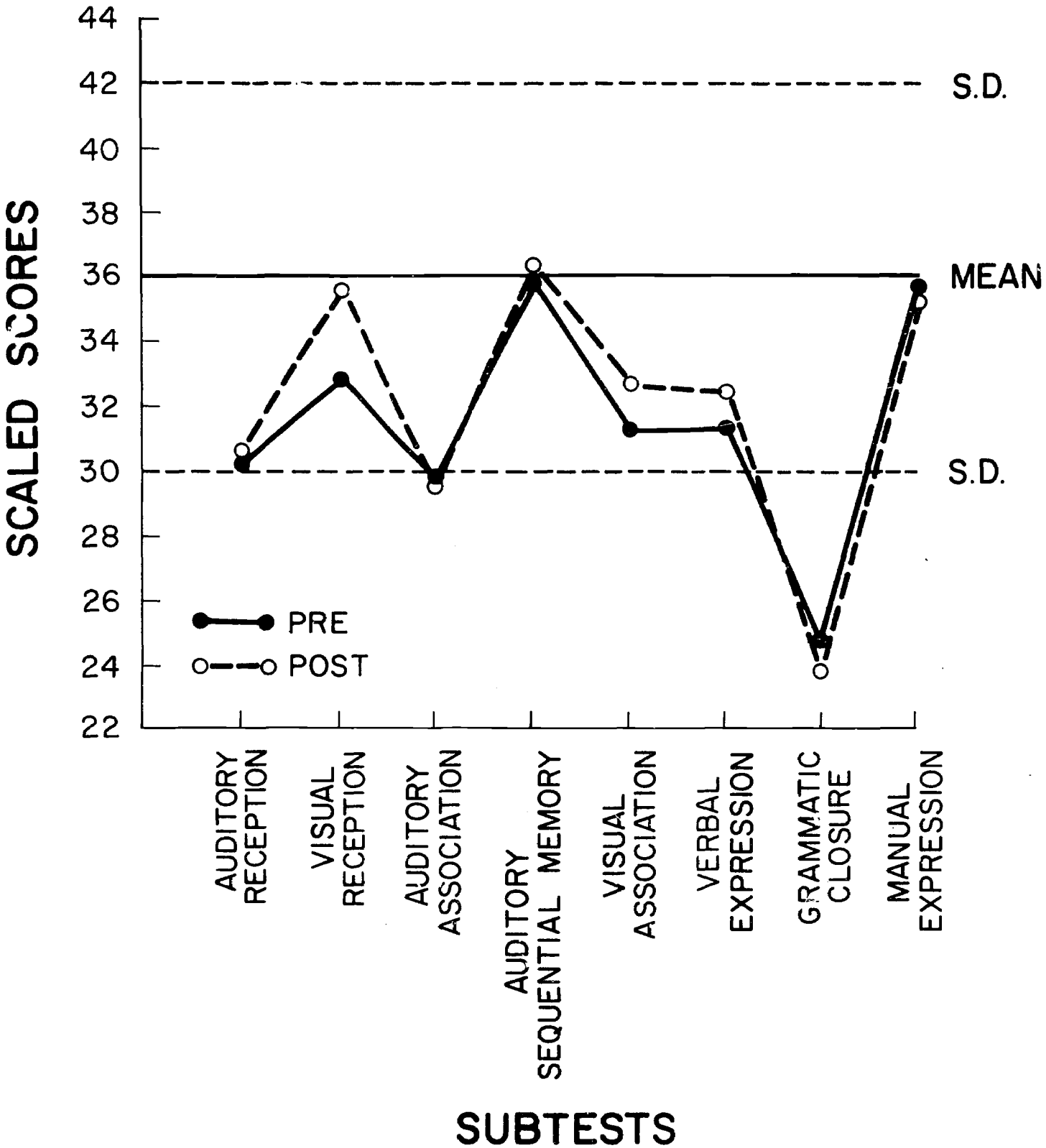

Fig. 3. Mean Scaled Scores on the ITPA for Two Enrichment Groups $E + P_2$ (hi) and $E + P_2$ (lo)

among groups was very large, from 1.09 [E + P_2 (lo)] to 25.00 [L + P_2 (lo)] scaled score points. The pattern of changes for the individual subtests was very variable. For the language groups highly significant pre- to post-test gains were achieved on both the Auditory Association subtest ($t = 7.34, p < .001$) and the Verbal Expression subtest ($t = 9.00; p < .001$). These tests measure, respectively, the ability to complete verbal analogies and to express descriptive concepts verbally. The latter test is analogous to the Manual Expression subtest. In contrast to the language classes, on both the Auditory Association and Verbal Expression tests the enrichment classes evidenced either minimal losses or slight gains from pre- to post-test. In general, the two enrichment groups showed very little change on the ITPA during the course of the year. The only area in which notable gains were demonstrated was in Visual Reception, primarily by the E + P_2 (hi) group. This test requires the child to select a picture from a set of four that is conceptually similar to the previously presented stimulus picture. Performance on the Grammatic Closure subtest of the ITPA seems highly resistant to marked improvement for these Hawaiian children. Three of the four language groups earned slightly higher post-test scores; both enrichment groups showed small losses in this area. This finding warrants further exploration in later studies.

Table 7 provides a summary of the findings for the multiple comparisons for the ITPA data. There were highly significant differences favoring the language curriculum on the total scaled score based on the eight subtests, as well as for the Verbal Expression and Auditory Association subtests. This was true for the broadest curricular comparison (# 1) as well as for the more pure comparison (# 2). For the

TABLE 7

t Values for Comparisons Involving Eight ITPA Subtests and Total of Scaled Scores

Comparisons	Subtests								
	Auditory Reception	Visual Reception	Auditory Association	Auditory Sequential Memory	Visual Association	Verbal Expression	Grammatic Closure	Manual Expression	Total of Scaled Scores
Curriculum									
1. L + $P_{1,2}$ (hi & lo)-- E + P_2 (hi & lo)	.95	-.19	5.11***	.94	1.47	4.96***	2.33	2.12	4.28***
2. L + $P_{1,2}$ (lo)-- E + P_2 (lo)	1.37	1.66	2.94**	.70	2.33	4.21***	2.49	2.14	4.49***
3. L + P_2 (hi)-- E + P_2 (hi)	-.42	-1.81	2.72*	.34	-.32	1.04	.07	.19	.57
Parent Program									
4. P_1 (hi) + L-- P_2 (hi) + L, E	.93	-.47	3.99***	.76	.36	4.34***	1.91	1.72	2.77*
5. P_1 (hi) + L-- P_2 (hi) + L	1.06	.56	2.00	.49	.50	3.26**	1.68	1.43	2.16
Parent Participation									
6. hi $P_{1,2}$ + L, E-- lo $P_{1,2}$ + L, E	.11	.27	1.36	-1.28	-.36	-.50	-.29	-2.32	-.45
7. hi P_1 + L-- lo P_1 + L	.01	-.78	2.01	.08	-.41	1.51	.41	-1.01	.48
8. hi P_2 + L-- lo P_2 + L	-.61	-1.01	.64	-1.52	-1.38	-2.47	-1.51	-2.27	-2.37
9. hi P_2 + E-- lo P_2 + E	.75	2.07	-.13	-.71	1.10	.25	.62	-.72	1.10

* p <.01
** p <.005
*** p <.001

third curricular comparison, which is limited to the groups whose mothers were active participants in P_2, only the results for the Auditory Association test are significant. Superior performance by children exposed to the language curriculum was also evidenced on the Grammatic Closure and Manual Expression subtests, and somewhat less consistently on Visual Association. Turning to the contrasts focused on parent programs, for the fourth comparison significant results favoring the P_1 program were obtained for the total of the scaled scores, and specifically for the Verbal Expression and Auditory Association subtests. Since the P_1 program was paired only with the language curriculum, however, one must be cautious about attributing the results of the comparison solely to the effectiveness of Parent Program # 1. A more nearly pure evaluation of the two parent programs can be obtained from an examination of the fifth comparison in which the curriculum variable is controlled. Although only the Verbal Expression subtest differences remain clearly significant, high t values in the direction favoring P_1 were obtained for both the total scaled score and Auditory Association. Additionally, for all subtests on the ITPA, higher mean scores were earned by children in the language curriculum whose mothers were active participants in Parent Program # 1 rather than in Parent Program # 2.

Notable in examining contrasts focused on level of participation is the strong tendency for children exposed to the UHPLC whose mothers rarely attended P_2 to perform better on the ITPA than children from the same classes whose mothers were active participants in Parent Program # 2. These findings were particularly strong for the Verbal Expression and Manual Expression tests, as well as for the sum of the scaled scores for the eight subtests. A partial explanation of these results is provided

in the discussion of the parent interview data. When P_2 was paired with the enrichment curriculum, different effects were noted. For the latter case, in general, the children whose mothers attended P_2 tended to do somewhat better than those whose mothers were inactive in the program. Those children exposed to the UHPLC whose mothers were active P_1 participants, also tended to perform better than their classmates whose mothers were inactive participants. The Manual Expression subtest is the one area in which there was a consistent tendency for children of nonparticipating mothers to perform better.

Verbal Expression Subtest Analyses

A summary of means for various analyses carried out on the Verbal Expression subtest of the ITPA is shown in Table 8. On the post-test all groups used more different types of descriptive categories as well as longer sentences in their responses on the Verbal Expression subtest than they had at pre-test. There were marked differences among the groups in the mean number of words used on both pre- and post-test. Only the group with the highest pre-test mean [$L + P_2$ (hi)] did not show an increase in verbal production during the course of the year.

The pattern of changes in the relationship between nouns and qualifiers for responses to the items on Verbal Expression was inconsistent. Since the numerator of the ratio was the number of nouns and pronouns and the denominator was the number of qualifiers (articles, adjectives, and adverbs), lower scores reflect the use of more descriptive language. On the post-test both $L + P_1$ groups used relatively fewer and both $L + P_2$ groups used relatively more qualifiers; the results for the enrichment groups were mixed.

TABLE 8

Pre-Test, Post-Test, and Adjusted Post-Test
Means for Analyses of the Verbal Expression Subtest

		Language + P_1 Groups				Language + P_2 Groups				Enrichment + P_2 Groups			
		N	L + P_1 (hi)	N	L + P_1 (lo)	N	L + P_2 (hi)	N	L + P_2 (lo)	N	E + P_2 (hi)	N	E + P_2 (lo)
Mean Number of Descriptive Categories	Pre $\bar{X}$	23	3.17	27	4.00	21	4.19	19	3.16	16	3.19	22	3.50
	Post $\bar{X}$		6.04		6.00		5.62		6.05		4.44		4.45
	Adjusted $\bar{X}$		6.26		5.76		5.28		6.28		4.65		4.49
Mean Number of Words	Pre $\bar{X}$	23	51.39	27	72.81	21	100.29	19	84.26	16	46.94	22	39.18
	Post $\bar{X}$		101.74		89.59		84.24		105.11		65.75		63.00
	Adjusted $\bar{X}$		107.31		87.08		71.36		98.27		73.00		73.18
Mean Length of Sentence	Pre $\bar{X}$	20	3.73	26	4.04	20	4.54	19	3.70	12	3.97	21	2.82
	Post $\bar{X}$		5.18		5.39		5.43		6.61		5.34		3.76
	Adjusted $\bar{X}$		5.23		5.22		4.92		6.67		5.21		4.42
Ratio of Nouns to Qualifiers[a]	Pre $\bar{X}$	20	1.35	26	1.45	20	1.70	19	1.87	12	1.94	21	2.74
	Post $\bar{X}$		1.68		1.85		1.61		1.52		2.48		1.98
	Adjusted $\bar{X}$		1.71		1.88		1.62		1.51		2.47		1.92

[a]Lower scores indicate a higher proportion of qualifiers to nouns.

Comparison analyses for these data are given in Table 9. Children in the language classes used significantly more different types of relevant categories for describing the objects presented in the Verbal Expression subtest than did children in the enrichment classes. The findings were highly significant for the overall curricular contrast and when the parent program and participation variables were eliminated. When the curricular comparison was limited to the two groups for which there was high P_2 participation, the difference was no longer significant. On all the other language measures used for analyzing Verbal Expression responses, differences tended to favor the language curriculum. Children exposed to the UHPLC whose parents were involved in P_1 used significantly more different descriptive categories and more words in their responses on Verbal Expression than did those in either curriculum whose mothers were active in P_2 (comparison #4). As was mentioned in the discussion of the ITPA subtests, the fifth contrast provides a clearer measure of the relative effectiveness of the two parent programs. With the curriculum variable controlled, the differences between the parent programs with respect to number of descriptive categories and number of words on the Verbal Expression subtest approach, but do not quite reach the adopted significance level.

As was noted for the general ITPA results, there was a general trend for the children in language classes paired with the P_1 program to perform better when their mothers were active rather than inactive participants, but the reverse was true in classes in which the UHPLC was paired with P_2. When the P_2 program was paired with the enrichment curriculum, however, the children with active mothers were more likely to do better on most of the ITPA measures.

TABLE 9

t Values for Various Analyses of the Verbal Expression Subtest of the ITPA

Comparisons	$\bar{X}$ Number of Descriptive Categories	$\bar{X}$ Number of Words	$\bar{X}$ Length of Sentence	Ratio of Nouns to Qualifiers
Curriculum				
1. L + $P_{1,2}$ (hi & lo)--E + P_2 (hi & lo)	4.28***	1.82	1.19	1.78
2. L + $P_{1,2}$ (lo)--E + P_2 (lo)	3.72***	1.50	2.06	.61
3. L + P_2 (hi)--E + P_2 (hi)	1.19	-.10	-.29	1.76
Parent Program				
4. P_1 (hi) + L--P_2 (hi) + L, E	3.07**	2.69*	.20	.87
5. P_1 (hi) + L--P_2 (hi) + L	2.04	2.38	.35	-.22
Parent Participation				
6. hi $P_{1,2}$ + L, E--lo $P_{1,2}$ + L, E	-.41	-.26	-.60	-.67
7. hi P_1 + L--lo P_1 + L	1.10	1.45	.02	.41
8. hi P_2 + L--lo P_2 + L	-1.98	-1.74	-1.98	-.26
9. hi P_2 + E--lo P_2 + E	.30	-.01	.79	-1.15

* $p < .01$
** $p < .005$
*** $p < .001$

Spontaneous Speech

During the early months of the school year, audio tapes of conversational speech among the children themselves were made in classroom settings. No significant difference was observed in the sentence or phrase length in terms of the number of words. The mean length of phrase for the experimental group was 3.83 number of words and for the comparison group 3.58.

At the end of the school year tapes were made again of the conversation of groups of two to four children. The recordings were made by adults unknown to the children, since it was thought that the regular language teacher might actually serve as a cue for speech patterns that had been taught in the experimental classes and for complete sentences, which had been encouraged. The mean length of phrase of the experimental classes was 4.19 while that for the comparison classes was 3.34. For the latter groups,therefore, there was a decrease in sentence or phrase length over the school year. The difference in the second tapes between the experimental and control groups was significant at the .001 level ($t = 5.00$).

Summary of Test Results

Since the relationships among the tests administered may be of interest, a table of intercorrelation coefficients based on 20 pre-test measures is provided in Appendix F.

For a variety of cognitive measures administered on a pre-test and post-test basis, children exposed to the language curriculum (UHPLC) earned significantly higher post-test scores than children in classes in which the enrichment curriculum was presented. Specifically, significant results were obtained for the Stanford-Binet, Preschool Inventory, Auditory Association and Verbal Expression ITPA subtests, including the number of different descriptive categories given in Verbal Expression responses,

as well as for the total scaled scores for the eight ITPA subtests administered. These results were obtained when comparisons involved all language and enrichment groups, and when the variables of parent program and level of participation were essentially eliminated. When comparisons were limited to the groups whose mothers were active P_2 participants, differences on these measures, though usually not significant, consistently favored the language curriculum. For the other cognitive measures, although differences between the curricula were not significant, children in language classes tended to earn higher scores. No significant differences were obtained for the measures related to social-emotional functioning, although the average adjusted post-test Gumpgookies scores for the enrichment groups was slightly higher than the average for the combined language groups, and children in the enrichment classes showed more improvement in adaptive test behavior as measured by their ratings on the Stanford-Binet Inventory of Factors Affecting Test Performance

In addition to the differential effects noted, there were significant pre- to post-test increases on the Binet, PSI, Gumpgookies, Animal House, and the ITPA for the combined language groups and on the PSI and Gumpgookies for the combined enrichment groups.

Significant differences between the two parent programs, in favor of P_1, were found on the Auditory Association and Verbal Expression subtests; the number of words and the number of different categories given on the Verbal Expression subtest; and the total of scaled scores on the ITPA. The specific comparison for which these results were obtained, however, is somewhat confounded by curricular differences, since the P_1 program was paired only with language, whereas the P_2 program was combined with both the language and the enrichment curricula. When comparisons between parent programs are confined to groups in which the children were exposed to the language program, only

the differences for Verbal Expression are clearly significant. However, for the other measures, the direction of differences is strongly in favor of P_1 (t values ranging from 1.72 to 2.38; 2.58 is the critical value). Additionally, for all ITPA subtests, higher scores were earned by children in language classes whose parents were active participants in P_1 rather than P_2.

There were no significant differences for any measures for comparisons focused on level of parent participation. Children in the language program whose parents attended P_1, however, performed better on the average than their classmates whose parents did not participate in P_1 on almost all measures used in the study. Only on the Stanford-Binet "work" per cent, and the Manual Expression and Visual Reception ITPA subtests was the reverse true to any degree. It is interesting to note that neither of these ITPA subtests involves any overt verbalization.

The effect of participating versus not participating in P_2 depended in large part on the curriculum to which the children were exposed. Children in the language program whose mothers did not participate in P_2 performed better on the ITPA and other measures than those whose mothers did participate. On the WPPSI Animal House subtest and the PSI a reverse trend was noted. When P_2 was combined with the enrichment curriculum, the tendency was for the children of active participants to earn higher scores, although this was not a uniform finding across all measures.

Summarizing results for comparisons involving parent programs and level of participation in parent programs, it appears that (a) active participation in P_1 was more effective than active participation in P_2 when all children were exposed to a language program; and (b) active participation of mothers in P_2 did not facilitate the performance of

their children in language classes, although it did appear to contribute somewhat to more effective functioning for children in enrichment classes. These findings raise the question of whether there was some incompatibility between the goals of P_2 and those of the language curriculum. Additionally, the composition of the inactive P_2 mothers from the three language classes should be examined for characteristics that would make them uniquely able to promote independently the cognitive development of their children. An analysis of the parent interview data for the six treatment groups is presented in the next section and provides some information along these lines.

Parent Interview

The parent interviews took place near the beginning and end of the school year. Some alterations were made in the post-interview form, including the addition of a few items. Where changes in responses to questions are of interest, data from both interviews are considered; otherwise the post-interview responses are reported. Tables relative to the interpretations given here are presented in Appendix G. Because the N's for the six sub-groups were of necessity small (17 to 29), conclusions involving contrasts among the groups should be regarded as being highly tentative and of low generalizability. Figures in all tables are percentages. Items for which the numbers do not add up to 100% reflect a failure to respond on the part of some mothers in a few instances, or inadvertent omission of the question. In some tables a "no response" category is included.

Data are presented in some detail for each of the six treatment groups, because of their possible relevance to conclusions regarding the parent programs.

Demographic data. A larger percentage of families in high parent participation groups in contrast to low parent participation groups were intact (i.e., both mother and father present), although there were fewer homes in which the mother was completely alone in the L + P_2 (lo) than in the L + P_2 (hi) group. The largest difference between high- and low-participating groups was found in the E + P_2 classes; 71% of the active mothers as compared with 32% of the inactive mothers were part of intact families. (See Table 1 in Appendix G.) Within each of the groups the highest percentage of families consisted of between five and seven people. There were no striking differences in

average family sizes among the treatment groups (Table 2).

Within each group, the highest percentage of mothers were Polynesian (i.e., part-Hawaiian or Samoan). The E + P_2 (hi) and L + P_2 (lo) groups had a relatively high number of Oriental mothers; the latter group was also the only one in which there were no Caucasian mothers. English was the only language spoken in a majority of the homes, but in many more families with children in enrichment classes than in language classes was an additional language also spoken (Table 4). This bi-lingualism may have impeded the language development of some children in enrichment classes and thus contributed to their poorer test performance.

The level of education of the L + P_1 and E + P_2 active mothers tended to be slightly higher than that of their inactive counterparts; the active and inactive mothers in the L + P_2 groups had approximately equivalent educational backgrounds. A similar pattern emerges when the educational levels of the fathers are compared. Fathers from the L + P_1 and E + P_2 active groups had had more education than the fathers from the inactive parallel groups, whereas the L + P_2 (lo) fathers on the average had had more schooling than the L + P_2 (hi) fathers (Table 5).

Not surprisingly, perhaps, more inactive than active program participants were employed (Table 6). The highest percentage of working mothers were in the L + P_2 (lo) group. There was a general increase in the mother's rate of employment during the course of the year. This was attributable in part to the Concentrated Employment Program, which was offered by the Manpower Development and Training Office to families living in the district of the two enrichment

classes and two of the language classes. There was also a general increase in the employment rate of fathers, with the exception of those in the L + P_1 (hi) group. As with the mothers, at the end of the year, the L + P_2 (lo) fathers had the highest employment rate.

Participation in and attitudes towards Head Start. On both pre- and post-interviews, mothers in all groups most frequently reported that the thing they liked best about Head Start was the opportunity it gave their children to acquire new skills (Table 7). There were small increases by the end of the year in the numbers of mothers giving this response in both L + P_1 groups and in the L + P_2 (hi) group. Three (13%) of the active L + P_2 mothers reported at the end of the year that what they liked best was that Head Start gave mothers a chance to learn new skills. On the post-interview the percentages of mothers in both high and low enrichment groups who emphasized their children's acquisition of skills were about equal. Whereas four (24%) of the active E + P_2 mothers mentioned maturity, it was not mentioned by an inactive mother. Two (14%) of the inactive E + P_2 mothers and no active mothers commented that Head Start was fun for their children.

Near the beginning of the school year when each mother was asked what changes she had observed in her child since the child had been attending Head Start, the most frequent response again was improvement in skills, with the exception of the L + P_1 (lo) group, which emphasized maturity slightly more (Table 8). Four of the groups showed little overall change in the pattern of their answers during the course of the year. The L + P_1 (hi) and E + P_2 (lo) groups, however, decreased their emphasis on skills with a corresponding increase in the percentage of mothers reporting that their children were more mature.

There were fairly large differences between active and inactive groups in the amount of classroom participation, with all active mothers reporting that they had volunteered at some time (Tables 9-11). Within each set of classes it is of interest to compare the percentages of active versus inactive mothers who volunteered regularly (i.e., once a week or more). Percentages, with those for the active groups presented first, for the L + P_1, L + P_2, and E + P_2 groups, respectively, are: 43% - 27%; 62% - 41%; 54% - 0%. It is difficult to know whether the high rate of volunteering of the mothers who participated in a parent program can be attributed to the impact of the program, or whether mothers who elected to attend parent meetings would have actively volunteered on their own initiative.

In all groups with the exception of E + P_2 (lo), more mothers reported that they assisted the teacher than that they participated in any other volunteer activity; more active than inactive mothers gave this response. Supervision of art activities and supervision of lunch were also frequently reported by all mothers, and again more mothers in high-participating groups than in low-participating groups mentioned these tasks. In general, the active mothers gave more responses, i.e., reported carrying out a wider variety of classroom jobs. Among the volunteer activities engaged in most frequently, assisting the teacher was mentioned by mothers with children in the enrichment and in the L + P_2 classes; art supervision and lunch supervision were mentioned by the high and low L + P_1 groups, respectively.

There were no clear effects of type of parent program on patterns of classroom volunteering, but mothers active in either program volunteered more frequently and in more diverse ways than inactive mothers.

Educational opportunities and aspirations. The amount of time mothers spend reading to Head Start children did not seem clearly affected by parent program participation (Table 12). There were slight increases in the reported frequency of reading for the active L + P_1 and E + P_2 groups. The pattern for the L + P_2 (hi) group was inconsistent; more mothers said that they read to their children regularly, but more mothers also said that they seldom read to their children. In the post-interview the L + P_2 (lo) group was the only one in which each mother responding said that she read to her child at least once a week.

Responses to the item concerned with how mothers handle children's questions that they cannot answer showed an overall decrease in the percentage of mothers who said that they knew all the answers and a corresponding increase in the number of mothers who would tell their child that they did not know the answer (Table 13). This change in response pattern was consistent for five of the six groups. In the post-interview, the L + P_2 (lo) mothers were more likely than any other group to answer questions as best they could and were the only group in which no mother reported that her strategy for handling questions she could not answer was to change the subject. However, the largest percentage increase in the number of mothers attempting to answer difficult questions and the largest percentage decrease in the number who tried to avoid answering these questions were in the L + P_2 (hi) group. This shift in the pattern of response for the active L + P_2 mothers was not matched by either the other active P_2 group or the active P_1 groups. There appear to be no clear trends related to level or type of parent participation.

Each mother was asked to indicate where on a continuum from one (best work) to 10 (poorest work) her child would be when he entered grade school (Table 14). No mother in either group on pre- or post-interview rated her child ninth or tenth. Except for the pre-interview responses of the L + P_1 (hi) group, mothers most frequently placed their children at the midpoint of the scale (i.e., in the middle of the class). At the end of the year no mother in the L + P_1 (hi) group rated her child below the middle of the continuum, with a consequent increase in the number placed just at the middle. The only other group in which there were no children in the bottom half of the scale was L + P_2 (lo), but this was true on the pre-interview as well. The high-participating groups shifted their appraisal of their children's relative class standing upward slightly during the course of the year. A consistent comparable shift in the inactive groups is not so readily apparent, although the E + P_2 (lo) mothers raised their estimations. Participation in a parent program seems to have contributed somewhat towards raising mothers' expectations of how well their children will perform in kindergarten.

Data on the educational expectations and aspirations of mothers for their Head Start children are given in Tables 15 and 16. Across groups on both pre- and post-interviews, mothers most frequently reported that they expected their children to finish high school. Initially, none of the active mothers said that they expected their children to go to college or beyond; at the end of the year a few mothers in each high-participating group anticipated that their Head Start children would go to college. Interestingly, in all inactive groups some mothers indicated in the pre-interview that they thought their

children would attend college. There was little change in these mothers' expectations during the year.

Educational aspirations of the mothers clearly exceed their expectations. In contrast to the relatively few mothers who expect their children to go to college, approximately two-thirds to three-fourths of all mothers would like their children to get higher education. If categories seven (go to college) and eight (finish college) are combined, the aspirational levels of the various groups appear to be quite similar and subject to little change over the course of the year.

On both interviews, although less frequently on the post-interview, most mothers reported that they could not predict what job their child would have as an adult (Table 17). Many of the responses that initially were placed in the "don't know" category probably were classified in category nine (leave the decision up to the child) on the post-interview, an option not available in the initial interview. Similarly, but to a lesser extent, many mothers were reluctant or were unable to say what type of job they wished for their child. Because of the relatively few mothers responding to these items, the findings are difficult to interpret. On the pre-interview, the percentage range of mothers who expected their children to become blue-collar workers (categories two-four) was from 12 per cent [E + P_2 (hi)] to 34 per cent [E + P_2 (lo)]. On the post-interview, although more mothers answered the question, a smaller percentage gave responses that were classified in categories two to four. The post-test range for these categories was from zero per cent for the E + P_2 (hi) mothers to 20 per cent for the L + P_1 (lo) mothers. Across groups there was a general trend away from blue-collar jobs, with mothers in the high-participating groups less likely to expect their children to have such jobs than were low-participating mothers.

As with occupational expectations, although more mothers were willing to state a vocational choice for their Head Start child on the post-interview, a smaller percentage, with the exception of the $E + P_2$ (lo) mothers, aspired to unskilled, semiskilled, or skilled occupations (Table 18). For these occupations, expectation and aspiration levels of the $E + P_2$ mothers as reported on the post-interview were equivalent. On the other hand, for other job categories, as was generally true for most categories for the remainder of the sample, aspirations exceeded expectations. The $E + P_2$ (lo) group was also the only one showing a definite decline in the percentage of mothers hoping that their children would attain high-level managerial or executive positions (categories seven and eight). Whether this reflects realism or undue pessimism is a matter of conjecture. Overall, involvement in Head Start, and especially where there was active participation in a parent program, seemingly helped to create higher educational and vocational goals.

Educational attitudes. A series of 24 statements taken from the 27-item Educational Attitude Survey (Hess, et al., 1968) were included in the interviews. The statements were slightly reworded and were presented as questions. There was general high agreement on both pre- and post-interviews that (a) teachers want parents to visit the school; (b) friendly teachers can control children; (c) most teachers are good examples for their children and are well trained; (d) sports and games do not take up too much school time; (e) getting a good education is the best way to improve your life; (f) children should be made to stay in high school until they earn a diploma; (g) anyone can go to college if he really wants to; and (h) parents should not keep their children out of school to help out at home. These responses reflect the mothers' overall approval of teachers and their belief in the importance of education. Specific results for these items as well as for others showing little change in response patterns during the year or little differentiation among groups are included in Table 20.

Results for the remaining 12 items of the Educational Attitude Survey are summarized in Table 19. The ordering of items in this table does not correspond to the sequence in which they were presented. A factor analysis of the responses of middle- and working-class mothers (Hess, et al., 1968) to the original 27-item scale resulted in a clustering of the first five items in Table 19 on a factor that was described as a "power-powerlessness" dimension. Affirmative responses on items one and two, and negative responses on items three, four, and five presumably reflect feelings of power. A marked increase in the percentage of mothers from both active P_2 groups who felt that they can do something about improving the schools was evidenced. Comparable increases did not occur in the active P_1 group or in any of the inactive

groups. The two groups showing the greatest positive change on this item were also those feeling most powerless initially. On a related question, focusing specifically on the school principal (question two), the active P_1 and inactive $E + P_2$ mothers revealed a shift towards an increased sense of personal effectiveness. For both items one and two, the percentage of mothers responding in a positive direction (i.e., indicating a sense of power) at the end of the year is greater for the $L + P_1$ (hi) and $E + P_2$ (hi) than for the parallel low groups; this is not true for the $L + P_2$ mothers. All groups clearly felt more capable of effectively dealing with a specific individual (principal) than with a broad system (the school).

In two low-participating groups, more mothers at the end of the year felt that teachers prefer quiet children ($E + P_2$) or, at least, they had more uncertainty about whether or not this is true ($L + P_1$). There was a shift in the opposite direction for the active $L + P_2$ mothers. All low-participating groups increasingly denied that children's behavior in school makes it difficult to teach, whereas there was a slight shift in the opposite direction for the active groups, notably for the $E + P_2$ mothers. Since these mothers were frequently classroom volunteers, in sharp contrast to the $E + P_2$ (lo) mothers (Table 9), their change in response to this item may be a realistic reaction to their experiences in the classroom. These same mothers [$E + P_2$ (hi)] were also the only group to show a clearly more positive attitude about children's desire to learn; a reverse shift was noted for their inactive counterparts. Overall, results for this set of questions (one through five) indicate that mothers who participated in a parent program were more likely than were inactive mothers to shift their attitudes away from feelings of ineffectuality.

Items six through eight in Table 19 clustered together in the Hess, et al. (1968) study on a factor which was labeled "irrelevance of education." Affirmative responses to these questions would indicate a belief in the importance of the noneducational aspects of life. Mothers in the L + P_1 (hi) group more frequently denied on the post-interview that life is just as enjoyable for people with little education as for the well-educated (number six); that there are more important things in school than getting good grades (number seven); and that teachers set standards in conflict with those established at home (number eight). This group of mothers, then, showed a consistent tendency towards increased emphasis on the importance of education for attaining a better life. The responses of the other groups were more variable. Both active P_2 groups were more likely on the post-interview to clearly disagree with the idea that increased education contributes to increased enjoyment of life. Many more of the active E + P_2 mothers also agreed that there were more important things than getting good grades, whereas fewer active L + P_2 mothers felt this way. More of these L + P_2 mothers, however, agreed that there was conflict between their standards and those of teachers. A reverse shift on this item occurred among the nonparticipating L + P_2 mothers. Other interesting changes within the low-participating groups were the increased feelings of the irrelevance of education for enjoyment of life for the E + P_2 mothers (item six), and for the L + P_2 mothers (item seven). The L + P_1 group emphasized good grades less but the importance of education for a better life more.

Participation in a parent program that was highly cognitively oriented (P_1) apparently contributed to an increased sense of the relevance of education. Involvement in Parent Program #2, particularly

when their children were exposed to an enrichment curriculum, did not have the same effect on the mothers. Further evidence of this is seen on examination of responses to item nine ("Can a man often learn more on a job than he can in school?"). Although this item did not originally fall on a factor with items six through eight, it is clearly concerned with feelings about the relative importance of education. Only the active P_1 group showed a clear decrease in the percentage of mothers who believe that on-the-job training can be more effective than schooling.

The three remaining items in Table 19 (10-12) do not seem to be related to each other in any particular way. There was a consistent increase across groups in the belief that teachers usually expect children to obey them. Although this change tended to be greater for the active groups, it is more likely based on the mothers' classroom experiences than on participation in parent programs. Another interesting finding was the more tolerant attitude exhibited by the high-participating groups, notably L + P_1 and L + P_2, towards the neighborhood children, whereas the expressed attitudes of the inactive groups were essentially unchanged. Finally, with the exception of L + P_1 (lo), all groups of mothers were less likely to agree that parents are to blame for the failure of their children in school. The E + P_2 (hi) mothers changed the most in this respect and were the only group in which a majority clearly indicated that they did not blame themselves for their children's failure. It would be of interest to investigate whether this attitude change reflects a greater sense of adequacy in their roles as parents.

Educational attitudes were also measured, at the beginning and at the end of the year, by asking each mother to describe what she would say or do to prepare her Head Start child for the first day of grade school. A modification of a system devised by Hess, et al. (1968) was the basis for classifying the mothers' responses to this question. A description of the categories used to code the responses is presented below:

1) Obedience: Responses that emphasize the need to behave and to listen to the teacher.

   Examples: a) "I'd tell her the name of her teacher...I would tell her to be good, listen to the teacher, help, behave, don't fight."

   b) "I told him to be nice, to behave, and to respect the teachers."

2) Learning: Responses that focus on the academic aspects of school by noting, for example, that school is a place to learn or to acquire skills.

   Examples: a) "Now she's going to be writing, painting with color crayons, using pencil, paper like that."

   b) "Things will be advanced. They teach you to read and spell."

3) Affective: Comments that present the new school situation to the child as an emotional experience primarily, either positive or negative.

   Examples: Positive a) "I would excite him--he is going to a new school to play with new children and have a new teacher. The schedule slightly different, and he have recesses still."

   b) She wants to go to school with her sisters and will make a lot of new friends and have a nice teacher.

   Negative a) "Do you want to go to school? I wouldn't force her. If they want to stay home I'd say O.K. but you must stay like you are sick or the policeman will come for you."

   b) "You are older now. All your playing is through, you are growing up. Your work in school is going to be harder. You have to listen to the teacher. Everyone goes through it."

4) Vague and Irrelevant: Responses that did not answer the question or were too vague to be scored.

Examples: a) Just going to school.

b) Actually, I have never had trouble with my children, they all looked forward to going.

Responses were given more than one code if they contained combinations of the factors scored. If a response was considered vague or irrelevant, however, no other code applied.

Changes in attitudes towards school as revealed by the mothers' descriptions of the child's role in school were minimal, especially for the high-participating groups (Table 21). Obedience was most frequently emphasized by all groups on both interviews, with the exception of L + P_1 (lo). These mothers gave 10 per cent fewer comments emphasizing obedience on the post-interview and consequently had the smallest percentage of responses in this category. They also had the highest percentage of responses on both interviews that presented school as a place to learn. Biggest changes in response patterns were demonstrated by the inactive E + P_2 mothers. They gave 14 per cent more obedience and 16 per cent fewer learning responses during the second interview. These mothers also made very few comments classified as positive on either interview. In general, no consistent effects of parent program or level of participation were noted in response to this question.

Attitudes towards life in general. Responses to a series of questions related to general attitudes towards life and society are presented in Table 22. The original five-point scale (from "strongly disagree" to "strongly agree") was reduced to three categories, since it was generally felt that discriminations at the ends of the scale were unreliable. Overall, mothers in the L + P_2 (lo) group showed the most consistent shift in an optimistic direction across items.

Observe that this is the group of mothers with the highest percentage employed. They responded more positively on all items and in particular were less likely to agree that "a person doesn't really know whom he can count on" and that "it's hardly fair to bring children into the world with the way things look for the future." The most radical attitude shifts in both positive and negative directions were experienced by the E + P_2 (lo) mothers. They were much less likely to agree that "life is getting worse," that writing to officials is useless, and that one should not have children, but much more likely to feel that "one should live for today" and that "you can't really count on people." Responses of the E + P_2 (hi) mothers showed the same pattern of change across items but to a lesser extent in general. The other active P_2 group (L + P_2) tended to become more uncertain or somewhat more pessimistic in their attitudes. The biggest change for both active and inactive P_1 groups was in the increase in the percentage of mothers who believe that you have to plan for tomorrow. Responses to the other items showed little change or were somewhat more positive, except that both groups became less optimistic about their ability to have an impact on public officials.

Three additional items tapping how effective mothers feel about coping with the environment were presented in the post-interview only (Table 23). Head Start mothers clearly felt that hard work is more important than good luck for success, and were more likely than not to feel that they have a chance to succeed in life. There was more uncertainty about whether or not environmental factors interfere with their advancement.

Community involvement. Patterns of participation in various types of organizations are shown in Table 24. Somewhat surprisingly, there was a reduction in the percentage of participants in each active group who were members of educational organizations. Their active involvement with Head Start may have reduced the time available for participation in other groups. All low-participation groups showed a decrease in the number of mothers reporting membership in a Head Start or CAP organization, as did the active L + P_1 group. A very small percentage of these active P_1 mothers, in contrast to the P_2 mothers, reported membership in CAP organizations. For some reason most P_2 mothers may have included their parent program participation in this category, whereas P_1 mothers did not. Mothers inactive in a parent program were more likely to be members of social organizations.

Child-rearing practices. The Head Start mothers were asked, "What do you consider one of the worst things (child's name) does?" and "What is one of the little things that (child's name) does that he shouldn't?" They were then asked to report what they usually said or did in response to these problems. The mothers' descriptions were classified, using the following broad categories:

1) Physical control--includes primarily spanking or shouting at the child.

2) Psychological control (Rejection)--depriving the child of mother's affection or companionship.

3) Psychological control (Guilt)--making the child feel that he is bad or that he has greatly disappointed his mother.

4) Constructive reaction--offering the child a reasonable explanation as to why his behavior is unacceptable or suggesting something else for him to do.

Responses were placed in as many categories as applied (Table 25).

Mothers who were active participants in P_1 were much less likely to use physical control to handle both severe and mild infractions at the end of the year. The E + P_2 (hi) group was also less likely to react to severe misbehavior with physical punishment but was more likely to use it to control minor deviations. On the post-interview, a smaller percentage of the inactive L + P_2 mothers reported resorting to physical control when confronted with extreme misbehavior; a comparable reduction was not evident for the active L + P_2 mothers or for the other inactive groups. However, a much smaller percentage of mothers in the L + P_2 (hi) group than in any other had reported using physical punishment to handle severe infractions at the beginning of the year.

The percentage of mothers who use psychological control to cope with behavior problems, either through rejection or by the arousal of guilt, is relatively small. Reactions indicating rejection of the child tended to decrease somewhat in response to severe infractions and increase slightly in response to mild infractions. Only for the L + P_1 (hi) mothers was the reverse true. The most notable finding on the use of guilt to control children was the decrease in its emphasis by the L + P_2 (hi) group when confronted with serious misbehaviors.

Constructive reactions to behavior problems were consistently more prevalent on the post-interview for all groups. For all inactive groups and for the active E + P_2 group, the increase was more evident in their handling of severe rather than minor problems. Involvement in the Head Start program in general has apparently promoted the development of more helpful approaches for dealing with children's actions that mothers find disturbing. Although child-rearing .

practices were an area of focus in Parent Program #2, no differential effect on the responses of the active participants of this program is noted. In fact, the active P_1 participants showed a greater increase in percentage of constructive responses, as well as a greater decrease in the use of physical punishment when confronted with both severe and mild infractions, than did the active P_2 mothers.

In the post-interview only, mothers were also asked how they respond when their children do something that pleases them (Table 26). The distribution of responses across groups was not highly variable. Most mothers report giving verbal praise (e.g., "that's wonderful") or affirmation (e.g., "that's right")rather than physical or material rewards.

Each mother was asked, on the post-interview only, to describe how she would go about teaching her child a new task. Almost all mothers incorporated praise in their narrative and only a very few mentioned punishing the child (Table 27). Labeling the task or preparing the child for it also rarely occurred, although mothers in both high and low L + P_1 groups were much more likely to prepare the child than were other mothers. It may be that the teachers in the L + P_1 classes provided these mothers with good models. Not surprisingly, the most frequently noted teaching technique for all groups was demonstration of the task. The high P_2 mothers were also somewhat more prone than others to give specific directions.

Responses to this item theoretically should have been affected by participation in Parent Program #1, because of its emphasis on the teaching role of the mother. Since both high and low P_1 groups emphasized preparing the child for the task, this finding does not seem related to participation in P_1. Actual observations of mothers teaching

their children, rather than reliance on their verbal reports alone, might have yielded different results and provided a better basis for evaluating the effectiveness of P_1 in this regard.

Summary of interview findings and evaluation of parent programs. Demographic characteristics that differentiated the high- and low-participating groups included (a) the higher percentage of intact families among the high-participating groups, (b) the slightly higher educational level of the mothers and fathers of the high-participating groups, and (c) the higher employment rate of the low-participating mothers. These different features of mothers who were active and inactive not only were difficult to control against but also compounded the difficulties in interpreting results.

Active mothers participated more frequently as classroom volunteers, were more likely over the course of the year to raise their educational and vocational goals for their children, to feel somewhat more powerful, and to become more tolerant in their attitudes towards their children's playmates. More of the active P_1 mothers than those in any other group increasingly emphasized the importance of education.

It is of interest to see how the inactive $L + P_2$ mothers fit into this general picture, since test results indicated that their children tended to perform as well as or better than their classmates whose mothers were active P_2 participants. The $L + P_2$ (lo) group had fewer father-absent homes than any other inactive group and fewer homes in which the mother was completely alone than any other group in the study. Unlike the other inactive groups, the educational level of the mothers and fathers was comparable to that of their active counterparts. At the end of the year, the percentage of mothers and fathers employed was higher for the $L + P_2$ (lo) group than for any other.

The inactive L + P_2 mothers participated more frequently in class than did any other low-participating group, and about as often as the L + P_1 (hi) mothers. These mothers provided cognitive stimulation for their children by reading to them regularly, were more likely than other mothers to attempt to answer difficult questions, and less likely to try to change the subject when they didn't know the answers to questions. They were similar to the active mothers in the degree to which their attitudes suggested feelings of power and showed a more consistent positive shift in their attitudes towards life in general than did any other group. Additionally, the attendance rates of children of <u>active</u> L + P_1 and E + P_2 mothers were significantly higher than those of their classmates with <u>inactive</u> mothers ($p < .05$ and $< .001$, respectively), whereas no significant differences were found within the L + P_2 group. Children from the L + P_2 classes whose mothers did <u>not</u> participate in the parent program attended class as frequently as those whose mothers were <u>active</u> participants.

It is apparent that the inactive L + P_2 mothers were unique among the low-participating groups in having characteristics and attitudes likely to be associated with the more rapid cognitive development of their children. Thus the finding that the children of active L + P_2 mothers tended to earn lower scores than their classmates (although the differences were not statistically significant) seems to be related to the unique composition of the inactive mothers rather than to a negative effect of Parent Program # 2. The data do clearly indicate, however, that children exposed to the language curriculum whose parents were active in P_1 performed better on most measures used than those exposed to the same curriculum whose mothers were active P_2 participants. Again, except for the <u>Verbal Expression</u> subtest of the

ITPA, the differences, although consistent, were not statistically significant. (See discussion of individual test results.) These results suggest that P_1 was more effective than P_2 in helping promote children's cognitive development; differential effects of the parent programs as measured by responses to the parent interview were not readily apparent.

Although test results showed that children in L + P_1 classes tended to earn higher scores than children in L + P_2 classes, the overall effectiveness of the combined intervention as reflected in parent program attendance was greater for the L + P_2 program. When mothers who were employed full-time were eliminated from the analyses, 60 per cent of the L + P_2 mothers as compared with 47 per cent of L + P_1 mothers were active participants in the program. Since the figure for the L + P_2 mothers was about equal to that for L + P_1 (46%), it apparently was not Parent Program # 2 by itself that attracted the mothers.

The relative drawing power of the parent programs was also examined by comparing the number of nonworking mothers in each group who were very active participants. At the end of the year the parent educators presented Certificates of Participation to mothers who had attended two-thirds or more of the scheduled meetings. Thirty-seven mothers, over half of the 64 mothers who attended one-third or more of the meetings, received certificates. Parents in the L + P_1 group received 14 certificates; parents in L + P_2 group received 12; and E + P_2 parents received 11. Proportionally more E + P_2 mothers received certificates, since this treatment involved only two rather than three classes. Thus the highest percentage of active mothers was drawn from L + P_2 classes, and the highest percentage of mothers who came to more than two-thirds of the meetings were from E + P_2 classes. In

general, then, participation in P_2 was more extensive than P_1 participation.

Finally, attitudes of mothers towards the parent educators and the parent programs reflect effects of these programs not readily measurable. Acceptance of the consultants as friends and confidantes was apparent in all the groups, and there were several occasions when the parents invited the staff to outside social events. There were two picnic swimming parties, and the University staff suffered a resounding defeat in a volleyball game by one of the parent groups. One mother included staff members in a party at her house; one parent group surprised a staff member with a baby shower.

Parents who completed evaluation forms reiterated positive attitudes toward the programs:

"Why don't more parents come? They don't know what they are missing."

"I find it's great help as well as fun to attend the parent meetings."

"I've enjoyed participating and hope it continues, for one thing it helps untie my nerves."

"These meetings have been real helpful to me and my children."

At the end of the year many parents asked about the following year and showed real concern when the staff expressed doubt that resources to permit continuation of such meetings with the same groups would be available.

Observation Procedures

The Observation of Substantive Curriculum Input (OSCI) focused on classroom activities and the nature of teacher verbalizations and interactions in the classroom. The OSCI was used four times during the school year. Systematically recorded with each type of activity observed (context) were a description of the input or specific nature of that activity (content); the type of social interaction, if any, observed; the equipment or material used; the number of children involved; and who was in charge of the situation (locus of control). Definitions of the codes used are provided in Appendix H.

Observations were recorded in three-minute units. During 24 of the three-minute units out of a total of 40 (two hours), the total classroom was observed; eight of the units were reserved for teacher observations, and the remaining eight units for observation of the aide or special teacher. The choice of whether to observe the aide or special teacher in the units designated for either of their observations was made on a random basis prior to each two-hour OSCI. The amount of time each of these adults was observed, therefore, varied from class to class. Additionally, since the special teacher was not always present, in some classes she was rarely observed. Therefore data on the observations focused on the aide or special teacher are not included in this report.

Classroom observations. Table 10 compares the average percentage of times each context code was recorded in relation to the number of children observed in that context for the combined language [L + P_1 (hi), L + P_1 (lo), L + P_2 (hi), L + P_2 (lo)] and combined enrichment [E + P_2 (hi), E + P_2 (lo)] groups. For each three-minute observation interval, activities (i.e., contexts) were recorded according to the

TABLE 10

Percentage of Context Codes Recorded Relative to the Percentage of Children Observed in Each Context

Context	Language Classes		Enrichment Classes	
	Per Cent of Codes	Per Cent of Children	Per Cent of Codes	Per Cent of Children
Cognitive				
D	3.9	6.9	4.9	9.6
V	9.3	14.2	3.7	7.8
Total	13.2	21.1	8.6	17.4
Creative				
P	7.2	4.8	8.5	8.8
A	12.5	18.8	12.9	15.9
Total	19.7	23.6	21.4	24.8
Large-Muscle				
L	18.4	13.6	8.0	7.0
B	2.4	1.5	1.2	0.8
Total	20.8	15.1	9.2	7.8
Visual-Motor				
S	7.3	4.1	17.0	10.0
Routine				
E	3.9	5.8	3.7	5.0
R	0.7	1.8	1.0	2.2
C	4.1	2.9	4.6	3.2
I	8.2	10.6	11.2	12.3
T	2.2	2.5	3.6	3.4
Total	19.2	23.6	24.0	26.2
Other				
U	4.0	1.5	6.0	2.3
N	2.2	1.2	1.8	1.1
W	13.4	9.9	12.0	10.4

groupings of the children in the classroom; and the number of children engaged in each activity was noted. The percentage of children associated with each context may be higher or lower than the percentage of times the context code was recorded. When the percentage of children observed is high compared with the percentage for the context code, in general relatively large groups of children were involved when the particular context was observed. Similarly, when the percentage of children observed in a context is small relative to the percentage of times that context occurred, children in these activities were more likely to be alone or in small groups. The relationship between the number of children engaged in and the frequency of occurrence of particular contexts is similar for the two sets of classes. For example, cognitive activities tend to involve relatively large groups of children and visual-motor tasks relatively small groups.

The biggest differences between the sets of classes are in the greater emphasis on large-muscle activities (essentially outdoor play) and structured cognitive activities (V) in the language classes, and the more frequent occurrence of visual-motor activities (i.e., puzzles, table games) in the enrichment classes. Dramatic play and discussions, as well as routine activities, were also more frequently observed in enrichment classes and involved more of the children. The difference in the degree of emphasis on structured activities is clearly attributable to the language intervention program; the findings on discussions and dramatic play probably reflect the presence of the special enrichment teacher. Other differences are more likely a function of classroom teacher preferences and facilities.

Data on the content codes are summarized in Tables 11 and 12. Two content codes were always recorded with each context observed, although frequently one code was sufficient to describe the activity and occasionally no content codes were applicable. When either of these situations occurred the na code was used, and thus it was recorded much more frequently than any other content code--about 50 per cent of the time on the average for both language and enrichment classes. The impact of the language curriculum is again seen when the percentages of la codes for enrichment classes (2.6%) and language classes (6.4%) are compared. General verbal communication was also somewhat more frequent in language classes. It is noteworthy that there was virtually no emphasis in either set of classes on quantitative, social studies, or science concepts.

The largest content differences between the classes was in the occurrence of the vm codes. Children in enrichment classes spent considerably more time engaged in activities involving both visual discrimination and manual dexterity. Unfortunately, none of the measures in the study effectively taps these skills and so the impact of this training cannot be evaluated. Although the Animal House subtest of the WPPSI involves eye-hand coordination, it is primarily thought of as a cognitive test of the ability to learn sign-symbol associations.

In addition to the two content codes, a social interaction code was noted for each context recorded. Findings on the amount and types of social contacts observed are presented in Table 13. Social interactions took place slightly more frequently in language classes and were almost always strictly verbal (e.g., praise). Purposeful physical contact among children or between children and adults was rarely noted.

TABLE 11

Percentage of Content Codes Distributed by Context Activity
for the Language Classes

Context	Cognitive				Creative				Sensory				Verbal Communication		Other			
	la	qu	ss	sc	dr	mu	ar	da	ad	vd	vm	po	vc	ru	me	sk	em	na
Cognitive	5.0	0.1	0.4	0.4	--	--	--	--	--	2.1	--	0.1	2.0	0.1	--	--	--	2.9
Creative	0.3	--	0.1	--	3.6	0.8	4.9	0.5	0.1	0.2	0.2	0.1	1.5	0.1	--	0.2	--	6.6
Large-Muscle	0.1	--	--	--	0.2	0.1	--	--	--	--	0.1	--	1.1	--	9.2	--	--	10.0
Visual-Motor	0.1	--	--	--	--	--	--	--	--	0.2	3.0	--	0.4	--	0.3	--	--	3.2
Routine	0.1	--	--	--	--	0.1	--	--	--	--	--	--	1.9	0.1	5.7	--	--	11.3
Interactive	--	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--	--	0.6	1.5
Uninvolved	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	3.8
Watching Listening	0.8	--	--	--	--	0.1	--	--	0.1	1.2	--	0.1	0.6	--	0.1	--	--	10.2
Total	6.4	0.1	0.5	0.4	3.8	1.1	4.9	0.5	0.2	3.7	3.3	0.3	7.6	0.3	15.3	0.2	0.7	49.5

TABLE 12

Percentage of Content Codes Distributed by Context Activity for the Enrichment Classes

Context	Content Codes: Cognitive				Creative				Sensory				Verbal Communication		Other			
	la	qu	ss	sc	dr	mu	ar	da	ad	vd	vm	po	vc	ru	me	sk	em	na
Cognitive	2.0	0.2	0.1	0.1	--	0.1	--	--	0.1	1.6	--	0.1	1.8	0.1	0.1	--	0.1	2.2
Creative	0.2	0.1	0.1	--	4.2	1.0	5.8	0.1	--	0.1	0.1	--	1.4	0.1	--	0.2	--	7.6
Large-Muscle	--	--	--	--	0.1	--	--	--	--	--	0.3	--	0.6	--	3.6	--	--	4.6
Visual-Motor	--	--	--	--	0.1	0.1	--	--	--	0.1	8.2	0.1	0.4	--	0.1	0.1	--	7.9
Routine	0.1	--	0.1	--	--	--	--	--	--	--	--	0.1	1.0	0.2	10.4	0.1	--	12.2
Interactive	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--	0.4	1.4
Uninvolved	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	--	0.2	5.7
Watching Listening	0.3	--	--	--	--	--	--	--	--	1.5	--	--	0.6	--	--	--	--	9.3
Total	2.6	0.3	0.3	0.1	4.4	1.2	5.8	0.1	0.1	3.3	8.6	0.3	5.8	0.5	14.3	0.4	0.7	50.9

TABLE 13

Percentage of Social Interaction Codes Distributed by Context Activities

Context	Language Classes				Enrichment Classes			
	sv	sp	si	oo	sv	sp	si	oo
Cognitive	3.5	0.2	0.2	9.4	1.6	--	0.1	7.0
Creative	4.1	0.1	0.2	15.5	4.6	--	--	16.8
Large-Muscle	6.0	0.4	0.5	14.0	3.1	0.1	0.4	5.6
Visual-Motor	1.0	0.1	0.3	6.1	4.2	--	0.1	12.6
Routine	4.0	0.2	0.3	14.9	2.8	--	0.3	20.9
Interactive	0.3	0.4	0.6	0.9	--	--	0.8	1.0
Uninvolved	--	--	--	3.0	--	--	--	6.0
Watching Listening	1.3	0.0	0.1	12.0	0.8	--	0.2	10.6
Total	20.2	1.4	2.2	75.8	17.1	0.1	1.9	80.5

Note.--sv = social-verbal
sp = social-physical
si = social-verbal and physical combined
oo = no social interaction

There was little difference between the language and enrichment classes in the distribution of locus of control (Table 14). Approximately two-thirds of the time, on the average, children were independently carrying out their activities. Generally, only during structured activities, discussions, and art projects were the adults more often than not in control. Structured activities were almost always conducted by the special teacher in the language classes, but about as frequently by the classroom teachers and the special enrichment teacher. Enrichment classroom teachers apparently felt the need to introduce structured activities, whereas teachers in classes in which the language curriculum was presented apparently felt that adequate time already was being spent in highly organized activities.

Table 15 provides information on the types and condition of equipment found in language and enrichment classes. The items evaluated were listed in the Class Facilities Inventory, an instrument used in the nationwide evaluation to describe facilities in Head Start classes. Information on classroom equipment was obtained from teachers or aides and from classroom observers. It is apparent from examination of Table 15 that there was more equipment available in language classes and that generally it was in better condition.

OSCI teacher observations. Eight of the three-minute OSCI units were reserved for observing the head teacher in the classroom. Recorded at 20-second intervals during the teacher observation units were the activity of the group of children with which she was involved, the number of children in that group, and the degree to which she was involved with them (scale of teacher involvement). Also recorded at each interval was the teacher's input, described by the content codes.

TABLE 14

Percentage Distribution of Locus of Control Codes for Each Context

Context	Language Classes				Enrichment Classes			
	Child 1	Class Teacher 2	Aide or Special Teacher 3	Other 4	Child 1	Class Teacher 2	Aide or Special Teacher 3	Other 4
D	26.8	33.8	32.5	6.8	32.6	24.3	41.6	1.4
V	2.4	16.3	73.1	8.2	8.0	44.6	47.3	--
P	96.4	1.9	0.3	1.4	91.4	--	6.6	1.9
A	26.4	26.4	33.9	13.2	16.8	28.8	42.1	12.2
L	87.8	4.1	6.5	1.6	83.2	5.2	10.6	1.0
B	95.2	--	2.4	2.4	100.0	--	--	--
S	86.2	4.8	3.3	5.6	93.7	--	4.0	2.3
E	75.0	13.7	7.6	3.7	74.1	22.0	1.9	1.9
R [a]	74.5	21.6	--	3.9	33.3	66.7	--	--
C	68.3	15.2	9.0	7.4	74.1	9.8	9.0	7.2
I	65.9	17.1	12.2	4.7	73.4	11.9	13.8	0.8
T	66.0	13.8	12.9	7.2	62.8	9.0	24.8	3.4
U	96.0	1.8	1.6	0.6	98.2	1.8	--	--
N	60.6	17.6	13.3	8.6	72.0	11.7	11.7	4.6
W	74.3	10.0	9.4	6.3	71.2	12.2	11.6	5.1
$\bar{x}$	66.8	13.2	14.5	5.4	65.6	16.5	15.0	2.8

a Resting was observed in only three of the six language classes and in one of the two enrichment classes.

TABLE 15

Availability and Condition of Equipment in Language and Enrichment Classes

Availability	Average Number of Items		Condition	Average Number of Items	
	Language Classes	Enrichment Classes		Language Classes	Enrichment Classes
Item present and available	18.3	10.5	Excellent	0.2	0.5
Item present but not readily available	3.3	6.0	Very good	13.8	2.0
			Good	9.0	13.5
Item inaccessible	2.8	1.5	Fair	1.7	1.5
Item unavailable	2.3	7.5	Poor	--	0.5
Not applicable	0.2	1.5	Item unavailable or not applicable	2.5	9.0

Note.--27 items of equipment were classified.

Table 16 presents the percentage of times each content code was recorded, on the average, for the three L + P_1, three L + P_2, and two E + P_2 classroom teachers. Three content codes were used to describe teacher input in each interval. The teachers in the classes in which the language curriculum was paired with Parent Program # 1 provided more verbal communication and cognitive input, thus actively supporting the language program; those in which the language program and Parent Program # 2 were combined gave more creative input; and those in the enrichment classes had slightly more sensory codes. All teachers in language classes, on the average, were more frequently observed engaged in social communication, particularly in social-verbal interactions (e.g., praising a child) than were the enrichment teachers. There were very few instances of deliberate physical contact between teachers and children.

The percentage of times teachers were observed at different levels on a scale of teacher involvement are shown in Table 17. Overall, the teachers were most often directly involved with the children. The ordering of the groups according to the amount of time teachers were observed either actively or passively supervising children (Codes 1 and 2 combined) was from high to low: (1) L + P_1, (2) L + P_2, (3) E + P_2. Teachers in the enrichment classes were more frequently observed in activities unrelated to the classroom; those in the L + P_2 classes were more frequently absent from the class.

Table 18 presents the size of the groups with which the teachers were involved when they were the focus of observation. During ut one-third of the observation units, on the average, teachers were not actively or indirectly involved with specific children. For the remainder of the units, teachers in all groups were most often seen interacting with

TABLE 16

Percentage Comparisons of Content Codes Recorded for Three Groups of Classroom Teachers

Content	Teachers		
	L + P_1 (N=3)	L + P_2 (N=3)	E + P_2 (N=2)
Cognitive			
la	5.3	2.6	4.0
qu	0.7	0.1	0.8
ss	0.6	0.5	
sc	0.2	0.6	
Total	6.8	3.8	4.8
Creative			
dr		0.3	0.1
mu	0.8	1.7	1.0
ar	0.2	0.5	0.3
da	0.2	0.6	0.1
Total	1.2	3.1	1.5
Sensory			
ad		0.2	0.2
vd	1.4	1.0	1.8
vm			0.1
po			
Total	1.4	1.2	2.1
Verbal Communication			
vc	15.1	12.1	12.5
ru	1.8	2.2	1.8
Total	16.9	14.3	14.3
Social Interaction			
sv	4.0	2.7	1.8
sp	0.9	1.0	0.1
si	0.6	1.1	0.6
Total	5.5	4.8	2.5
Other			
sk	1.3	0.6	1.8
na	66.8	72.4	73.0

TABLE 17

Percentage of Times Teachers Were Observed at Different Levels of Involvement

Classroom Teachers	N	Scale of Teacher Involvement				
		1	2	3	4	5
$L + P_1$	3	57.8	11.8	22.9	5.7	1.8
$L + P_2$	3	48.7	14.6	29.9	1.5	5.3
$E + P_2$	2	45.2	12.2	31.2	10.2	1.2

Note.--1. Directly and actively involved with children.
2. Physically present, passively supervising.
3. Present at the site; involved in program activities.
4. Present at the site; not involved with children or program activities.
5. Not present; has left the scene.

TABLE 18

Percentage of Times Teachers Were Observed with Groups of Different Sizes

Classroom Teachers	N	Number of Children in Groups				
		1	2-5	6-10	11 or more	None
$L + P_1$	3	10.4	26.3	16.0	19.2	28.1
$L + P_2$	3	6.6	23.8	16.3	15.1	37.9
$E + P_2$	2	9.6	25.5	8.5	19.1	37.4

small groups of from two to five children--teachers in the L + P_2 classes were somewhat less likely than others to be involved with groups of five or fewer children. Teachers in both the L + P_1 and L + P_2 classes were more often observed than were enrichment teachers with groups of average size (six to 10 children).

P.O.T. teacher observations. In addition to the OSCI, the head teachers were observed and rated five times during the program with the Post Observation Teacher Rating Scale (P.O.T.). A special analysis performed by the University of Hawaii Head Start Research Center using P.O.T. data from all the Centers (see Appendix I) permitted the identification and labeling of two factors: (1) "Quality of Cognitive Input" and (2) "Concern for Individual Emotional Comfort." In addition, the total score was obtained by adding the scores for all the items in the scale.

Inspection of the scores on this instrument for the teachers in our sample reveals a large difference between the language and enrichment teachers (Table 19). While the language teachers were rated close to the mean for the national sample for both subscale scores and total score, the enrichment teachers were rated about 1.50 standard deviations above the mean for the national sample in all three scores, indicating a comparatively poorer use of opportunities to teach cognitive tasks as well as a less skilled management of emotional problems in the classroom. These findings are consistent with the results reported previously.

Teacher interview. The observation procedures were designed to assess curricular input in terms of the content and structure of programs and teacher characteristics. Since classroom teachers' perceptions of their roles and of the goals of their programs are also relevant for

TABLE 19

Mean Scores on the P.O.T. for the Hawaii Language and Enrichment Classroom Teachers and for the National Sample

Group	N		Subscale 1	Subscale 2	Total Score
$L + P_1$	3	$\bar{X}$	37.15	27.05	87.68
$L + P_2$	3	$\bar{X}$	40.28	30.37	90.92
$E + P_2$	2	$\bar{X}$	51.55	39.68	114.08
Total Hawaii Sample	8	$\bar{X}$	41.93	31.45	95.49
National Sample	142	$\bar{X}$	38.07	28.40	88.05
		S.D.	7.26	6.05	12.51

describing curricula, their responses to selected questions from the teacher interview held at the end of the year are included in this section of the report.

The head teacher of each class was presented with lists of different educational orientations, educational goals, and teacher roles, from which she was asked to select those most characteristic of her class and of herself. Table 20 provides a list of 15 program emphases and the number of teachers from the L + P_1, L + P_2, and E + P_2 classes choosing each of the alternatives. No program focus was uniformly selected by all teachers. Five of the eight teachers, including both with enrichment classes, felt that their program emphasized social experiences; five of the eight, including four language teachers, thought that their program emphasized language development. Despite the language intervention program, then, two teachers whose children were exposed to the UHPLC did not consider language to be of primary importance in their programs. The L + P_2 teachers, in particular, tended to stress the importance of focusing on the whole child and developing positive self-concepts; responses of the L + P_1 teachers were diverse.

The list of educational goals from which the teachers were asked to choose the five that they considered the most important are given in Table 21. All teachers in language classes considered the development of self-confidence and security in school as among the essential goals that they had for their Head Start children. Most of them also stressed the importance of having children rely on verbal communication rather than on gestures and of learning to work and play cooperatively. Both enrichment teachers felt that speaking more was an important goal; there was no other overlap in their choices. The teachers in enrichment classes,

TABLE 20

Focus of Head Start Programs Reported by Classroom Teachers

Program Focus	Classroom Teachers		
	L + P_1	L + P_2	E + P_2
1. Parent-centered	1		
2. Child-centered	1		
3. Family-centered	1		
4. Teacher-centered			
5. Material-centered			
6. Task-oriented			
7. Mental health-oriented		1	
8. Language-oriented	2	2	1
9. Social experience-oriented	2	1	2
10. Concept-oriented		1	
11. Academically oriented			1
12. Reading-oriented			
13. Self-concept-oriented	1	2	1
14. The "whole child"-oriented	1	2	1
15. Other (Specify)_____			
Totals	9	9	6

Note.--Each teacher chose three focuses.

TABLE 21

Educational Goals of Head Start Reported by Classroom Teachers

Educational Goals	L + P_1	L + P_2	E + P_2
1. Participation in group activities		1	
2. Trust of adults	1	1	1
3. Familiarity with books, paper, crayons, pencils, etc.			1
4. Observing safety habits			
5. Going to the toilet alone			
6. Tidiness			
7. Handling books carefully			
8. Enjoying stories			1
9. Standing up for his own rights			
10. Reading			
11. Speaking more		1	2
12. Solving problems			
13. Using what he knows more effectively	1	1	
14. Speaking clearly			1
15. Thinking logically			
16. Identifying cause-effect relationships			
17. Enjoying other children			
18. Accepting new people without fear			
19. Taking turns			
20. Feeling secure in a school situation	3	3	
21. Caring for and picking up materials			
22. Following directions			1
23. Putting on and taking off his own wraps			
24. Completing a task before starting another			
25. Observing good health practices			
26. Relying on verbal communication more than on gesture	3	2	1
27. Working and playing cooperatively	2	2	1
28. Respecting the rights of others		1	
29. Sharing ideas and materials			
30. Using good table manners			
31. Working independently			
32. Leading effectively			
33. Following effectively			
34. Accepting group decisions			
35. Expressing his negative feelings			
36. Expressing his positive feelings	1		
37. Being confident of himself	3	3	1
38. Accepting authority			
39. Showing mastery of quantitative concepts and operations			
40. Other (Specify) _____	1		
Totals	15	15	10

Note.--Each teacher chose five goals.

however, were very consistent in their descriptions of their teacher roles (Table 22). Both conceived of themselves as transmitters of knowledge and skills, as designers of learning and experience, and as motivators. The teachers in language classes in general also emphasized their roles as motivators. The L + P_2 teachers tended to see themselves as developers of human potential and knowledge; the L + P_1 teachers as designers of learning and experience.

TABLE 22

Self-Descriptions of Head Start Teachers

Teacher Concepts	Classroom Teachers		
	$L + P_1$	$L + P_2$	$E + P_2$
1. Transmitter of knowledge and skills			2
2. Motivator	2	3	2
3. Problem solver			
4. Transmitter of culture			
5. Model of behavior			
6. Hypothesis tester or experimentalist	1		
7. Classroom manager	1		
8. Agent of change	1		
9. Professional specialist			
10. Socializing agent	1	1	
11. Diagnostician			
12. General professional	1		
13. Designer of learning and experience	2		2
14. Developer of human potential		3	1
15. Group processes specialist			
16. Arranger of reinforcement contingencies	1	1	
17. Transmitter of moral standards or values		1	
18. Developer of knowledge and skills		2	1
19. Administrator			
20. Pupil/parent advisor, counselor	1	1	
21. Observer	1		
22. Demonstrator			
23. Record keeper			
24. Analyst (behavior, achievement, etc.)			
25. Other (Specify) _____	___	___	___
Totals	12	12	8

Note.--Each teacher chose four concepts.

SUMMARY

The University of Hawaii's contribution to the 1968-69 national evaluation of Head Start was to compare the effectiveness of a language curriculum (UHFLC) and a general enrichment curriculum, and of two experimental parent programs, one emphasizing the role of the mother as a teacher of her child (P_1) and one primarily concerned with general concepts of child development (P_2). The impact of high versus low participation in these parent programs on the performance of children and on the attitudes of the mothers was also assessed. The participation variable was dichotomous, those mothers who attended one-third or more of the meetings being labeled high participants, those attending fewer than one-third, low participants. In addition to the three broad comparisons of curricula, parent programs, and level of parent participation, relationships among these variables were examined, resulting in a total of nine comparisons among the treatment groups. Thus, to separate the effects of parent programs and level of participation from the overall curricular effects, comparisons were made between children in each program whose mothers were essentially nonparticipants in a parent program, and between those in each curriculum whose mothers were active in a parent program (P_2). To eliminate the curriculum variable from the effects of the parent programs, comparisons between P_1 and P_2 were made when all children were exposed to the same curriculum (language). The parent participation variable was examined for each combination of curriculum and parent program: language and P_1, language and P_2, enrichment and P_2. The impact of the programs was examined through use of tests, interviews, and observational procedures.

Results of the individual tests revealed significantly higher scores for children in language classes than for those in enrichment classes for the overall curriculum comparison and when the parent program and level of participation variables were essentially eliminated on the following measures: the Stanford-Binet; Preschool Inventory; ITPA total, and Verbal Expression and Auditory Association subtests; and the mean number of descriptive categories used on the Verbal Expression subtest. When the curriculum comparison was limited to the two groups whose mothers were active participants in a parent program (P_2), significant differences favoring the language curriculum were obtained on the PSI and on the Auditory Association subtest. Although results for the remaining cognitive measures were not significant, their direction tended to favor the language curriculum. Overall pre- to post-test changes on the cognitive measures included significant increases on the Stanford-Binet, PSI, ITPA, WPPSI Animal House, for the language groups combined, and on the PSI for the combined enrichment groups.

No significant differential effects on either of the "social-emotional" measures (Gumpgookies and Inventory of Factors Affecting Test Performance) were noted. Both the combined language and combined enrichment groups, however, earned significantly higher post-test scores, transmuted to an age base, on Gumpgookies.

The test data clearly reveal substantial improvement in performance of Head Start children on a variety of measures, with those children exposed to the language curriculum improving significantly more than those in a general enrichment curriculum on measures emphasizing language functioning as well as on the more general cognitive tests used in this study.

When the curriculum variable was not controlled, comparisons between the parent programs revealed significant differences in favor of P_1 on the Auditory Association and Verbal Expression subtests, the total of the eight ITPA subtests, and the number of words produced and the number of different categories given on the Verbal Expression subtest. Since P_1 was paired with the language curriculum and P_2 was paired with both the language and enrichment curricula, these results presumably are due to the combined effects of P_1 and the language curriculum. When comparison of the parent programs was limited to the groups with children in the language classes, the only clearly significant result was obtained on the Verbal Expression subtest. However, for every ITPA subtest, higher scores were earned by the children whose mothers were active in P_1 rather than P_2. Additionally, values approaching the adopted significance level (.01) were also obtained for the number of descriptive categories and the number of words produced on Verbal Expression, and for "verbal not-work" per cent on the Stanford-Binet. Thus, children whose mothers actively participated in P_1, a program focused on the mother's role as a teacher of language skills, performed better on various measures of language functioning than those whose mothers participated in a broader parent program.

Overall, no significant differences were obtained between test scores of children whose mothers were active participants in either parent program and those whose mothers rarely, if ever, attended parent meetings. Children in the language program whose mothers were active P_1 participants performed better, on the average, than their classmates whose mothers were inactive in the program. Those in the same curriculum whose mothers were active in Parent Program # 2, however, tended to perform less well, notably on the ITPA and related measures, than their

classmates whose mothers did not participate in P_2. This was not necessarily true when children were exposed to the enrichment curriculum. Analysis of the parent interview data suggests that a primary reason for the relatively good performance of the children in the language curriculum whose mothers did not participate in P_2 was the unique characteristics of these mothers and their families. In this group there were fewer homes in which the mother was completely alone than for any other group in the study, and it also had the highest percentage of both fathers and mothers who were employed at the end of the year. An atmosphere likely to encourage cognitive development is suggested by the relatively high frequency with which these mothers read to their children and by their reported ways of handling their children's questions that they could not answer.

Participation in a parent program apparently contributed to some of the differential findings on the post-interview between active and inactive mothers. Those mothers who were active participants in a parent program (a) volunteered more frequently in the classroom and carried out a wider variety of classroom duties, (b) showed a greater tendency to have increased feelings of powerfulness, (c) developed more tolerant attitudes towards children with whom they would allow their children to play, and (d) developed higher educational and vocational aspirations for their children. Differential effects of the two parent programs as measured by responses on the parent interview were not readily discernible, although mothers who were active in P_1 seemed to place greater emphasis on the importance of education.

Participants in parent programs undoubtedly experienced benefits that are not measurable by the techniques used in this study. This is

suggested by the acceptance of the parent consultants and by comments of numerous mothers about the enjoyment and help derived from their experiences in these programs. The need for innovative approaches for assessing some of the currently more elusive outcomes of parent programs is apparent.

Although the differences between the curricula and parent programs were assumed to be primarily a function of the specific interventions, variability among classroom teachers and their own programs may have affected the results. Major differences based on observations of the classrooms were that language classes had more outdoor activities and more structured cognitive activities, specifically with language content (reflecting the intervention program), and that there were more visual-motor activities, emphasizing both visual discrimination and manual dexterity, in enrichment classes. Head teachers in language classes, on the average, were more frequently observed giving verbal praise than were the enrichment teachers. Those teachers in which the language program was paired with P_1 provided more verbal communication and cognitive input generally than did the other teachers.

Head teachers in all classes were observed and rated five times during the program with the Post Observation Teacher Rating Scales (P.O.T.). In a separate study using P.O.T. data for 142 teachers from Head Start Centers across the nation conducted by the University of Hawaii Head Start Research Center, two subscales were isolated using factor analysis. The first subscale, labeled "Quality of Cognitive Input," has to do with the use of and stress on verbs, adjectives, fine discriminations, discussion of past events, comparisons, exploration of the multiplicity of attributes and/or functions of objects, and so on. The second subscale, labeled "Concern for Individual Emotional Comfort" deals with

the management of frustration, satisfaction of emotional needs, individualized versus group responses, acceptance of children's own alternatives and so on.

Examination of the scores on these two subscales and a total score for the P.O.T. reveals a significant difference in favor of teachers in the language group as compared to teachers in the enrichment group. These differences are consistent with the significant superiority found on several measures for the language curriculum groups.

The outcomes of this study clearly established the superiority of a well specified language curriculum (UHPLC) in contrast to a more general enrichment curriculum on a variety of cognitive measures. Future studies might profitably compare the UHPLC with other clearly defined programs focused on language or cognitive development generally. Additionally, since the language program consumes only about one hour of the school day, it is possible to combine it with other programs to test for cumulative effects of different curricula. The Hawaii Head Start Research Center is following such an approach this year. Not surprisingly, perhaps, effects of the parent programs were not so clear-cut as were curriculum effects. A basic difficulty in evaluating the parent programs was the select nature of the sample of mothers who actively participated in a parent program. Fewer than one-half of the mothers were interested enough and had the time available to attend meetings regularly. Some individual parent meetings are being held this year in an attempt to circumvent this problem. Although the comparisons of the parent programs tended to favor P_1, it would certainly be premature to discard the approaches and techniques developed for use with P_2. At this stage of development it is desirable to cull from both programs those procedures deemed most successful.

Appendix A

Outline of the UHPLC Manual

Level V-- Blue

Level VI--Gold

Introduction of new content

A. LABELS: Workers

B. VERBS

C. DESCRIPTIONS: Changes

EXTENSIONS

A. Labels

B. Verbs

C. Descriptions

D. Questions 210

E. Deductions 211

Appendix B

Reinforcement Procedure Used With the Preschool Language and Enrichment Curricula

A reinforcement procedure was used (during the presentation of the curricula) in all eight classes throughout the entire school year. This procedure began with the use of edibles and led to a token system with a wide choice of rewards, ranging in value from a balloon to a book. The following is a list of the specific objects earned by the children:

Reinforcer	Number of Marks Needed
candy	4 for 4 M & Ms
flashcards	4 for 1 card
balloons	4
creepy crawlers	4 for small; 8 for large
cereal	4 for several pieces
raisins	8 for a box
regular pencil	8
small writing tablet	8
large pencil	12
crayon	12 for 1 crayon
writing tablet	16
eraser (fancy)	16
toy cars	20
jump ropes	24
play dough	32
coloring book	32
scissors	48
books	48

The reinforcement schedule was applied in accordance with the following instructions to the special teachers.

1. First dispense edible rewards (e.g., M & Ms) directly to a child immediately after he displays a desirable response. Dispense six to 10 M & Ms per child during a lesson at first. Gradually reduce

the number of rewards per lesson at a rate that allows the established language lesson behavior to be maintained. Eventually establish four to five M & Ms per child as the limit in any lesson. Praise other responses that deserve reward.

2. When the children become familiar with the reward procedure and the lesson format (in three to six weeks), introduce the back-up system. Display two rewards (e.g., candy and balloons) on a pegboard. Prepare "mark cards" for candy and for balloons. Tell the children that they can work for candy or a balloon and ask each child which he prefers. As each child makes his choice, put his name on an appropriate mark card and clip it to the pegboard. During the lesson, when a child displays a desirable response, put a mark on his card and explain that you are putting a mark on it because he gave the right answer, or for whatever the reason. Explain that when he gets all the boxes filled with marks he will receive his balloon or candy. Always pair marks with praise.
3. Gradually introduce more rewards from which the children can choose. Introduce rewards worth fewer marks earlier in the year and ones worth more marks later in the year, so that the delay between the performance and the reward is increased gradually. Continue to offer four- and eight-mark items, however, for children who prefer edibles or do not want to wait. Arrange rewards from left to right on the choice board, according to value, so that the children can easily see the progression from four-mark items to 48-mark items.
4. Limit the number of marks you dispense to a child in a lesson to four or five. Continue to praise other responses that deserve reward.

5. When a child completes a mark card, tell him that he is finished and will get his reward at the end of the lesson, and ask him to make his next selection. Collect all rewards in a reward box until it is time for the children to take them home, if you like, but do not fail to deliver them at the appointed time.

6. Vary the procedure according to what works best in your own school with your own class. For example, you might use immediate material rewards at the beginning of the year to get the children involved, then gradually eliminate them and rely on praise, or you might use them at the beginning of the year and at periodic intervals when the children seem to be losing interest, or when you are introducing something that is particularly difficult.

Appendix C

Language Lesson
(Outline that teacher used in class for lesson that follows)

Teacher: School: Date:

Gp.	Topic	Task	Materials	Comments
	Categories (workers)	(Preparation) These are workers. These are not workers.	Community Worker Pictures	OK
		Statement Repetition This worker is a baker.	flannel figures--variety of categories	Could do this without trouble but some still say "one" for "is."
		Show Me (share and tell me about it)		
	Names	Singular-plural Chant (Sentence drill) This is a knee. This is a knee. These are knees.	body parts	Went well; they like this!
	Labels Verbs Descriptions	Analogy (My turn --Your turn)	pairs of cards with similar qualities -names -categories -verbs -colors -opp. words	Had trouble discriminating between the names and the categories.
	Names, Color, Size	Same--Different (one word)	pairs of cards	Need more work on one kind of "sameness" at a time.
	Labels Verbs Descriptions	Tell me all (spontaneous-- clue if necessary)	large picture--zoo	Needed some clues. Had to say, "Let's talk about color, or where things are."

Sample Lesson Plan

(Time: approximately 20 minutes)

The detailed lesson that follows is an example of what can be expected some time after the midpoint of the school year. Teachers plan lessons to include a variety of topics and tasks, but alter the suggested tasks according to the materials that are available to them and the abilities of the children in their class.

Categories--Workers

COMBINATION INTRODUCTORY TASK

Procedure	Lesson
Preparation	
Present several workers, identifying each as a worker. Then identify the group as workers. Show a series of pictures that depict groups of workers. Practice the plural statement in unison with each picture.	(Baker) T: This is a worker. Say it. C: This is a worker. (Plumber) T: This is a worker. Say it. C: This is a worker. (Policeman) T and C: This is a worker. (Baker, plumber, and policeman) T: These are workers. Say it. C: These are workers. T: Again.... (Fireman, doctor, and painter) T: These are workers. Say it. C: These are workers....
Present pictures of non-workers, and practice the plural not statement in unison with each.	(Children playing) T: These are not workers. Say it. C: These are not workers. (Animals) T: These are not workers. C: These are not workers. (Buildings) T and C: These are not workers....
STATEMENT REPETITION	
Show pictures of single workers and practice the category statement for each in unison, calling for occasional individual responses.	(Baker) T: This worker is a baker. Say it. C: This worker is a baker. T: Again.... (Plumber) T: This worker is a plumber. C: This worker is a plumber....

(continued on next page)

Combination Introductory Task (cont.)

SHOW ME

Display flannelboard pictures of workers and other categories on the flannelboard. Ask individual children to find a picture that belongs to a given category and tell about it. Call for occasional unison repetitions.

Include some of the following words:

Workers		Non-workers
Baker	Dentist	Children playing
Plumber	Teacher	
Policeman	Truck driver	Group of animals
Fireman	Bricklayer	
Doctor	Carpenter	Group of buildings
Painter	Farmer	
Fisherman		Fish in a bowl
Animals	Plants	Group of toys
Furniture	Vehicles	Basket of fruit
Toys	Clothes	
Food	Buildings	

(Flannelboard workers, furniture, food, animals, plants, buildings, vehicles, toys, and clothes)

T: Jackie, show me a worker and tell me what kind of worker he is.

C: (taking a fireman from the flannelboard) This worker is a fireman.

T: Fine. Let's all say it....

T: Sally, you show us an animal and tell us about it.

C: (taking a lion from the flannelboard) This lion is an animal.

T: Right, and we can also say, "This animal is a lion."...

TASK 2

Names--Singular and Plural

SINGULAR--PLURAL CHANT: Body parts

As you point to a part (or parts) of your body, direct the children to imitate you and to make singular, then plural statements, as appropriate, in a chant, so that the task moves at a fast pace.

knee(s)	heel(s)	finger(s)
elbow(s)	cheek(s)	hand(s)
arm(s)	wrist(s)	toe(s)
	shoulder(s)	

T: Let's talk about different parts of our bodies. When I point to just one part, say, "This is," and when I point to more than one part, say, "These are." Let's go.

(Knee)

T and C: (pointing) This is a knee. This is a knee.

(Knees)

T: These are knees....

(continued on next page)

Singular--Plural Chant: Body Parts (cont.)

Review parts of the body with which children are familiar and introduce new ones.

(Elbow)
T and C: (pointing) This is an elbow. This is an elbow.
(Elbows)
T: These are elbows....

TASK 3

Comprehensive (Labels, Verbs, and Colors-- Singular, Positive, and Not)

ANALOGY TASK: My turn--Your turn

Arrange many picture cards in pairs, some to illustrate color, some present progressive or past tense statements, some statements with opposite words, and some naming statements. If you make a color statement about the first picture in a pair, then the children should make a color statement about the second picture and so forth.

If the children make statements that are not analogous, correct them and give them examples of what you mean by "the same kind of sentence."

```
**************************************
* Colors --red, blue, yellow         *
* Verbs --present progressive, past  *
* Labels --names                     *
* Opposite words --big, clean,       *
*                  straight, cold    *
**************************************
```

It is helpful to say the beginning of the statement for the children until they catch on. Gradually eliminate the clues, so that instead of completing the analogous statement, they produce the complete statement themselves.

(Picture cards arranged in pairs)
T: I'm going to show you a picture and tell you something about it. Then I'll show you another picture and I want you to tell me about it.
(Picture of red kite flying)
I might show you this card and say, "The kite is flying." Then I might show you a card like this.
(Picture of blue boat sailing)
Since I told you what the kite is doing, you tell me what the boat is doing. Tell me.
C: The boat is sailing.
C: The boat is floating.
T: That's right. Now if I had said, "The kite is red," I'd want you to tell me the color of the boat when I show it to you. Let's try it.

(Picture of red kite flying)
T: The kite is red.
(Boat)
T: The boat _____
C: is blue.
(Kite)
T: Now what if I said, "This is a kite"?
(Boat)
T: What would you say?
C: This is a boat.
T: Right.

(continued on next page)

Analogy Task (cont.)

(Boy swimming)
T: The boy is swimming.
(Bird flying)
C: The bird is flying.

(Blue flower)
T: This is a flower.
(Red box)
C: This is a box.

(Blue umbrella)
T: The umbrella is blue.
(Red fish swimming)
C: The fish is red.

(Watermelon)
T: I ate the watermelon.
(Glass of water)
C: I drank the water.

(Elephant)
T: The elephant is big.
(Mouse)
C: The mouse is little.

TASK 4

Names, Color, Size

SAME--DIFFERENT

Using picture flashcards of various objects, some identical and some not identical, hold up two at a time, letting the children tell you if the objects they see are the same or different.

T: When I hold up two pictures, tell me if the objects you see have the "same" name or "different" names.
(Holding two pictures of balls)
T: If I show you these pictures, you say "same" because they are both balls.

T: (holding two cats)
C: Same.
T: Why did you say, "Same"?
C: Because this is a cat and this is a cat. (pointing)
T: Yes, they are both cats. How about these?

(continued on next page)

Same--Different (cont.)	(Holding a cat and a dog) C: Different. T: Why did you say, "Different"? C: Because one is a cat and one is a dog. T: Very good, children. Now let's try these. (Holding a house and a car) C: Different. (Holding two tables) C: Same....
Vary the task by including color.	T: Now when I hold up two cards, tell me if the colors are the same or different. (Holding up two red cards) T: You would say, "Same," because they are both red. (Holding two blue cards) C: Same. T: Why did you say, "Same"? C: Because they are both blue. T: Good answer. Let's try some more. (Two purple cards) C: Same. (Yellow card and purple card) C: Different.
Include both unison and individual responses.	T: (two green cards) Mary, tell us about these. C: Same. T: Very good, Mary....
"Size" of objects adapts well to this task also, but be sure the children understand which characteristic is being discriminated.	T: Let's talk about "size" now. I have some balls and when I show you two of them, tell me if the sizes are the same or different. (Holding a big ball and a little ball) C: Different. T: You are right. This ball is big and this one is little, so they are different sizes. Tell me about these. (Two balls the same size) C: Same. T: Very good. They are the same size. (Two the same size) C: Same. (Two of different sizes) C: Different. T: John's turn.

(continued on next page)

Same--Different (cont.)

(Two the same size)
C: Same....

Summarize after concluding each characteristic.

T: You did good work, children. You told me if they were the same "size" or different "sizes."

TASK 5

Comprehensive--Names, Verbs, and Colors

TELL ME ALL

Use a picture for this task--one that includes a number of figures, colors, and actions.

```
**********
*  Names   *
*  Verbs   *
*  Colors  *
* Opposite Words *
*  Prepositions  *
**********
```

T: I want you to tell me everything you can about this picture.
C: (pointing) This boy is sliding.
T: Good, Charles. You told us what the boy is doing. Who can tell us something else?
C: The wagon is red.
T: That's very good, Ruthie. You told us about a color.
C: This is a house.
T: Good, Fred. You told us the name of something.

After a number of statements have been made, you might need to give further clues.

T: Can anyone else tell us about a color? Yes, Fred.
C: The car is blue.
T: Good. Is anyone else doing something?
C: The daddy is sitting down....

When the sentences are given, then feed them back to the children by way of summary. If you can remember who made each statement, mention his name as you define what he did.

T: Let's see now. You told me the names of the house and the tree. You said, "This is a house" and "This is a tree." You told me about the color of the wagon and the car. Charlie said, "This wagon is red," and Fred said, "The car is red." You told me about what some people are doing. You said, "The boy is sliding" and "The daddy is sitting down." Good work.

Appendix D

"Norms" for the 64-Item Preschool Inventory, Based Upon Pre-Test Scores of 1575 Children in the 1968-69 Head Start National Evaluation Sample

University of Hawaii
Head Start Research Center

The accompanying "norms" were developed by essentially the same procedures as those used for the pre-test norms for the 55-item Gumpgookies. Subjects were segregated into age groups, with a one-month interval. Data from all Head Start Evaluation and Research Centers were supplied to the Hawaii Center by Dr. Lois-ellin Datta. Means and standard deviations are shown in the table below.

Means and Standard Deviations on the 64-Item Preschool Inventory, by One-Month Age Groups, Fall, 1968, Pre-test Data

Age	Mean	Standard Deviation	N	Age	Mean	Standard Deviation	N
73	-	-	1	54	25.69	9.2	85
72	-	-	5	53	26.53	8.0	95
71	37.20	4.2	10	52	25.54	8.9	106
70	38.50	9.6	20	51	25.76	8.3	94
69	31.65	10.2	23	50	23.87	8.4	108
68	33.81	7.0	21	49	24.46	9.2	74
67	33.92	9.8	38	48	23.72	8.7	78
66	32.77	8.0	31	47	22.37	7.8	70
65	33.03	8.3	35	46	20.79	8.0	29
64	31.69	6.4	35	45	23.65	7.2	26
63	29.31	8.4	54	44	20.73	7.0	15
62	33.13	7.4	56	43	-	-	8
61	32.53	9.0	43	42	-	-	4
60	31.11	8.4	38	41	-	-	1
59	30.63	9.3	38	40	-	-	3
58	29.27	9.2	66	39	-	-	3
57	28.05	8.4	77	38	-	-	1
56	28.93	8.8	100	37	-	-	2
55	26.73	8.7	82	-	-	-	-

Although the plot of raw score against age reveals a high linear relation, there are irregularities. These may be partly attributable to the size of the N's. It seems evident that in general the older age groups do somewhat less well (relative to their ages) than the middle and younger groups, a finding probably related to genuine differences in the samples. Nevertheless, use of different tables of norms for different samples does not seem to be indicated.

The procedure adopted was to "fit" a straight line to the means for successive age groups, to extrapolate it downward to age 36 months and upward to 81 months, then to read from the graph the mean corresponding to each age group. The standard deviations are not constant but reveal no particular trend with increasing age. The unweighted average for groups with N's of 20 or above is 8.5.

The following formula was applied:

$$Z = \frac{15\ (X - \bar{X})}{8.5} + 100,$$

where Z is the transmuted score and X the raw score. This formula will result in scores with a predicted mean of 100 and a standard deviation of roughly 15.

Slight adjustments were made in many of the Z scores in the accompanying table, with a view to having, where possible, successively lower Z scores corresponding to particular raw scores as age increases.

It is recognized that the data are not ideal, mainly because the different age groups from different parts of the country do not represent large samples drawn at random from a nation-wide pool of Head Start children. Nevertheless, it is hoped that they will be serviceable in interpreting change from pre-test to post-test, as against trying to interpret raw-score change without an age base.

PSI Norms by One-Month Age Groups Based on National Head Start Evaluation Data, Fall 1968, Total N = 1575

Pretest Raw Score on PSI	AGE IN MONTHS																							
	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
64	183	182	181	180	179	178	177	176	175	174	173	172	171	171	170	169	167	166	165	165	164	163	162	160
63	181	180	180	179	178	177	176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161	160	159
62	179	179	178	177	176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161	160	159	158	157
61	178	177	176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161	160	159	158	157	156	155
60	176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161	160	159	158	157	156	155	154	153
59	174	173	172	171	171	170	169	168	167	165	165	164	163	162	161	160	159	157	156	155	154	153	152	151
58	172	171	171	170	169	168	167	166	165	164	163	162	161	160	159	158	157	156	155	154	153	152	151	150
57	171	170	169	168	167	166	165	164	163	162	161	160	159	158	157	156	155	154	153	152	151	150	149	148
56	169	168	167	166	165	164	163	162	161	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146
55	167	166	165	164	163	162	161	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	144
54	165	165	164	163	162	161	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	144	143
53	164	163	162	161	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	144	143	142	141
52	162	161	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	144	143	142	141	140	139
51	160	159	158	157	156	155	154	153	152	151	150	149	149	148	147	146	145	144	143	142	141	140	139	138
50	158	157	156	155	155	154	153	152	151	150	149	148	147	146	145	144	143	142	141	140	139	138	137	136
49	156	156	155	154	153	152	151	150	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134
48	155	154	153	152	151	150	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132
47	153	152	151	150	149	148	147	146	145	144	143	142	141	141	140	139	138	137	136	135	134	133	132	131
46	151	150	149	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129
45	149	148	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127
44	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126	125
43	146	145	144	143	142	141	140	139	138	137	136	135	135	134	133	132	131	130	129	128	127	126	125	124
42	144	143	142	141	141	140	139	138	137	135	135	134	133	132	131	130	129	128	127	126	125	124	123	122
41	142	142	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120
40	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118

PSI Norms - Continued

AGE IN MONTHS

Pretest Raw Score on PSI	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
39	139	138	137	136	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116
38	137	136	135	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115
37	135	134	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113
36	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111
35	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110	109
34	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110	109	108	107
33	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105
32	126	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105	105
31	125	124	123	122	121	120	119	118	118	116	115	114	113	112	112	111	110	109	107	106	105	105	104	103
30	123	122	121	120	119	119	118	117	116	114	113	112	112	111	110	109	108	107	105	105	104	103	102	100
29	121	120	119	119	118	117	116	115	114	112	112	111	110	109	108	107	106	105	104	103	102	101	100	99
28	119	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
27	118	117	116	115	114	113	112	110	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95
26	116	115	114	113	112	112	111	110	109	107	106	105	105	104	103	102	100	99	98	97	96	96	95	94
25	114	113	112	112	111	110	109	108	107	106	105	104	103	102	101	100	98	97	96	96	95	94	93	92
24	112	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90
23	111	110	109	108	107	106	105	105	104	102	101	100	99	98	97	96	95	94	93	92	91	90	89	89
22	109	108	107	106	105	104	103	102	101	100	99	98	97	96	96	95	93	92	91	90	89	89	88	86
21	107	106	105	105	104	103	102	101	100	98	97	96	96	95	94	93	92	91	90	89	88	87	86	85
20	105	105	104	103	102	101	100	99	98	96	96	95	94	93	92	91	90	89	88	87	86	85	84	83
19	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
18	102	101	100	99	98	97	96	95	94	93	92	91	90	89	89	88	87	86	84	83	82	82	81	80
17	100	99	98	97	96	96	95	94	93	91	90	89	89	88	87	86	85	84	83	82	81	80	79	78
16	98	97	96	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76
15	96	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74

PSI Norms - Continued

AGE IN MONTHS

Pretest Raw Score on PSI	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
14	95	94	93	92	91	90	89	89	88	86	85	84	83	82	82	81	80	79	77	76	75	74	73	72
13	93	92	91	90	89	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71
12	91	90	89	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69
11	89	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67
10	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
9	86	85	84	83	82	82	81	80	79	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63
8	84	83	82	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	61
7	82	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
6	81	80	79	78	77	76	75	75	74	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58
5	79	78	77	76	75	75	74	73	72	71	70	68	67	66	65	64	63	62	61	60	59	58	57	56
4	77	76	75	75	74	73	72	71	70	69	68	67	66	65	64	63	61	60	59	58	57	56	55	54
3	75	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
2	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51
1	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
0	70	69	68	67	66	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48
N	-	2	1	3	3	1	4	8	15	26	29	70	78	74	108	94	106	95	85	82	100	77	66	38

AGE IN MONTHS

Pretest Raw Score on PSI	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
64	159	158	157	156	155	155	154	153	152	151	150	149	148	147	146	145	144	143	142	141	140	139
63	158	157	156	155	154	153	152	151	150	149	148	147	146	145	144	143	142	141	140	139	138	137
62	156	155	154	153	152	151	150	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135
61	154	153	152	151	150	149	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134
60	152	151	150	149	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132
59	150	149	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132	131	130
58	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129	128
57	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126
56	145	144	143	142	142	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126	125
55	143	142	141	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126	125	124	123
54	142	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121
53	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119
52	138	137	136	135	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118
51	137	136	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116
50	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114
49	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112
48	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110
47	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110	109
46	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110	109	108	107
45	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105
44	124	123	122	121	120	119	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105	104
43	122	121	120	119	118	118	117	116	115	114	113	112	111	110	109	108	107	106	105	104	103	102
42	121	120	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105	104	103	102	101	100
41	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98
40	117	116	115	114	113	112	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97

PSI Norms - Continued

AGE IN MONTHS

Pretest Raw Score on PSI	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
39	115	114	113	112	111	110	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95
38	114	113	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95	94	93
37	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92	91
36	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90	89
35	108	107	106	105	104	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88
34	106	105	104	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86
33	105	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84
32	104	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82
31	102	100	99	98	97	96	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30	99	98	97	96	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
29	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77
28	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75
27	94	93	92	91	90	89	88	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74
26	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72
25	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70
24	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68
23	88	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66
22	85	84	83	82	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
21	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63
20	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61
19	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59
18	79	76	75	75	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58
17	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56
16	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
15	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52

PSI Norms - Continued

Pretest Raw Score on PSI	AGE IN MONTHS																						
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
14	71	70	69	68	67	66	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51
13	70	69	68	66	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
12	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47
11	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45
10	64	63	62	61	60	59	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44
9	62	61	60	59	58	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42
8	60	59	58	57	56	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
7	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38
6	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
5	55	54	53	52	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
4	53	52	51	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
2	50	49	48	47	46	45	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
1	48	47	46	45	44	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
0	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
N	38	43	56	54	35	35	31	38	21	23	20	10	5	1	-	-	-	-	-	-	-	-

Appendix E

"Norms" for the 55-Item Gumpgookies, Based Upon Pre-test Scores of 1485 Children in the 1968-69 Head Start National Evaluation Sample

University of Hawaii
Head Start Research Center

The nature of these "norms" and the procedure by which they were developed calls for some explanation. First, scores on the Gumpgookies pre-test, which contained 100 items, were recomputed for the 55 items that comprised the post-test. The subjects were then segregated into age groups, with a one-month interval. Data from all Head Start Evaluation and Research Centers were supplied to the Hawaii Center by Dr. Lois-ellin Datta. The means and standard deviations for these age groups are shown in an accompanying table:

Means and Standard Deviations on the 55 Gumpgookies Pre-test Items that Comprised the Post-test, by One-Month Age Intervals

Age	Mean	Standard Deviation	N	Age	Mean	Standard Deviation	N
69	41.1	7.4	27	56	35.8	9.3	99
68	41.4	7.5	23	55	36.4	8.1	78
67	41.5	8.4	35	54	37.3	8.4	80
66	40.1	6.8	39	53	36.7	9.1	71
65	39.9	8.0	31	52	36.2	8.1	109
64	42.3	7.6	36	51	33.9	8.6	96
63	39.7	7.6	49	50	33.9	8.1	80
62	41.6	8.1	54	49	37.5	8.8	102
61	38.4	6.9	39	48	33.2	9.9	74
60	39.8	9.0	32	47	35.05	6.3	58
59	38.0	7.0	56	46	33.6	8.0	45
58	36.2	9.3	61	45	34.1	7.2	18
57	37.3	8.1	72	44	34.2	6.7	21

It will be noted that, although there is a trend for the scores to increase with age, the curve of mean score against age fluctuates. For example, the mean for children 49 months of age exceeds those for children 50 and 51 months of age; and the mean for the 62-month age group exceeds the means for ages 65 through 69 months. This finding, although not unanticipated, indicates that it would not make sense to try to develop "national" norms, such as transmuted standard scores, using for each monthly age group its mean and standard deviation. The reason is simply that a particular score for one age group might have a lower transmuted score than would the same score for a higher age group. Nor would the irregularity disappear entirely if a larger age interval, say two, three, or four months, were to be used, and a still larger interval would defeat the purpose of the norms.

The procedure adopted was to "fit" a straight line to the means for successive age groups, to extrapolate it downward to age 43 months and upward to 79 months, then to read from the graph the mean corresponding to each monthly age interval. The standard deviations are not constant but reveal no particular trend with increasing age. The unweighted average is 7.7. To simplify the arithmetic, the following formula was applied:

$$Z = \frac{15\ (X - \bar{X})}{7.5} + 100,$$

where Z is the transmuted score and X the raw score. This formula will result in scores with a predicted mean of 100 and a standard deviation of roughly 15. When the formula was applied, rounding resulted in the same Z-scores for particular adjacent age groups. Hence the ages in questions were combined in the resulting table of norms.

It is recognized that the data are not ideal mainly because the different age groups from different parts of the country do not represent large samples drawn at random from a nation-wide pool of Head Start children. Nevertheless, it is hoped that they will be serviceable in interpreting change from pre-test to post-test, as against trying to interpret raw-score changes without an age base. Each Center is of course free to make whatever use of the table of norms it desires, or no use.

Z-Score "Norms" for the 55-Item Gumpgookies, Based Upon Pre-test Scores of 1485 Children in the 1968-69 Head Start National Evaluation Sample (See Text)

Raw Score	Age in Months													
	43	44-45	46	47	48-49	50	51-52	53	54-55	56	57	58-59	60	61
55	144	143	142	141	140	139	138	137	136	135	134	133	132	131
54	142	141	140	139	138	137	136	135	134	133	132	131	130	129
53	140	139	138	137	136	135	134	133	132	131	130	129	128	127
52	138	137	136	135	134	133	132	131	130	129	128	127	126	125
51	136	135	134	133	132	131	130	129	128	127	126	125	124	123
50	134	133	132	131	130	129	128	127	126	125	124	123	122	121
49	132	131	130	129	128	127	126	125	124	123	122	121	120	119
48	130	129	128	127	126	125	124	123	122	121	120	119	118	117
47	128	127	126	125	124	123	122	121	120	119	118	117	116	115
46	126	125	124	123	122	121	120	119	118	117	116	115	114	113
45	124	123	122	121	120	119	118	117	116	115	114	113	112	111
44	122	121	120	119	118	117	116	115	114	113	112	111	110	109
43	120	119	118	117	116	115	114	113	112	111	110	109	108	107
42	118	117	116	115	114	113	112	111	110	109	108	107	106	105
41	116	115	114	113	112	111	110	109	108	107	106	105	104	103
40	114	113	112	111	110	109	108	107	106	105	104	103	102	101
39	112	111	110	109	108	107	106	105	104	103	102	101	100	99
38	110	109	108	107	106	105	104	103	102	101	100	99	98	97
37	108	107	106	105	104	103	102	101	100	99	98	97	96	95
36	106	105	104	103	102	101	100	99	98	97	96	95	94	93
35	104	103	102	101	100	99	98	97	96	95	94	93	92	91
34	102	101	100	99	98	97	96	95	94	93	92	91	90	89
33	100	99	98	97	96	95	94	93	92	91	90	89	88	87
32	98	97	96	95	94	93	92	91	90	89	88	87	86	85
31	96	95	94	93	92	91	90	89	88	87	86	85	84	83
30	94	93	92	91	90	89	88	87	86	85	84	83	82	81
29	92	91	90	89	88	87	86	85	84	83	82	81	80	79
28	90	89	88	87	86	85	84	83	82	81	80	79	78	77
27	88	87	86	85	84	83	82	81	80	79	78	77	76	75
26	86	85	84	83	82	81	80	79	78	77	76	75	74	73
25	84	83	82	81	80	79	78	77	76	75	74	73	72	71
24	82	81	80	79	78	77	76	75	74	73	72	71	70	69
23	80	79	78	77	76	75	74	73	72	71	70	69	68	67
22	78	77	76	75	74	73	72	71	70	69	68	67	66	65
21	76	75	74	73	72	71	70	69	68	67	66	65	64	63
20	74	73	72	71	70	69	68	67	66	65	64	63	62	61
19	72	71	70	69	68	67	66	65	64	63	62	61	60	59
18	70	69	68	67	66	65	64	63	62	61	60	59	58	57
17	68	67	66	65	64	63	62	61	60	59	58	57	56	55
16	66	65	64	63	62	61	60	59	58	57	56	55	54	53
15	64	63	62	61	60	59	58	57	56	55	54	53	52	51
14	62	61	60	59	58	57	56	55	54	53	52	51	50	49
13	60	59	58	57	56	55	54	53	52	51	50	49	48	47
12	58	57	56	55	54	53	52	51	50	49	48	47	46	45
11	56	55	54	53	52	51	50	49	48	47	46	45	44	43
10	54	53	52	51	50	49	48	47	46	45	44	43	42	41

Z-Score "Norms" for 55-Item Gumpgookies, Continued

Age in Months

Raw Score	62-63	64	65-66	67	68	69-70	71	72	73-74	75	76-77	78	79
55	130	129	128	127	126	125	124	123	122	121	120	119	118
54	128	127	126	125	124	123	122	121	120	119	118	117	116
53	126	125	124	123	122	121	120	119	118	117	116	115	114
52	124	123	122	121	120	119	118	117	116	115	114	113	112
51	122	121	120	119	118	117	116	115	114	113	112	111	110
50	120	119	118	117	116	115	114	113	112	111	110	109	108
49	118	117	116	115	114	113	112	111	110	109	108	107	106
48	116	115	114	113	112	111	110	109	108	107	106	105	104
47	114	113	112	111	110	109	108	107	106	105	104	103	102
46	112	111	110	109	108	107	106	105	104	103	102	101	100
45	110	109	108	107	106	105	104	103	102	101	100	99	98
44	108	107	106	105	104	103	102	101	100	99	98	97	96
43	106	105	104	103	102	101	100	99	98	97	96	95	94
42	104	103	102	101	100	99	98	97	96	95	94	93	92
41	102	101	100	99	98	97	96	95	94	93	92	91	90
40	100	99	98	97	96	95	94	93	92	91	90	89	88
39	98	97	96	95	94	93	92	91	90	89	88	87	86
38	96	95	94	93	92	91	90	89	88	87	86	85	84
37	94	93	92	91	90	89	88	87	86	85	84	83	82
36	92	91	90	89	88	87	86	85	84	83	82	81	80
35	90	89	88	87	86	85	84	83	82	81	80	79	78
34	88	87	86	85	84	83	82	81	80	79	78	77	76
33	86	85	84	83	82	81	80	79	78	77	76	75	74
32	84	83	82	81	80	79	78	77	76	75	74	73	72
31	82	81	80	79	78	77	76	75	74	73	72	71	70
30	80	79	78	77	76	75	74	73	72	71	70	69	68
29	78	77	76	75	74	73	72	71	70	69	68	67	66
28	76	75	74	73	72	71	70	69	68	67	66	65	64
27	74	73	72	71	70	69	68	67	66	65	64	63	62
26	72	71	70	69	68	67	66	65	64	63	62	61	60
25	70	69	68	67	66	65	64	63	62	61	60	59	58
24	68	67	66	65	64	63	62	61	60	59	58	57	56
23	66	65	64	63	62	61	60	59	58	57	56	55	54
22	64	63	62	61	60	59	58	57	56	55	54	53	52
21	62	61	60	59	58	57	56	55	54	53	52	51	50
20	60	59	58	57	56	55	54	53	52	51	50	49	48
19	58	57	56	55	54	53	52	51	50	49	48	47	46
18	56	55	54	53	52	51	50	49	48	47	46	45	44
17	54	53	52	51	50	49	48	47	46	45	44	43	42
16	52	51	50	49	48	47	46	45	44	43	42	41	40
15	50	49	48	47	46	45	44	43	42	41	40	39	38
14	48	47	46	45	44	43	42	41	40	39	38	37	36
13	46	45	44	43	42	41	40	39	38	37	36	35	34
12	44	43	42	41	40	39	38	37	36	35	34	33	32
11	42	41	40	39	38	37	36	35	34	33	32	31	30
10	40	39	38	37	36	35	34	33	32	31	30	29	28

Appendix F

Correlations Among Twenty Pre-test Variables

In addition to the measures described in the instrumentation section of this report, the correlation matrix includes teacher rankings of the achievement motivation of their pupils converted to percentiles (#7) and the percentage of times a child was chosen as a playmate by his classmates on the Sociometric Play Situation Technique (#8). The classroom teachers were provided with a description of achievement motivation to be used as a guide in their rankings, but they may not have been able to clearly discriminate among motivation, intelligence, or specific academic abilities.

Appendix F

Correlation Matrix of Twenty Pre-test Variables

	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Chronological Age	139		-.18*	-.15	.28**	.11	.11	.17*	.17*	.14	-.06	.37**	-.05	.00	-.07	.08	.08	.07	.24**	-.06	.07
2. Stanford-Binet IQ	139	-.18*		-.23**	.60**	.19*	.24**	.37**	.20*	.47**	-.15	.45**	.51**	.32**	.56**	.22**	.36**	.40**	.26**	.50**	.42**
3. Stanford-Binet Inventory	139	-.15	-.23**		-.13	-.12	-.23**	-.17*	-.13	-.14	.40**	-.34**	-.14	-.13	-.10	-.17*	-.10	-.07	.00	-.20*	-.28**
4. Preschool Inventory	140	.28**	.60**	-.13		.22**	.31**	.47**	.23**	.41**	.00	.55**	.47**	.26**	.64**	.21*	.38**	.46**	.44**	.41**	.32**
5. Animal House	146	.11	.19*	-.12	.22*		.18*	.10	.15	.26**	.01	.09	.11	.13	.13	.03	.01	.04	.01	.00	.11
6. Gumpgookies	137	.11	.24**	-.23**	.31**	.18*		.23**	.00	.24**	-.05	.23**	.21*	.24**	.19*	.10	.17*	.25**	.16	.19*	.17*
7. Motivation Rankings	147	.17*	.37**	-.17*	.47**	.10	.23**		.14	.17*	-.06	.37**	.28**	.21*	.25**	.12	.27**	.28**	.27**	.25**	.19*
8. Sociometric	137	.17*	.20*	-.13	.23**	.15	.00	.14		.09	-.16	.27**	.26**	.02	.23**	.16	.10	.04	-.01	.17*	.09
9. "Work" Per Cent	139	.14	.47**	-.14	.41**	.26**	.24**	.17*	.09		-.06	.29**	.15	.22**	.27**	.07	.20*	.21*	.19*	.18*	.23**
10. "Not-Work" Per Cent	133	-.06	-.15	.40**	.00	.01	-.05	-.06	-.16	-.06		-.14	-.10	.01	-.05	.02	-.05	-.07	.01	-.10	-.22**
11. Psycholinguistic Age	139	.37**	.45**	-.34**	.55**	.09	.23**	.37**	.27**	.29**	-.14		.46**	.50**	.51**	.54**	.50**	.57**	.43**	.57**	.65**
12. Auditory Reception	139	-.05	.51**	-.14	.47**	.11	.21*	.28**	.26**	.15	-.10	.46**		.27**	.48**	.14	.33**	.33**	.20*	.42**	.27**
13. Visual Reception	139	.00	.32**	-.13	.26**	.13	.24**	.21*	.02	.22**	.01	.50**	.27**		.29**	.13	.24**	.24**	.16	.15	.28**
14. Auditory Association	139	-.07	.56**	-.10	.64**	.13	.19*	.25**	.23**	.27**	-.05	.51**	.48**	.29**		.36**	.31**	.53**	.37**	.49**	.30**
15. Auditory Sequential Memory	139	.08	.22**	-.17*	.21*	.03	.10	.12	.16	.07	.02	.54**	.14	.13	.36**		.20*	.33**	.16	.33**	.26**
16. Visual Association	139	.08	.36**	-.10	.38**	.01	.17*	.27**	.10	.20*	-.05	.50**	.33**	.24**	.31**	.20*		.30**	.24**	.20*	.19*
17. Verbal Expression	138	.07	.40**	-.07	.46**	.04	.25**	.28**	.04	.21*	-.07	.57**	.33**	.24**	.53**	.33**	.30**		.80**	.47**	.33**
18. Categories - Verbal Expression	125	.24**	.26**	.00	.44**	.01	.16	.27**	-.01	.19*	.01	.43**	.20*	.16	.37**	.16	.24**	.80**		.31**	.21*
19. Grammatic Closure	138	-.06	.50**	-.20*	.41**	.00	.19*	.25**	.17*	.18*	-.10	.57**	.42**	.15	.49**	.33**	.20*	.47**	.31**		.46**
20. Manual Expression	138	.07	.42**	-.28**	.32**	.11	.17*	.19*	.09	.23**	-.22**	.65**	.27**	.28**	.30**	.26**	.19*	.33**	.21*	.46**	

* p = <.05
** p = <.01

TABLE 1

Family Structure of Six Groups of Head Start Children (Post-Interview)

Family Structure	High Participation Groups			Low Participation Groups		
	L + P_1	L + P_2	E + P_2	L + P_1	L + P_2	E + P_2
	(N = 23)	(N = 24)	(N = 17)	(N = 29)	(N = 24)	(N = 22)
1. Father and mother	57	58	71	41	50	27
2. Father and mother and adult relative (including older siblings)	17	8	--	14	8	5
3. Mother and adult female relative	--	--	--	--	4	--
4. Mother and adult male and female or male relatives	--	--	--	3	8	--
5. Mother only	22	33	29	41	21	59

Note.--Figures are percentages.

TABLE 2

Sizes of Families of Six Groups of Head Start Children (Post-Interview)

Size of Family	High Participation Groups			Low Participation Groups		
	$L + P_1$	$L + P_2$	$E + P_2$	$L + P_1$	$L + P_2$	$E + P_2$
	(N = 23)	(N = 24)	(N = 17)	(N = 29)	(N = 24)	(N = 22)
2. Two	--	--	--	--	5	--
3. Three	--	4	--	4	--	--
4. Four	14	13	6	11	5	10
5. Five	9	29	12	11	14	20
6. Six	32	8	18	25	14	15
7. Seven	--	17	29	25	23	15
8. Eight	14	13	18	7	5	5
9. Nine	9	4	6	7	14	15
10. Ten	5	8	6	4	5	10
11. Eleven	14	--	6	4	9	5
12. Twelve	5	4	--	--	--	--
13. Thirteen	--	--	--	--	5	--
14. Fourteen	--	--	--	--	--	5
15. Fifteen	--	--	--	--	5	--
25. Twenty-Five	--	--	--	4	--	--

Note.--Figures are percentages.

TABLE 3

Ethnic Distribution of Mothers of Six Groups of Head Start Children (Post-Interview)

Ethnic Group	High Participation Groups			Low Participation Groups		
	L + P_1	L + P_2	E + P_2	L + P_1	L + P_2	E + P_2
	(N = 23)	(N = 24)	(N = 17)	(N = 29)	(N = 24)	(N = 22)
1. Puerto Rican	4	13	12	14	--	9
2. Other, white	17	8	--	14	--	5
3. Oriental	13	8	29	17	25	14
4. Polynesian	39	50	47	45	42	36
5. Other (including mixed)	26	21	12	10	33	32

Note.--Figures are percentages.

TABLE 4

Language Spoken in the Homes of Six Groups of Head Start Children (Post-Interview)

Groups		N	English	English and Another Language
High Participation	$L + P_1$	23	91	4
	$L + P_2$	24	88	13
	$E + P_2$	17	59	41
Low Participation	$L + P_1$	29	90	10
	$L + P_2$	24	75	25
	$E + P_2$	22	59	36

Note.--Figures are percentages.

TABLE 5

Educational Backgrounds of the Mothers and Fathers of Six Groups of Head Start Children

Level of Education	High Participation Groups						Low Participation Groups					
	L + P_1		L + P_2		E + P_2		L + P_1		L + P_2		E + P_2	
	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers
1. No school	--	--	4	--	--	--	3	--	--	--	--	--
2. 1st to 3rd grade	--	--	--	--	--	--	--	--	4	--	5	20
3. 4th to 6th grade	--	6	4	12	-6	--	--	6	--	--	5	--
4. 7th to 8th grade	--	6	--	18	--	23	10	18	4	7	10	30
5, 9th to 11th grade	50	30	58	35	47	39	48	35	57	50	38	30
6. 12th grade (high school graduate)	50	41	33	35	47	39	31	30	35	43	43	20
7. Some college	--	12	--	--	--	--	7	12	--	--	--	--
8. College graduate or higher	--	6	--	--	--	--	--	--	--	--	--	--

Note.--Figures are percentages.

TABLE 6

Percentages of Fathers and Mothers in Six Head Start Groups Employed at Times of Pre- and Post-Interviews

Groups		Pre-Interview				Post-Interview			
		Full-time		Part-time		Full-time		Part-time	
		Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers
High Participation	$L + P_1$	65	--	6	5	53	9	12	9
	$L + P_2$	83	8	--	--	80	13	--	--
	$E + P_2$	62	--	15	12	77	--	--	12
Low Participation	$L + P_1$	77	10	--	7	78	21	6	3
	$L + P_2$	71	22	--	4	85	21	7	8
	$E + P_2$	55	5	--	5	66	9	--	5

TABLE 7

Distribution of Responses by Six Groups of Head Start Mothers to the Question "What do you like best about your child being in Head Start?"

Categories of Responses	High Participation Groups						Low Participation Groups					
	L + P_1		L + P_2		E + P_2		L + P_1		L + P_2		E + P_2	
	Pre (N = 22)	Post (N = 23)	Pre (N = 24)	Post (N = 24)	Pre (N = 17)	Post (N = 17)	Pre (N = 29)	Post (N = 29)	Pre (N = 23)	Post (N = 24)	Pre (N = 21)	Post (N = 22)
0. No response	--	4	--	--	--	6	--	3	--	13	--	5
1. Nothing	--	--	--	--	--	--	--	--	--	--	--	--
2. Don't know	--	--	4	--	6	--	3	--	--	--	10	--
3. Away from mother	18	9	8	4	12	12	7	3	9	8	19	18
4. Has fun	9	4	4	--	6	--	10	3	--	--	--	14
5. Meeting other children	14	4	13	4	6	12	10	10	17	21	5	18
6. Learns new skills	50	65	63	71	59	47	62	69	52	50	48	45
7. Will grow up more	9	13	8	4	12	24	3	10	13	8	19	--
8. Mother can participate & learn skills	--	--	--	13	--	--	3	--	9	--	--	--
9. Medical & social services	--	--	--	4	--	--	--	--	--	--	--	--

Note.--Figures are percentages.

TABLE 8

Distribution of Responses by Six Groups of Head Start Mothers to the Question "What is the biggest change in your child because of Head Start?"

Changes	High Participation Groups						Low Participation Groups					
	L + P_1		L + P_2		E + P_2		L + P_1		L + P_2		E + P_2	
	Pre (N = 22)	Post (N = 23)	Pre (N = 24)	Post (N = 24)	Pre (N = 17)	Post (N = 17)	Pre (N = 29)	Post (N = 29)	Pre (N = 23)	Post (N = 24)	Pre (N = 21)	Post (N = 22)
0. No response	5	4	--	--	--	--	--	3	4	4	--	5
1. Worse	--	4	--	--	6	--	--	--	--	--	--	--
2. Social	9	17	13	21	24	29	21	24	17	13	19	5
3. Skills	64	26	58	63	41	47	34	38	57	58	67	41
4. Maturity	18	48	25	17	18	24	38	31	22	21	14	50
5. Physical	--	--	--	--	--	--	--	--	--	--	--	--
6. Unknown	--	--	4	--	12	--	7	--	--	4	--	--
7. Other	5	--	--	--	--	--	--	3	--	--	--	--

Note.--Figures are percentages.

TABLE 9

Distribution of Responses by Six Groups of Head Start Mothers to the Question "How often did you volunteer in class?" (Post-Interview)

Frequency of Attendance	High Participation Groups			Low Participation Groups		
	L + P_1	L + P_2	E + P_2	L + P_1	L + P_2	E + P_2
	(N = 23)	(N = 24)	(N = 17)	(N = 29)	(N = 24)	(N = 22)
0. No response	4	8	6	10	8	5
1. Did not participate	--	--	--	14	8	14
2. Less than once a month	26	17	29	31	25	45
3. About once or twice a month	26	13	12	17	17	36
4. About once a week	13	50	12	14	33	--
5. About twice a week	26	4	12	10	--	--
6. About three times a week	--	8	18	--	--	--
7. About four times a week	--	--	6	--	--	--
8. About five times a week	4	--	6	3	8	--

Note.--Figures are percentages.

TABLE 10

Types of Classroom Participation Reported by Six Groups of Head Start Mothers (Post-Interview)

Forms of Participation	High Participation Groups			Low Participation Groups		
	$L + P_1$	$L + P_2$	$E + P_2$	$L + P_1$	$L + P_2$	$E + P_2$
	(N = 23)	(N = 24)	(N = 17)	(N = 29)	(N = 24)	(N = 22)
1. Observer	--	--	--	--	--	--
2. Housekeeping chores	9	17	12	14	21	5
3. Assisted teacher in on-going activities	83	75	76	55	58	41
4. Supervised free-play	35	50	41	21	46	18
5. Supervised lunch, etc.	48	63	65	41	50	55
6. Supervised art activities	57	67	65	28	50	36
7. Read stories	13	21	18	10	21	9
8. Played table games	17	25	24	10	25	9
9. Taught	--	4	--	3	8	9

Note.--Figures are percentages of mothers within a group responding positively to each category.

TABLE 11

Distribution of Responses by Six Groups of Head Start Mothers to the Question "What did you do most often in the Head Start classroom?" (Post-Interview)

Forms of Participation	High Participation Groups			Low Participation Groups		
	L + P_1	L + P_2	E + P_2	L + P_1	L + P_2	E + P_2
	(N = 23)	(N = 24)	(N = 17)	(N = 29)	(N = 24)	(N = 22)
0. No response/don't know	9	--	--	21	21	18
1. Observer	--	4	--	--	--	--
2. Housekeeping chores	4	4	--	10	8	--
3. Assisted teacher in on-going activities	30	42	35	14	38	36
4. Supervised free-play	9	--	6	7	4	5
5. Supervised lunch, etc.	9	25	24	17	13	27
6. Supervised art activities	35	8	29	14	17	9
7. Read stories	--	18	--	3	--	--
8. Played table games	4	8	6	7	--	5
9. Taught	--	--	--	7	--	--

Note.--Figures are percentages.

TABLE 12

Distribution of Responses by Six Groups of Head Start Mothers to the Question "How often is your child read to at home?"

Frequency	High Participation Groups						Low Participation Groups					
	L + P_1		L + P_2		E + P_2		L + P_1		L + P_2		E + P_2	
	Pre (N = 22)	Post (N = 23)	Pre (N = 24)	Post (N = 24)	Pre (N = 17)	Post (N = 17)	Pre (N = 29)	Post (N = 29)	Pre (N = 23)	Post (N = 24)	Pre (N = 21)	Post (N = 22)
0. No response	--	9	13	8	12	6	10	7	4	4	10	9
1. Seldom or never	9	9	--	13	18	18	7	17	4	--	19	14
2. Sometimes (at least once a week)	55	39	29	38	24	12	41	38	35	29	19	27
3. Often (several times a week)	23	30	46	13	35	35	24	28	35	46	29	36
4. Regularly (at least once a day)	14	13	13	29	12	29	14	10	17	21	24	14
5. Very frequently (much of each day)	--	--	--	--	--	--	3	--	4	--	--	--

Note.--Figures are percentages.

TABLE 13

Distribution of Responses by Six Groups of Head Start Mothers to the Question "What do you do if your child asks a question that you cannot answer?"

Categories of Responses	High Participation Groups						Low Participation Groups					
	L + P_1		L + P_2		E + P_2		L + P_1		L + P_2		E + P_2	
	Pre (N = 22)	Post (N = 23)	Pre (N = 24)	Post (N = 24)	Pre (N = 17)	Post (N = 17)	Pre (N = 29)	Post (N = 29)	Pre (N = 23)	Post (N = 24)	Pre (N = 21)	Post (N = 22)
0. No response	--	4	--	8	--	--	--	7	--	4	--	5
1. Child never asks	--	--	--	--	--	--	--	--	4	--	--	--
2. I know all the answers	23	13	33	13	29	29	45	17	22	17	24	14
3. Change the subject	9	9	38	13	12	18	10	3	13	--	10	9
4. Say, "I don't know."	23	35	13	33	12	24	21	31	22	21	29	36
5. Answer best one can	23	17	4	21	29	12	7	17	26	33	19	5
6. Send to someone else	18	13	4	8	6	--	10	17	4	13	10	23
7. Look it up	5	9	8	4	12	18	7	7	9	13	10	9

Note.--Figures are percentages.

TABLE 14

Estimations of Six Groups of Head Start Mothers of Their Children's Class Standings on Entry to School

Groups		N	Class Standing 1	2	3	4	5	6	7	8	9	10
High Participation	$L + P_1$ Pre	22	9	9	32	5	27	9	5	5	--	--
	Post	23	14	9	18	18	41	--	--	--	--	--
	$L + P_2$ Pre	24	17	8	13	17	33	4	4	4	--	--
	Post	24	13	9	26	9	35	9	--	--	--	--
	$E + P_2$ Pre	17	--	6	29	24	35	--	6	--	--	--
	Post	17	--	18	24	12	35	12	--	--	--	--
Low Participation	$L + P_1$ Pre	29	14	--	14	24	34	7	3	3	--	--
	Post	29	--	7	19	30	30	7	4	4	--	--
	$L + P_2$ Pre	23	13	13	26	4	43	--	--	--	--	--
	Post	24	9	9	32	9	41	--	--	--	--	--
	$E + P_2$ Pre	21	14	--	--	14	62	5	5	--	--	--
	Post	22	9	19	9	5	43	9	5	--	--	--

Note.--Figures are percentages.

TABLE 15

Educational Expectations for Their Head Start Children
Reported by Six Groups of Head Start Mothers

Educational Level	High Participation Groups						Low Participation Groups					
	L + P_1		L + P_2		E + P_2		L + P_1		L + P_2		E + P_2	
	Pre (N = 22)	Post (N = 23)	Pre (N = 24)	Post (N = 24)	Pre (N = 17)	Post (N = 17)	Pre (N = 29)	Post (N = 29)	Pre (N = 23)	Post (N = 24)	Pre (N = 21)	Post (N = 22)
0. No response	--	4	--	--	--	--	--	--	--	4	--	5
1. Don't know	18	4	21	29	24	6	10	24	13	13	24	5
2. Finish grade school	--	--	--	--	--	--	--	--	--	--	--	--
3. Finish junior high	--	--	4	8	--	--	14	3	4	--	14	--
4. Vocational work in high school	--	--	--	--	--	--	--	--	--	--	--	--
5. Finish high school	82	70	67	54	76	88	48	45	65	71	52	86
6. Vocational work after high school	--	4	8	--	--	--	3	--	4	--	--	--
7. Go to college	--	13	--	4	--	6	21	24	13	13	10	--
8. Finish college	--	4	--	4	--	--	3	3	--	--	--	5
9. Go to graduate school	--	--	--	--	--	--	--	--	--	--	--	--

Note.--Figures are percentages.

TABLE 16

Educational Aspirations for Their Head Start Children
Reported by Six Groups of Head Start Mothers

Educational Level	High Participation Groups						Low Participation Groups					
	L + P_1		L + P_2		E + P_2		L + P_1		L + P_2		E + P_2	
	Pre (N = 22)	Post (N = 23)	Pre (N = 24)	Post (N = 24)	Pre (N = 17)	Post (N = 17)	Pre (N = 29)	Post (N = 29)	Pre (N = 23)	Post (N = 24)	Pre (N = 21)	Post (N = 22)
0. No response	--	4	--	--	--	--	--	3	--	4	--	5
1. Don't know	--	9	4	4	--	--	--	3	--	--	5	--
2. Finish grade school	--	--	--	--	--	--	--	--	--	--	--	--
3. Finish junior high	--	--	--	4	--	--	--	--	4	--	--	--
4. Vocational work in high school	--	--	--	--	--	--	--	--	--	--	--	--
5. Finish high school	27	13	17	21	29	24	24	28	17	21	19	14
6. Vocational work after school	5	4	--	8	--	--	7	3	4	8	--	3
7. Go to college	36	35	71	50	65	76	38	45	65	63	62	64
8. Finish college	27	35	4	13	6	--	28	17	4	4	14	5
9. Go to graduate school	5	--	4	--	--	--	3	--	4	--	--	5

Note.--Figures are percentages.

TABLE 17

Job Expectations for Their Head Start Children Reported by Six Groups of Head Start Mothers

Vocational Level	High Participation Groups						Low Participation Groups					
	L + P_1		L + P_2		E + P_2		L + P_1		L + P_2		E + P_2	
	Pre (N = 22)	Post (N = 23)	Pre (N = 24)	Post (N = 24)	Pre (N = 17)	Post (N = 17)	Pre (N = 29)	Post (N = 29)	Pre (N = 23)	Post (N = 24)	Pre (N = 21)	Post (N = 22)
0. No response	--	4	--	--	--	--	--	--	--	4	--	5
1. Don't know	55	35	46	38	47	35	66	52	61	38	43	32
2. Unskilled worker	5	9	13	4	--	--	3	7	9	4	5	--
3. Semiskilled worker	5	--	4	8	6	--	3	3	4	4	10	5
4. Skilled worker	5	4	8	--	6	--	10	10	9	8	19	14
5. Owner of little business	23	17	13	17	18	18	--	7	--	8	14	23
6. Administrative personnel of large concerns	--	--	--	13	6	12	--	3	--	8	--	5
7. Mgr. & proprietor of medium-sized business	9	17	13	13	18	24	14	3	13	17	10	18
8. Executive & proprietor of large concern	--	--	4	4	--	--	3	3	4	4	--	--
9. Leave decision up to child	--	13	--	4	--	12	--	10	--	4	--	--

Note.--Figures are percentages.

TABLE 18

Job Aspirations for Their Head Start Children Reported by Six Groups of Head Start Mothers

Vocational Level	High Participation Groups						Low Participation Groups					
	L + P_1		L + P_2		E + P_2		L + P_1		L + P_2		E + P_2	
	Pre (N = 22)	Post (N = 23)	Pre (N = 24)	Post (N = 24)	Pre (N = 17)	Post (N = 17)	Pre (N = 29)	Post (N = 29)	Pre (N = 23)	Post (N = 24)	Pre (N = 21)	Post (N = 22)
0. No response	--	4	--	--	--	--	--	3	--	4	--	5
1. Don't know	41	4	29	13	18	12	28	14	22	4	14	14
2. Unskilled worker	--	--	4	--	--	--	3	--	--	--	--	--
3. Semiskilled worker	--	--	--	--	--	--	--	--	4	--	5	5
4. Skilled worker	5	4	4	--	12	6	17	3	--	4	5	14
5. Owner of little business	23	22	33	13	18	12	17	10	9	13	24	14
6. Administrative personnel of large concerns	5	9	--	13	--	--	10	10	4	--	--	14
7. Mgr. & proprietor of medium-sized business	18	17	25	33	35	53	14	7	39	42	43	23
8. Executive & proprietor of large concern	9	26	4	17	18	18	10	34	22	17	10	14
9. Leave decision up to child	--	13	--	13	--	--	--	17	--	17	--	--

Note.--Figures are percentages.

TABLE 19

Selected Items from the Educational Attitude Survey

Questions	High Participation Groups' Responses						Low Participation Groups' Responses					
				No	Unsure	Yes				No	Unsure	Yes
1. Do you think there is anything you can do to improve the school?	L + P_1	Pre	(N = 22)	50	5	45	L + P_1	Pre	(N = 29)	45	17	38
		Post	(N = 23)	48	00	48		Post	(N = 29)	48	10	41
		Change		-2	-5	3		Change		3	-7	3
	L + P_2	Pre	(N = 24)	63	17	21	L + P_2	Pre	(N = 23)	30	22	48
		Post	(N = 24)	46	13	42		Post	(N = 24)	33	13	50
		Change		-17	-4	21		Change		3	-9	2
	E + P_2	Pre	(N = 17)	53	18	29	E + P_2	Pre	(N = 21)	57	5	38
		Post	(N = 17)	41	12	47		Post	(N = 22)	50	14	32
		Change		-12	-6	18		Change		-7	9	-6
2. If you disagree with the school principal, can you do anything about it?	L + P_1	Pre	(N = 22)	23	14	64	L + P_1	Pre	(N = 29)	21	7	72
		Post	(N = 23)	9	4	83		Post	(N = 29)	24	7	69
		Change		-14	-10	19		Change		3	0	-3
	L + P_2	Pre	(N = 24)	13	13	75	L + P_2	Pre	(N = 23)	17	17	65
		Post	(N = 24)	13	21	67		Post	(N = 24)	17	8	67
		Change		0	8	-8		Change		0	-9	2
	E + P_2	Pre	(N = 17)	00	6	94	E + P_2	Pre	(N = 21)	43	5	52
		Post	(N = 17)	6	6	88		Post	(N = 22)	18	9	68
		Change		6	0	-6		Change		-25	4	16

TABLE 19 (cont.)

				No	Unsure	Yes				No	Unsure	Yes
3. Do most teachers like quiet children better than noisy children?	L + P_1	Pre	(N = 22)	45	14	41	L + P_1	Pre	(N = 29)	55	14	31
		Post	(N = 23)	39	22	35		Post	(N = 29)	41	31	28
		Change		-6	8	-6		Change		-14	17	-3
	L + P_2	Pre	(N = 24)	21	38	42	L + P_2	Pre	(N = 23)	26	22	52
		Post	(N = 24)	38	21	42		Post	(N = 24)	33	21	42
		Change		17	-17	0		Change		7	-1	-10
	E + P_2	Pre	(N = 17)	47	12	41	E + P_2	Pre	(N = 21)	48	19	33
		Post	(N = 17)	41	12	47		Post	(N = 22)	23	23	50
		Change		-6	0	6		Change		-25	4	17
4. Do you think most children act up so badly in school that teachers can't teach?	L + P_1	Pre	(N = 22)	64	14	23	L + P_1	Pre	(N = 29)	45	28	24
		Post	(N = 23)	61	4	30		Post	(N = 29)	59	14	24
		Change		-3	-10	7		Change		14	-14	0
	L + P_2	Pre	(N = 24)	46	13	38	L + P_2	Pre	(N = 23)	39	22	39
		Post	(N = 24)	42	21	38		Post	(N = 24)	50	13	33
		Change		-4	8	0		Change		11	-9	-6
	E + P_2	Pre	(N = 17)	53	18	29	E + P_2	Pre	(N = 21)	24	19	57
		Post	(N = 17)	41	6	53		Post	(N = 22)	36	9	50
		Change		-12	-12	24		Change		12	-10	-7
5. Do most children have to be made to learn?	L + P_1	Pre	(N = 22)	45	14	41	L + P_1	Pre	(N = 29)	45	3	52
		Post	(N = 23)	43	4	48		Post	(N = 29)	41	10	48
		Change		-2	-10	7		Change		-4	7	-4
	L + P_2	Pre	(N = 24)	50	00	50	L + P_2	Pre	(N = 23)	39	9	52
		Post	(N = 24)	42	13	46		Post	(N = 24)	33	17	46
		Change		-8	13	-4		Change		-6	8	-6
	E + P_2	Pre	(N = 17)	41	00	59	E + P_2	Pre	(N = 21)	57	5	38
		Post	(N = 17)	53	00	47		Post	(N = 22)	45	00	50
		Change		12	0	-12		Change		-12	-5	12

TABLE 19 (cont.)

				No	Unsure	Yes				No	Unsure	Yes
6. Do people with only a little education enjoy life just as much as people with a lot of education?	$L + P_1$	Pre	(N = 22)	23	23	55	$L + P_1$	Pre	(N = 29)	17	24	59
		Post	(N = 23)	39	4	52		Post	(N = 29)	28	21	52
		Change		16	-19	-3		Change		11	-3	-7
	$L + P_2$	Pre	(N = 24)	46	4	50	$L + P_2$	Pre	(N = 23)	35	13	52
		Post	(N = 24)	33	17	50		Post	(N = 24)	29	13	54
		Change		-13	13	0		Change		-6	0	2
	$E + P_2$	Pre	(N = 17)	41	12	47	$E + P_2$	Pre	(N = 21)	43	14	43
		Post	(N = 17)	24	35	41		Post	(N = 22)	23	5	68
		Change		-17	23	-6		Change		-20	-9	25
7. Are there more important things in school than getting good grades?	$L + P_1$	Pre	(N = 22)	32	5	64	$L + P_1$	Pre	(N = 29)	31	3	66
		Post	(N = 23)	43	9	43		Post	(N = 29)	24	17	59
		Change		11	4	-21		Change		-7	14	-7
	$L + P_2$	Pre	(N = 24)	17	13	71	$L + P_2$	Pre	(N = 23)	22	13	65
		Post	(N = 24)	25	21	54		Post	(N = 24)	17	00	79
		Change		8	8	-17		Change		-5	-13	14
	$E + P_2$	Pre	(N = 17)	47	18	35	$E + P_2$	Pre	(N = 21)	24	5	71
		Post	(N = 17)	29	00	71		Post	(N = 22)	27	00	68
		Change		-18	-18	36		Change		3	-5	-3
8. Do teachers make children go against things they are told at home?	$L + P_1$	Pre	(N = 22)	68	23	9	$L + P_1$	Pre	(N = 29)	76	14	10
		Post	(N = 23)	74	9	9		Post	(N = 29)	72	17	10
		Change		6	-14	0		Change		-4	3	0
	$L + P_2$	Pre	(N = 24)	58	25	17	$L + P_2$	Pre	(N = 23)	61	4	35
		Post	(N = 24)	63	8	29		Post	(N = 24)	75	4	17
		Change		5	-17	12		Change		14	0	-18
	$E + P_2$	Pre	(N = 17)	94	00	6	$E + P_2$	Pre	(N = 21)	81	5	14
		Post	(N = 17)	100	00	00		Post	(N = 22)	82	00	14
		Change		6	0	-6		Change		1	-5	0

TABLE 19 (cont.)

				No	Unsure	Yes				No	Unsure	Yes
9. Can a man often learn more on a j[illegible] than he can in school?	L + P_1	Pre	(N = 22)	27	5	68	L + P_1	Pre	(N = 29)	41	21	38
		Post	(N = 23)	30	17	48		Post	(N = 29)	17	31	52
		Change		3	12	-20		Change		-24	10	14
	L + P_2	Pre	(N = 24)	21	21	58	L + P_2	Pre	(N = 23)	22	35	43
		Post	(N = 24)	17	25	58		Post	(N = 24)	25	25	46
		Change		-4	4	0		Change		3	-10	3
	E + P_2	Pre	(N = 17)	35	18	47	E + P_2	Pre	(N = 21)	24	24	52
		Post	(N = 17)	24	24	53		Post	(N = 22)	23	27	45
		Change		-11	6	6		Change		-1	3	-7
10. Do you think teachers usually expect children to obey them?	L + P_1	Pre	(N = 22)	59	14	27	L + P_1	Pre	(N = 29)	55	3	41
		Post	(N = 23)	30	4	61		Post	(N = 29)	38	3	59
		Change		-29	-10	34		Change		-17	0	18
	L + P_2	Pre	(N = 24)	33	4	63	L + P_2	Pre	(N = 23)	30	00	70
		Post	(N = 24)	25	4	71		Post	(N = 24)	17	00	79
		Change		-8	0	8		Change		-13	0	9
	E + P_2	Pre	(N = 17)	53	6	41	E + P_2	Pre	(N = 21)	43	10	48
		Post	(N = 17)	00	12	88		Post	(N = 22)	23	5	68
		Change		-53	6	47		Change		-20	-5	20
11. Are there any children in your neighborhood school that you don't want your child to play with?	L + P_1	Pre	(N = 22)	64	5	32	L + P_1	Pre	(N = 29)	66	00	34
		Post	(N = 23)	78	00	17		Post	(N = 29)	69	00	31
		Change		14	-5	-15		Change		3	0	-3
	L + P_2	Pre	(N = 24)	71	4	25	L + P_2	Pre	(N = 23)	65	00	35
		Post	(N = 24)	83	00	17		Post	(N = 24)	63	00	33
		Change		12	-4	-8		Change		-2	0	-2
	E + P_2	Pre	(N = 17)	59	00	41	E + P_2	Pre	(N = 21)	67	00	33
		Post	(N = 17)	59	6	35		Post	(N = 22)	64	00	32
		Change		0	6	-6		Change		-3	0	-1

TABLE 19 (cont.)

				No	Unsure	Yes				No	Unsure	Yes
12. Are parents to blame when children do not work hard in school?	$L + P_1$	Pre	(N = 22)	14	18	68	$L + P_1$	Pre	(N = 29)	31	14	55
		Post	(N = 23)	22	17	57		Post	(N = 29)	17	21	62
		Change		8	-1	-11		Change		-14	7	7
	$L + P_2$	Pre	(N = 24)	25	13	63	$L + P_2$	Pre	(N = 23)	26	17	57
		Post	(N = 24)	21	33	46		Post	(N = 24)	25	25	46
		Change		-4	20	-17		Change		-1	8	-11
	$E + P_2$	Pre	(N = 17)	41	6	53	$E + P_2$	Pre	(N = 21)	33	10	57
		Post	(N = 17)	53	18	29		Post	(N = 22)	36	14	45
		Change		12	12	-24		Change		3	4	-12

TABLE 20

Remaining Items from the Educational Attitude Survey

Questions	High Participation Groups' Responses						Low Participation Groups' Responses					
				No	Unsure	Yes				No	Unsure	Yes
1. Do most teachers really want parents to visit the school?	$L + P_1$	Pre	(N = 22)	5	00	95	$L + P_1$	Pre	(N = 29)	7	3	90
		Post	(N = 23)	9	9	74		Post	(N = 29)	3	3	93
		Change		4	9	-21		Change		-4	0	3
	$L + P_2$	Pre	(N = 24)	4	4	88	$L + P_2$	Pre	(N = 23)	9	00	91
		Post	(N = 24)	4	4	92		Post	(N = 24)	00	8	88
		Change		0	0	4		Change		-9	8	-3
	$E + P_2$	Pre	(N = 17)	6	00	94	$E + P_2$	Pre	(N = 21)	00	5	95
		Post	(N = 17)	6	00	94		Post	(N = 22)	00	5	91
		Change		0	0	0		Change		0	0	-4
2. Do sports and games take up too much school time?	$L + P_1$	Pre	(N = 22)	95	5	00	$L + P_1$	Pre	(N = 29)	83	00	14
		Post	(N = 23)	74	4	13		Post	(N = 29)	90	00	10
		Change		-21	-1	13		Change		7	0	-4
	$L + P_2$	Pre	(N = 24)	75	13	13	$L + P_2$	Pre	(N = 23)	70	17	13
		Post	(N = 24)	71	17	13		Post	(N = 24)	75	4	17
		Change		-4	4	0		Change		5	-13	4
	$E + P_2$	Pre	(N = 17)	94	00	6	$E + P_2$	Pre	(N = 21)	90	5	5
		Post	(N = 17)	88	12	00		Post	(N = 22)	82	00	14
		Change		-6	12	-6		Change		-8	-5	9

TABLE 20 (cont.)

			No	Unsure	Yes			No	Unsure	Yes
3. Do you think that more time should be spent teaching children reading, writing, and arithmetic?	L + P_1	Pre (N = 22)	41	5	55	L + P_1	Pre (N = 29)	45	14	34
		Post (N = 23)	35	13	48		Post (N = 29)	45	14	38
		Change	-6	8	-7		Change	0	0	4
	L + P_2	Pre (N = 24)	21	8	71	L + P_2	Pre (N = 23)	26	9	65
		Post (N = 24)	38	00	63		Post (N = 24)	33	4	58
		Change	17	-8	-8		Change	7	-5	-7
	E + P_2	Pre (N = 17)	41	00	59	E + P_2	Pre (N = 21)	24	5	71
		Post (N = 17)	41	00	59		Post (N = 22)	27	00	68
		Change	0	0	0		Change	3	-5	-3
4. Can teachers who are very friendly control children?	L + P_1	Pre (N = 22)	23	5	73	L + P_1	Pre (N = 29)	17	17	66
		Post (N = 23)	22	9	65		Post (N = 29)	28	10	62
		Change	-1	4	-8		Change	11	-7	-4
	L + P_2	Pre (N = 24)	13	13	75	L + P_2	Pre (N = 23)	13	22	65
		Post (N = 24)	25	8	67		Post (N = 24)	13	8	75
		Change	12	-5	-8		Change	0	-14	10
	E + P_2	Pre (N = 17)	6	6	88	E + P_2	Pre (N = 21)	5	10	86
		Post (N = 17)	12	00	88		Post (N = 22)	00	5	86
		Change	6	-6	0		Change	-5	-5	0
5. Is getting a good education the best way for people to improve the way they live?	L + P_1	Pre (N = 22)	23	5	73	L + P_1	Pre (N = 29)	17	3	79
		Post (N = 23)	17	4	74		Post (N = 29)	14	3	83
		Change	-6	-1	1		Change	-3	0	4
	L + P_2	Pre (N = 24)	25	13	63	L + P_2	Pre (N = 23)	17	4	78
		Post (N = 24)	17	8	75		Post (N = 24)	13	00	83
		Change	-8	-5	12		Change	-4	-4	5
	E + P_2	Pre (N = 17)	29	00	71	E + P_2	Pre (N = 21)	24	00	76
		Post (N = 17)	29	00	71		Post (N = 22)	14	00	82
		Change	0	0	0		Change	-10	0	6

TABLE 20 (cont.)

				No	Unsure	Yes				No	Unsure	Yes
6. Should boys and girls have to stay in school until they finish high school and get a diploma?	L + P_1	Pre	(N = 22)	5	5	91	L + P_1	Pre	(N = 29)	10	7	83
		Post	(N = 23)	9	13	74		Post	(N = 29)	10	7	83
		Change		4	8	-17		Change		0	0	0
	L + P_2	Pre	(N = 24)	8	4	88	L + P_2	Pre	(N = 23)	4	00	96
		Post	(N = 24)	13	00	88		Post	(N = 24)	4	4	88
		Change		5	-4	0		Change		0	4	-8
	E + P_2	Pre	(N = 17)	12	00	88	E + P_2	Pre	(N = 21)	00	00	100
		Post	(N = 17)	6	6	88		Post	(N = 22)	9	5	82
		Change		-6	6	0		Change		9	5	-18
7. Do you think anyone can go to college if he really wants to?	L + P_1	Pre	(N = 22)	00	00	100	L + P_1	Pre	(N = 29)	14	7	79
		Post	(N = 23)	4	00	91		Post	(N = 29)	3	3	93
		Change		4	0	-9		Change		-11	-4	14
	L + P_2	Pre	(N = 24)	00	8	92	L + P_2	Pre	(N = 23)	13	00	87
		Post	(N = 24)	4	4	92		Post	(N = 24)	8	00	88
		Change		4	-4	0		Change		-5	0	1
	E + P_2	Pre	(N = 17)	18	00	82	E + P_2	Pre	(N = 21)	00	00	100
		Post	(N = 17)	12	18	71		Post	(N = 22)	5	5	86
		Change		-6	18	-11		Change		5	5	-14
8. Do you think most teachers are good examples for your children?	L + P_1	Pre	(N = 22)	9	00	86	L + P_1	Pre	(N = 29)	7	7	86
		Post	(N = 23)	4	17	74		Post	(N = 29)	7	7	86
		Change		-5	17	-12		Change		0	0	0
	L + P_2	Pre	(N = 24)	8	4	88	L + P_2	Pre	(N = 23)	0	9	91
		Post	(N = 24)	8	17	75		Post	(N = 24)	13	8	71
		Change		0	13	-13		Change		13	-1	-20
	E + P_2	Pre	(N = 17)	6	12	82	E + P_2	Pre	(N = 21)	19	00	81
		Post	(N = 17)	00	12	88		Post	(N = 22)	5	14	77
		Change		-6	0	6		Change		-14	14	-4

TABLE 20 (cont.)

				No	Unsure	Yes				No	Unsure	Yes
9. Do you think most teachers are poorly trained?	L + P_1	Pre	(N = 22)	82	14	5	L + P_1	Pre	(N = 29)	79	17	3
		Post	(N = 23)	70	22	4		Post	(N = 29)	90	7	3
		Change		-12	8	-1		Change		11	-10	0
	L + P_2	Pre	(N = 24)	67	21	13	L + P_2	Pre	(N = 23)	87	9	4
		Post	(N = 24)	67	21	13		Post	(N = 24)	75	13	8
		Change		0	0	0		Change		-12	4	4
	E + P_2	Pre	(N = 17)	47	29	24	E + P_2	Pre	(N = 21)	71	14	14
		Post	(N = 17)	59	12	29		Post	(N = 22)	73	9	14
		Change		12	-17	5		Change		2	-5	0
10. Are most classrooms over-crowded?	L + P_1	Pre	(N = 22)	41	9	50	L + P_1	Pre	(N = 29)	24	21	55
		Post	(N = 23)	30	00	65		Post	(N = 29)	14	10	76
		Change		-11	-9	15		Change		-10	-11	21
	L + P_2	Pre	(N = 24)	42	13	46	L + P_2	Pre	(N = 23)	35	9	57
		Post	(N = 24)	29	17	54		Post	(N = 24)	38	8	50
		Change		-13	4	8		Change		3	-1	-7
	E + P_2	Pre	(N = 17)	47	6	47	E + P_2	Pre	(N = 21)	67	10	24
		Post	(N = 17)	53	6	35		Post	(N = 22)	59	14	23
		Change		6	0	-12		Change		-8	4	-1
11. Is it O. K. for parents to keep their children out of school to help out at home once in a while?	L + P_1	Pre	(N = 22)	68	00	32	L + P_1	Pre	(N = 29)	79	00	21
		Post	(N = 23)	65	00	30		Post	(N = 29)	72	3	24
		Change		-3	0	-2		Change		-7	3	3
	L + P_2	Pre	(N = 24)	83	00	17	L + P_2	Pre	(N = 23)	70	00	30
		Post	(N = 24)	83	4	13		Post	(N = 24)	67	4	25
		Change		0	4	-4		Change		-3	4	-5
	E + P_2	Pre	(N = 17)	82	00	18	E + P_2	Pre	(N = 21)	71	00	29
		Post	(N = 17)	82	12	6		Post	(N = 22)	77	5	14
		Change		0	12	-12		Change		6	5	-15

TABLE 21

Perceptions of the School Environment as Presented to Their Children by Six Groups of Head Start Mothers

Group		N	Categories of Responses				
			Obedience	Learning	Affective		Vague
					Positive	Negative	
High Participation							
L + P_1	Pre	22	31	14	28	7	21
	Post	23	36	16	28	8	12
L + P_2	Pre	24	42	15	21	12	9
	Post	24	34	19	22	13	13
E + P_2	Pre	17	57	19	19	5	--
	Post	17	52	14	14	10	10
Low Participation							
L + P_1	Pre	29	34	22	22	2	20
	Post	29	24	24	24	11	16
L + P_2	Pre	23	32	16	23	13	16
	Post	24	39	18	18	4	21
E + P_2	Pre	21	43	21	4	14	18
	Post	22	57	5	5	14	19

Note.--Figures are percentages.

TABLE 22

Responses of Six Groups of Head Start Mothers to Items on a Scale of Social Alienation

Item	High Participation Groups' Responses				Low Participation Groups' Responses			
		Disagree	Undecided	Agree		Disagree	Undecided	Agree
1. In spite of what some people say, the lot of the average man is getting worse.	$L + P_1$ Pre (N = 22)	50	5	45	$L + P_1$ Pre (N = 29)	33	3	61
	Post (N = 23)	43	9	44	Post (N = 29)	34	14	51
	Change	-7	4	-1	Change	1	11	-10
	$L + P_2$ Pre (N = 24)	33	21	46	$L + P_2$ Pre (N = 23)	26	13	61
	Post (N = 24)	38	17	46	Post (N = 24)	38	00	54
	Change	5	-4	00	Change	12	-13	-7
	$E + P_2$ Pre (N = 17)	35	18	47	$E + P_2$ Pre (N = 21)	24	10	67
	Post (N = 17)	53	12	35	Post (N = 22)	45	5	45
	Change	18	-6	-12	Change	21	-5	-22
2. It's hardly fair to bring children into the world with the way things look for the future.	$L + P_1$ Pre (N = 22)	32	5	64	$L + P_1$ Pre (N = 29)	34	10	55
	Post (N = 23)	39	4	52	Post (N = 29)	38	3	59
	Change	7	-1	-12	Change	4	-7	4
	$L + P_2$ Pre (N = 24)	33	00	67	$L + P_2$ Pre (N = 23)	30	0	70
	Post (N = 24)	17	17	67	Post (N = 24)	33	17	42
	Change	-16	17	00	Change	3	17	-28
	$E + P_2$ Pre (N = 17)	29	12	59	$E + P_2$ Pre (N = 21)	24	0	76
	Post (N = 17)	53	12	35	Post (N = 22)	27	23	45
	Change	24	00	-24	Change	3	23	-31

TABLE 22 (cont.)

			Disagree	Undecided	Agree			Disagree	Undecided	Agree
3. Nowadays a person has to live pretty much for today and let tomorrow take care of itself.	$L + P_1$	Pre (N = 22)	55	00	46	$L + P_1$	Pre (N = 29)	41	7	51
		Post (N = 23)	74	00	21		Post (N = 29)	62	7	31
		Change	19	00	-25		Change	21	00	-20
	$L + P_2$	Pre (N = 24)	54	04	42	$L + P_2$	Pre (N = 23)	61	9	30
		Post (N = 24)	42	25	33		Post (N = 24)	67	00	25
		Change	-12	21	-9		Change	6	-9	-5
	$E + P_2$	Pre (N = 17)	47	12	41	$E + P_2$	Pre (N = 21)	57	14	29
		Post (N = 17)	41	00	59		Post (N = 22)	32	9	55
		Change	-6	-12	18		Change	-25	-5	26
4. These days a person doesn't really know whom he can count on.	$L + P_1$	Pre (N = 22)	23	5	73	$L + P_1$	Pre (N = 29)	37	3	58
		Post (N = 23)	26	4	66		Post (N = 29)	52	3	44
		Change	3	-1	-7		Change	15	00	-14
	$L + P_2$	Pre (N = 24)	38	17	46	$L + P_2$	Pre (N = 23)	39	4	56
		Post (N = 24)	38	8	54		Post (N = 24)	50	4	38
		Change	00	-9	8		Change	11	00	-18
	$E + P_2$	Pre (N = 17)	18	6	77	$E + P_2$	Pre (N = 21)	24	10	67
		Post (N = 17)	6	6	88		Post (N = 22)	14	00	82
		Change	-12	00	11		Change	-10	-10	15
5. There's little use writing to public officials because often they aren't really interested in the problems of the average man.	$L + P_1$	Pre (N = 22)	55	14	32	$L + P_1$	Pre (N = 29)	52	10	37
		Post (N = 23)	43	17	34		Post (N = 29)	48	0	51
		Change	-12	3	2		Change	-4	-10	14
	$L + P_2$	Pre (N = 24)	42	29	29	$L + P_2$	Pre (N = 23)	52	13	35
		Post (N = 24)	38	25	38		Post (N = 24)	50	21	21
		Change	-4	-4	9		Change	-2	8	-14
	$E + P_2$	Pre (N = 17)	47	12	41	$E + P_2$	Pre (N = 21)	38	29	33
		Post (N = 17)	59	6	35		Post (N = 22)	73	9	14
		Change	12	-6	-6		Change	35	-20	-19

Note.--Figures are percentages.

TABLE 23

Responses of Six Groups of Head Start Mothers to Items about Coping with Environment (Post-Interview Only)

Item	High Participation Groups				Low Participation Groups			
		Disagree	Unsure	Agree		Disagree	Unsure	Agree
1. Good luck is more important than hard work for success.	L + P_1 (N = 23)	87	4	4	L + P_1 (N = 29)	93	--	7
	L + P_2 (N = 24)	75	8	17	L + P_2 (N = 24)	88	--	4
	E + P_2 (N = 17)	82	--	18	E + P_2 (N = 22)	77	--	18
2. Every time I try to get ahead, something or somebody stops me.	L + P_1 (N = 23)	48	4	43	L + P_1 (N = 29)	55	--	41
	L + P_2 (N = 24)	58	4	25	L + P_2 (N = 24)	54	--	21
	E + P_2 (N = 17)	59	--	41	E + P_2 (N = 22)	50	--	45
3. People like me don't have much of a chance to be successful in life.	L + P_1 (N = 23)	74	4	17	L + P_1 (N = 29)	59	7	31
	L + P_2 (N = 24)	46	25	17	L + P_2 (N = 24)	67	8	--
	E + P_2 (N = 17)	59	6	35	E + P_2 (N = 22)	73	--	23

Note.--Figures are percentages.

TABLE 24

Percentages of Mothers in Six Head Start Groups Involved in Community Organizations

Groups		Community Organizations							
		Social		Head Start/CAP		Educational		Religious	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
High Participation	$L + P_1$	19	--	41	26	45	17	18	17
	$L + P_2$	4	8	79	92	33	17	21	21
	$E + P_2$	--	6	88	88	65	35	53	47
Low Participation	$L + P_1$	10	21	37	24	24	21	24	28
	$L + P_2$	43	21	52	37	35	33	26	38
	$E + P_2$	14	18	43	32	14	23	29	32

TABLE 25

Modes of Control Reported by Six Groups of Head Start Mothers To Handle Misbehaviors

Mode of Control	High Participation Groups			Type of Infraction		Low Participation Groups			Type of Infraction	
				Severe	Mild				Severe	Mild
Physical	$L + P_1$	Pre	(N = 22)	92	73	$L + P_1$	Pre	(N = 29)	82	65
		Post	(N = 23)	57	61		Post	(N = 29)	79	69
		Change		-35	-12		Change		-3	4
	$L + P_2$	Pre	(N = 24)	66	59	$L + P_2$	Pre	(N = 23)	87	52
		Post	(N = 24)	63	58		Post	(N = 24)	58	50
		Change		-3	-1		Change		-29	-2
	$E + P_2$	Pre	(N = 17)	83	71	$E + P_2$	Pre	(N = 21)	76	67
		Post	(N = 17)	71	88		Post	(N = 22)	77	68
		Change		-12	17		Change		1	1
Psychological--Rejection	$L + P_1$	Pre	(N = 22)	10	20	$L + P_1$	Pre	(N = 29)	23	7
		Post	(N = 23)	22	13		Post	(N = 29)	17	14
		Change		12	-7		Change		-6	7
	$L + P_2$	Pre	(N = 24)	16	0	$L + P_2$	Pre	(N = 23)	21	4
		Post	(N = 24)	8	8		Post	(N = 24)	8	4
		Change		-8	8		Change		-13	0
	$E + P_2$	Pre	(N = 17)	6	0	$E + P_2$	Pre	(N = 21)	5	5
		Post	(N = 17)	6	6		Post	(N = 22)	5	9
		Change		0	6		Change		0	4

TABLE 25 (cont.)

				Type of Infraction					Type of Infraction	
				Severe	Mild				Severe	Mild
Psychological--Guilt	$L + P_1$	Pre	(N = 22)	14	9	$L + P_1$	Pre	(N = 29)	10	20
		Post	(N = 23)	9	17		Post	(N = 29)	10	14
		Change		-5	8		Change		0	-6
	$L + P_2$	Pre	(N = 24)	25	0	$L + P_2$	Pre	(N = 23)	17	4
		Post	(N = 24)	8	8		Post	(N = 24)	13	8
		Change		-17	8		Change		-4	4
	$E + P_2$	Pre	(N = 17)	0	6	$E + P_2$	Pre	(N = 21)	15	5
		Post	(N = 17)	6	6		Post	(N = 22)	9	0
		Change		6	0		Change		-6	-5
Constructive Response Plus Punishment	$L + P_1$	Pre	(N = 22)	18	18	$L + P_1$	Pre	(N = 29)	17	24
		Post	(N = 23)	52	61		Post	(N = 29)	52	45
		Change		34	43		Change		35	21
	$L + P_2$	Pre	(N = 24)	29	46	$L + P_2$	Pre	(N = 23)	17	43
		Post	(N = 24)	42	71		Post	(N = 24)	50	63
		Change		13	25		Change		33	20
	$E + P_2$	Pre	(N = 17)	18	36	$E + P_2$	Pre	(N = 21)	34	43
		Post	(N = 17)	36	36		Post	(N = 22)	59	50
		Change		18	0		Change		25	7

Note.--Figures are percentages.

TABLE 26

Responses by Six Groups of Head Start Mothers to Good Behavior (Post-Interview)

Types of Rewards	High Participation Groups			Low Participation Groups		
	L + P_1	L + P_2	E + P_2	L + P_1	L + P_2	E + P_2
	(N = 23)	(N = 24)	(N = 17)	(N = 29)	(N = 24)	(N = 22)
1. Doesn't respond to good behavior	4	8	--	10	4	5
2. Physical	9	4	6	24	--	9
3. Material	22	17	18	21	17	14
4. Verbal praise	57	54	47	34	63	59
5. Verbal affirmation	30	29	35	34	25	23
6. Other	--	8	12	14	13	9

Note.--Figures are percentages.

TABLE 27

Teaching Styles of Six Groups of Head Start Mothers (Post-Interview)

Teaching Style	High Participation Groups			Low Participation Groups		
	$L + P_1$	$L + P_2$	$E + P_2$	$L + P_1$	$L + P_2$	$E + P_2$
	(N = 23)	(N = 24)	(N = 17)	(N = 29)	(N = 24)	(N = 22)
1. Prepares child for new task	22	4	6	21	4	5
2. Labels task	4	--	--	3	--	--
3. Gives nonspecific directions	13	25	18	17	33	9
4. Gives specific directions	17	42	47	31	38	36
5. Demonstrates task	65	75	71	79	50	73
6. Praises child	74	88	82	93	79	91
7. Punishes child	--	4	--	3	--	9

Note.--Figures are percentages.

Appendix H

Observation of Substantive Curricular Input (OSCI) Codes

Context Codes

Context codes describe the general nature of the activity.

Cognitive Activities:

D--Discussion. This code is used when verbal interaction between two or more people is the primary activity. The discussion can be on any subject matter.

V--Structured Lesson. V is coded when there is evidence that the verbal interaction is part of a planned lesson and is following a planned progression. This code includes the use of programmed instructional material and games such as lotto, when used in a planned lesson.

Creative Activities:

P--Dramatic Play. Any dramatic play or role-playing is coded P. This is frequently used when children are playing in the doll corner, using dress-up clothes, or playing with toy cars and people.

A--Creative Arts. This includes all art and music activities, such as working with paint or crayons, singing or dancing.

Large-muscle Activities:

L--Large-muscle. Activities such as riding tricycles, running, and swinging, where the use and development of the large muscles are of primary importance, are coded L.

B--Building. This code is used for activities involving construction with large floor blocks.

Visual-motor Activities:

S--Small-muscle. This includes activities involving fine coordination and manipulation of objects, such as puzzles, beads, and small table blocks and other table toys and games.

Routine Activities:

C--Clean up and set up. Putting away, cleaning, and setting-up activities are included in this code.

T--Toilet, wash, dress. The activity of this context is washing, toileting, dressing, or undressing, either as a classroom routine or by an individual child.

E--Eating. This includes all snack and lunch times.

I--Interval. This can be either a structured or unstructured transition period when individuals or groups are moving from one activity to the next.

R--Rest. This code is used when rest is of primary importance. Other activities, such as listening to music or a story, may also be occurring during rest.

Other Activities:

N--Interactive. Emphasis of this context is on the physical contact between children or teacher and child rather than on a specific activity. N is coded when the teacher is dealing with emotional needs of children expressed by reactions such as fighting or crying. It also includes physical contact that implies positive affect.

U--Uninvolved. This code is used when the child wanders aimlessly without taking part in any activity.

W--Watching, listening. This code is used for any listening, watching, observing, exploring, or sensing activities. It includes such activities as a child listening to a story record, looking at a book by himself, or watching other children's activity.

Content Codes

A content code is differentiated from a context code in that it indicates the specific nature of the curricular input that the child is receiving from the activity, from the teacher or another adult, or from other children.

Cognitive Activities:

la--language. Emphasis is on the development of spoken language. There must be elements of either labeling, elaboration, correction, or the introduction of new vocabulary.

qu--quantitative. Emphasis is on numbers, mathematical concepts, or concepts relative to size.

ss--social studies. This includes concepts dealing with the community, school, the family, and human relations.

sc--science. Emphasis is on scientific concepts.

Creative Activities:

dr--dramatic play. Role-playing, housekeeping activities, doll corner, dress-up, puppets, and creative dramatics are included.

mu--music. This includes singing, clapping, playing instruments, and listening to records.

ar--art. Included are painting, coloring, pasting, and working with clay.

da--dance. Movement to music, creative or directed, is coded da.

Sensory Activities:

ad--auditory discrimination. Emphasis is on sounds, either in the environment, in recordings, or in lessons on discrimination of word and letter sounds.

vd--visual discrimination. Emphasis is on the visual environment. This code describes children looking at books by themselves or watching movies.

vm--visual motor. Any activity that combines visual discrimination and manual dexterity, such as working with puzzles, is included in this code.

po--perceptual other. Experiences that stress either the sense of smell, touch, or taste are coded po.

Verbal Communication:

vc--verbal communication. Verbal exchanges that are not specifically directed toward language development are coded vc.

ru--rules. This code covers teaching or calling to attention rules of activities or of children's social behavior.

Other Content Activities:

me--mechanical. This code is used when an activity is performed routinely or mechanically without elaboration, such as eating with minimal verbal communication.

sk--skill. This code is used to indicate teaching of a technique. It covers sport skills, art methods, dressing skills, etc.

em--emotional. This refers only to negative interactions, such as physical and verbal fighting, crying, spitting, or tantrums.

na--not applicable. If there is no observed content, or the activity does not fit into any category, it is coded na. This content code would be used for a child staring out of a window.

Social Interaction Codes

One of the following codes was recorded with each context activity observed:

sv--social verbal. The purpose of the verbalization is primarily for socializing rather than to communicate information. A teacher praising a child is coded sv.

sp--social physical. This code includes all non-verbal social interactions that involve physical contact, such as quietly holding hands or hugging a child.

si--social interaction. Both verbal and physical interaction as described above must be present to be coded si.

oo--This code was recorded if no social interaction occurred within the activity being observed.

Appendix I

Analysis of the Internal Characteristics of the Post Observation Teacher Rating Scales (P.O.T.) With Data From the 1968-69 National Evaluation of Head Start

Renato Espinosa, Assistant Professor and Researcher
Dorothy C. Adkins, Professor and Researcher
University of Hawaii

Problem

During the 1968-69 national evaluation of Head Start, the Post Observation Teacher Rating Scales (P.O.T.) was used to assess some behavior categories assumed to reflect the classroom atmosphere generated by the teacher.

The instrument is a compilation of items submitted to the Head Start Evaluation and Research Center at Syracuse University by the Bank Street College of Education, Michigan State University, and the University of Texas Head Start Research and Evaluation Centers. In some instances items were rewritten to fit a common format. The P.O.T. was completed after a 2½-hour observation period in October and also after every Observation of Substantive Curricular Input (OSCI), a total of five times during the program. The ratings were made by the observer immediately after leaving the classroom. Judgments were to be made on the basis of what had taken place during that particular period.

Each item provides a category for unobservable or non-occurring instances of the behavior described. The coding system used is reversed so that a small number indicates a desirable or positive attribute. Most of the items describe a particular behavior or event and list the alternative ratings in the form of frequency of occurrence, i.e., constantly, frequently, occasionally, infrequently, and never (opportunity

present; behavior did not occur). Exceptions to the above format are items #2, 3, 4, 7, 10, 16, 25, and 30. The alternatives on these items were as follows:

Item 2. Reliance on ongoing activities (+) versus reliance on formal lessons (-).

Item 3. Attention to individual (+) versus attention to the group (-).

Item 4. Frequency in a one-day span.

Item 7. Approval (+) versus disapproval (-).

Item 10. Number of techniques for coping with pupil frustration.

Item 16. Use of pictures (+) versus use of objects (-) to illustrate an idea or concept.

Item 25. Type of punishment most frequently used: reasoning (+) versus physical (-).

Item 30. Frequency in one-year span.

Objectives

This study was designed to obtain an estimation of the reliability of the items in this instrument and to attempt to isolate meaningful factors that could be used to generate subscale scores. These subscores can then be used to evaluate teacher effects on cognitive and emotional changes in the children.

Procedure

The University of Hawaii Head Start Evaluation and Research Center received data consisting of five ratings for each teacher from 11 Centers. Examination of these data revealed a large number of zero ratings (no opportunity to observe). Tabulation of these data showed that there were

two items in which zero ratings had been recorded more than half of the time. These items are Number 6 (Did the teacher indicate respect for the children's families?) and Number 33 (To what extent does the teacher deal with hazardous situations as they occur?). It was also observed that the data for all the items from the U.C.L.A. Center contained a significantly greater number of zero ratings than did the data from the other Centers. Although this does not necessarily mean a more or less conscientious job on the part of the raters at U.C.L.A., but simply different criteria, it was felt that their inclusion in the analyses would tend to introduce additional error variance. Thus, the analyses to be reported are based on 31 items (items 6 and 33 were deleted) and the total sample (142 teachers) from 10 Centers, with U.C.L.A. data excluded.

In order to estimate the reliability of the items while controlling for changes in the teachers or raters over time, a procedure suggested by Dr. Paul Horst was followed. It consists of getting two average ratings for each teacher. The first average is obtained by adding the first, third, and fifth ratings and dividing the sum by three, and the second average by adding the second and fourth ratings and dividing the sum by two. In each case, the average was based on the number of significant ratings, that is, not counting any zero rating. Still, some zero averages were obtained for some teachers on some items. In those cases, the mean rating for that item for the total sample was substituted for the zero average.

The final product was two ratings for each teacher. The correlation between these two ratings for each item using the total sample provides an estimate related to reliability. The results of this analysis,

including means and standard deviations for each item, are presented in Table 1. The average of these coefficients was .49. Starting with the familiar formula for the correlation for the sum of two series, we can solve for the average of the correlations of the items from one series to the other and then substitute this value in the familiar Spearman-Brown prophecy formula. The resulting over-all estimate of the average reliability of the sum of ratings on five occasions on a single item is .66,* while an estimate of the uncorrected reliability as if there were two and a half ratings in each series is .49. The next step was to factor analyze the ratings. Following a procedure suggested by Horst, the two average ratings for each teacher were included, as if they were for different persons, so that the factor analysis was performed on a total of 284 observations (two per teacher).

A four-factor orthogonal rotation solution was obtained. Following Horst's suggestion, the number of factors extracted was determined by the criterion that the sum of the eigenvalues divided by the number of variables should not exceed the uncorrected reliability estimate of the ratings. The factor loading matrix is presented in Table 2. Inspection of Table 2 permitted the identification and labeling of two factors.

The first factor, labeled "Quality of Cognitive Input," is presented in Table 3. The second factor, labeled "Concern for Individual

---

*The general approach and resulting formulas are given in Dorothy C. Adkins, "A comparative method of selecting test items." (Unpublished Ph.D. Dissertation, The Ohio State University, Columbus, Ohio, 1937), pp. 258-261. The special case of the formula for three measures in one series and two in the other is

$$r_{XX} = \frac{5r_{AB}\,[3r_{AB} + \sqrt{r_{AB}^2 + 24}]}{4\,[3 + 2r^2_{AB} + r_{AB}\sqrt{r_{AB}^2 + 24}]}$$

TABLE 1

Item Means, Standard Deviations, and Product-Moment Correlation Coefficients for Two Means of Ratings Per Teacher on the Post Observation Teacher Rating Scales (P.O.T.) (N = 142), 1968-69 National Evaluation Data (See text)

Item Number	First Mean		Second Mean		Correlation[a]
	Mean	S.D.	Mean	S.D.	
1	2.20	.75	2.18	.73	.63
2	2.90	1.02	2.98	.94	.57
3	3.04	.71	3.13	.77	.36
4	2.46	.97	2.46	.97	.59
5	3.08	.77	3.20	.71	.36
6	Excluded from the analyses				
7	2.33	.88	2.35	.89	.58
8	2.65	.75	2.63	.89	.48
9	2.64	.77	2.80	.90	.49
10	3.39	.87	3.38	.86	.49
11	3.30	.92	3.25	.93	.57
12	2.95	.93	3.01	.88	.69
13	3.05	.82	3.01	.83	.51
14	2.83	.87	2.78	.90	.46
15	2.52	.82	2.65	1.00	.52
16	2.60	.74	2.64	.85	.20
17	2.58	.77	2.68	.88	.38
18	2.68	.81	2.70	.87	.47
19	2.87	.84	2.90	.99	.28
20	2.90	.84	3.03	.98	.49
21	2.97	.92	3.11	1.01	.42
22	3.30	.91	3.25	1.07	.45
23	2.98	.88	2.91	.89	.40
24	2.79	.81	2.93	.84	.55
25	2.12	.99	2.15	1.00	.48
26	2.72	.71	2.66	.85	.51
27	4.14	.90	4.13	1.03	.68
28	2.77	.82	2.78	.82	.56
29	2.70	.83	2.85	.85	.38
30	2.77	.84	2.68	.79	.57
31	2.71	.85	2.76	.85	.56
32	2.64	.73	2.51	.74	.34
33	Excluded from the analyses				

[a]These coefficients represent the correlation of the sum or average of three ratings with the sum or average of two ratings. By the technique referred to previously (Adkins, op. cit.), they could be used to provide a "stepped up" reliability estimate for each item. It did not seem worthwhile to make this additional computation for each item.

TABLE 2

Factor Loadings for 31 Items (P.O.T.)
Four Factors, Orthogonal Rotation [a] (N=284)

Item No.	Factor I	Factor II	Factor III	Factor IV
1	--	--	.67	--
2	--	.71	--	--
3	--	.48	.48	--
4	--	.67	--	--
5	--	--	--	-.66
6	Excluded from analyses			
7	--	--	.50	.51
8	.48	--	--	--
9	--	--	.58	--
10	--	--	.49	--
11	.76	--	--	--
12	.74	--	--	--
13	.61	--	--	--
14	.53	--	--	--
15	--	--	.50	--
16	--	--	--	-.56
17	.51	--	--	--
18	--	--	.44	--
19	.55	--	--	--
20	.43	--	--	--
21	.71	--	--	--
22	.76	--	--	--
23	.63	--	--	--
24	.55	--	--	--
25	--	.43	--	--
26	--	--	.49	--
27	--	--	-.50	--
28	--	--	.66	--
29	--	--	.57	--
30	--	--	.47	--
31	.41	--	--	--
32	--	.50	--	--
33	Excluded from analyses			
Eigenvalues	8.974	2.147	1.872	1.425

[a] Only loadings of .40 and higher have been included and each item assigned to a factor has been assigned to that on which its loading is highest. (See text.)

TABLE 3

Items with High Loadings on Factor 1, "Quality of Cognitive Input"

Item No.	Loading	Content
11	.76	Use and stress of a variety of verbs.
22	.76	Emphasis in analytical attitudes in the examination and discussion of events.
12	.74	Use and stress of descriptive adjectives.
21	.71	Extent to which the teacher leads the children to explore the multiplicity of attributes and/or functions of objects.
23	.63	Extent of discussions about past events, experiences, comparisons, suppositions, etc.
13	.61	Use of multisensory stimulation in teaching.
19	.55	Extent of encouragement for fine discriminations.
24	.55	Extent of use of large and varied repertoire of modes of communication.
14	.53	Use of techniques to develop enthusiasm for learning; creation of atmosphere of possibility.
17	.51	Extent of encouragement for perseverance in activities.
8	.48	Attempts to inculcate respect for ideas/property of others.
20	.43	Extent of encouragement for delayed responses in order to think carefully.
31	.41	How often teacher sets up activities that will create a mess.

Emotional Comfort," is presented in Table 4. The other two factors are difficult to interpret and have high loadings on very few items. From the standpoint of this analysis, they are considered to be residual factors.

Finally, two subscale scores were obtained for each teacher. First, the two average ratings obtained previously were added and divided by two to obtain an over-all rating for the total number of observations.* Then, the score for Subscale 1, "Quality of Cognitive Input," was obtained by adding the average ratings of items 8, 11, 12, 13, 14, 17, 19, 20, 21, 22, 23, 24, and 30. The score for Subscale 2, "Concern for Individual Emotional Comfort," was obtained by adding the average ratings of items 1, 3, 7, 9, 10, 15, 18, 26, 28, 29, 30, 32, and then subtracting the average for item 28, which had a high negative loading on that factor.

In interpreting these subscale scores, it must be remembered that a small number indicates a positive attribute and a large number a negative attribute or the absence of a behavior or a less frequent behavior. For the total sample (N = 142) Subscale 1, "Quality of Cognitive Input," has a mean of 38.07 and a standard deviation of 7.26. Subscale 2, "Concern for Individual Emotional Comfort," has a mean of 28.40 and a standard deviation of 6.05. The total score has a mean of 88.05 and a standard deviation of 12.51. Subscale 1 correlates .73 with Subscale 2 and .94 with the

---

*Strictly speaking, a weighted average should have been obtained, but absence of data in some cases had meant that only two ratings instead of three had been averaged. Although a mean rating for each teacher on each scale could have been obtained, it did not seem worth the amount of work that would have been required.

TABLE 4

Items with High Loadings on Factor 3,
"Concern for Individual Emotional Comfort"

Item No.	Loading	Content
1	.68	Extent to which teacher responds to children as individuals.
28	.66	Extent to which teacher gives information and/or reasons for her commands.
9	.58	Extent of teacher awareness of pupil frustration.
29	.57	Extent to which teacher encourages use of equipment, demonstrates use, etc.
15	.50	Acceptance of children's alternatives as being "as correct as teacher's own."
32	.50	Extent to which teacher administers comfort to physical and/or psychological needs.
7	.50	Use of approval/disapproval in behavior development.
10	.49	Use of specific techniques for frustration or emotional problems.
26	.49	Attempts to vary environment.
3	.48	Attention to individuals versus groups.
30	.47	Extent of variety in daily schedule.
18	.44	Extent to which teacher allows completion of activities past due time.
27	-.50	Extent to which teacher modifies her behavior under observation.

total score. Subscale 2 correlates .88 with the total score.

On the basis of these findings, at least two alternatives for evaluating teacher effects are open to the different Centers:

1. The average ratings and subscale scores reported to each Center can be used directly to test for teacher effects by contrasting different classes.
2. Subscale scores can be obtained for each teacher for each of the five different observation periods, thus providing an estimate of changes of teacher behavior over time to be used to evaluate differential change in relevant measures of the children.

As was done in the foregoing analyses, it is necessary to replace zero ratings with the average for the relevant item at each observation time if the second strategy is followed. An alternative solution, less satisfactory, is to replace zero ratings with the theoretical midpoint of the scale, i.e., with 3.

For the U.C.L.A. sample, a procedure similar to the one presented here should yield similar results. Considerations of time have prevented the authors from following this suggestion with respect to the U.C.L.A. teachers.

REFERENCES

Adkins, Dorothy C. and Ballif, Bonnie L. Exploration of motivation to achieve in preschool children. University of Hawaii Head Start Evaluation and Research Center Annual Report, 1966-67. Submitted to the Institute for Educational Development for the Research Evaluation Division, Project Head Start, Office of Economic Opportunity.

Adkins, Dorothy C. and Crowell, Doris C. Development of a preschool language-oriented curriculum with a structured parent education program: Final report. Head Start Evaluation and Research Center, University of Hawaii, Contract No. OEO 4121, 1968.

Beadle, Kathryn R. Prevention and early detection of learning disabilities and language disorders in a culturally deprived population: Final report. Head Start Language Research Project. State of Hawaii, Department of Education, General Education Branch, Kindergarten Primary Education Section, 1966 (mimeo).

Crowell, Doris C. and Fargo, Jean. "Development of verbal abilities in head start children." Annual report: Head Start Evaluation and Research Center, University of Hawaii, 1966-67.

Dixon, W. J. (Ed.) Biomedical computer programs. University of California, Los Angeles, 1964.

Hertzig, Margaret E.; Birch, H. G.; Thomas, A.; & Mendez, Olga Aran. Class and ethnic differences in the responsiveness of preschool children to cognitive demands. Monographs of the Society for Research in Child Development. Serial No. 117, 1968.

Hess, R. D.; Shipman, Virginia C.; Brophy, J. E.; & Bear, Roberta. The cognitive environment of urban preschool children. Graduate School of Education, University of Chicago, 1968.

Kirk, R. E. Experimental design: Procedures for the behavioral sciences. Belmont, California: Brooks/Cole Publishing Co., 1968.