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ABSTRACT

This is the evaluation report of the third year of operation, 1970-71, of the Fort Worth Central Cities Project, which was initiated in 1968-69 to provide structural preschool experiences for two- to five-year-old children from an economically deprived area in the Fort Worth inner city. The Project was a joint effort of the Southwest Educational Development Laboratory and the Fort Worth Central Cities staff. Evaluation results indicate that the Project was successful in preparing economically disadvantaged children to enter first grade on an equal footing with their more advantaged agemates, and to experience success in their first experience with formal schooling. The report contains a description of the program and its objectives, the evaluation design, the comparison groups, the hypotheses to be tested, and the results of the evaluation (including an evaluation of special education and self-concept). There are numerous tables and figures throughout the report. (Authors/SB)

ANNUAL EVALUATION REPORT

1970-71

EARLY CHILDHOOD EDUCATION LEARNING SYSTEM

FORT WORTH CENTRAL CITIES PROJECT

Submitted to the Fort Worth Independent School District

by

Southwest Educational Development Laboratory
Austin, Texas

SOUTHWEST EDUCATIONAL DEVELOPMENT LABORATORY
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April 2, 1972

Dr. Julius Truelson, Superintendent
Fort Worth Independent School District
Fort Worth, Texas

Dear Dr. Truelson:

Submitted herewith is the evaluation report of the third year of operation, 1970-71, of the Fort Worth Central Cities Project. This Project was a joint effort of the Southwest Educational Development Laboratory and the Fort Worth Central Cities staff. The Laboratory assisted in the design of the materials and conducted the evaluation. The Central Cities staff was solely responsible for implementing the program in 1970-71.

Evaluation results indicate that the Project was successful in preparing economically disadvantaged children to enter first grade on an equal footing with their more advantaged agemates, and to experience success in their first experience with formal schooling.

The report contains a description of the program and its objectives, the evaluation design, the comparison groups, the hypotheses to be tested, the results of the evaluation, and their implications.

We appreciate the assistance of the Region XI Education Service Center and the cooperation of the Fort Worth Independent School District personnel who participated in the Project.

Sincerely,

James H. Perry

James H. Perry
Executive Director

JHP/mh

ACKNOWLEDGMENTS

The Fort Worth Central Cities Early Childhood Learning System was developed by the Project Team of the Central Cities Project of the Fort Worth Independent School District. Director of the Project since its inception has been John Barnett. He was assisted in the development of the Instructional Materials component by Ann Brannon (1968-69), Dayton Ward (1969-70), and Inas Carroll (1970-71).

Under Mr. Barnett's guidance, Mrs. Brannon had principal responsibility for the Staff Development component in 1968-69 and 1969-70; Cecil Wright assumed this responsibility in 1970-71. Leon Ray was in charge of guiding and implementing the Parent Involvement component. Site Evaluation was supervised by Charles Evans in 1968-69, Bill Fisher in 1969-70, and Fae Lysiak in 1969-70 and 1970-71. Mrs. Lysiak was assisted by Carl Koch, site psychologist.

Specialists who worked under the direction of these supervisory and coordinating personnel included Reva Bell, Alma Bruton, Flora Cox, Roy Hill, Roberta Holiday, Robbie Lewis, Vincente Llamozas, Robert O'Neal, Burnham Robinson, Sherry Wallace, and Eileen Wheeler.

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ABSTRACT

The Fort Worth Central Cities Project was initiated in 1968-69 to provide structured preschool experiences for two- to five-year-old children from an economically deprived area in the Fort Worth inner city. For the three years, 1968-1971, the program was supported by U. S. Office of Education Title III funds.

The Project was a cooperative venture of the Fort Worth Independent School District and the Southwest Educational Development Laboratory. The educational materials included three components of the SEDL Early Childhood Education Learning System -- Curriculum Development, Staff Development, and Parent Involvement. A fourth component, Special Education, was added in 1969, funded by a grant from Region XI Education Service Center. Research and evaluation services have supported all the components. The Fort Worth Independent School District administered the Project. Evaluation was the responsibility of SEDL.

During the 1970-71 school year there were 152 Blacks, six Mexican Americans, and two Anglos in the Central Cities program. These children comprised the Experimental or Project group. For evaluation purposes there were four Control or Comparison groups: a primary group of two- to four-year-old children in three Fort Worth United Fund day care centers; and three secondary groups of five-year-old children in 1) a public school kindergarten near Texas Christian University serving middle-class families, 2) three public school all-day kindergartens in the target area drawing from families similar to those in the Project group, and 3) two public school all-day kindergartens in a low-income, predominantly Anglo area of Fort Worth.

In keeping with the analysis plan, various intelligence and achievement measures were administered as pre- and posttests to each age group in the Project and to each Comparison group. The evaluation design also included a parent interview schedule, teacher attitude test, an analysis of pupil attendance and pupil self-concept, and an assessment of special education pupils.

Evaluation findings indicated that disadvantaged children in the Central Cities Project made significant increases on the Slosson Intelligence Test. Five-year-olds who completed three years in Central Cities showed readiness for first grade, scoring in the 90th percentile on the Test of Basic Experience and well above the disadvantaged comparison sample on the Raven Progressive Matrices and the Slosson as well. Gains on the Slosson correlated with age of entry into the Project and also with the amount of time spent in the program, as follows:

1. Five-year-olds who entered the program at age three and remained in it for three years showed a mean gain of 12.74.

2. Four-year-olds who entered the program at age two and remained in it for three years showed a mean gain of 25.50.

3. Four-year-olds who entered the program at age three and remained in it for two years showed a mean gain of 6.58.

From these results it would appear that the earlier intervention is begun and the longer it is maintained, the more effective it is.

An analysis of the effects of parent involvement revealed that the amount of parent participation, as measured by attendance at school meetings, did not correlate significantly with the IQ gains of their children. The Minnesota Teacher Attitude Inventory was used to assess teacher attitudes. A correlation study revealed that teacher attitude was not significantly related to the IQ of children in their classes

during the third year of the program. In the two previous years, however, children with more authoritarian teachers made greater IQ gains than children in classes with less authoritarian teachers.

A follow-up study was made of children who had had two years in the Project and in 1970-71 were completing first grade. They were compared with a first grade class in a target area school and one in a middle-income school. Scores of the middle-income group remained significantly higher on the Slosson and the Peabody, but all three groups regressed on the Slosson at the end of Grade 1, a regression observed in a majority of follow-up evaluations of preschool programs. Central Cities participants, however, showed higher self-concepts and were rated by their teachers as exhibiting more positive emotional behavior, intellectual ability, physical status, motor behavior, and adjustment to the class than did non-Project children from the target area.

Following are some of the conclusions reached after three years of research on children who participated in the Central Cities Project:

1. Intervention at ages two and three brings greater score increases on a standardized IQ test than later intervention at ages four and five.

2. Children achieve significant score gains on IQ tests during their first year of preschool intervention and tend to maintain these gains when preschool intervention is continued.

3. Children show a decrease in IQ score between the end of preschool and the end of first grade regardless of the economic level or racial composition of the group.

4. Disadvantaged children show readiness for first grade after three years of participation in the Fort Worth Central Cities Project.

Each year of the Project produced some positive results. After three years, it could be measured a success by virtue of meeting its primary goal -- to prepare disadvantaged children aged two to five to experience success when they enter first grade.

CHAPTER I

BACKGROUND AND OBJECTIVES

The Fort Worth Central Cities Project was begun in 1968-69 in an effort to provide economically disadvantaged Black children in the heart of Fort Worth with the preparation they need to enter the primary grades on an equal footing with their middle-class agemates. While the Central Cities Program incorporated materials originally designed by the Southwest Educational Development Laboratory, during 1970-71 it was implemented solely by Central Cities staff, with the Laboratory conducting the evaluation. Funds for the Project were secured from the U.S. Office of Education through Title III. Since funding was not renewed for 1971-72, 1970-71 was the last year of operation for the Central Cities Program.

SITE DESCRIPTION

In the Fort Worth Central Cities area there are seven elementary schools: Charles E. Nash, Carver, Versia Williams, R. Vickery, East Van Zandt, Carrol Peak, and James E. Guinn. All feed into I. M. Terrel High School.

The problems of the target area are similar to those of other large inner-city neighborhoods across the country. The 1960 census showed that 95 percent of the 35,692 persons residing in inner-city Fort Worth were Black.* The section consists of seven square miles, 3.5 percent of the land within the Fort Worth city limits. In contrast, the area also contains:

- 50 percent of the city's Black population
- 40 percent of its single-parent families
- 60 percent of the Tarrant County welfare recipients

*At the time this report was written, the ethnic breakdown of the 1970 census was not complete. Information available indicates that no major distributional changes have taken place.

- 50 percent of the county's recipients of aid for dependent children
- 43 percent of the county's recipients of aid to the blind and disabled
- 23 percent of all crimes committed in Fort Worth
- 20 percent of the city's juvenile offenders
- 7.5 percent of the city's income-producing families (However, 80 percent of the families have less than $5,000 total income [They equal 20 percent of all Fort Worth families receiving less than $5,000.]; 30 percent receive less than $2,000; 50 percent receive less than $3,000; and 65 percent receive less than $4,000.)

Area residents have a median education level of fewer than nine school years, more than 10 percent below the median for the city and 23 percent below the median for Tarrant County. Over 50 percent of the area work force is composed of unskilled laborers or domestic workers. Although Fort Worth had a 1.9 percent unemployment rate in 1969, a majority of the target area residents were unemployed or employed in jobs yielding inadequate incomes.

The inner-city area, which was primarily Anglo residential at the end of World War I, is close to the central business district of Fort Worth. Residential sections are isolated by major physical barriers, such as the Trinity River, five sets of railroads, four freeways, and several major thoroughfares. These barriers make many sections virtually inaccessible and uneconomical to serve adequately with streets, public facilities, and other services.

Area housing consists predominantly of small, frame, single-family units. Most dwellings are over 50 years old, dilapidated and deteriorating, and lacking the amenities of modern living. Still, the housing situation is not as congested as it is in comparable areas in other major cities. There is little stacking, and the amount of open lot space is generally more adequate.

Scattered throughout the area are a few newly-constructed, higher density residential, commercial, and industrial buildings. About 40 percent of the people in the target area own their own homes. By contrast 63 percent

of all Tarrant County residents were homeowners in 1960, and 59 percent of all Fort Worth residents were homeowners. The average value of owner-occupied dwellings in the target area is $5,845 per unit -- much lower than the average for the city.

RATIONALE

Since children are more alike than they are different, their needs are basically the same. They need love, food, clothing, shelter, and medical attention; but they also need the freedom to grow and develop within an environment conducive to positive learning. When a child lacks this sort of environment and is denied the necessities of a secure, happy existence, his potential for growth is usually reduced and his emotional and intellectual development stunted.

According to several research studies (Bloom 1964; Davis and Hess 1965) involving infants of different ethnic groups, there is little measurable difference among most children through the age of 15 to 18 months. Somewhere between 18 and 36 months the difference in the intellectual development of middle-class and low-income children widens considerably. The effects of an impoverished environment are most obvious in the area of language development. By the time they enter kindergarten, low-income Black children are often far behind their more fortunate agemates in both understanding and expressing themselves in the language of the school. This disadvantage, combined with the other drawbacks of poverty, puts the low-income Black child behind before he even starts school.

Aside from language difficulties, the lack of basic physical needs also handicaps low-income children. Their parents are often poorly educated themselves, and their knowledge of proper nutrition and medical care is usually limited. Even if they knew what should be done, the parents usually could

not afford the necessary attention. No matter how highly motivated he is, a child who is undernourished or in poor health will not be able to learn effectively.

With middle-class, standard-English-speaking children, educators usually work to promote language development by focusing on the cognitive, affective, and psychomotor development of the child. However, the particular environmental problems faced by the low-income Black child necessitate a more comprehensive approach. While the Black child can understand and make himself understood by a sensitive, patient teacher, his nonstandard dialect and poor language structure make both these tasks more difficult for him than for other young children. A teacher who lacks an understanding of the child's background may link his impeded progress with low intelligence. This attitude often is transferred to the child, who begins to see himself as a failure at an early age. As he continues through school, he tends to fall further behind; and the cyclical process of low self-concept and failure will be harder to halt.

Proper care and positive learning experiences may prevent this failure cycle from getting started. With good food and medical care and a stimulating, reinforcing environment, young children may develop enough self-confidence and experience enough joy in learning to take them through the difficult primary school period without becoming discouraged. If at the same time their standard language skills are developed, their school communication problems may be eliminated.

GOALS

The Fort Worth Central Cities Project attempted to provide a group of two- through five-year-old low-income urban Black children with the language skills they needed to function well in school. At the same time the Project

fed the children two hot meals a day and saw that they received all necessary medical care. Two basic language development approaches were used. For two- and three-year-olds, the Project attempted to develop structured language patterns and to correct faulty patterns acquired prior to intervention. Since four- and five-year-olds usually have already learned to communicate verbally, the Project attempted to add a school dialect to their home dialect and teach them when to use each form of language.

With both older and younger children, staff members refrained from making value judgments. They presented standard English as appropriate in school situations and the children's home dialect as appropriate among family and friends. Teachers were careful to guide language development through planned activities rather than individual correction. This approach was designed to minimize anxiety and hurt feelings. The Project's overriding language development goal was to teach each child to understand and use the language of the school and to let him decide for himself when other dialects are appropriate.

OBJECTIVES AND EVALUATION DESIGN

The contractual agreement between the Fort Worth Central Cities Project and the U.S. Office of Education committed the Project to three tasks:

- To develop an early childhood education curriculum for economically disadvantaged two- through five-year-old children
- To develop a staff training program to complement the curriculum
- To develop a parent involvement program to help parents enrich and reinforce their children's learning experiences

In order to reach these goals, the Fort Worth Central Cities Project established three objectives. Following is presentation of each objective in both non-behavioral and behavioral terms.

OBJECTIVE 1 (Non-Behavioral) -- To establish an educational environment in which two- through five-year-old children from economically deprived homes are provided an opportunity to develop intellectually, socially, physically, and emotionally.

OBJECTIVE 1 (Behavioral) -- As measured by norm-referenced evaluation instruments, the performance of economically disadvantaged preschool children who have experienced an educational environment which includes a sequentially planned program, adult-child interaction, guided peer interaction, and nutritional and medical services will be higher in the areas of affective, cognitive, and psychomotor development than that of children in day care centers.

Affective development

A. General goal

1. Given learning activities designed to foster affective development, 80 percent of the children will exhibit self-concept development reflected in changes in their school adjustment, interests, attitudes, and values as measured by Project staff using observation check sheets and criterion-referenced tests.

B. Specific objectives

1. Given learning experiences involving peer group and adult-child interactions, 80 percent of the children will exhibit the behavior of sharing as indicated by project staff on an observation check sheet and criterion-referenced instruments.

2. Given learning experiences designed to teach children to take turns speaking, 80 percent of the pupils will exhibit this behavior as indicated by Project staff on an observation check sheet and criterion-referenced instruments.

3. Given learning experiences including role-playing and the use of pictures to elicit desired emotional responses, 80 percent of the children will exhibit the appropriate behavior as indicated by Project staff on an observation sheet and criterion-referenced instruments.

4. Through participation in structured learning experiences emphasizing self-awareness and interpersonal similarities and differences, 80 percent of the children will exhibit self-awareness and an understanding and acceptance of individual and cultural variety, as indicated by norm-referenced instruments.

C. Evaluation

1. Norm-referenced instruments
   a. Preschool Attainment Record
   b. Caldwell Preschool Inventory

2. Observation Check Sheet
3. Self-Concept Inventory

Cognitive Development

A. General goal

Given structured learning activities designed to aid cognitive development, 80 percent of the children will demonstrate the ability to recall knowledge, to solve problems, and to think creatively, as measured by norm- and criterion-referenced instruments.

B. Specific objectives

1. Given structured learning activities designed to aid language development, 80 percent of the children will demonstrate significantly increased vocabularies as measured by norm-referenced instruments.

2. Given structured learning activities involving problem solving, 80 percent of the children will exhibit gains in relevant skills as measured by norm-referenced instruments.

3. Given learning activities requiring creative thinking, 80 percent of the children will achieve the objectives of the lessons as measured by criterion-referenced instruments.

C. Evaluation

1. Norm-referenced instruments (pre-post measures)
   a. Slosson Intelligence Test
   b. Peabody Picture-Vocabulary Test
   c. Raven Progressive Matrices Test
   d. Caldwell Preschool Inventory
2. Criterion-referenced instruments
   a. Unit Criterion Test
   b. Mastery Criterion Test

Psychomotor Development

A. General goal

Given sequential learning activities designed to improve psychomotor development, 80 percent of the children will exhibit the ability to use fine motor skills to manipulate materials and objects and will also demonstrate improved auditory acuity and visual discrimination as measured by norm-referenced instruments.

B. Specific objectives

1. Given specific instructions in listening to auditory stimuli, 80 percent of the children will demonstrate the

ability to recall prior auditory information sequentially, as measured by norm-referenced instruments.

2. Given structured learning activities requiring visual discrimination, 80 percent of the children will demonstrate the ability to recall prior visual experiences sequentially, as measured by norm-referenced instruments.

3. Given learning activities involving fine muscle control, 80 percent of the children will exhibit skill in coordinating visual perception with fine motor responses as measured by criterion- and norm-referenced instruments.

C. Evaluation

1. Norm-referenced instruments
   a. Auditory Test of Language Comprehension (Pre-post)
   b. Caldwell Preschool Inventory
2. Criterion-referenced instruments
   a. Unit Criterion Test
   b. Mastery Criterion Test

OBJECTIVE 2 (Non-Behavioral) -- To provide an opportunity for parents of Project children to participate more effectively in society and assume responsibility for enhancing the educational and physical development of their children.

OBJECTIVE 2 (Behavioral) -- The children whose parents take an active part in a parent involvement program designed to complement the Early Childhood Education Learning System will achieve greater gains on norm-referenced instruments and perform better on criterion-referenced tests than the children of parents who assume a less active role.

The following activities for parents were planned to complement the children's program:

A. Eight monthly meetings consisting of the following parent learning experiences:

October	Getting acquainted with parents Film - "Characteristics of Children"
November	Lesson demonstration with children
December	Selecting educational toys and using them to develop concepts
January	Slides of Center children - their progress and their needs
February	Discussion with each individual parent about his child (while other parents involve themselves in making toys or other resource materials)

March	Group discussion - each parent tells how he works with his child
April	Film
May	Group discussion - Where do we go from here?

At each classroom meeting, the teacher presents the parents with a list of concepts and skills that have been taught previously. The teacher also distributes another list containing specific activities designed to reinforce the child's cognitive and social development.

B. Adult vocational courses

1. The courses are designed to upgrade the parents' skills. Children of skilled parents benefit both directly and indirectly.

2. The courses bring target area and Central Cities parents together monthly to hear speakers and to interact on topics that will reinforce and enhance their understanding of child-rearing practices.

C. Evaluation

The attendance of parents at the eight monthly meetings was used as an index of parent participation. Parents attending four to eight meetings were considered actively involved; those attending three meetings or less were considered less actively involved. The effectiveness of the parent involvement program was measured in terms of the gains of children on norm- and criterion-referenced instruments. A statistical analysis was conducted to determine whether the norm- and criterion-referenced gains of the children of actively involved parents exceeded the gains of those with less active parents.

OBJECTIVE 3 (Non-Behavioral) -- To increase the effectiveness of school personnel who work with Project children by using programs which extend professional competencies and deepen understanding of the special needs and characteristics of economically deprived people.

OBJECTIVE 3 (Behavioral) -- The children of the teachers who are most successful in achieving the objectives of a preservice and inservice training program designed to complement the Early Childhood Education Learning System will show greater gains on evaluation instruments than the children whose teachers are less successful.

The preservice and inservice program consisted of:

A. Sessions on the use of the following teaching strategies: questioning, reinforcement, adult-child interaction, role-playing, diagnosis, matching, and evaluation. Observation instruments were used to measure the success of the

teacher in questioning, reinforcement, and adult-child interaction.

B. Sessions involving patterning (structured language activities that require the child to respond to a prescribed phrase or sentence pattern) and modeling (spontaneous use of correct English in all situations). Video tapes of individual teachers were used for self-analysis, and video tapes of anonymous teachers were used for group analysis. Also, an articulation test was administered to all teachers. Articulation checklists were employed by the staff to measure success in modeling.

C. Sessions involving research studies, books, and periodicals on the disadvantaged child. These sessions were designed to provide the teacher with material to improve her attitude, her level of expectation, her acceptance, and her ability to identify with the disadvantaged child. An instrument designed to test the teacher's knowledge of the characteristics of the disadvantaged child was administered on a pre-post basis. Teachers also took the Minnesota Teacher Attitude Inventory.

D. Sessions involving classroom management. These focused primarily on the flow of activities, that is, the use of learning centers and the rotation of groups and individuals from teachers to teacher assistants to independent individual activities in a well-planned and organized way. An observation check sheet was used to determine the success of each teacher in developing a positive learning atmosphere in her room.

E. Evaluation

The success of the teacher training program was measured by pupil gains on norm-referenced instruments. First, the success of each teacher was determined by the instruments designated for evaluating each training session. Second, a statistical analysis was made to show the relationship between the teachers with varying degrees of success and the gains of the pupils on norm-referenced instruments.

ANALYSIS PLAN

I. AGE GROUPS

TWO-YEAR-OLDS

Tests Administered

1. Slosson Intelligence Test
2. Preschool Attainment Record

Analysis: Pre-posttest comparison of Experimental and Control groups with pretest treated as a covariable

THREE-YEAR-OLDS

Tests Administered

1. Slosson Intelligence Test
2. Peabody Picture-Vocabulary Test
3. Raven Progressive Matrices Test (raw scores)
4. Auditory Test of Language Comprehension (Carrow)
5. Preschool Attainment Record

Analyses
1. Pre-posttest comparision of experimental vs. control groups with pretest treated as a covariable
2. Pre-posttest comparison of special education vs. control groups with pretest treated as a covariable
3. Pre-posttest comparison of three-year olds with one previous year in Project vs. control groups with pretest treated as a covariable
4. Pre-posttest comparison of three-year-olds with one previous year in Project vs. three-year-olds with no previous time in Project with pretest treated as a covariable
5. Pre-posttest comparison of both groups in number 4 vs. control groups with pretest treated as a covariable

Analysis - Pre-posttest comparison of experimental vs. control groups with Slosson IQ treated as a covariable

FOUR-YEAR-OLDS

Tests Administered

1. Slosson Intelligence Test
2. Peabody Picture-Vocabulary Test
3. Raven Progressive Matrices Test (raw scores)
4. Auditory Test of Langauge Comprehension (Carrow)
5. Preschool Attainment Record

Analyses
1. Pre-posttest comparison of experimental vs. control groups with pretest treated as covariable
2. Pre-posttest comparison of special education vs. control groups with pretest treated as a covariable
3. Pre-posttest comparison of pupils with one year in Project vs. control groups with pretest treated as a covariable

4. Pre-posttest comparison of pupils with previous years in project vs. control groups with pretest treated as a covariable
5. Pre-posttest comparsion of pupils with one and two previous years vs. control groups with pretest treated as a covariable
6. Pre-posttest comparison of pupils with one previous year vs. two previous years with pretest treated as a covariable

FIVE-YEAR-OLDS

Tests Administered

1. Slosson Intelligence Test (pretests administered May 1970)
2. Peabody Picture-Vocabulary Test
3. Raven Progressive Matrices Test (raw scores)
4. Auditory Test of Language Comprehension (Carrow)
5. Preschool Attainment Record
6. Test of Basic Experience (TOBE)

Analyses
1. Pre-posttest comparison experimental vs. control groups with pretest treated as a covariable
2. Pre-posttest comparison special education vs. control groups with pretest treated as a covariable

II. FOLLOW UP DATA

Tests to be administered

Slosson Intelligence Test - Project children, 1969-70 comparisons, and selected classmates. Some standardized achievement test (Data on Self-Concept Inventory and Social Rating Scale will be analyzed and furnished for report by Fort Worth Central Cities staff)

Analysis Comparison of first graders with two years in the program vs. first-year classmates, one previously used sample, and one group of middle-class children, all first grade

III. LONGITUDINAL STUDY

Tests Administered

1. Slosson Intelligence Test
2. Preschool Attainment Record

Analysis A generation of means plotted over time for five-year-olds who have been in the project for three years and for every child who has been in the project for more than one year

IV. PARENTAL INVOLVEMENT

Measures Parent attendance records at PTA meetings and corresponding children's Slosson IQ Scores

Analysis For each age group (two, three, four, and five) a comparison of the attendance record of the parents of child against the child's IQ as measured by the Slosson

V. PARENT INTERVIEW SCHEDULE

Test Administered

CTAB

Analysis Comparison of parents of Center children (N=100) vs. parents of target area children (N=50)

VI. STAFF ATTITUDE CHANGE

Test Administered

Minnesota Teacher Attitude Test

Analysis Comparison of test results for project teachers both individually and collectively over a three-year time period; and comparison of high scorers' pupils with low scorers' pupils on expected performance on Slosson

VII. PUPIL ATTENDANCE

Measures School attendance records of five-year-olds over a three-year time period and their respective Slosson IQ scores

Analysis Pre-posttest comparison of IQ scores vs. attendance records (low, medium, high attendance) with pretest Slosson treated as a covariable

VIII. PUPIL SELF-CONCEPT

Test Administered

A 16 item self-concept test (locally developed)

Analysis Comparison of five-year-old pupils who have been in the project for three years with three control groups

IX. SPECIAL EDUCATION EVALUATIONS

Tests Administered Pre-posttests of Illinois Test of Psycholinguistics, Goldman-Fristoe Test of Articulation, and Frostig Developmental Test of Visual Perception

Evaluation An evaluation and report of the data from the above three tests (The analyses of these tests will be performed by the Center.)

Tests Administered

Test	Months Administered		Purpose
Slosson Intelligence Test	September	May	To measure the child's level of intellectual functioning
Raven Progressive Matrices Test	September	May	To measure the child's cognitive development (reasoning ability)
Peabody Picture-Vocabulary Test	September	May	To measure the child's vocabulary development
Auditory Test of Language Discrimination (Carrow)	September	May	To measure the child's development of auditory and language skills
Test of Basic Experience (General Concept)	September	May	To measure the child's development of concept formation
Self-Concept Inventory	December	May	To determine how the child feels about himself and his relationship to others

Comparison Schools

1. Target Area Kindergarten Sample -- This comparison sample consisted of a random group of children from three all-day kindergartens located in East Van Zandt, Carroll Peak, and Carver Schools. All three schools are in the Central Cities area.

2. Low-income (Anglo) Kindergarten Sample -- This comparison sample consisted of a random group of children from three all-day state kindergartens, housed in Stephen F. Austin and M. H. Moore schools. Both schools are located in a low-income, predominantly Anglo area.

3. Middle-class Sample -- This comparison sample consisted of one tuition kindergarten from the Alice Carlson School.

CHAPTER II

THE EXPERIMENTAL LEARNING SYSTEM

During 1970-71 the Fort Worth Central Cities Program tested Instructional materials, Staff Development materials, and Parent Involvement materials designed to meet the specific needs of the target population. Special services also were provided.

PRESCHOOL PROGRAM

In 1968-69 the Parent Involvement staff selected the initial pupils, ages two through five, for the Central Cities Project. Since then, these children have advanced or dropped out. New pupils were selected to fill resulting vacancies for ages two and three, but none were added for the four- and five-year-old groups.

As part of the recruitment effort, the staff provided information through activities conducted by area schools and neighborhood civic organizations. In selecting the children, the staff considered factors such as family income, number of children in the family within the age range, presence or absence of a father in the home, and the possibility of freeing a mother to work or care for younger children. In 1970-71, pupils enrolled in the program included 152 Blacks, six Mexican Americans, and two Anglos.

Although the sample was not selected by a random process, the homogeneous nature of the area supports an assumption that the Central Cities pupils were representative of the local population of preschool age children. Results on intelligence measures for new two- and three-year-old pupils conform closely with each other and with tests for three- and four-year-olds new to the program in 1968-69. It should be noted, however, that in both 1968-69

and in 1969-70, two-year-old pupils at local day care centers had IQ scores significantly higher than the scores of Experimental pupils. Therefore, the group placed in the Experimental program (Group T1) was not composed of children whose initial IQ scores were higher than those of the children in the target area.

PROJECT POPULATION

New pupils entered the Central Cities Project at ages two and three; returning experimental pupils were ages three, four, and five. The returning children of course, had previous intervention. A comparison of the scores reported in Tables II A and II B indicate that intervention at the Central Cities Project in 1968-69 had important positive effects. Since most of the day care pupils (combined to produce the mean IQ scores below) were not in the day care centers in 1968-69, effects on these pupils are not so clearly shown.

TABLE II A

ENTRY SCORES OF EXPERIMENTAL AND DAY CARE PUPILS, 1968-69, ON SLOSSON INTELLIGENCE TEST

Age Group	Experimental Pupils	Day Care Pupils
Two-year-olds	88.4	117
Three-year-olds	98.4	91.7
Four-year-olds	95.4	98.1
Five-year-olds (Kindergarten)	88.8	101.3

The 1969-70 mean IQ scores of the new two-year-old pupils at the day care centers were more than one standard deviation above the presumed IQ norms for the Slosson (M = 100; S.D. = 15). In contrast, scores of the

TABLE II B
INITIAL INTELLIGENCE SCORES FOR PROJECT AND COMPARISON PUPILS

	Pupils With No Previous Intervention						Pupils With Previous Intervention					
	Slosson Intelligence Test			Preschool Attainment Record			Slosson Intelligence Test			Preschool Attainment Record		
Age Group	N	Mean IQ	S.D.	N.	Mean AQ	S.D.	N	Mean IQ	S.D.	N	Mean AQ	S.D.
Two (Total group)												
Exper. (T1)	15	101.8	16.2	17	149.4	24.5		--			--	
Spec. Ed.		--			--			--			--	
Day Care (T2)	10	124.2	24.5		NA			--			--	
Three												
Exper. (T1)	27	103.8	13.9	41*	128.22	16.2	15	110.3	11.7	*Included in No Pre.Exper.		
Spec. Ed.	10	91.6	11.4	12*	117.4	16.9	3	100.7	4.0	*Included in No Pre.Exper.		
Day Care (T2)	9	95.1	9.9		NA		2	104.0	10.0		NA	
Four												
Exper. (T1)		--			--		36	112.7	14.1	37	134.4	10.4
Spec. Ed.		--			--		10	106.2	20.4	14	117.7	21.7
Day Care (T2)	14	93.7	15.4		NA		2	99.5	0.5		NA	
Five												
Exper. (T1)		--			--		28	104.4	10.8	27	114.4	22.5
Spec. Ed.		--			--		23	96.0	8.8	26	114.8	11.4
Day Care (T2)	15	90.7	11.6		NA			--			--	
Kindergarten-TCU Area (T6)	26	109.7	15.1		NA		Pupils assumed to be without previous experience					
Kindergarten-Target Area (T9)	23	87.8	13.7		NA		Pupils assumed to be without previous experience					

NA -- Not Administered
* These data were not available separately by previous/no-previous experience status.

Experimental pupils of this age in 1968-69 were almost one standard deviation below this norm.[1] However, in 1969-70 the new two-year-olds in the Experimental program at Central Cities scored at the mean for the norm group. At this age, testing is expected to pose problems, with many children emotionally or mentally too immature for testing. Only half of the children were able to work with the test; thus, the mean scores represent half of the pupils intended for testing.

The comparability of the children in the Central Cities Project and in the day care centers is partially confirmed by the samples of children tested with the Auditory Test of Language Comprehension (English version). Under the evaluation design only half of the children were to be tested with this instrument, but this proportion was not reached at all ages and in all groups. Entry scores on the ATLC for each age group are shown in Table II C.

STAFF DEVELOPMENT COMPONENT

Staff Development was designed to increase the effectiveness of Center teachers and aides in nurturing the development of economically deprived children. To accomplish this goal, all teachers, staff, and aides participated in a week of training and orientation prior to the arrival of the children in 1968.

Strategies used to determine the most pressing needs of teachers and aides included videotaping classrooms, paper-pencil tests, classroom observations, and discussions with teachers. Following identification of needs, the Staff Development specialists planned appropriate development activities.

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[1]Only two-year-old children who were toilet trained were enrolled in the program. This selection factor, coupled with the fact that only half the children could be tested, could account for higher scores at the beginning of the year. In the day-care centers, only two-year-olds for whom valid tests could be obtained were used in the sample.

Resource persons for the Staff Development component were drawn primarily from the participating agencies: the district, the Southwest Educational Development Laboratory, the Central Cities staff, and Region XI Education Service Center. Periodically, consultants from other sources interacted with Project staff in both small and large group sessions.

INSTRUCTIONAL MATERIALS COMPONENT

The goal of the Instructional Materials or Curriculum component was to develop, test, refine, and validate an instructional program for economically disadvantaged children, ages two through five. Scope and sequence of the curriculum was patterned after development schedules available from Gesell, Heffernan, and others. The curriculum itself covers four areas of development -- structured and unstructured language, and visual, auditory, and motor development.

Lesson topics were chosen after interaction with parents, teachers, other staff members, and curriculum writers. Each lesson contained:

- a specific objective stated in behavioral terms
- directions to the teacher pertinent to readiness, content, materials, and vital teaching strategies
- suggestions for related activities
- special activities directed toward needs of children with learning difficulties
- evaluation procedures

Curriculum writers revised and modified the lessons based on information gathered from (1) teachers' completed evaluation forms, (2) teacher comments to curriculum writers, (3) regularly scheduled meetings in which the lessons were discussed, and (4) analysis of results of testing of children on behavioral objectives related to the instructional materials. After modification,

TABLE II C
ENTRY SCORES OF EXPERIMENTAL, SPECIAL EDUCATION, AND DAY CARE PUPILS
ON THE AUDITORY TEST OF LANGUAGE COMPREHENSION (ENGLISH VERSION)

Age Group	Experimental T1 N	Mean Raw Score	S.D.	Special Education Exper. N	Mean Raw Score	S.D.	Day Care Center T2 N	Mean Raw Score	S.D.
Two		NA			NA		8 NP	60.5	6.9
Three	11 NP	66.8	5.3	3 NP	59.3	2.6	7 NP	63.9	4.4
	7 P	67.0	7.3	1 P	70.0	0.0	2 P	57.0	3.0
	18 T	66.9	6.2	4 T	62.0	5.9	9 T	62.3	5.0
Four		—		2 NP	68.0	2.0	14 NP	66.4	8.6
		—		8 P	70.6	5.7	2 P	68.0	5.0
	37 P	73.5	6.0	10 T	70.1	5.3	16 T	66.6	8.2
Five*	27 P	83.4	7.6	24 T	77.9	8.9	15	73.0	6.2
Kindergarten-TCU Area	25	88.0	7.7						
Kindergarten-Target Area	22	63.4	5.1						

NA -- Not Administered
* Other five-year-old comparison groups.

NP = No previous intervention
P = In the program the previous year
T = Total of NP and P

materials were reintroduced into a classroom setting for a second cycle of pilot testing.

TABLE II D
CHARACTERISTICS OF CURRICULUM WRITERS

Age Group	Ethnic Group	Sex	Formal Education	No. of Years Teaching Experience	No. of Years Employed with Disadvantaged Preschool
20-30	W	F	B.S.	3	1 1/2
31-40	W	F	M. Ed.	8	2
	B	M	B.S.	9	2
	W	F	M.R.E.	4	1
*41-50	B	F	M. Ed.	14	3
	B	F	M.Ed.	8	1

* Curriculum Analyst

DAILY SCHEDULE

Children arrived at the Center via school buses at 7:00 a.m., ate breakfast, made general preparations for the day, and participated in planned large-group activities (singing, rhythmic exercises, listening to records and stories, etc.) under the supervision of aides. At 8:00 a.m., teachers began structured lessons, sequentially teaching a specific lesson to each of three small groups comprising the class. Aides reinforced lessons with related activities. A rest and play period, either indoors or out, was followed by a morning snack of juice and cookies.

Another structured activity preceded lunch at 11:45 a.m., after which the children napped until 3:00 p.m. Then there was another instructional period, followed by outside play. Depending upon the weather, children either stayed out-of-doors for the remainder of the day or were brought inside for

large group activities directed by the aides. At 5:15 p.m. the children boarded buses to return home. Some aides rode the buses with the children, while others prepared the room and materials for the next day.

Since teachers arrived at 8:00 a.m. and remained until 4:00 p.m., children were under the care of aides for one hour in the morning and from one to one and one-half hours in the late afternoon. Structured learning activities generally occurred in less than two of the child's 11 daily hours at the Center. Other activities were used to reinforce this learning, and children were encouraged to use their new skills and concepts at home as well as school.

PARENT INVOLVEMENT COMPONENT

A Parent Involvement component staff consisting of three community agents, a secretary, and a coordinator served parents (or parent surrogates) of children enrolled in classes at the Center. The staff also served approximately 1,000 parents of children, ages two to five, residing in the area but not attending classes at the Center. The Parent Involvement staff also worked with community services agencies to facilitate use of services by area families.

A major goal of the Parent Involvement staff was to make parents aware of educational activities at the center. During the 1968-69 school year parents were asked to spend one-half day each month at the Center, observing their children and discussing progress with the teachers. Evaluation results failed to indicate a significant difference in pupil achievement which could be related to this kind of parental involvement. Therefore in 1969-70, meetings of this type were discontinued and parents were asked to attend monthly parent-teacher meetings at night. At these meetings parents had an opportunity to discuss with teachers the children's activities, lessons being taught,

and needs of the children which the parent and teacher might jointly meet. In some cases, the Parent Involvement staff visited homes of parents who could not attend the monthly night meetings.

SPECIAL EDUCATION COMPONENT

For each year 1968-71, the Fort Worth Independent School District and the Educational Service Center for Region XI joined in submitting a proposal to the Texas Education Agency and the U. S. Office of Education for a Title VI grant to provide special services to children in the Ruby Williamson Experimental group who initially deviated substantially from one of the mean group measures of growth and development. A grant of $30,000 was made to create and operate a program from April 1, 1969, to August 9, 1969. Favorable results attained during this short period prompted a proposal for further funding, and, for the school year 1969-70, a grant of $60,000 was received for the program. In 1970-71, a budet of $51,448 was approved. Of this amount, Title VI furnished $31,874 and the local school district $19,574.

Special Education program objectives were to:

- identify children needing additional learning experiences
- develop an instructional program for each child
- improve the quality of parent-child relationships for these children and their parents
- provide special staff development services

The component had full use of instructional and support staff. Other personnel included a special education specialist, a language development specialist, a home-school counselor, and one teacher aide. Medical and psychological services were contracted as needed.

Children considered in need of these special services were referred by the psychologist to the special education specialist, who developed individual

instructional prescriptions to fit each child's needs. For children in need of help in speech and language, the language development specialist designed a specific program and, with the regular teacher of the child, planned a supporting language program for classroom use. Three paraprofessionals assisted in the classroom, working with individual children or with groups of two or three to carry out individual prescriptions.

Working with the special education staff, the home-school counselor planned a supportive home program for each child receiving special education. The counselor visited in each home to help parents understand their child's problems and to assist them in developing a school reinforcement program to be used at home.

Special diagnostic instruments as well as instruments used to test other children were used. All special education pupils remained in classrooms with other pupils, usually with their age-peers, unless their special problems prohibited use of stairways.

SPECIAL SERVICES

Breakfast, lunch, and morning and afternoon snacks were prepared by the school district cafeteria staff and served in the classrooms. After the meals, the aides and children cleaned the rooms and returned trays to the cafeteria.

Additional services were provided by a nurse, child psychologist, speech therapist, and coordinator of services for children with learning disabilities.

Extensive health services were provided. During 1968-1969 all children were given a blood test, and special medical services amounting to more than $6,000 were provided. In 1969-70 the program was further expanded, although the number of children requiring special attention was reduced considerably due to corrections effected in 1968-69. New to the program in 1969-70 was

administration of blood SMA-12 studies and a serum iron evaluation on each child.

Special procedures and treatments of children in the Center from 1968 through 1971 are shown in Table II E. Data are available for each child treated, including the separate cost of the treatment.

FACILITIES

At the inception of the Central Cities Project the Fort Work School District was contemplating closing the ten-year-old Ruby Williamson Elementary school, a two-story structure located on the northern fringe of the target area. Instead, the site was selected for this project. With only minor changes the building was adapted to provide offices for the Staff Development component, the Center administrative staff, and all ten classrooms needed for the project. A temporary building provided space for the Parent Involvement and the Research and Evaluation staffs. The former library served as the teachers' media center and the area for staff meetings, reception, orientation of visitors, and staff development activities. The cafeteria was used by both pupils and staff.

Because the school is operated most of the calendar year, air conditioning was installed in May-June 1969 and window screens were installed on all lower windows. Each classroom was equipped with cots and sheets for daily naps, several rectangular tables, partition shelves, chairs, bookcases, and other needed items. A play-living area was separated from each regular classroom area by bookcases.

STAFF

The Project Director, a longtime member of the professional staff of the Fort Worth Independent School District, drew his supporting staff from teachers and other professional personnel of the District.

TABLE II E
HEALTH SERVICES ADMINISTERED

Category	1968-69 Number	Cost	1969-70 Number	Cost	1970-71 Number	Cost
Emergency Illness	11	184.00	6	157.00	4	79.99
EENT-Total Operation	1	1,512.51	0	—	0	—
Blepharitis	0	—	1	35.00	0	—
Blood Test	186	372.00	All pupils	2,210.00	0	—
Bronchitis (URI)	2	28.00	6	76.00	5	47.00
Cardiac Evaluation	3	517.60	1	80.00	0	—
Chest X-ray	1	15.00	0	—	0	—
Circumcision	1	20.00	0	—	0	—
Conjunctivitis	0	—	0	—	2	12.00
Dental	21	1,186.00	7	524.00	19	2,819.00
Dermatology	13	164.00	6	222.50	0	—
Hypospadius	1	457.00	1	949.00	0	—
Hernias (Operation)	6	1,697.60	4	1,354.80	0	—
Medication	10	84.22	9	118.15	5	27.95
Pneumonia	0	—	0	—	1	13.00
Urinary Infection	0	—	0	—	1	46.00
		$6,237.93		$6,057.20		$3,044.94

Teachers -- The teaching staff was composed of youthful and relatively inexperienced teachers, believed to be more adaptable and cooperative in an experimental setting. All teachers had undergraduate degrees, except a teaching aide who assumed charge of two-year-old children in November 1970. Of the ten teachers employed in 1970-71, seven had taught at the Center since the program was initiated in 1968. Three of the seven were formerly release teachers. The characteristics of Project teachers are shown in Table II F.

TABLE II F
CHARACTERISTICS OF PROJECT TEACHERS

Age Group	Ethnic Group	Sex	Formal Education	No. of Years Teaching Experience	No. of Years Employed with Disadvantaged Preschool
*20-30	B	F	2 years	3	1 1/2
20-30	W	F	B.S.	7	1
	B	F	B.S.	5	3
	B	F	B.S.	3	3
	B	F	B.S.	4	3
	W	F	B.S.	3	1 1/2
	W	F	B.S.	4 1/2	3
31-40	W	F	B.S.	4	3
	B	F	B.S.	7	3

*Instructional Aide

Special Personnel -- Specialists contributed to the program in many ways. Key persons with special responsibilities included the Director, Staff Development personnel, Special Services staff, Special Education staff, and Research and Evaluation staff on site.

Instructional Leadership Personnel -- The Project Director and members of his staff working in Staff Development and Instructional Materials Development represented many years of previous professional experience. Several staff members had graduate degrees, and all had taken special coursework relating to economically disadvantaged children.

A certified registered school nurse supplemented services provided by practicing dentists and physicians in the Special Services component.

Research and Evaluation Personnel -- The Research and Evaluation team consisted of a research manager and a child psychologist. The research manager was formerly the child psychologist for the Center and had ten years of school experience as a teacher, counselor, and psychologist. She holds a M. Ed. and a M.A. in psychology. The child psychologist has a M.A. in psychology and has worked as a research psychologist for eight years.

During periods of heavy test administration, evaluation services were supplemented by assistance from psychologists and psychometrists of the Fort Worth District. In return, the Center psychologist assisted them in administration of tests at other schools. Research and evaluation specialists from the Southwest Educational Development Laboratory also provided design and evaluation assistance.

Descriptive information concerning these specialists is shown in Table II H.

TABLE II G
CHARACTERISTICS OF PROJECT PARAPROFESSIONAL AIDES

Age Group	N	Sex	Educational Level			Ethnic Group			Length of Employment					
			No degree	H.S. Grad.	Some College	Black	Mex. Amer.	Anglo	Less /1yr	1 1 yr	1 1/2 yr	2 yr	2 1/2 yr	3 yr
20-30	26	F	1	11	14	24	1	1	2	2	4	8	2	8
31-40	10	F	0	5	5	8	1	1	0	1	1	2	0	6
41-50	6	F	1	3	2	4	0	2	1	1	0	3	0	1
Total	42		2	19	21*	36	2	4	3	4	5	13	2	15

* Five of the teacher aides were attending TCU, sponsored by the Career Opportunity Program.

TABLE II H
CHARACTERISTICS OF INSTRUCTIONAL LEADERSHIP PERSONNEL

Position	Age Group	Ethnic Group	Sex	Formal Educa.	Years of Educational Exp.	No. of Years Exp. with Disad. Preschool
Director	41-50	B	M	M.A.	24	3
Staff Development Coordinator	31-40	B	F	M.Ed.	16	2
Curriculum Development Coordinator	41-50	B	F	M.Ed.	10	3
Parent Involvement Coordinator	31-40	B	M	M.Ed.	13	3
Special Services						
Nurse	20-30	B	F	B.S.-RN	4	3
Speech Therapist	41-50	W	F	B.S.	3	3
Psychologist	31-40	W	M	M.A.	1	1
Home School Counselor	51-60	B	F	B.S.	14	2
Special Education Coordinator	51-60	W	F	B.S.	14	2
Research Manager	31-40	W	F	M.Ed.-M.A.	10	3
Staff Development						
Staff Specialist	31-40	B	F	B.S.	16	3
Staff Specialist	41-50	W	M	M.Ed.	9	2
Staff Specialist	51-60	B	F	M.S.	25	3

CHAPTER III

COMPARISON GROUPS

The Fort Worth Central Cities Project was established on the basis of data accumulated by (1) determining the needs of the target area, (2) considering alternative approaches which might overcome the problems, (3) reviewing the kinds of solutions tried elsewhere and the results achieved with them, and (4) considering general information needed for development of a plan of action. These factors were described in detail in the 1968-69 Evaluation Report. While the gathering of context information has continued as the project developed, this report is concerned solely with formative and summative evaluation findings from data gathered during 1970-71.

The elements of the formative evaluation and the findings were designed primarily for immediate feedback and use at the site by the instructional materials and staff development personnel. The recycling pattern used for the development of instructional materials was one fundamental part of this design; the classroom observations, video taping, and other activities relating to the Staff Development program formed another. This permitted the component staff to determine weaknesses in teacher and aide performance and to design means of overcoming these through the formal training program or other training devices. Thus, formative evaluation took place on a day-to-day basis, with the findings used to refine the program during the school year.

Summative evaluation was used to reveal the overall effectiveness of the Experimental program. Evaluation questions stated at the end of Chapter I provided the focus for the design decisions. To carry out the evaluation design, certain tests were administered at the beginning of the school year, and some were repeated at the end of the year. Comparison groups were

established to determine whether the Experimental program was more effective than the treatments received by the comparison or control groups of pupils.

1. Primary Comparison Group

   Two- to four-year-old children in three Fort Worth United Fund Day Care Centers serving families of working mothers

2. Secondary Comparison Groups

   a. Five-year-old children in a public school kindergarten near Texas Christian University serving middle class families

   b. Five-year-old children from three public school all-day kindergartens in the target area, drawing from families similar to those in the experimental group

   c. Five-year-old children from two public school all-day kindergartens located in a low-income, predominantly Anglo area of Fort Worth

PRIMARY COMPARISION GROUP: FORT WORTH DAY CARE CENTERS

The primary comparison group, designated as Group T_2, consisted of pupils from three day care centers operated by the Tarrant County Day Care Association, with help from the United Fund. Three- and four-year-old children were used for comparison purposes. The centers' five-year-old pupils were not included because their school day included one-half day at public school kindergartens in addition to the time spent at the United Fund centers. Therefore, five-year-old pupils were drawn from public school all-day kindergartens.

United Fund-Tarrant County Day Care Association Centers

The Tarrant County Day Care Association operates day care centers at various locations in and around Fort Worth, serving approximately 150 children of working mothers. In addition to some community support, the centers charge fees based on ability to pay.

Day Care Center Pupil Population -- Pupils in three day care centers serving Black populations comparable to those in the Central Cities Project were chosen as controls. These centers served approximately 60 pupils, all children of mothers who held jobs outside the home.

The initial developmental level of the day care pupils was determined by use of the Slosson mean IQ scores (and the standard deviation) reported in Table IIB. As the Table indicates, day care pupils at age two scored substantially higher than pupils in the Experimental program. At ages three, four, and five, however, the day care groups attained Slosson mean IQ scores notably below those of the Experimental pupils. Many of the Experimental pupils of age three and all of those of age four had received at least one year of the Experimental program, and all five-year-old children had received three years of intervention. Prior to this intervention (at the time of entry into the Experimental program) the age group mean IQ scores had approximately equalled those of the age groups in the day care centers. The means were at levels generally comparable to, or below, those of the day care pupils.

Day Care Program and Schedule -- The United Fund day care program is typical of conventional day care centers. Attention is given to physical, social, and cognitive development; but more emphasis is generally given to the first two. In various creative activities the children do have opportunity for cognitive development, but physical and social development activities make up most of the daily schedule. The children are brought by parents to the centers at 7:00 a.m., when their day begins with a free play period. Again there is a period of free play and planned activities from 3:30 to 5:30 (departure time). The daily schedule follows:

7:00 - 9:00 a.m.	Free play
9:00 - 9:15 a.m.	Toileting time
9:15 - 9:30 a.m.	Snack
9:30 - 9:45 a.m.	Circle experiences: music, stories, rhythmical experiences (broad range of activities)

9:40 - 10:45	a.m.	Planned creative experiences: cutting and pasting, clay, playdough, science and art, etc.
10:45 - 11:15	a.m.	Toileting and preparation for lunch
11:15 - 11:30	a.m.	Quiet time
11:30 - 12:00	noon	Lunch
12:00 - 12:30	p.m.	Getting ready for nap
12:30 - 3:00	p.m.	Nap time
3:00 - 3:30	p.m.	Snack
3:30 - 5:30	p.m.	Outdoor play, free play (teacher planned activities)

Day Care Facilities -- The three day care centers are located in four- and five-room, two-bath houses in predominately Black neighborhoods. Each center includes a kitchen, sleeping room, classrooms, and office. Classrooms contain tables, chairs, books, crayons, paper for drawing, coat racks, easel, finger paint, creative arts supplies, and toys.

The relatively large outdoor playground areas of each center are fenced. They are equipped with swing sets, jungle gyms, barrels, and see-saws.

Day Care Staffs -- Each of the three centers has four to five staff members. At two centers the supervisors are college graduates with four to five years experience working with children. At the third center, the supervisor is a high school graduate with approximately ten years of nursery school experience. All three supervisors are in the 35 to 45 age range.

Each center also is staffed by two or three teachers and a cook. The teachers are high school graduates, and one has had some college training as well as the most experience - 15 years.

Inservice workshops are held each month for supervisors and teachers.

SECONDARY COMPARISON GROUPS: KINDERGARTENS

Three secondary comparison groups of five-year-old pupils were selected, each consisting of pupils at the kindergarten level in Fort Worth Independent School District public schools.

The first secondary comparison groups (T_6) consisted of middle class and upper-middle class five-year-olds attending a public school kindergarten

in the area of Texas Christian University. Pupils in this kindergarten program are drawn from families associated with Texas Christian University. All pupils are white. Parents pay public school kindergarten rates established by the Fort Worth District.

Supervisor of the kindergarten program was a former member of the Central Cities Project staff. In general, the supervisor has the freedom to select her own program. Teachers are regularly certified in accordance with applicable regulations of the Texas Education Agency. Two student teachers from TCU provide assistance at all times.

The second comparision group (T_9) was composed of pupils from three free, all-day, public school state kindergartens operated in the target area by the Fort Worth Independent School District for low income families. A random sample of the children, all Black, was chosen. Teachers met all regular requirements for teaching in Texas.

The third public kindergarten comparison group (T_5) was composed of pupils, all white, from two separate public school campuses in a low-income, predominately white section of Fort Worth. Pupils were chosen as a random sample of children enrolled in the free all-day public school, state kindergarten program operated by the Fort Worth Independent School District for low income families.

DIFFERENCES BETWEEN PROJECT AND COMPARISON GROUPS

There are a number of important differences between the Experimental program and the activities at the day care centers and the target area kindergartens. These differences relate to pupil experiential background, staffing patterns and preparation, facilities, the programs themselves, and the special services available to pupils. When compared with two of the control groups and the target area kindergarten (T_9), the Central Cities

Experimental program appears to have some advantages. All three groups should be approximately equal, however, in pupil experiential background. On the other hand, the experiential background of the pupils in all three groups would be below that of pupils in the TCU-area middle class public school kindergarten (T_6).

CHAPTER IV

FINDINGS AND CONCLUSIONS

The evaluation design for the Fort Worth Central Cities Educational Development Center for the 1970-1971 school year called for the administration of intelligence and achievement measures and for the processing and analysis of the data obtained. The test measures concerned pupil performance; summative evaluation was undertaken to determine the extent of program effects upon pupil performance. Factors essential to the evaluation included:

1. establishing baseline data on intelligence and ability
2. collecting this information on a pretest-posttest basis so that possible program effects could be obtained
3. making comparisons between the Project pupils and the Comparison pupils for a further consideration of program effectiveness

SAMPLE COMPOSITION

The children involved in early childhood activities at Central Cities were designated as Treatment Group 1 (T_1). The age levels in this experimental group ranged from two to five years, grouped as follows:

	AGES (in years)			
	2	3	4	5
In Program 1970-1971 (Total)	18	57	51	51
In Program 1969-1970	0	12	48	50
In Special Ed. 1970-1971	0	6	18	17

The primary comparison group included 67 children aged two to four enrolled in United Fund day care centers (T_3). The secondary comparison group, for the five-year-olds, consisted of random samples of (1) 28 Black children from three low-income all-day state kindergartens (T_2), (2) 24 Anglo

children from two low-income all-day kindergartens (T_3), (3) 18 Anglo children in an upper-middle-class kindergarten (T_4)

DATA COLLECTION INSTRUMENTS

Standardized instruments used for collecting various measures of pupil performance were administered predominantly on a pretest-posttest basis to Project and Comparison pupils at all age levels. The instruments given to pupils in age levels two to five were the Preschool Attainment Record Social Subscale (PAR),* and the Slosson Intelligence Test (SIT). Three- to five-year-old pupils were given the Peabody Picture-Vocabulary Test (PPVT), the Raven Coloured Progressive Matrices (Board Form), and the Auditory Test of Language Comprehension (ATLC or Carrow). The Test of Basic Experiences - General Concepts Subscale (TOBE) was given to one group of five-year-olds. The Slosson, Peabody, and the Stanford Achievement Test were administered to first grade pupils. Descriptive statistics, including the number of pupils taking each test and the average time of testing, are presented in Table IV A. When available, norm percentiles to accompany raw scores are given in Table IV B.

PUPIL PERFORMANCE

Test results were analyzed for each age level, and Project pupil performance was compared to Comparison group performance. Where pre- and posttest scores were available, analyses were performed to learn program effects for Project students during the time of instruction. As the Project pupils performed in subsequent groups over a period of years, longitudinal data was treated in order to mark the children's progress across time.

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*This scale was used by the classroom teachers and contains items that are rated subjectively. Therefore, results should be interpreted with caution.

Two-Year-Olds. As the Slosson and the PAR were given on a pretest-posttest basis, gain scores between pre- and posttest means were computed. The Project group with an N of 9 gained 11.00 points on the Slosson. A comparison group (N = 11) lost 3.18 points between pre- and posttest means. On the PAR, the Project group gained 44.25 points. Whereas a significant difference was found at the .01 level of probability between pre- and posttest means on the Slosson ($F = 10.78$, $df = 1,8$) for Project pupils, there was no significant difference between Project pupils (T_1) and the Comparison group pupils (T_5) on the posttest Slosson scores. Likewise, analyses of variance between pretest and posttest means on the PAR Social Subscale was highly significant ($F = 39.47$, $df = 1,11$, $p < .001$).

A pre-posttest comparison of the Project group (T_1) and the Comparison group (T_5) on the Slosson with pretest treated as a covariable was undertaken. When effects due to intelligence were parceled out, there was no difference between the groups.

Three-Year-Olds. Gain scores between pre- and posttest means were calculated:

Instrument	Treatment Group	N	Gain Score
PAR	T_1	43	2.63
SIT	T_1	35	12.52
	T_5	14	.35
RAVEN (total)	T_1	13	2.53
	T_5	10	- .30
ATLC	T_1	19	3.48
	T_5	12	13.00

Analyses of variance between pre- and posttest means for project pupils (T_1) were computed:

Instrument	F-Ratio	df	prob.
SIT	28.38	1,37	<.001
RAVEN			
Scale A	15.34	1,13	<.01
Scale AB			NS
Scale B	5.55	1,13	<.05
Total	20.71	1,13	<.001
ATLC	8.31	1,18	<.01

Significant score gains were made by the project pupils on the Slosson, Raven, and Auditory Test of Language Comprehension. The three-year-old comparison group made significant score gains only on the Auditory Test of Language Comprehension. Similarly, the same test was conducted on these instruments (posttest) to see if there were any significant differences between Project and Comparison groups. No differences in Posttest scores were found between groups on the Slosson (SIT) and the ATLC. Differences between groups were significant on the Raven:

Scale	F-Ratio	df	prob.
A	13.05	1,22	<.01
AB			NS
B			NS
Total	8.66	1,22	<.01

Analyses of covariance with two groups and one covariable (pretest) were undertaken in regard to the Slosson, the Raven Progressive Matrices, and the ATLC. In comparing pretest scores of all experimental pupils (T_1) with all Comparison pupils (T_3), there was one significant result. When group members have the same initial level of pretest ability as measured by the Raven, there is a difference between Project and Comparison groups. The

expected performance level of Project pupils is 3.29 points above Comparison pupils ($F = 10.01$, $df = 1,20$, $p < .01$).

There were no significant results in pre-posttest comparisons with analysis of covariance of the following: (a) one year previous intervention in program vs. Comparison groups, (b) one year previous intervention in program vs. no previous time in project, (c) T_1 vs. T_5 with Slosson IQ as covariable and posttest ATLC as criterion. Pre-post comparisons of Special Education vs. Comparison groups were not made due to an insufficient number of pupils.

Four-Year-Olds. Gain scores between pretest and posttest performance were determined:

Instrument	Treatment Group	N	Gain Score
PAR	T_1	45	- 11.35
SIT	T_1	45	- 1.80
	T_5	19	1.89
RAVEN (total)	T_1	23	2.00
	T_5	5	1.60
PPVT	T_1	40	- 5.56
ATLC	T_1	22	5.23

For instruments administered on a pretest-posttest basis, analyses of variance were computed. Whereas there were no significant differences between pre- and posttest means on the PPVT, SIT, and PAR, there were significant differences on the ATLC ($F = 9.30$, $df = 1,21$, $p < .01$) and on the total Raven score ($F = 6.41$, $df = 1,22$, $p < .01$). In regard to comparisons between Project and Comparison group posttest scores, there were no significant differences. Analyses of covariance as pre-posttest comparisons of Project vs. Comparison groups, of Special Education vs. Comparison groups, and of students with previous time in Project vs. Comparison groups were conducted in regard to the Slosson IQ scores, Raven raw scores, ATLC raw

scores, PPVT scores, and PAR Social Attainment quotients. The only significant results found were when PAR pretest scores were used as covariable and PAR posttest scores as criterion. These are as follows:

1. T_1 vs. T_5 - There was a significant interaction ($F = 17.95$, $df = 1,51$, $p < .01$) in that those pupils who scored low on the pretest PAR in the Comparison group scored higher than Project pupils on the posttest PAR. Conversely, those who scored high on the pretest in the Project group scored higher on the posttest than Comparison pupils.
2. Special Education vs. T_5 - There was a significant interaction ($F = 10.38$, $df = 1,24$, $p < .01$). Special Education pupils <u>initially</u> (pretest) scoring low on the PAR scored lower than Comparison pupils on the posttest and Special Education pupils <u>initially</u> scoring high scored higher on the posttest than Comparison pupils.
3. One year's previous experience group vs. T_5 - There was a significant interaction ($F = 11,74$, $df = 1,37$, $p < .01$). Pupils having one year's previous experience in the program who scored low on the pretest PAR scored lower than Comparison pupils on the posttest, and Project pupils scoring high on the pretest scored higher than Comparison pupils on the posttest.
4. Pupils with more than one year's previous experience in the Program vs. Comparison group - The same held true as for the one year's previous experience group ($F = 17.30$, $df = 1,48$, $p < .01$).
5. Pupils with one year's previous experience vs. pupils with two year's previous experience vs. Comparison group - The interaction was significant ($F = 8.24$, $df = 2,46$, $p < .01$). Comparison group pupils who scored low on the pretest PAR scored higher than the

other two groups on the posttest PAR. Pupils with two year's previous experience who scored high on the pretest scored higher on the posttest than the other two groups.

Five-Year-Olds. Gain scores as differences between means were computed for those instruments given on a pretest-posttest basis to Project and Comparison groups. These gain scores are as follows:

Instrument	Treatment Group	N	Gain Score
PAR	T_1	32	- 2.47
SIT	T_1	45	- .58
	T_2	28	6.50
	T_3	24	9.00
	T_4	17	4.39
RAVEN	T_1	42	1.90
	T_2	28	- .80
	T_3	24	- .70
	T_4	17	3.30
ATLC	T_1	28	3.93
PPVT	T_2	25	3.61
	T_3	30	- 1.33
	T_4	23	7.20
TOBE	T_1	39	4.41

On pre-post analysis of variances, significant differences between means for Project children are as follows:

Instrument	F	df	prob.
ATLC	21.22	1,27	<.001
TOBE	51.28	1,39	<.001
RAVEN			
Scale A			NS
Scale AB	8.23	1,43	<.01
Scale B	5.14	1,43	<.05

Analysis of variance between Project and Comparison groups or posttest means showed the Project children were significantly higher than the T_2 (target area) kindergarten children on the SIT and Raven. The project children's posttest scores were significantly different from the T_3 (low-income Anglo) kindergarten children on the PPVT test only. Project children were significantly lower than the T_4 (upper-middle-income Anglo) kindergarten children on all posttest scores. Following are the results of analyses of variance between Project and Comparison groups on the posttest means.

Instrument	Treatment Group	F-Ratio	df	prob.
SIT	T_1-T_2	10.03	1,71	<.01
	T_1-T_3			NS
	T_1-T_4	25.10	1,61	<.001
RAVEN				
Scale A	T_1-T_2			NS
Scale AB		12.54	1,70	<.001
Scale B		6.45	1,70	<.01
Total		11.69	1,70	<.001
Scale A	T_1-T_3			NS
Scale AB				NS
Scale B		8.08	1,66	<.01
Total		7.48	1,66	<.01
Scale A	T_1-T_3	5.48	1,59	<.05
Scale AB		21.48	1,59	<.001
Scale B		10.50	1,59	<.001
Total		26.71	1,59	<.001
ATLC	T_1-T_2			NS
	T_1-T_3			NS
	T_1-T_4	4.20	1,31	<.05

Instrument	Treatment Group	F-Ratio	df	prob.
PPVT	T_1-T_2			NS
	T_1-T_3	8.26	1,71	<.01
	T_1-T_4	84.86	1,65	<.001

Pre-post comparisons of the Project group (T_1) vs. Comparison groups (T_2, T_5, and T_4) with pretest scores as the covariable were performed. In separate analyses in regard to the Slosson, Raven, and ATLC, the following significant results occurred:

1. Slosson - Experimental pupils differed from Comparison groups in posttest Slosson IQ performance when group members had the same initial level of pretest IQ ability. For experimental pupils (T_1), the expected performance level was 7.9 points <u>below</u> that of pupils in upper-middle-class Anglo kindergartens (T_4), 7.3 points <u>below</u> that of pupils in lower-income Anglo all-day kindergartens (T_3) and 3.8 points <u>below</u> that of pupils in Black, all-day kindergartens (T_2). ($F = 4.51$, $df = 3,110$, $p < .01$).
2. Raven - Experimental pupils differed in posttest Raven performance from Comparison pupils when group members had the same initial level of pretest Raven ability in that the expected performance of T_1 pupils was 3.5 points <u>below</u> that of T_4 pupils, yet 2.1 points <u>above</u> that of T_2 pupils and 2.2 points <u>above</u> that of T_3 pupils. ($F = 15.89$, $df = 3,106$, $p < .001$)

In pre-post comparisons of Special Education pupils to Comparison groups, a significant result was found in regard to posttest performance on the Raven. Although there was little difference between performance levels when group members had the same initial level of pretest ability in regard to T_1, T_2, and T_3 groups, the

special education experimental group scored 5.2 points <u>below</u> the T_4 group.

3. ATLC, English (first nine items omitted) - Experimental pupils differed from Comparison pupils in posttest ATLC performance when group members had the same initial level of pretest ATLC ability. A significant interaction occurred. Experimental pupils who scored low on the pretest scored <u>lower</u> than (in ascending order) T_2, T_4, and T_3 pupils on the posttest. Conversely, experimental pupils who scored high on the pretest scored <u>higher</u> on the posttest than did (in descending order) T_4, T_2, and T_3 pupils. ($F = 3.71$, $df = 3,54$, $p < .05$)

LONGITUDINAL STUDY

A large number of children enrolled in the five-year-old groups at Central Cities had participated in the program activities for the preceding two or three years. The Slosson Intelligence Test and the Preschool Attainment Record were administered each year, 1968-69 to 1970-71. Since the children were assessed upon entry into the program, this score serves as an initial score for comparison purposes. Mean scores for the same children over time are shown in Figures IV A (PAR) and IV B (Slosson). The figures present means plotted over time for five-year-olds who have been in the Project for three years and for four-year-olds who have been in the Project for two years. This was the first year of formal school experience for the T_4, T_3, and T_2 groups. Research has shown that the greatest IQ gains are made during the first year of intervention.

The Project children's mean posttest score was significantly higher than that of the T_2 (target area) Black children. Longitudinal charts of mean scores for children over the two- or three-year period are shown in Figures IV A, B, C, and D.

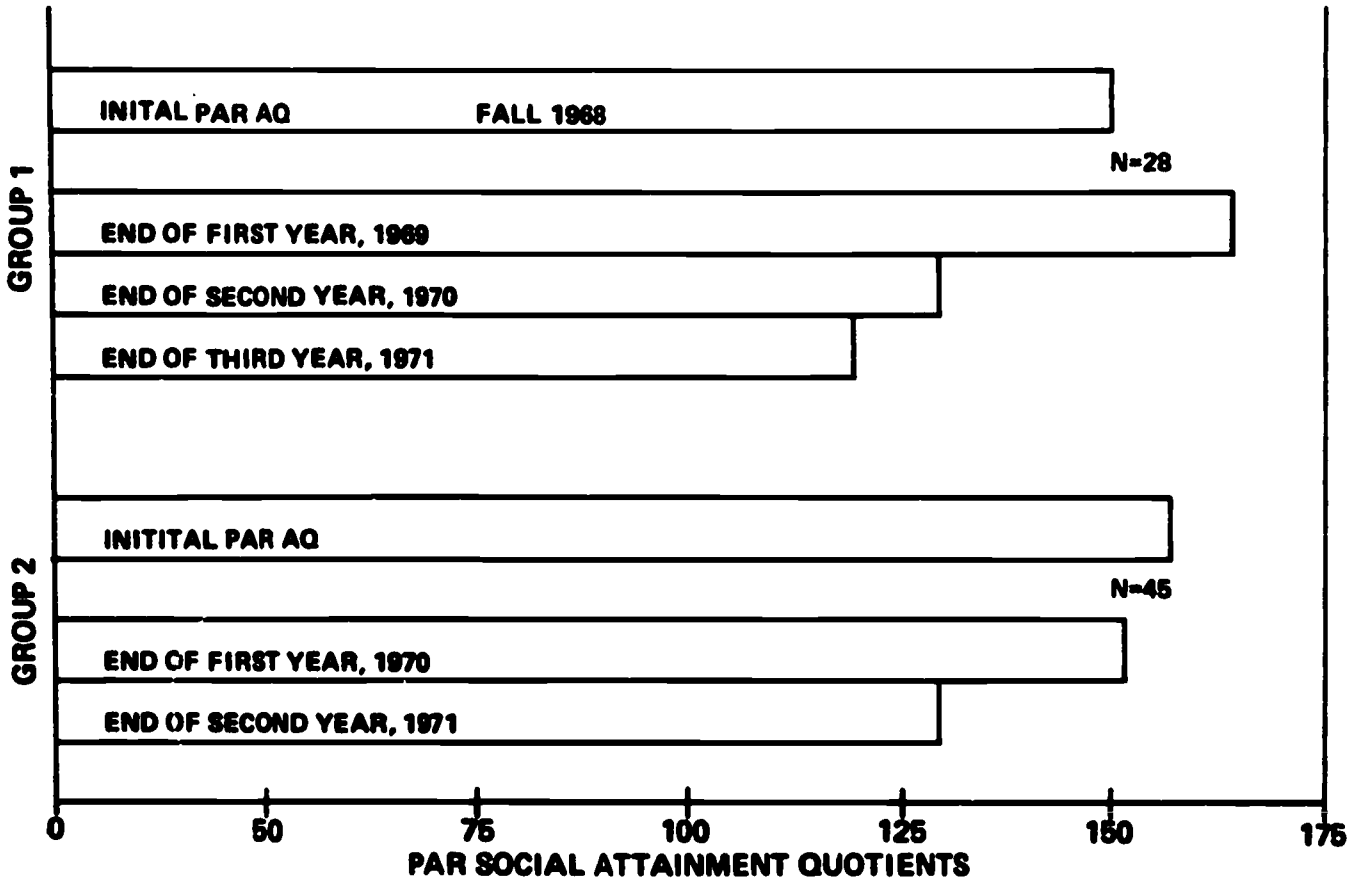

FIGURE IV A. MEAN PAR SOCIAL ATTAINMENT QUOTIENTS ACROSS TIME

*The children were rated each year by a different teacher; therefore these results may reflect differences among teachers rating children

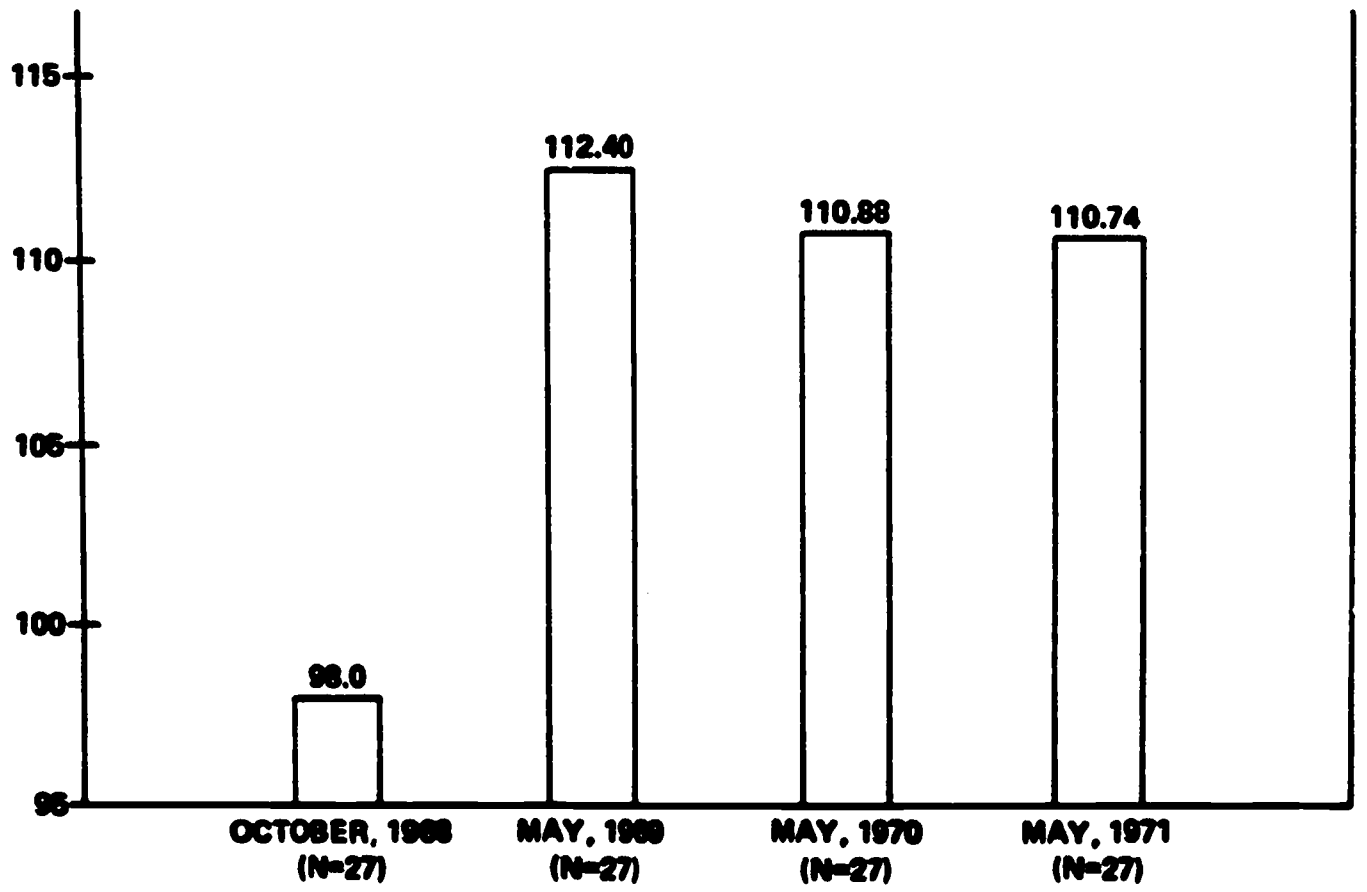

FIGURE IV B. LONGITUDINAL SLOSSON IQ MEAN SCORES FOR CHILDREN WHO ENTERED THE PROJECT AT AGE THREE AND CONTINUED FOR THREE YEARS

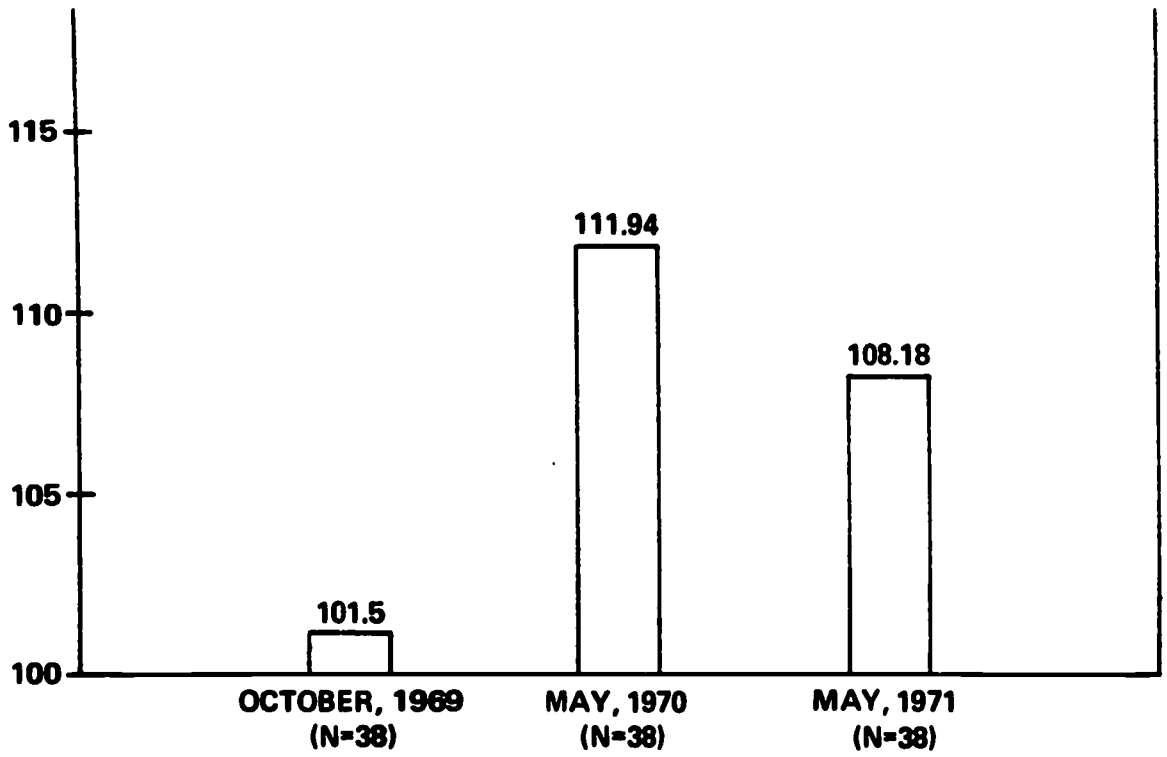

FIGURE IV C. LONGITUDINAL SLOSSON IQ MEAN SCORES FOR CHILDREN WHO ENTERED THE PROJECT AT AGE THREE AND CONTINUED FOR TWO YEARS

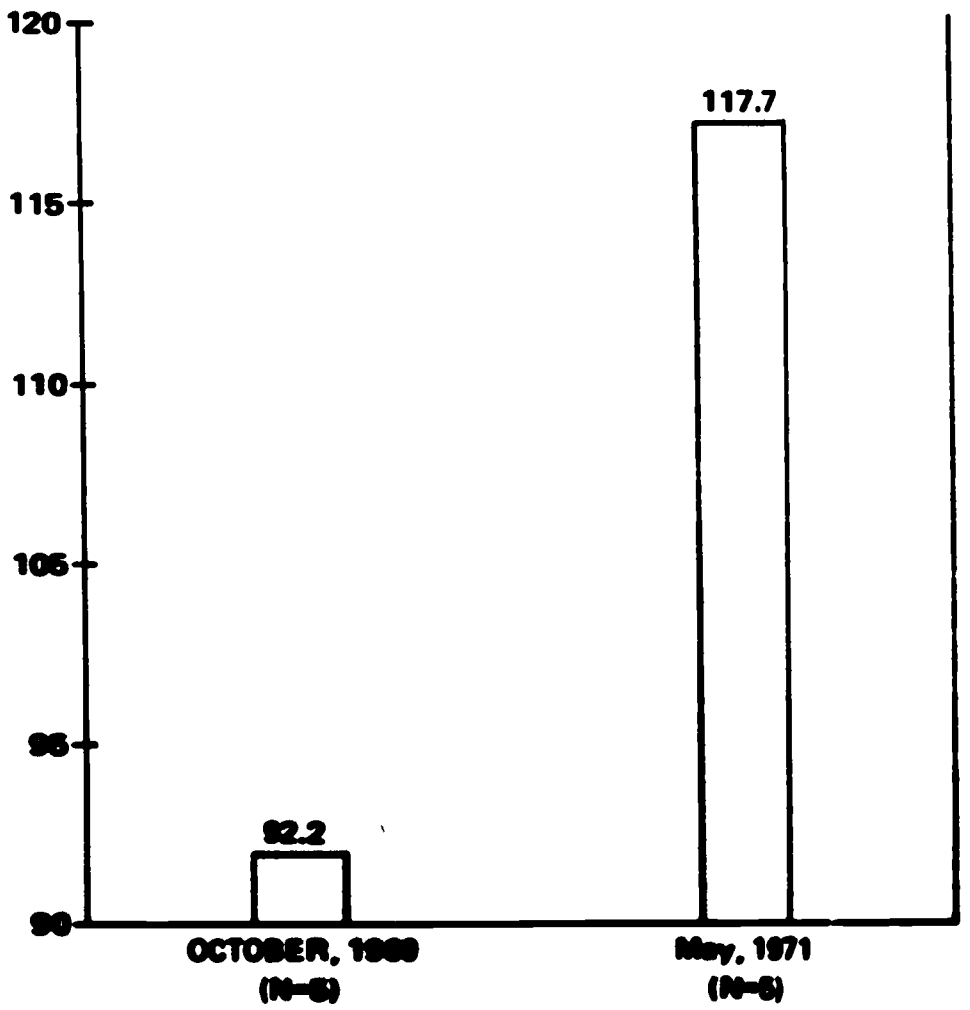

FIGURE IV D. LONGITUDINAL SLOSSON IQ MEAN SCORES FOR CHILDREN WHO ENTERED PROJECT AT AGE TWO AND CONTINUED FOR THREE YEARS

TABLE IV A

DESCRIPTIVE STATISTICS FOR STANDARDIZED INSTRUMENTS
USED AT CENTRAL CITIES EDUCATIONAL DEVELOPMENT CENTER, 1970-1971

Preschool Attainment Record Social Subscale
(Results Given as Attainment Quotients)

Age	Date	*Treatment	N	Mean	S.D.	Range
2	Oct.	T_1	12	119.92	13.97	94-150
	May	T_1	12	164.17	21.01	129-216
3	Oct.	T_1	43	124.60	23.31	66-163
	May	T_1	43	127.23	16.57	79-150
4	Dec.	T_1	45	125.31	11.30	95-149
	May	T_1	45	113.96	9.19	91-137
5	Sept.	T_1	32	108.56	10.38	71-124
	May	T_1	32	106.09	6.39	88-119

Slosson Intelligence Test
(Results Given as IQ Scores)

Age	Date	Treatment	N	Mean	S.D.	Range
2	Oct.	T_1	9	105.00	16.06	75-131
	May	T_1	9	116.00	14.62	94-141
	Oct.	T_5	11	111.73	17.49	86-151
	May	T_5	11	108.55	21.23	75-163
3	Sept.	T_1	35	96.28	15.62	70-127
	May	T_1	35	108.80	12.98	83-139
	Sept.	T_5	14	107.36	16.30	86-155
	May	T_5	14	107.71	9.35	91-124
4	Oct.	T_1	45	110.22	13.86	82-148
	May	T_1	45	108.42	11.16	83-141
5	May 70	T_1	45	108.91	12.37	80-169
	May 71	T_1	45	108.33	13.90	69-131

* T_1 = Experimental (Project) Group
T_5 = Control (Comparison) Group

TABLE IV A (cont.)

The Coloured Progressive Matrices, Board Form
(Results Given as Raw Scores)

Maximum Total Score = 36

Age	Date	*Treatment	N	Mean	S.D.	Range
3	Nov.	T_1	13	8.85	1.87	5.0–12.0
	May	T_1	13	12.38	1.73	9.0–15.0
	Nov.	T_5	10	9.70	2.49	5.0–13.0
	May	T_5	10	9.40	3.00	5.0–14.0
4	Nov.	T_1	23	11.91	2.90	5.0–17.0
	May	T_1	23	13.91	3.12	10.0–21.0
	Nov.	T_5	5	12.80	1.47	10.0–14.0
	May	T_5	5	14.40	2.65	11.0–18.0
5	Oct.	T_1	42	13.29	1.80	11.0–18.0
	May	T_1	42	15.19	2.93	9.0–22.0

* T_1 = Experimental (Project) Group
  T_5 = Control (Comparison) Group

TABLE IV A (cont.)

Auditory Test of Language Comprehension

1970- English Version

(Due to error in administration, first 9 items were omitted. Therefore, total maximum score becomes 101.)

Age	Date	Treatment	N	Mean	S.D.	Range
3	Nov.	T_1	19	53.68	6.94	43.0-67.0
	May	T_1	19	57.16	5.92	41.0-61.0
	Dec.	T_5	12	55.67	8.85	42.0-75.0
	May	T_5	12	68.67	10.07	55.0-89.0
4	Nov.	T_1	22	67.82	7.71	50.0-86.0
	May	T_1	22	73.05	9.63	56.0-91.0
5	Nov.	T_1	28	79.68	8.85	57.0-93.0
	May	T_1	28	83.61	10.18	67.0-98.0

Test of Basic Experiences

General Concepts, Level K
(Results Given as Raw Scores)

Maximum Score = 28

Age	Date	Treatment	N	Mean	S.D.	Range
5	Nov.	T_1	39	16.28	5.39	5.0-26.0
	May	T_1	39	20.69	4.73	8.0-28.0

TABLE IV B

NORM PERCENTILES FOR RAVEN PROGRESSIVE MATRICES

AND TEST OF BASIC EXPERIENCES

The Coloured Progressive Matrices, Board Form : Raw Scores to Percentiles

	Raw Score		Percentile
Age	5 1/2	6	
	21	23	95
	19	21	90
	15	17	75
	12	14	50
	10	11	25
	-	10	10
	-	-	5

TOBE - General Concepts: Raw Scores to Percentiles

	Raw Score		Percentile
Grade	Kdg.	1	
	22	25	95
	20	24	90
	17	22	75
	13	20	50
	10	17	25
	7	13	10
	6	12	5

PARENT INVOLVEMENT: PTA ATTENDANCE

A record of parents' attendance at PTA meetings was obtained in order to compare the attendance record of parents of each child against the child's IQ. Comparisons were made for each age level by correlating parents' attendance results with Slosson IQ scores. The resulting Product moment correlation coefficients (r) were tested for significance (Student's t) and were not found to be significantly different from zero. The correlations were as follows:

	Children's Age in Years			
	2	3	4	5
r	.44	-.21	-.15	-.17
n	14	35	44	43

PUPIL ATTENDANCE: CORRELATION WITH IQ

Project attendance records were obtained for three-, four-, and five-year-old children in the project who had recorded Slosson IQ scores. Attendance was considered as high, medium, or low. These values were obtained by listing the frequencies of days attended and dividing this into three sub-groups approximately equal to the number of children in each sub-group. Using Slosson pre-IQ scores as the covariable and Slosson post-IQ scores as criterion, an analysis of covariances for each age level was performed. Each age level had three sub-groups -- high, medium, and low attendance. No significant differences were found; when all group members had the same initial level of IQ, posttest performance (post IQ) did not differ among the three attendance sub-groups.

Following are the attendance data for each age group and pretest-posttest IQ means for children having low, medium, or high Project attendance.

	Attendance Data			Pre IQ Mean Scores			Post IQ Mean Scores		
				Low	Med.	High	Low	Med.	High
N	Mean	S.D.	Range						
35	151.6	19.1	110-177	97.6	94.6	96.7	108.9	113.0	104.0
44	158.9	21.0	53-178	103.6	114.4	113.4	108.3	104.3	110.8
43	166.6	12.3	129-177	107.0	108.1	109.3	105.7	108.6	109.3

STAFF: MINNESOTA TEACHER ATTITUDE INVENTORY

Project staff comprised two groups, with Group A members having higher positive scores than Group B members as measured by the Minnesota Teacher Attitude Inventory. Correspondingly, pupils were divided into two sub-groups -- pupils of Group A and pupils of Group B staff members. Using children' pre-IQ scores (Slosson) as covariable and post-IQ scores as criterion, analyses of covariance between the two sub-groups of pupils at each age level were performed. In each instance, there was no posttest difference in performance of children, regardless of whether they were pupils of Group A or Group B staff members.

In addition, teacher scores were compared to see if any staff changes occurred over the years. Teacher scores (MTAI) for ten teachers for the years 1968, 1969, and 1970 showed that the overall mean for teachers remaining with the Project for three years was 30.75, for two years (1968-69) was 65.75, and for two years (1969-70) was 53.62.

		Minnesota Teacher Attitude Inventory Scores			
Teacher	No. Years	1968	1969	1970	Mean
1	3	35	45	50	43.3
2	3	- 1	- 4	- 2	- 2.3
3	3	8	34	31	24.3
4	3	65	59	49	57.7
5	2	52	91		71.5
6	2	65	55		60.0
7	2		56	55	55.5
8	2		94	106	100.0
9	2		49	68	58.5
10	2		10	- 9	.5

SUMMARY AND CONCLUSIONS

The use of analyses of variance shows significant pre-posttest score increases for two-year-old Central Cities children on the Slosson and PAR Social Subscale. The two-year-old Comparison group did not make significant score increases on these instruments.

The three-year-old Central Cities children's score results from pretest to posttest, when analyses of variance are used, show significant increase on the Slosson, Raven, and Auditory Test of Language Comprehension. The Comparison group of three-year-old children made significant score increases on the ATLC only.

Four-year-old children enrolled in the Central Cities Program had entered the program at age two or three. Gains of from 10 to 25 IQ points on the Slosson had been recorded for prior years (see Figures II A and II B). Therefore, a leveling off of scores on this instrument was as anticipated. Significant increases from pretest to posttest were achieved on the ATLC and Raven for the four-year-old Project pupils.

Analysis of variances revealed significant score increases for five-year-old Central Cities children on the Auditory Test of Language Development, Test of Basic Experiences, and the Raven Progressive Matrices. They did not show significant gains on the Slosson Intelligence Test. This was anticipated as the five-year-old children had been enrolled in the Central Cities Early Childhood Program for three years and showed a mean score gain of 12 IQ points during their three years of preschool.

This was the first year of preschool experience for the three comparison groups of five-year-old children and thus showed greater pretest to posttest gains than the Project group on the Slosson. At the end of the year Project children were significantly higher on the Slosson than the target area Black kindergarten, significantly lower than the upper-middle-class Anglo kindergarten groups, and not significantly different from the low-income Anglo kindergarten.

On the Raven, the Central Cities group was significantly higher than the target area and low-income Anglo groups on the total scale but significantly lower than the upper-middle-class Anglo kindergarten children. Central Cities children who scored high on the pretest of the ATLC scored higher on the posttest than the upper-middle-income Anglo, the target-area Blacks, and the low-income Anglo children.

This third and final research and evaluation report indicates that disadvantaged children made significant increases on the Slosson Intelligence Test when enrolled in the Central Cities Early Childhood program. Five-year-old children who have completed three years at Central Cities show readiness for first grade school work as reflected by their scores on the Test of Basic Experiences (General Concept) which are at the 90th percentile. Results of the Slosson Intelligence Test show the Central Cities children second at the 69th percentile and on the Raven Progressive Matrices they score at the

75th percentile. The Comparison sample of disadvantaged children from the target area scored below the 50th percentile on these tests.

The amount of gain on the Slosson is related to the number of years the children spent in school and also their age at entry. The five-year-old children who enrolled at age three and remained for three years in the program show a mean score gain of 12.74 IQ points. The four-year-old children who began the program at age two and continued for three years show a mean score increase of 25.50 IQ points. The four-year-old children who entered at age three and continued for two years show a mean score increase of 6.58 IQ points. Therefore, one must conclude that preschool intervention for disadvantaged children is most effective when begun at age two and continued for at least three years.

CHAPTER V

SPECIAL EDUCATION EVALUATION RESULTS

Three tests were used by the Special Education Component for the diagnosis of special education pupils and the evaluation of their progress. These instruments were the Goldman-Fristoe Test of Articulation, the Illinois Test of Psycholinguistic Abilities, and the Frostig Developmental Test of Visual Perception.

ARTICULATION

The Goldman-Fristoe Test of Articulation is used to measure articulation of consonants at the beginning, middle, and end of words and to determine specific problems with consonant formation. Based upon the results of this test, individual prescriptions of remedial activites are developed for each child.

During the 1970-71 school year the Special Education Component treated 28 children with diagnosed articulation problems. Eight of these children began remedial activities during 1969-70 at age four. The other 19 children, both four- and five-year-olds, began remedial activities during the fall of 1970.

In May 1971 these children were retested with the Goldman-Fristoe Test in order to evaluate their progress. A comparison of the initial test results and the subsequent posttests is shown in Tables V A and V B.

Table V A summarizes the pretest and posttest results for the first-year pupils. There was a significant reduction (7.3) in the mean number of incorrect responses. This difference was statistically significant at the .01 level of confidence.

TABLE V A

RESULTS ON THE GOLDMAN-FRISTOE TEST OF ARTICULATION (FIRST-YEAR PUPILS)

	N	Mean Error	Diff.	P
Pre (October 1970)	19	19.1	7.3	.01
Post (May 1971)	19	11.8		

A comparison of the pretest and posttest results for the second-year pupils is shown in Table V B. In the fall of 1969 these children had a mean error score of 31.1. At the end of 1970-71 the mean number of incorrect responses had dropped to 13.3. This difference in the means (17.8) was statistically significant ($p < .01$).

TABLE V B

RESULTS ON THE GOLDMAN-FRISTOE TEST OF ARTICULATION (SECOND-YEAR PUPILS)

	N	Mean Error	Diff.	P
Pre (October 1969)	8	31.1	17.8	.01
Post (May 1971)	8	13.3		

The results of the Goldman-Fristoe Test were gratifying. Both first-year and second-year pupils had a lower number of incorrect responses at posttest, and this lower mean number was significantly different from the mean at pretest.

It is of interest to note the rather large difference in the pretest means for the two groups of pupils. The children tested in the fall of 1969 had a mean pretest error score of 31.1. The children tested in the fall of 1971 had a mean pretest error score of 19.1. This difference can probably be attributed to the difference in preschool experience. The 1969 sample of children had received only one year of preschool intervention, while the majority of children tested in the fall of 1970 had completed two years of preschool work.

One would expect that the more a child was exposed to a language-oriented curriculum the greater would be his chances for self-remediation of his articulation problems. The difference in the pretest performance for the two groups of children suggests that this was the case.

LANGUAGE DEVELOPMENT

The Illinois Test of Psycholinguistic Abilities is designed to assess language development in exceptional children, particularly those of preschool age. It is especially useful in diagnosing specific abilities and disabilities.

In the fall of 1970 the language development specialist selected the 11 special education pupils with the most severe language disabilities. These children were given the ITPA, and remedial activities were prescribed on the basis of the test results. In May 1971 these 11 children were re-tested on the ITPA in order to evaluate their progress.

A word of explanation is needed regarding the analysis of the ITPA test results. In order to relate language age scores to chronological age, a difference score was computed by subtracting a child's chronological age at the time of testing from his language age score. For example, a child who was 48 months old at the time of the pretest and earned a language age score of 40 months on a given subtest would receive a difference score of -8 months; that is, he would have a deficit of eight months on that subtest. Statistical treatment of the ITPA scores was conducted on the basis of these difference scores. It must be kept in mind that a difference score gain of six months between the pretest and the posttest would represent that gain plus the gain required by the interval between tests. Thus, if the test interval were eight months, and the child showed a gain of six months, this would, in fact, represent a 14-month change (a six-month gain plus the eight-month gain required by the test interval) in the child's language age.

The results of the pretest and posttest performance on the ITPA are summarized in Table V C.

TABLE V C

RESULTS ON THE ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITIES
(Special Education Pupils)

	N	Pretest	Difference	Posttest	P
Psycholinguistic Abilities	11	- 9.0	1.9	- 7.1	NS
Auditory Reception	11	- 9.6	2.1	- 7.5	NS
Visual Reception	11	- 6.1	4.3	- 1.8	NS
Verbal Expression	11	- 5.1	- .6	- 5.7	NS
Manual Expression	11	- 2.1	2.3	.2	NS
Auditory Association	11	-19.2	6.5	-12.7	<.01
Visual Association	11	- 9.4	1.7	- 7.7	NS
Auditory Closure	11	-22.3	4.4	-17.9	NS
Sound Blend	10*	-13.1	3.5	- 9.6	NS
Grammatical Closure	11	-18.0	2.0	-16.0	NS
Visual Closure	11	- 5.5	-2.6	- 8.1	NS
Auditory Memory	11	7.0	-4.3	2.7	NS
Visual Memory	11	-10.8	1.9	- 8.9	NS

* One child did not complete this subtest.
NS = not significant

Inspection of Table V C shows that on 10 of the 13 subscales the children were able to make gains. The largest gains were made in the areas of visual reception, auditory associations, auditory closure, and sound blend. The only statistically significant gain was in the area of auditory associations ($p < .01$). The most notable loss was in the area of auditory memory (-4.3). It should be noted, however, that at the time of the pretest the children as a group were seven months above their chronological age with respect to auditory memory. At posttest the children still showed a language age of 2.7 months above their chronological age. Since there was approximately a six-month test interval, the children actually made small gains during this interval. For clarification of this relationship, see Table V D.

TABLE V D

AUDITORY MEMORY PERFORMANCE

Pretest		D	Posttest		D
Mean Chron. Age	65.0	7.0	Mean Chron. Age	71.0	2.7
Mean Aud. Mem. Age	72.0		Mean Aud. Mem. Age	73.7	

Here it can be seen that at pretest the mean auditory memory age was 72.0 months. On the posttest the mean auditory memory age was 73.7 months. This figure represents a gain of almost two months. Due to the data analysis technique being used, however, this gain is reflected as a loss because of the six-month test interval.

In general, the results on the ITPA were very encouraging. The children gained on 10 of the 13 subscales. Although with one exception these gains were not statistically significant, the gains did represent some rather significant changes in the language ages of the children. More important than the numerical gains is the fact that successful remediation was occurring; the children's language deficits were being eliminated.

VISUAL PERCEPTION

The Frostig Visual Perception Test is designed to assess visual perception in children between the ages of four and eight. The test is used by the language development specialist to diagnose children believed to have a visual perception problem.

Ten children were included in the Frostig evaluation. Three of these children were given the initial test during the 1969-70 school year as four-year-olds. The other seven children, all four- and five-year-olds, were initially tested in 1970-71. The test results were not analyzed separately because of the small sample size.

TABLE V E

RESULTS ON THE FROSTIC TEST OF VISUAL PERCEPTION
(N = 10)

Subscale	Pretest	Difference	Posttest	P
PQ	92.3	-1.1	91.2	NS
Eye Motor	1.3	- .4	.9	NS
Figure Ground	-10.5	-7.2	-17.7	<.05
Position in Space	- 3.8	-3.1	- 6.9	NS
Spatial Relations	- 6.4	-1.3	- 7.7	NS
Form Constancy	3.3	-3.0	- 6.3	NS

NS = not significant

Based upon the initial test results, individual remedial activities were prescribed by the language development specialist. In May 1971 all children were retested in order to assess their progress. The results of the Frostig evaluation are summarized in Table V E.

Inspection of Table V E reveals that on the overall PQ score and the five subscales there were no gains made by the children. The only significant loss ($p < .05$) was on the Figure Ground subscale.

The results on the Frostig Test were disconcerting. The findings on the posttest strongly suggest that the remedial materials prescribed for the children did not result in remediation of the visual deficits.

At the present time there is no plausible explanation of why this happened. The same general pattern occurred regardless of how many months the child had been receiving special help. The children with two years of remedial work showed as many losses as the children with one year or less of remediation. These results indicate that time alone was not a significant factor.

Since the language specialist was thoroughly competent in the administration and scoring of the Frostig test, the only other possible explanation would be the utilization of the remedial materials. The exact

remedial package recommended by Dr. Frostig was not used. The paper and pencil remedial activities were given to the children, but the suggested physical exercises and the three-dimensional activities were omitted. It could well be that the failure to coordinate all suggested remedial activities negated the positive potentials of the remedial program, or that the scope of this program transcended the children's developmental readiness. Some of these "deficits" are falsely labeled for this age.

SUMMARY OF FINDINGS

The results of the evaluation of the children's performance on the posttest of the Coldman-Fristoe and the ITPA were encouraging, for the children made substantial gains towards the remediation of their language deficiencies.

Results on the Frostig test, however, were disappointing. On the overall PQ score and the five subscales, the children were unable to demonstrate any positive effects of the remedial activities. These results would suggest that the remedial program for visual deficiencies is not working and that revisions in the program must be initiated.

CHAPTER VI

SELF-CONCEPT EVALUATION RESULTS

BACKGROUND

The 16-item Self-Concept Inventory entitled "The Way I Feel About Myself" was administered in April 1971 to the three classes of disadvantaged kindergarten children who had been enrolled in the Central Cities Project for three years. During the same month the inventory also was administered to three kindergarten comparison groups consisting of random samples of (1) Black children enrolled in schools within the Central Cities Target Area, (2) Anglo children enrolled in schools located in a low-income neighborhood of Fort Worth, and (3) Anglo children enrolled in schools in a middle-income Fort Worth neighborhood.

The Self-Concept Inventory (SCI) was designed by the Central Cities Research Manager specifically for preschool children. To complete the inventory, the children are asked to respond to each of the 16 items. Their responses are categorized as indicative of either positive or negative self-concept. In scoring, one point is given for each positive response and no points for negative responses. The resultant score value may range between zero and 16, with lower values interpreted as lower general self-concept and higher values as higher general self-concept. A test of the items on the instrument is shown in Table VI A.

An example may be used to illustrate the administration procedure. The administrator, in presenting the first item to a male subject, would read, while pointing to the stick figure on the left side of the page, "The children in school make fun of this boy." "They do not make fun of this boy" is read while indicating the stick figure to the right. The child is

TABLE VI A

SELF-CONCEPT INVENTORY

"THE WAY I FEEL ABOUT MYSELF"

1. The children in school make fun of this boy/girl; they do not make fun of this boy/girl. Which is more like you?

2. This boy/girl is happy; this boy/girl is not happy. Which is more like you?

3. This boy/girl has lots of friends; this boy/girl does not have lots of friends. Which is more like you?

4. This boy/girl is sad; this boy/girl is not sad. Which is more like you?

5. This boy/girl is smart; this boy/girl is not smart. Which is more like you?

6. This boy/girl is shy; this boy/girl is not shy. Which is more like you?

7. This boy/girl is pretty; this boy/girl is not pretty. Which is more like you?

8. The other children do not like this boy/girl; but they like this boy/girl. Which is more like you?

9. This boy/girl is a lot of trouble to his/her mother; this boy/girl is not a lot of trouble to his/her mother. Which is more like you?

10. This boy/girl always does what the teacher tells him/her; this boy/girl does not do what the teacher tells him/her. Which is more like you?

11. This boy/girl is good at home; this boy/girl is not good at home. Which is more like you?

12. This boy/girl has lots of friends at school; this boy/girl does not have lots of friends at school. Which is more like you?

13. The teacher likes this boy/girl; the teacher does not like this boy/girl. Which is more like you?

14. This boy/girl is often afraid; this boy/girl is not often afraid. Which is more like you?

15. This boy/girl does not like his/her brother (sister); this boy/girl likes his brother (sister). Which is more like you?

16. This boy/girl likes to come to school; this boy/girl does not like to come to school. Which is more like you?

them asked, "Which is more like you?" A response is made by the child pointing to one of the figures. The administrator records the response by circling "L" for left figure or "R" for right. The remaining items are administered in the same manner.

The completed inventory forms were hand-scored and tabulated by Fort Worth Independent School District Research and Evaluation personnel.

CENTRAL CITIES SELF-CONCEPT INVENTORY RESULTS

The mean scores of the Central Cities kindergarten classrooms are presented in Table VI B.

TABLE VI B

SCI MEAN SCORES FOR THREE CENTRAL CITIES CLASSES

	Mean Score
Classroom 1 (N = 15)	12.20
Classroom 2 (N = 16)	11.50
Classroom 3 (N = 18)	14.22

Tests of mean differences indicate that the mean score of Classroom 3 on the SCI was significantly different from the mean of Classroom 2 ($p < .01$).

In light of this finding, further analyses were undertaken to determine which specific items on the SCI contributed to the mean differences observed between the three Central Cities classrooms. For this item analysis, a null hypothesis was formulated: no difference exists between the responses of a particular Central Cities classroom on any SCI item and the total Central Cities kindergarten population. Chi-square analysis with continuity correction was applied to test the hypothesis. Only two of the 48 tests (3 classrooms X 16 items) resulted in chi-square values sufficiently large to reject the hypothesis at the .01 level of confidence. Both of these differences were found in comparisons of Classroom 2 to the total group, and both

were in the direction of a more negative self-concept expressed by children in that classroom. The differences may be stated:

1. In comparison to the total Central Cities population, children in Classroom 2 feel they are more trouble to their mothers ($p < .01$ for chi-square = 10.936).
2. In comparison to the total Central Cities population, children in Classroom 2 feel less liked by other children ($p < .01$ for chi-square = 10.977).[1]

These differences are indicated in Table VI D which compares the response patterns of the three Central Cities classrooms on each of the 16 items of the SCI. General self-concept trends may be inferred for each classroom from the data presented in Table VI C. Classrooms 1 and 2 responded more positively than the total Central Cities population on six of the 16 items, while Classroom 3 did so on 13 of the items. This is consistent with the classroom means presented in Table VI B.

Although some self-concept differences, as measured by the SCI, were found among the three Central Cities classes, their results were combined for comparison with those of the three kindergarten "control" groups.

COMPARISON SELF-CONCEPT INVENTORY RESULTS

Three samples of kindergarten children were selected from the Fort Worth area to provide self-concept comparison data for the Central Cities SCI results.

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[1] The method of analysis selected for comparison of groups is the chi-square technique. A continuity correction has been incorporated into the calculations because the SCI yields only a dichotomized data. The .01 level of confidence was selected for use with the SCI analyses. This means simply that when a difference is stated to be significantly different, there is at least at 99 percent probability that a true difference actually exists. When contingency table expected cell values drop below a value of five in chi-square analysis, spurious interpretation may result. When this situation exists (as it does in the case of Statement 2 above), it will be so stated. This should be a signal to the reader to consider the interpretation with caution.

TABLE VI C

PERCENT POSITIVE RESPONSES BY ITEM ON THE SELF-CONCEPT INVENTORY
FOR THREE CENTRAL CITIES CLASSES

Inventory Item (Positive response underlined)	Percent Positive Responses			
	Classroom 1 N = 15	Classroom 2 N = 16	Classroom 3 N = 18	Total N = 49
1. Other children: make fun of/do not make fun of	27	69	50	49
2. Happy/not happy	80	87	94	88
3. Have lots of friends/do not have lots of friends	93	69	89	84
4. Sad/not sad	67	50	89	69
5. Smart/not smart	100	94	94	96
6. Shy/not shy	27	62	39	43
7. Pretty/not pretty	87	100	100	96
8. Other children: do not like/like	93	37*	94	76
9. Lot of trouble to mother/not a lot of trouble to mother	80	25*	94	67
10. Does what teacher tells/does not do what teacher tells	93	94	100	96
11. Good at home/not good at home	93	94	89	92
12. Have lots of friends at school/does not have lots of friends at school	80	94	100	92
13. Teacher: likes/does not like	87	94	94	92
14. Often afraid/not often afraid	60	31	89	61
15. Does not like (siblings)/likes (siblings)	80	50	94	76
16. Likes to come to school/does not like to come to school	93	94	100	96

* Significantly different from Total

Comparison Group A consisted of 18 Anglo five-year-olds enrolled in a kindergarten class in a middle-income neighborhood. The sample was selected to provide both an ethnic[2] and economic contrast to the Central Cities population.

Comparison Group B also consisted of Anglo children of the same age, but this sample was selected from a low-income neighborhood to minimize the economic contrast with the project children. The sample size is 24.

Twenty-eight Black children selected from the Central Cities Target Area comprise Comparison Group C. The only basic difference between the Central Cities and Comparison Group C children was the educational program in which they were enrolled. For three years the Central Cities children had been involved in a full-day preschool project for disadvantaged children, whereas the Target Area children were enrolled for one year in an all-day public school kindergarten. The children in Group C were of the same ethnic background as the Project population and resided in the same area of the city.

The Central Cities project group and the three comparison groups all were administered identical SCI instruments during April 1971. Directions for administration of the SCI were the same for all groups.

The mean number of positive responses for each group is presented in Table VI D. As mentioned, the three Central Cities classes have been combined into a single group.

TABLE VI D

SCI MEAN SCORES FOR FOUR GROUPS OF KINDERGARTEN CHILDREN, APRIL 1971

	Mean Score
Middle-Income Anglo (N = 18)	14.11
Low-Income Anglo (N = 24)	13.54
Target Area Black (N = 28)	13.03
Central Cities Project (N = 49)	12.69

[2] 96 percent of the Central Cities project population was Black.

Tests of mean difference were performed for all possible mean pairings. None of these indicated a statistically significant difference.

Table VI E contrasts the response patterns of the three comparison groups and the Central Cities population on each of the 16 items of SCI. The general self-concept trend for each of the four groups is consistent with the central tendency data provided in Table VI D.

To analyze the comparison data, a second null hypothesis was formulated: no difference exists between the Central Cities children and each of the three comparison groups on any SCI item. Chi-square was selected as the method of analysis.

No significant difference was found between the Central Cities children and each of the comparison groups on seven of the SCI's 16 items. All groups indicated a high level of happiness (Item 2) and perceived of themselves as being pretty (Item 7). Items 3 and 12 were similar -- "have lots of friends" and "have lots of friends at school." High positive responses were made by all groups on these items, and the pattern of response shows consistency of response within the groups. All four groups responded that they like to come to school (Item 16) and that, once in school, they do what their teacher tells them to do (Item 10). Across groups, most of the children viewed themselves as good at home (Item 11).

The following inferences, based on differences which are significantly different in a strict mathematical sense, should be considered with reservation:

1. In comparison to both Anglo kindergarten samples, the Central Cities children perceived themselves to be more sad (Item 4). No significant difference was found on this item between the Project children and the Target Area Black group.

TABLE VI E

PERCENT POSITIVE RESPONSES BY ITEM ON THE SELF-CONCEPT INVENTORY FOR FOUR KINDERGARTEN GROUPS

Inventory Item (Positive response underlined)	Percent Positive Responses			
	Middle Income Anglo Kdg. N = 18	Low Income Anglo Kdg. N = 24	Target Area Black Kdg. N = 28	Central Cities Kindergarten N = 49
1. Other children: make fun of/<u>do not make fun of</u>	67	79*	43	49
2. <u>Happy</u>/not happy	94	87	82	88
3. <u>Have lots of friends</u>/do not have lots of friends	89	79	86	84
4. Sad/<u>not sad</u>	100*	92*	75	69
5. <u>Smart</u>/not smart	89	87	75*	96
6. Shy/<u>not shy</u>	78*	62*	46	43
7. <u>Pretty</u>/not pretty	89	87	93	96
8. Other children: do not like/<u>like</u>	83	75	89*	76
9. Lots of trouble to mother/<u>not a lot of trouble to mother</u>	83*	87*	93*	67
10. <u>Does what teacher tells</u>/does not do what teacher tells	94	92	89	96
11. <u>Good at home</u>/not good at home	100	87	96	92
12. <u>Have lots of friends at school</u>/does not have lots of friends at school	94	87	79	92
13. Teacher: <u>likes</u>/does not like	100*	96	100*	92
14. Often afraid/<u>not often afraid</u>	89*	87*	75	61
15. Does not like (siblings)/<u>likes (siblings)</u>	67*	71	93*	76
16. <u>Likes to come to school</u>/does not like to come to school	94	96	89	96

* Significantly different from Central Cities Kindergarten

2. In comparison to the Middle-Income Anglo and Target Area Black pupils, the Central Cities children felt that they are less liked by their teachers (Item 13). No difference on this item was indicated in comparison with the Low-Income Anglo group. It should be noted that a great majority of pupils in all groups responded positively to this item.

3. Central Cities children reported that they like their siblings more than the Middle-Income Anglo pupils do, but less than the Target Area Black pupils do.

Analyses of six items revealed group difference on self-concept components which are felt to be distinguishing factors in the self-concept of Central Cities project students. Three of these differences appear to be due to ethnic or cultural factors and three to be due to the Early Childhood instructional program.

The findings which seem influenced by ethnic or cultural factors include:

1. In contrast to both Anglo comparison groups, the project pupils perceived themselves as being made fun of more often by other children (Item 1). No difference exists in comparison with the Target Area Black children. (Middle-Income Anglo comparison: $p < .01$ for chi-square = 6.405; Low-Income Anglo comparison: $p < .01$ for chi-square = 24.840)

2. In contrast to both Anglo comparison groups, children in the Central Cities project more often responded that they are shy (Item 6). No difference is found between the project pupils and the Target Area Black pupils. (Middle-Income Anglo comparison: $p < .01$ for chi-square = 33.248; Low-Income Anglo comparison: $p < .01$ for chi-square = 6.831)

3. The Central Cities group perceived themselves to be more often afraid than either of the Anglo comparison groups (Item 14). Again, no significant difference exists in comparison with the Target Area Black pupils. (Middle-Income Anglo comparison: $p < .01$ for chi-square = 35.828; Low-Income Anglo comparison: $p < .01$ for chi-square = 26.550)

Analyses of the remaining three SCI items revealed significant difference that set the Central Cities pupils apart from other groups.

1. In comparison to the Target Area Black pupils, the Central Cities children perceived themselves as smarter ($p < .01$ for chi-square = 10.347). No difference is found in comparison with either Anglo sample (Item 5).

2. The Central Cities pupils thought that they are less liked by other children than did the Target Area Black pupils ($p < .01$ for chi-square = 7.782). Again, no difference is found in comparison with either Anglo sample (Item 8).

3. Item 9 is the only SCI item on which data analysis indicates significant difference between the Central Cities population and the three comparison groups. In contrast to all comparison samples, the Central Cities pupils perceived themselves as causing more trouble to their mothers (Middle-Income Anglo comparison: $p < .01$ for chi-square = 7.436; Low-Income Anglo comparison: $p < .01$ for chi-square = 15.041; Target Area Black comparison: $p < .01$ for chi-square = 45.671).

SUMMARY OF FINDINGS

The Self-Concept Inventory, "The Way I Feel About Myself," administered to samples of Fort Worth kindergarten pupils revealed similarities between the responses of Middle- and Low-Income Anglo children, Target Area Black

children, and children enrolled for three years in the Central Cities Early Childhood Program. Similarities include perceptions of being happy, pretty, good at home, and attentive to teachers. All groups reported having many friends and enjoying coming to school.

The Anglo children were more outgoing (i.e., less shy, less often afraid) and had better peer relations (i.e., made fun of less by other children) than the Central Cities and Target Area children. Teasing and making fun of each other tended to be characteristic of the Black children. However, they did indicate that they had lots of friends and that other children liked them.

IMPLICATIONS

There is evidence of some effect on general self-concept for children engaged in a three-year, year-round, 12-hour-day preschool program. As measured by the Self-Concept Inventory, these children generally have a more negative self-concept than other children of the same age.

The critical comparison in this study for evaluating the effects of the Central Cities project on concept-of-self is the comparison between the Target Area Black children and the children engaged in the three-year project. Table VI F uses data from the preceding table for this purpose, with the information presented in terms of negative rather than positive item response.

TABLE VI F

PERCENT RESPONSE TO NEGATIVE ALTERNATIVES ON SELECTED SCI ITEMS FOR TARGET AREA AND CENTRAL CITIES CHILDREN

Item (Negative Alternative)	Target Area	Central Cities
9. Lots of trouble to mother	7	33
14. Often afraid	25	39
15. Do not like siblings	7	24

These comparisons reveal the possible consequences of early separation of the child from home and family. The project children were away from home approximately 60 hours per week over a three-year period. The assumption could be made that the children would be very little trouble to their mothers and have little interaction with their siblings. Their fear could likely be the result of parental separation.

The differences exhibited in Table VI F, however, cannot be totally explained by parental separation. On Table VI B the differences on the three items can be accounted for by the response patterns of pupils in Classrooms 1 and 2. Classroom 3 did not exhibit the negative response pattern on these items that are associated with the total sample. This indicates that the classroom teacher and teacher aide may alleviate some of the negative self-concept consequences of a comprehensive preschool program. Classroom observation data collected by trained staff development personnel of the Fort Worth Independent School District support this conclusion. In comparison to the instruction personnel of Classrooms 1 and 2, the teacher and aide of Classroom 3 were judged more understanding of the needs of preschool children. They were characterized in classroom observation summaries as being more strict and more consistent in their expectations and discipline.

Minnesota Teacher Attitude scores for these three teachers revealed further information concerning teacher attitude and the self-concept of children in her classroom. The teacher in Classroom 3 made a score of 55 on the MTAI, the teacher in Classroom 1 scored -9 and the teacher in Classroom 2 made a high score of 90. Results would indicate that teachers who do not score at either extreme on this test would tend to help the children develop a more positive self-concept.

CHAPTER VII

FOLLOW-UP EVALUATION RESULTS

FINDINGS OF THE FOLLOW-UP STUDY

In order to determine the long-range effects of the Central Cities Project, staff members conducted a follow-up evaluation using a sample of former Central Cities pupils who had had two years in the Project and were completing the first grade. The staff also tested a random sample of their subjects; classmates and two groups of pupils who were enrolled in kindergarten in 1969-70 and served as comparison samples that year. The 1969-70 comparison groups consisted of 15 first grade children attending schools located in the target area and 20 children enrolled in a middle-income school. For the purposes of this report, these groups are identified as Target Area and Middle-Income samples.

After finishing kindergarten in May 1970, the Central Cities children (T_1), the Target Area children (T_3), and the Middle-Income children (T_4) were given the Slosson Intelligence Test. The Central Cities children made a mean gain of 8.4 IQ points on the Slosson during their two years at Central Cities, the Target Area children showed a mean gain of 3.4 IQ points during one year of kindergarten, and the Middle-Income children had a mean gain of 12.8 during their kindergarten year. All three groups were retested on the Slosson in May 1971 at the end of first grade. The results of the May 1970 and May 1971 Slosson Intelligence Test and a May 1971 Peabody Picture-Vocabulary Test are given in Table VII A.

The posttest mean scores for all groups of children on the Slosson were lower than the mean scores achieved at the end of Kindergarten in May 1970, but the difference in the rate of loss among the groups is not statistically significant. The Middle-Income sample was still significantly higher ($p < .01$) than the Central Cities and Target Area children.

TABLE VII A

MEAN SCORES FOR CENTRAL CITIES GRADUATES AND COMPARISON GROUPS

		Sloesson Mean IQ				Peabody Mean	
		May 1970	May 1971		1970 - 1971	May 1971	
Group	N	Pretest	Posttest	Loss	Percent Loss	Raw Score	IQ
Central Cities	42	103.9	97.8	-6.1	5.96	52.9	83
Target Area	15	94.5	91.2	-3.3	3.48	54.6	87
Middle-Income	20	124.5	114.7	-9.8	7.86	68.3	114

On the Peabody Picture-Vocabulary Test there was no statistically significant difference between the Central Cities and the Target Area children's mean raw scores and mean IQ scores, but the Middle-Income group was significantly higher ($p < .01$) than the other two. This is to be expected since the Peabody Picture-Vocabulary Test was normed on white children and many of the vocabulary items occur more frequently in a white middle-class culture.

Of the 42 Central Cities graduates given the Sloesson Intelligence Test, eight were enrolled in Follow Through first grade classes and 34 were enrolled in traditional programs. Their Sloesson Intelligence Test scores are reported separately in Table VII B.

TABLE VII B

MEAN SCORES FOR CENTRAL CITIES GRADUATES ENROLLED IN FOLLOW THROUGH AND REGULAR CLASSES

		Sloesson Mean IQ			Peabody Mean	
		May 1970	May 1971		May 1971	
Group	N	Pretest	Posttest	Gain or Loss	Raw Score	IQ
Regular Classes	34	102.8	96.4	-6.4	52.8	83
Follow Through	8	104.0	101.8	-2.2	54.2	87

The children enrolled in the Follow Through classes tended to have higher scores on the Slosson at the end of the first grade than the children enrolled in traditional classes, but the difference was not statistically significant and may merely reflect the small size of the sample.

Test scores were collected from first grade pupils enrolled in regular first grade or Follow Through classes. Some of the children had previously attended classes at the Central Cities Educational Development Center; others served as comparison samples. The treatment groups were:

T_1 - 35 Central Cities graduates enrolled in regular first grade classes

T_2 - 8 Central Cities graduates enrolled in Follow Through classes

T_3 - 20 children of the 1969-70 middle-class kindergarten comparison sample enrolled in regular first grade classes

T_4 - 14 children as a random sample of children enrolled in regular first grade classes with Central Cities graduates

T_5 - 12 children as a random sample of children enrolled in Follow Through classes with Central Cities graduates

T_6 - 15 children of the 1969-70 target population kindergarten sample enrolled in regular first grade classes

In May 1971 the Stanford Achievement Test was given to the Central Cities graduates, the Target Area comparison sample, and a random sample of children currently enrolled in first grade classes with the Central Cities children. The children enrolled in regular and Follow Through classes were separated for comparison. The results of the Stanford Achievement Test are given in Table VII C.

TABLE VII C

STANFORD ACHIEVEMENT TEST RESULTS
(Mean Scores)

Sample	N	Word Meaning	Paragraph Meaning	Voc.	Spell.	Word Study	Arith.
Central Cities Graduates Regular Classes, T_1	25	12.6	6.3	10.5	2.6	17.4	14.1
Target Area 1969-70 Comparison Sample Regular Classes, T_2	7	10.3	6.0	10.4	3.7	14.3	11.8
Random Sample of Classmates Regular Classes, T_4	11	14.2	7.4	12.6	5.3	20.5	16.3
Central Cities Graduates Follow Through, T_5	11	7.7	3.5	9.7	1.6	16.8	7.5
Random Sample of Classmates Follow Through, T_6	11	8.5	4.0	9.6	2.6	18.1	8.1

There were no significant differences among the three groups of children enrolled in regular classes or between the two enrolled in Follow Through classes. There was a significant difference between the Central Cities graduates in regular classes and the Central Cities graduates enrolled in Follow Through classes on three of the subtests -- word meaning ($p < .01$), paragraph meaning ($p < .05$), and arithmetic ($p < .05$). Statistically significant differences did not occur on the vocabulary, spelling, and work study subtests.

The Stanford Achievement Test was not a suitable instrument for the children in these first grade samples. The test was administered because it had been selected for inclusion on the Bilingual evaluation and could be used to compare the Central Cities graduates with the children in the Bilingual Program. However, the Stanford Test was too difficult for all five groups of children and therefore only discriminated between children in

Follow Through and regular classes. The Stanford Achievement Test was less suitable for Follow Through children because it requires a great deal of reading. Follow Through stresses a developmental approach instead of giving reading skills the same emphasis they have in traditional first grade programs.

A Self-Concept Inventory containing 16 items which could be answered in a positive or negative manner was given to the Central Cities graduates enrolled in regular classes, a random sample of their classmates, and the Target Area and Middle-Income samples. The mean number of positive answers for each group is given in Table VII D.

The Central Cities graduates' mean self-concept was not significantly different from those of the 1969-70 comparison samples of children from the Target Area and Middle-Income groups. Project pupils scored higher than the random sample of their classmates, but the difference was not statistically significant.

TABLE VII D

SELF-CONCEPT INVENTORY MEAN POSITIVE RESPONSES

Group	N	Mean
Central Cities Graduates	34	13.50
1969-70 Comparison Sample Target Area	15	13.28
Random Sample	20	12.35
1969-70 Comparison Sample Middle-Income	20	13.70

(F = 1.5, N.S.)

Teachers rated the Central Cities graduates, the target area children, and the random sample of Central Cities classmates on an Adjustment Rating Scale, considering social behavior, emotional behavior, intellectual ability, physical status, and adjustment to classroom membership. Children's traits

were judged on a five-point scale ranging from desirable (1) to undesirable (5). Thus, a low score indicates a better adjustment than a high one. Mean scores for each group in each area as well as total adjustment means are given in Table VII E.

TABLE VII E

ADJUSTMENT RATING SCALE

Group	N	Adjust.	Social Behav.	Emotional Behav.	Intell. Ability	Phys. Status	Adj. to Classroom
Central Cities	39	89.13	14.73	19.78	17.23	7.70	29.86
1969-70 Comparison Target Area	15	99.13	14.73	21.33	20.80	8.67	33.60
Random Sample of Classmates	18	95.22	14.39	21.06	19.50	8.67	31.17
		(F=1.35) N.S.		(F=1.31) N.S.	(F=1.30) N.S.		(F=1.35) N.S.

Although there were no statistically significant differences among the groups' mean scores on the Adjustment Rating Sheet, the Central Cities children were rated as better adjusted than their classmates. They were judged to be more emotionally mature, to have higher intellectual ability, to be healthier, and to have better muscular coordination. Furthermore, their adjustment to classroom membership was higher than that of their classmates.

SUMMARY OF FINDINGS

The Stanford Achievement Test did not discriminate between the high- and low-ability children sufficiently since the test was too difficult for all the children tested. Although the Central Cities children in regular classes scored significantly higher on three of the six subtests than did the Central Cities children in Follow Through, the discrepancies may reflect

a difference in emphasis on formal reading skills in the two types of first grade programs.

The Central Cities graduates tend to have a slightly higher self-concept than their classmates; and they were rated by teachers as exhibiting better emotional behavior, intellectual ability, physical status, motor behavior, and adjustment to classroom membership.

Scores of the Middle-Income group remained significantly higher than those of the other samples on the Slosson and Peabody tests. The Central Cities children's mean score on the Slosson was higher than the Target Area mean, but the difference was not statistically significant. Central Cities graduates enrolled in Follow Through classes tended to maintain the gains they made on the Slosson during their preschool years better than Central Cities graduates in regular classes, but there were too few children in the Follow Through Program to permit a valid comparison.

Children from all three groups receiving the Slosson Intelligence Test made lower scores at the end of the first grade than they had made at the end of kindergarten. However, there was no significant difference in the rates of regression. The decrease in IQ scores may be explained by the fact that most standardized tests for young children are normed on samples with little or no educational intervention. One would expect that a group of children with one, two, or three years of preschool education would compare very favorably with such a norm. At age six, however, most children in this country have completed at least one year of school. Thus, the norming sample for a test at age six would contain a majority of children with educational experiences, and the performance of children with preschool experience would be compared with a norm significantly different from the younger age standards. One would expect, therefore, that the difference in ability between the norm and the performance of children with preschool experience would decrease.

This statistical decrease or regression represents not so much a loss of ability for the preschool groups, but rather an increase in the intellectual development of the norm sample due to increased educational experience. Such a phenomenon occurs quite frequently. For example, a child who matures early will often appear much more advanced than his peers. Once his peers mature, however, one often finds that the early-maturing child is best described as being within the average range.

This regression in IQ scores is not unique to the present evaluation. The majority of follow-up evaluations of preschool programs have observed the same general phenomenon. That is, the children at the end of the first grade generally tend to show a loss in IQ. This phenomenon is sometimes taken to discredit compensatory or intervention strategies in early childhood. It could well be, however, that this regression is not so much a function of the ability of the children as it is of the norming procedures used for standardized tests. However, this may also be failure of the first grade classes to continue to provide experiences necessary for maintaining intellectual growth. Under these circumstances one must be careful not to interpret this regression as evidence of the failure of the Central Cities Project. The real goal of the preschool program is not to win a numbers game of IQ scores, but rather to give the disadvantaged child an opportunity to compete on an equal basis with his more fortunate peers. Educators must not lose sight of this primary objective.

The importance of this final objective should compel educators to continue research efforts which may result in more effective programs in early childhood education and a better understanding of the learning process and its evaluation.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

The Central Cities Early Childhood Program provided an educational environment which included a sequentially planned curriculum, guided peer group interaction, and nutritional and medical services for disadvantaged children ages two to five. The program provided Staff Development for the teachers of these children and a Parent Involvement component to help parents enrich and reinforce their children's learning experiences.

The three major objectives of the program and a summary of the research data for 1970-71 follow.

OBJECTIVE ONE

> Children enrolled in the Central Cities preschool program will score higher on measures of affective, cognitive, and psychomotor development than children in day care centers.

The comparison children enrolled in day care centers had higher IQ scores on the Slosson pretest than did Central Cities children. This was to be expected, as Central Cities children were selected on the basis of deprivation. Generally, the greater the deprivation the greater the likelihood of poor showing on IQ tests. Day care children, although they live in the target area, are from families of a higher socioeconomic level than Central Cities children. Their parents are employed and pay for day care on a sliding scale. Many parents of the Central Cities children are unemployed and on welfare.

Analysis of test results on the two-year-old Project children and Comparison children show that Project children of age two made a mean gain from October to May of 11 IQ points on the Slosson, whereas the Comparison

group lost 3.18 points. Project children showed a mean gain of 44.25 points on the Preschool Attainment Record's Social Subscale. The PAR Social Subscale was not obtained on the day care children. Although the comparison group began the year with higher Slosson IQ scores, posttest scores were not significantly different. Comparison of the Project and Comparison groups on pre- and posttests with pretest Slosson treated as a covariable shows no difference between the groups.

Pre- and posttest results of the three-year-old Project children and the Comparison group show that the Project children made significant gains on the Slosson, Raven, and Auditory Test of Language Comprehension. Project children also made gains on the PAR Social Subscale. The comparison group made significant gains only on the Auditory Test of Language Comprehension. The PAR Social Subscale was not obtained on the day care children.

Although the Comparison group made higher pretest scores on the Slosson and Auditory Test of Language Comprehension than the Project children, the posttest scores were not significantly different. Analysis of covariance between the two groups on the Slosson and Auditory Test of Language Comprehension shows no significant difference between the groups.

Pre- and posttest results for Project and Comparison three-year-old children on the Raven Progressive Matrices show a significant difference between the groups. Among children who had the same initial level of ability on the pretest, the Project children's expected performance level was 3.28 points above the Comparison group.

Children of age four enrolled in the Central Cities project had enrolled at age three or two. Therefore, this was the second or third year of educational intervention for these children. The four-year-old Project children had made significant gains on the Slosson Intelligence and Preschool Attainment Record Social Subscale in prior years; therefore, they did not

show gains this year on these instruments. The four-year-old Project children did show significant gains this year on the Raven Progressive Matrices and Auditory Test of Language Comprehension.

Analysis of covariance revealed no significant differences between the Project and Comparison four-year-old children except on the PAR Social Subscale. There was a significant interaction in that Comparison children who scored low on the pretest Social Subscale scored higher on the posttest than Project children. Conversely, Project children who scored high on the pretest scored higher on the posttest than the Comparison group.

Results of the research on the five-year-old children was of tremendous value due to the three comparison groups.

Significant pre- and posttest gains were achieved by the Central Cities children on the Auditory Test of Language Comprehension, Raven Progressive Matrices, and Test of Basic Experiences. Significant gains had been achieved in prior years on the intelligence test and the PAR Social Subscale; therefore, additional gains were not made on these instruments this year. Prior gains were retained and the pretests of these children were significantly higher than those of the target area comparison groups.

Posttest results show that the Central Cities children were significantly higher than the target area children on the Slosson Intelligence Test and Raven Matrices. They were not significantly different on the Auditory Test of Comprehension and Peabody Picture-Vocabulary Test. The Central Cities children's posttests were not different from the low-income Anglo group on the Slosson and Auditory Test of Language Comprehension. They scored significantly higher than the low-income Anglo group on the Raven, but the low-income group was higher than Central Cities on the Peabody Picture-Vocabulary Test.

When compared to the middle-income group the Central Cities children were significantly lower on all tests.

Use of covariance with the four groups shows a significant interaction when group members had the same initial level of pretest ability on the Auditory Test of Language Comprehension. Project children who scored low on the pretest scored lower on the posttest than the target area, middle-income, and low-income children. Conversely, experimental children who scored high on the pretest scored higher on the posttest than did the target area, middle-income, and low-income children.

Children enrolled in the Central Cities project made significant score increases on measures of cognitive and social development. After three years in the project five-year-old children were significantly higher on tests of mental ability than children from the same area of Fort Worth who received only one year of kindergarten. The Central Cities five-year-old children were not significantly different from the Anglo children from the low income area, but they are still significantly lower than the middle-class children who had completed one year of kindergarten.

The goal of the Central Cities project was to bring the deprived child up to a level at which he could successfully compete in education with his peers from a higher socioeconomic level. Therefore, the project appeared highly successful. After three years the Central Cities children's scores on the Test of Basic Experiences were at the 90th percentile on national norms, on the intelligence test at the 69th percentile, and on the Raven Progressive Matrices at the 75th percentile.

The children from the target area with whom the Central Cities children compete in first grade were significantly lower on the Slosson Intelligence Test and Raven Progressive Matrices.

The mean score for the Central Cities five-year-old children on the Test of Basic Experiences (General Concept) was at the 90th percentile according to the norms given in the test manual, indicating a readiness for first grade work.

The importance of three years of preschool is evident in a comparison of five-year-old Central Cities children and five-year-old target area kindergarten children. Central Cities five-year-olds achieved mean IQ scores of 108 on the Slosson Intelligence Test, the 69th percentile, while the Comparison group had a mean IQ score of 97, at the 43rd percentile for this test. Raven Progressive Matrices mean score for Central Cities children was at the 75th percentile; the Comparison group was below the 50th percentile.

A longitudinal study of the children who had been in the program for two or three years provides evidence of the importance of preschool education at an early age for disadvantaged children. Score gains obtained on the Slosson Intelligence Test are related to the number of years the children spent in school and also their ages at entry. Children who entered the program at age two and continued for three years made a mean IQ gain of 25 points; children who entered at age three and continued for three years gained a mean of 12.74 points; and children who entered at age three and continued for two years made a mean gain of 7.6 points. Therefore, if increased IQ scores are an acceptable criterion for an educational preschool program, intervention should begin at age two or three to be most effective.

OBJECTIVE TWO

Children of Central Cities parents who participated most in parent meetings will achieve greater gains on norm-referenced tests than children of parents who participated least.

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Parent involvement was an important part of the Central Cities preschool program. In order to assess the effect of parent participation on their children's IQ, a correlation was computed which revealed that the amount of parent particpation (attendance at school meetings) was not significantly related to the IQ gains of their children. Gains obtained by the children on other test instruments were not computed.

In 1968-69, there was a tendency for children of parents most highly involved in the parent programs to achieve greater IQ gains than children of parents least involved. Results of this objective would indicate that more effective methods of including parents and also measuring the parent programs should be devised.

OBJECTIVE THREE

Children of teachers who are most successful in achieving the objectives of in-service training programs will show greater gains on evaluation instruments than children whose teachers are less successful.

Staff development in-service to upgrade the skills of the staff was an important part of the Central Cities Program. The Minnesota Teacher Attitude Inventory, the only standardized instrument given to teachers over the three years of the program, measures minimum and not significant changes in teacher attitudes. A correlation study revealed that teacher attitude was not significantly related to the IQ of the children in their classes during the third year of the program.

In 1969-70, significant IQ gains on the Slosson were obtained by students who were placed with teachers who scored low on the MTAI. In general, children in a class of a more authoritative teacher made greater IQ gains than children with less authoritative teachers. The results of

the language test did not reveal this difference. Similar results were also found in 1968-69.

CONCLUSIONS

Three years of research on children who were enrolled in the Central Cities Early Childhood Progr.m supports the following conclusions:

(1) Children enrolled in the Central Cities Early Childhood Program make greater pre-posttest gains on the Slosson Intelligence Test at ages two and three than children of the same ages enrolled in day care centers.

(2) Intervention at ages two and three brings greater score increases on a standardized IQ test than later intervention at ages four and five.

(3) Children achieve significant score gains on IQ tests during their first year of preschool intervention and tend to maintain these gains when preschool intervention is continued.

(4) All experimental and comparison children tested show a decrease in IQ score between the end of kindergarten or preschool and the end of first grade regardless of the economic level or racial composition of the group.

(5) Disadvantaged children show readiness for first grade work after three years of preschool in the Central Cities program.

(6) Children with special learning disabilities, when diagnosed in preschool and given special lessons, can overcome these disabilities as shown by increased scores on the Illinois Test of Psycholinguistic Abilities and Goldman-Fristoe Test of Articulation.

(7) The Central Cities kindergarten curriculum has greater effects on the verbal comprehension of children with high initial verbal

comprehension than the kindergarten curriculum used by the comparison groups. This was true even for the middle-income comparison group.

(8) The Central Cities curriculum has proven effective in increasing observational skills and the intellectual development of children ages three to five.

(9) Disadvantaged children with only one year of kindergarten score below the 50th percentile on all standardized tests given, whereas children with three years at the Central Cities program score above the 60th percentile on all standardized tests.

RECOMMENDATIONS

(1) The Central Cities Program should be continued for disadvantaged children and the curriculum should be extended into other socio-economic levels.

(2) Educational intervention for the disadvantaged should begin at age two or three for maximum effectiveness and should be continuous until school age is reached.

(3) Special learning disabilities should be diagnosed in early childhood and dealt with through special lessons before first grade.

(4) Further study needs to be made regarding the relationship of teacher attitude and level of training to pupil achievement in the Early Childhood Program. Further study also needs to be made regarding the relationship of parent involvement to pupil achievement.