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ABSTRACT

The Basic Skill Centers (BSC) program was developed to help students, primarily from the inner-city Target Area schools of Minneapolis, learn to read. The BSC approach was remedial, and each year more than 700 students, the majority in grades four through six, participated in the program. In 1969-70 the Talking Typewriter was one major aspect of the program. The student spent 20 minutes a day using this teaching machine and received 20 minutes of additional instruction from teachers and aides. In 1970-71 the BSC program was substantially revised. More hardware was used, in addition to the Talking Typewriter, and a multimedia room was developed. The students spent equal time in the multimedia room, on the typewriter, and in the related classrooms. The results for 1969-70 indicated that students did not make gains large enough to help them catch up in reading, nor were their gains better than a comparative group. The results for 1970-71 indicated that the BSC program was more successful, and students were progressing at a rate faster than the average child. Center children made average gains of eight and nine months in vocabulary and reading comprehension over the six-and-a-half month testing span. (Author/WR)

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Minneapolis Public Schools

Basic Skill Centers Evaluation
September 1969 - June 1971

Sara Page Clark, Research Coordinator

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Research and Evaluation Department
Educational Services Division
807 N. E. Broadway
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Minneapolis Public Schools

Basic Skill Centers Evaluation
1969-1971

Summary

Operations and results of the Minneapolis Public Schools' Basic Skill Centers (BSC) from September 1969 to June 1971 are described in this report. The BSC program was developed to help students learn to read. It is aimed at the students from inner-city Target Area schools whose reading is most severely retarded. The BSC approach is remedial rather than developmental.

See p 8, 9, 11

There are two Basic Skill Centers; one on the near North Side, the other on the South Side. The Centers are supported mostly with local funds although some teaching aides are paid with ESEA Title I funds. Each year more than 700 students, the majority in grades four through six, participate in the BSC Regular Day Program.

See p 12 - 15

One major aspect of the BSC operation was the extensive use of Talking Typewriters. In 1969-70 each student spent 20 minutes a day using these computerized teaching machines and 20 minutes in an adjacent classroom where he received additional support from teachers and aides. Another 20 minutes a day was allowed for transportation.

See p 23 - 25

In 1970-71 the Centers' program -- hardware, software and students served -- was changed substantially.

A multimedia room was developed where students worked with tabletop Talking Pages, listening tables, overhead projectors and, in some cases, with Dorsett teaching machines. Students spent equal amounts of time in the multimedia room, on the Talking Typewriters and in the related classrooms, using two of these three facilities each day.

Because first year evaluation suggested gaps in programming and poor validity for the placement tests, both the instructional program and the testing were changed during 1970-71. Minneapolis Schools' personnel developed new software for the Talking Typewriters and other teaching machines, and new support materials for the Centers' classrooms. Related materials for the home school classrooms, to be used on a voluntary basis, also were prepared. Questions were raised about the relevance of the Stanford Achievement Test as a measure of student progress and a switch to the Gates-MacGinitie Reading Test was made.

See p 39 - 40

See p 47 - 50

The student population served also changed. In 1969-70 entire classrooms, including children without reading disabilities, were bussed to the Centers. In 1970-71 only the children determined by their teachers and by tests to be the most severely retarded in reading participated in the program.

See p 42 - 44

Results

In 1969-70, students in the BSC program did not make gains large enough to help them catch up in reading, nor were their gains better than those of a comparative group of children who did not attend a Center.

See p 28 - 33

In 1970-71, after program changes were instituted, mid-year results showed substantial gains in reading progress for BSC students compared with their reading growth in previous years. (No comparison group was available because essentially all Target School severely retarded readers were enrolled in the BSC program.)

See p 51 - 55

Year-end results showed that the progress had continued throughout the year. BSC children, who previously had been learning at a much slower rate than the average child in the national norms, now were learning faster than the average child.

See p 59 - 64

Center children made average gains of eight and nine months (grade equivalents) in vocabulary and reading comprehension over the six-and-a-half month testing span. This rate of growth was substantial for children who had been falling steadily behind their classmates each year so that the typical sixth grader in the program had tested at the third grade level.

The wide scope of changes in BSC operations and evaluation procedures from 1969-70 to 1970-71 made it impossible to attribute reading gains to any specific component of the program. Whatever took place at the Centers during 1970-71 did help the children learn to read, however.

See p 68 - 70

Recommendations to continue the program, with specific attention to component analysis and cost effectiveness, were made.

See p 71 - 72

November 1971

Research and Evaluation Department
Educational Services Division

Table of Contents

List of Tables

Appendix Tables

List of Tables (continued)

About this report. . . . . .

All evaluation reports prepared by the Research and Evaluation Department of the Minneapolis Public Schools follow the procedures and format described in Preparing Evaluation Reports, A Guide for Authors, U. S. Department of Health, Education and Welfare.

Readers who are familiar with these Evaluation Reports may wish to skip the sections describing the City of Minneapolis and the Minneapolis Public Schools since these descriptions are standard for all reports.

This report is organized into four major sections.

First, the context in which the project operated is described (see pp. 2-9).

Next, objectives, project operations, personnel, and dissemination for the two years covered by the report, 1969-70 and 1970-71, are described.

The third section gives details of project operations during 1969-70.

The last section gives details for 1970-71 operations.

A report on the Extended Day Program and the Summer School Program is presented in Appendix A.

Section I Overview - Context of the Project

This section of the report describes the context in which the Basic Skill Centers operated from September 1969 through June 1971.

First, a brief picture of the City of Minneapolis is given. This is followed by a description of the Minneapolis Public Schools.

Finally, the historical background of the project is presented.

The City of Minneapolis

The program described in this report was conducted in the Minneapolis Public Schools. Minneapolis is a city of 434,400 people located on the Mississippi River in the southeastern part of Minnesota. With its somewhat smaller twin city, St. Paul, it is the center of a seven county metropolitan area of over 1,874,000, the largest population center between Chicago and the Pacific Coast. As such it serves as the hub for the entire Upper Midwest region of the country.

The city, and its surrounding area, long has been noted for the high quality of its labor force. The unemployment rate in Minneapolis is lower than in other major cities, possibly due to the variety and density of industry in the city as well as to the high level capability of its work force. The unemployment rate in May of 1971 was 4.7%, compared with a 6.2% national rate for the same month. As the economic center of a prosperous region rich in such natural resources as forests, minerals, water power and productive agricultural land, Minneapolis attracts commerce and workers from throughout the Upper Midwest region. Many residents are drawn from the neighboring states of Iowa, Wisconsin, Nebraska and the Dakotas as well as from the farming areas and the Iron Range region of outstate Minnesota.

More Minneapolitans -- three out of 10 -- work in clerical and sales jobs than in any other occupation, reflecting the city's position as a major wholesale-retail center and a center for banking, finance and insurance. Almost as many (27%) are employed as craftsmen, foremen and operatives, and one out of five members of the work force are professionals, technicians, managers, and officials. Fewer than one out of five (17%) workers are employed in laboring and service occupations.

Minneapolis city government is the council-dominated type. Its mayor, elected for a two year term, has limited powers. Its elected city council operates by committee and engages in administrative as well as legislative action.

Minneapolis is not a crowded city. While increasing industrial development has occupied more and more land, th· city's population has declined steadily from a peak of 522,000 in 1950. The city limits have not been changed since 1927. Most homes are sturdy, single family dwellings built to withstand severe winters. Row homes are practically nonexistant even in low income areas. In 1970, 48% of the housing units in Minneapolis were owner-occupied.

Most Minneapolitans are native born Americans, but about 35,000 (7%) are foreign born. Swedes, Norwegians, Germans, and Canadians comprise most of the foreign born population.

Relatively few nonwhite citizens live in Minneapolis although their numbers are increasing. In 1960 only three percent of the population was nonwhite. The 1970 census figures indicate that the nonwhite population has more than doubled (6.4%) in the intervening 10 years. About 70% of the nonwhites are Black. Most of the remaining nonwhite population is American Indian, mainly Chippewa and Sioux. Only a small number of residents from Spanish-speaking or Oriental origins live in the city. In 1970 nonwhite residents made up 6.4% of the city's population but accounted for 15% of the children in the city's elementary schools.

Minneapolis has not yet reached the stage of many other large cities in terms of the level of social problems. It has been relatively untouched by racial disorders or by student unrest. Crime rates are below national averages. Continuing concern over law and order, however, is still evidenced

by the election in 1969 and the re-election in June 1971 of Mayor Charles Stenvig, a former police detective.

One's first impression is that Minneapolis doesn't really have serious problems of blight and decay. But the signs of trouble are evident to one who looks beyond the parks and lakes and tree-lined streets. As with many other large cities, the problems are focused in the core city and are related to increasing concentrations there of the poor, many of them nonwhites, and of the elderly. For example, nine out of 10 Blacks in Minneapolis live in just one-tenth of the city's area. While Minneapolis contains 11.4% of the state's population, it supports 27% of the state's AFDC families. In addition, more than one out of every four school children in Minneapolis now is living in a low income (Title I criteria) home.

There has been a steady migration to the city by American Indians from the reservations and by poor whites from the small towns and rural areas of Minnesota. They come to the "promised land" of Minneapolis looking for a job and a better way of life. Some make it; many do not. In 1967 the city supported one out of 10 of the state's American Indians who were on relief; in 1969 the city supported three out of 10. The American Indian population is generally confined to the same small geographic areas where the Blacks live. Estimates of the Indian unemployment rate vary, but range as high as 60%. These same areas of the city have the lowest median incomes in the city and the highest concentrations of dilapidated housing, welfare cases, and juvenile delinquency.

The elderly also are concentrated in the central city. In 1970, 15% of its population was over age 65. The elderly, like the 18 to 24 year old young adults, live near the central city because of the availability

of less expensive housing in multiple-unit dwellings. Younger families have continued to migrate toward the outer edges of the city and surrounding suburban areas.

The Minneapolis Schools

About 78,700 children go to school in Minneapolis. Most of them, about 64,200, attend one of the city's 99 public schools; 14,500 attend parochial or private schools.

The Minneapolis Public Schools, headed by Dr. John B. Davis, Jr., who became Superintendent in 1967, consists of 69 elementary schools (kindergarten-6th grade), 15 junior high schools (grades 7-9), nine high schools (grades 10-12), two junior-senior high schools, and five special schools. Over 3,700 certificated personnel are employed.

Control of the public school system ultimately rests with the seven-member School Board. These nonsalaried officials are elected by popular vote for staggered six year terms. The Superintendent serves as the Board's executive officer and professional adviser, and is selected by the Board.

The system's annual operating general fund budget in 1971 was $72,784,887 up from $62,385,985 in 1970 and $56,081,514 in 1969. Per pupil costs were $715 in 1970. The range of per pupil costs in the state for 1970 was from $387.00 to $908.00. The range of per pupil expenditures for school districts in the seven-county metropolitan area was $536 to $820 with a mean expenditure of $645.[1] Almost 40 cents of each local property tax dollar goes for school district levies. The School Board is

[1] Per pupil cost is the adjusted maintenance cost from state and local funds and old federal programs, exclusive of transportation, per pupil unit in average daily attendance for the 1968-69 school year. Source of these figures is Minnesota Education Association Circular 7071-C2 Basic Financial Data of Minnesota Public School Districts, February, 1971.

a separate governmental agency which levies its own taxes and sells its own bonds. Minneapolis also received federal funds totaling 4.2 million dollars in 1970-71 from many different federal aid programs. The Elementary and Secondary Education Act provided about 2.9 million dollars of which 2.5 million dollars was from Title I funds.

One of the Superintendent's goals has been to achieve greater communication among the system's schools through decentralization. Consequently two "pyramids" or groups of geographically related schools have been formed. First to be formed, in 1967, was the North Pyramid, consisting of North High School and the elementary and junior high schools which feed into it. In 1969 the South-Central Pyramid was formed around South and Central High Schools. Each pyramid has an area assistant superintendent as well as advisory groups of principals, teachers, and parents. The goals of the pyramid structure are to effect greater communication among schools and between schools and the community, to develop collaborative and cooperative programs, and to share particular facilities and competencies of teachers.

In 1970-71 there were 22 elementary schools, four junior highs, three senior highs, and five parochial schools serving children in areas eligible for programs funded under Title I of the Elementary and Secondary Education Act (ESEA). The federal criteria for selecting these schools are based on economic factors, in particular the number of families receiving AFDC or having incomes under $2,000. About 20,000 children attend these public and parochial schools. Of that number, about one-third of the children have nonwhite backgrounds, and one-third are defined by the State Department of Education as educationally disadvantaged, i.e. one or more grade levels behind in basic skills such as reading and

arithmetic. Federal programs are concentrated on the educationally disadvantaged group.

Based on sight counts on October 20, 1970 the percentage of Black pupils for the school district was 9.9%. Six years before the proportion was 5.4%. American Indian children currently comprise 3.7% of the school population, more than double the proportion of six years ago. The proportion of minority children in the various elementary schools generally reflects the prevailing housing pattern found in each school area. Although some nonwhite pupils are enrolled in every elementary school, nonwhite pupils are concentrated in two relatively small areas of the city. Of the 69 elementary schools, 11 have more than 30% nonwhite enrollment and five of these have over 50%. There are no all-black or all-white schools. Thirty-three elementary schools have nonwhite enrollments of less than 5%.

The proportion of school age children in AFDC homes has almost doubled from approximately 12% in 1962 to 23% in 1971.

Turnover rate is the percent of students that come in new to the school or leave the school at some time during the school year (using the September enrollment as a base figure). While the median turnover rate for all the city schools in 1969-70 was about 22%, this figure varied widely according to location. Target Area schools generally experienced a much higher turnover rate; in fact only two of the Target Area schools had turnover rates less than the city median. Compared with the city, the median for the Target Area schools was almost twice as large (41%).

Historical Background

Results from the citywide testing program for the Target Area schools had indicated a great need for trying a new approach to the remediation of reading deficiencies. Dr. John B. Davis, Superintendent of Minneapolis Public Schools, asked a group of four reading specialists which included representatives from the Target Area elementary, secondary, administrative and Federal Projects levels to go to Brooklyn, New York, to study the "Talking Typewriter" program. When compared with other approaches which had been investigated, it seemed to have the greatest potential for providing a highly structured and skill oriented program which would allow each child to progress at his own learning rate while acquiring the necessary basic skills for reading.

On March 12, 1968, the Board of Education authorized the Administration to develop a program at two Basic Skill Centers which would include the Talking Typewriter, more accurately known as the Edison Responsive Environment Learning System. This system consists of a special typewriter, audio components (speaker and recorder), exhibitor (on which typed characters or words appear), and an automatic projection unit (for pictorial interpretation of the words). These units are combined by a compact computer to provide the primary sensory responses of sight, sound, and touch. These units, combined with a programming system, create a "responsive environment" in which the student experiences success since the typewriter is controlled so that only correct typed responses to the audio instructions can be made.

The Sullivan Programmed Reading Materials, published by The Behavioral Research Laboratory, were recommended by the Responsive Environment Corporation (REC) as the most effective software to be used with the

Typewriters. These materials consisted of four introductory programs followed by 20 Sullivan books or levels. REC had programmed the materials from Book 1 through Book 8 for the Typewriter; books 9-12 and introductory materials were programmed by the Basic Skill Centers' staff using, essentially, the format of the REC models. Enrichment materials also were programmed by the Centers' staff.

The Basic Skill Centers began partial operation in July 1968. The first two months were used to train staff as well as to work with students who needed remedial reading. During this time plans were made for the school year 1968-69, the first full year of operation. (An Extended Day Program, which admitted students from the entire city, was added in October 1968. It ran five days a week from 3:30 p.m. to 6:30 p.m.)

Meetings were held for staff and community to explain the program. A film, slides, and discussions were used in these presentations. An inservice program was conducted for participating schools in August 1958. Approximately 50 teachers attended a detailed explanation of the program and curriculum. Open houses were held for community organizations, residents, PTA groups, and Minneapolis teachers so they could see the Centers and meet the staff.

Since this was a new approach to teaching reading a few teachers preferred not to become involved, although most of them were very interested in the project. Some problems which existed at the beginning of the program involved transportation of students, adjusting schedules, and changing their programs. None proved unsolvable.

Section II Overview

Section II presents information on the Basic Skill Centers for the period September 1969 through June 1971.

Included in this two-year picture is a list of project objectives, general project operations, personnel, and dissemination and communications procedures.

Section II gives a rather general picture of those aspects of the project which spanned the two years.

Details for 1969-70 operations are presented in Section III and details for 1970-71 are presented in Section IV.

Objectives

The general goal of the program was to provide an individualized approach to teaching the necessary basic skills for reading to children from Target Area schools. These schools had large percentages of students who were reading one or more years below grade level. Measurable objectives included raising the reading achievement of the children as measured by standardized tests. Length of time in the program was considered a relatively unimportant factor in the evaluation since each child was allowed to progress at his own learning rate.

In 1968-69 the two primary objectives of the program at the Basic Skill Centers were stated:

1. Children who meet the entry requirements of having poor reading skills will "break the reading code" and learn to read with significantly greater success.

2. Children who use the machines (Talking Typewriters) will take on a better attitude toward school and improve in other school work as well as in reading.

In the fall of 1970, the goals were further specified to include the following:

1. To combine use of context clues with recognition of initial consonants. Implied:

   a. Inclusion of words in listening, thinking, speaking vocabulary

   b. Letter knowledge in both upper and lower case

      (1) consonant phoneme-grapheme relationships

      (2) short vowel phoneme-grapheme relationships

2. To combine use of context clues with recognition of linguistic patterns or visual analysis clues

   a. consonant blends and digraphs
   b. phonograms and diphthongs
   c. reading in thought units, or phrasing
   d. most common inflected endings: s, ed, ing
   e. compound words
   f. roots and affixes: ly, er, est, y, prefixes, etc: (regular)
   g. phonetically irregular beginnings and endings and affixes with root changes
   h. syllabication, with pattern emphasis rather than rule emphasis

3. To comprehend sentences and paragraphs

Project Operations

There were two Basic Skill Centers. The South Center operated in the basement of an insurance company at 2500 Park Avenue South. Custodial expenses were included as part of the rent. The North Center was situated in a nonschool building purchased by the School Board. Its address was 1306 Plymouth Avenue North. Both Centers were air conditioned, partly because the Talking Typewriters would not operate above a given temperature and also to provide an improved learning environment for the children.

There were ten Talking Typewriters housed in 4'x 6' booths at each Center. One additional machine at the South Center was used for the development of new programs. Within the soundproof booth the learner is confronted with two visual systems and two audio systems. Responses are made by typing and speaking. When the learner types, his printed response is visible on the Typewriter paper. Spoken responses could be recorded and then played back with the student's words compared to a model recording.

Outside each booth is a control panel. This monitoring equipment includes a telephone intercom hook-up through which the booth attendant can listen or talk to the student. An instrument control panel can be adjusted by the attendant, under the advice of the teacher, to control and tabulate the responses of the student.

When a child first goes to the Talking Typewriter, it is set so he can explore the keyboard freely. Whenever a key is struck, the Typewriter types the letter and pronounces the name of the letter. At the end of every line the Typewriter carriage returns automatically. The keyboard is

color-coded to assist beginners in locating letters. In the programmed phase, all incorrect keys are blocked; therefore, only the correct response can be made. The student experiences success continuously at his own rate of learning.

Each Center also had two classrooms where the students worked on their individual programs with the assistance of a teacher and aides. In the classroom there were five aides for ten children; in the laboratory one aide was assigned to every two machines.

Further reinforcement of reading skills presented by the Sullivan program was made through the use of other teaching machines. In January 1970, the Talking Page, another REC innovation, was introduced. It consists of a series of booklets and records which present phonic principles of beginning reading. The Language Master was added to the program in early Spring 1970. Cards with pictures, words, or short phrases and sentences are run through this machine. Each card has a two-track tape on it. The first track has the teacher's presentation of a word or phrase on it. The student's response is recorded on the second track. The student then compares the two tracks and, if necessary, repeats his response. Since both tracks are erasable the cards can be used over and over. Also, the Center staff can construct new cards with pertinent or remedial material when needed.

In the 1970-71 school year, multimedia rooms were set up to house the Talking Pages, Language Masters, record players, overhead projectors, and listening tables. Three Dorsett machines, with the Dorsett software, were added to provide experience transitional to the schools' developmental programs. Five aides worked with ten children at a time in this room under

the supervision of the certificated staff.

Since the REC automated Sullivan (BRL) Levels 1 through 8 weren't sufficient to accomodate the ability range of the students attending the Centers, four additional levels as well as introductory materials were programmed by the Center staff in 1968-69. The first year's research indicated a need for more vocabulary building so "enrichment programs" at various Sullivan levels were written and automated for building vocabulary and reinforcing specific skills. Parts of the Reading Attainment System also were automated for increasing vocabulary and comprehension skills. Both these enrichment programs were suitable only for children who were reading at level 5 or above in the Sullivan materials, so a beginning reading series, teaching a basic sight vocabulary, also was automated.

Each school day in 1969-70, students came in groups of 20 to the Centers for 40 minute periods. There were ten periods five days a week in the regular day program. (The extended day program of four periods met four days a week).[1] At the Centers, students were divided into two groups of ten and spent half their time on the machines and the other half in the classrooms. Teachers in the lab assigned typewriter programs to the students which were coordinated with their work in the Center classrooms. Teachers also assigned enrichment and special help programs to students who needed them. The classroom teachers supervised the students' work in the Sullivan books, giving individual help and selecting activities designed to improve specific skills. Teachers worked together to diagnose and evaluate each student's needs and progress.

In 1970-71, thirty students per period at each Center were scheduled so that during any given week their time was divided equally among the class-

[1] See Appendix A for report

room, multimedia room, and the Talking Typewriter. Over a month's time the students averaged 13 minutes a day at each of the stations though on any given day they spent 20 minutes at each of two stations. There were ten periods five days a week in the Regular Day Program. (The Extended Day Program was cut to one period three days a week).

Each student received individual assistance every day from his teacher or aide, who discussed his progress with him. He kept a record of his test scores and each day took home a "type-out" which showed the work he had done on the Talking Typewriter.

Dissemination and Communications

Information about the project and its purpose first was made available to the principals of the participating schools. Mimeographed flyers also were widely distributed. More elaborate illustrated brochures were distributed to the schools and community agencies. The Basic Skill Centers program was described in Federal Programs in the Minneapolis Public Schools (1969) which has had nationwide distribution.

There have been announcements in both the School Bulletin and local newspapers when open houses were being held at the Centers. Posters and flyers announcing an experimental adult program were placed in the offices of community agencies and businesses. An additional effort was made to reach the nonreading adult through the use of spot announcements on radio and a TV interview with films shown on the Community News Program.

All the administrators and teachers can and have made presentations of the project. Various photographs, exhibits and slides are available for talks given outside the Center. An average of two groups a week has been conducted through each Center. These visitors have included teachers, parents, legislators, college students, school administrators, businessmen and groups from other countries.

Since the first year's operation was somewhat of a pilot study, no extensive report was distributed, although a one-page abstract was made available to members of the American Educational Research Association during their convention in February, 1970. About 80 AERA members took the opportunity to tour the Centers at that time. This report covers the second and third years of operation.

Evaluation

Evaluation results for 1969-70 are described in Section III. The 1970-71 evaluation is given in Section IV.

A chronology of the evaluation effort from July 1968 through June 1971 is given in Appendix B.

Section III Overview - The 1969-70 Regular Day Program

Section III describes the operations and results of the Basic Skill Centers' Regular Day Program during 1969-70.

Included is a description of the project schools and the students involved.

Detailed project operations are given and the 1969-70 budget is presented.

Evaluation results, a discussion, and recommendations also are given.

1969-70

Regular Day Program

The Project Schools

Children served by the Basic Skill Centers in 1969-70 came from eight elementary and four junior high schools in Minneapolis. Of the elementary schools, four were in the North Pyramid (Bethune, Hall, Hay, and Willard) and three were in the South-Central Pyramid (Clinton, Greeley, and Adams). Field elementary was not in either Pyramid.

The four North Pyramid elementary schools drew their pupils primarily from the Near North community. This community had substantial economic and social problems--far more than the city as a whole. Data from the 1960 census, the Crime Prevention Bureau, and the Hennepin County Welfare Board showed that unemployment, divorce, delinquency, and neglect cases were well above the city average; median school years completed were well below the city average. Some 60% of the housing was renter occupied, and approximately a quarter of the housing was unsound or dilapidated in 1960. A visual inspection of the area showed that with some notable exceptions the housing had continued to deteriorate over the past 10 years.

Two of the North Pyramid elementary schools had been built since 1960; two were built between 1905 and 1910. Total school enrollments for the 1969-70 school year ranged from 402 at Hall to 987 at Willard. All these schools had a high proportion of nonwhite students. Hay, with 74% nonwhite pupils, ranked highest in the city. Willard and Bethune ranked second and third,

with about 60% nonwhite students. Approximately one-third of Hall's pupils were nonwhite, although minority groups accounted for only 13% of the pupils enrolled in the entire Minneapolis school system. The proportion of children from AFDC families was high in these schools, ranging from 43% at Hay and Willard to 64% at Bethune, which ranked highest in the city. Turnover of students was higher in Target Area schools, with Hall School's turnover rate of 61% one of the highest in the city. (Percentage of turnover was derived by totaling the number who entered and left and dividing by the average yearly enrollment.) Turnover rates for the other three schools ranged from 35% to 50%.

The three South-Central Pyramid elementary schools in the Basic Skills project drew their pupils primarily from the South Target Area of the city. The area was similar in socioeconomic status to the North Target Area, although median school years completed and unemployment were closer to the city averages in 1960. All three of these South-Central elementary schools were built prior to 1900. Adams, the oldest school in the city, was built in 1875. Enrollments for the 1969-70 school year were 328 for Adams, 376 for Clinton, and 646 for Greeley. About 40% of the students at Adams and Clinton were nonwhites, while the nonwhite percentage at Greeley was 30%. Close to one-half the children at Adams and Clinton and one-third at Greeley came from AFDC families. The mobility of many families in the community was reflected in a turnover rate of 54% at Clinton.

Field elementary school is located just south of the South Target Schools in an area with a relatively high concentration of nonwhite residents. The school, built in 1920, had a student enrollment of 657 during the 1969-70 school year; 53% were nonwhite. Data from 1960 showed

the area to be more stable than either the South or North Target communities. Unemployment at that time was slightly less than the city average, while median number of school years completed was slightly above the city average. Only one out of five of the housing units were renter occupied, and the percentage of unsound and dilapidated housing in 1960 was well below that for the city as a whole. This relatively greater stability was reflected by a turnover rate of 28% at Field, and the fact that only 18% of the children enrolled there during 1969-70 came from AFDC homes.

Of the four junior high schools served by the program, Jordan and Franklin were in the North Pyramid, Phillips was in the South-Central Pyramid, and Sheridan was not in either Pyramid, although it was one of the Title I Target Area schools in 1969-70.

Franklin drew students from Hall and Bethune elementary schools, and its characteristics were similar to theirs. Of the 437 students enrolled during the 1969-70 school year, one-half were from families receiving AFDC. Nonwhite students comprised 31% of the population. The physical plant, built in 1917, was in poor condition and was replaced by a new building in 1971.

Phillips Junior High drew students from Adams, Greeley, and Clinton elementary schools in the South Pyramid, and consequently was similar to them in having a relatively high proportion of nonwhite students (27% and also many students from AFDC families (36%). Built in 1926, the school had an enrollment of 799 for 1969-70.

Jordan Junior High's students came from schools other than the eight

elementary schools in the program. It was a large school, with over 1,200 pupils. One in five came from AFDC homes. Less than 2% of the students were nonwhite. Sheridan Junior High also had a low proportion of nonwhites (6%) and approximately one in five of the students came from AFDC families. The enrollment for 1969-70 was 632.

Citywide testing for the fall of 1969 showed that the fifth grade medians on reading comprehension for the eight project elementary schools were well below city average, ranging from the 15th to the 43rd percentile on Minneapolis norms. From 44% to 98% of the children in the various schools were reading one or more years below their grade levels.

No other concentrated reading programs in the schools and grades served by the Basic Skill Centers existed in 1969-70. Programs which might have had some effects on small numbers of children included Youth Tutoring Youth, Special Learning Disability Reserve Teachers (SLDR), and Women in Service to Education (WISE) volunteers. "Books and Goodies Clubs", an after school activity which provided special new reading materials and snacks, were formed at Bethune, Field, and Willard schools. The American Book Company materials were used in grades K-3 in both the North and South Pyramid Schools. These materials may have had a systematic effect on about one-third of the children in the Comparison Groups. However, the Comparison Group children at grade four and above were exposed to a variety of materials so no constant biases were introduced.

1969-70

Project Operations

This section covers the Regular Day Program of ten periods lasting from 8:40 a.m. to 3:30 p.m. for the school year 1969-70. A total of 703 students was registered at the Centers in the Regular Day Program. This total includes all students who attended, including those who were enrolled for only short periods of time. Students in the program were inner-city children in grades 2-9. Many had experienced a great deal of failure in normal school situations. Almost all were below grade level in reading.

Since the Sullivan (Behavioral Research Laboratory) Materials in Reading formed the basis of the program, the Sullivan placement test and teacher recommendations were used to determine which students might benefit most from the program. Selection of the children was made by the participating schools. Originally, elementary children who placed at or below Sullivan level 6 and junior high students who placed at or below level 8 were admitted to the program. However, since intact classrooms attended the Centers, some students who could read at a higher level than the original selection criteria were involved in the program. These students worked on advanced Sullivan programs in the classroom and on enrichment materials on the Typewriters.

A comparison group of 161 students from several of the schools participating in the program was identified in the fall of 1969. These comparison

students were pre- and posttested on the same schedule as were those in the program but they were not enrolled at the Centers. Only 97 of these students were usable for comparison, however, due to attrition and because 10 of them eventually were sent to the Basic Skill Centers.

Classes at the Centers were in session for 165 days. The Centers started a little later in the fall than did the regular schools; a teachers' strike also shortened the program somewhat. Although the time span between pre- and posttests was seven months, the average attendance of those on roll for the whole school year was 128 days, or about six school months. A relatively high turnover rate is reflected in the fact that the average attendance of all those enrolled at any time was only 75 days. Over half of those who remained for the full year were from third and fourth grades while those from the junior high schools tended to stay for shorter periods of time.

The ratio of boys to girls was about three-to-two. Roughly 20% of the students had attended the Basic Skill Centers at some time previously.

The Stanford Achievement Tests, Form W, were used as pre- and posttests. Students were given Primary I if they scored at or below level 4 on the Sullivan placement test and Primary II if they scored at or above level 5 on the placement test.

The Primary I sections (as described by the publishers) which were used were:

a. Word Reading. Measures the ability of a pupil to analyze a word without the aid of context.

b. Paragraph Meaning. A functional measure of the child's ability to comprehend connected discourse ranging in length from single sentences to paragraphs of six sentences and involving levels of comprehension varying from extremely simple recognition to the making of inferences from several related sentences.

c. Vocabulary. Measures a pupil's vocabulary independent of his reading skills.

The Primary II sections used were:

a. Word Meaning. Measures the ability of a pupil to read a sentence and to select a correct word to complete the sentence.

b. Paragraph Meaning. Similar to the Paragraph Meaning section of Primary I, but at a higher level of difficulty. The test authors have attempted to emphasize the notion of "reading as reasoning" and genuine comprehension of the materials read in the subtest.

Primary I is designed to be given in grade 1, and Primary II is intended for grades 2 and 3. These tests were selected because standardized tests designed for the grade levels of the children attending the Centers were too difficult for them; many of them scored below chance. Because the Stanford tests were standardized on grades 1-2 for Primary I and grades 1-4 for Primary II, on national normative distributions, the use of grade equivalents is not strictly appropriate. All analyses in this report were made using raw scores. Although grade equivalents are given for various averages, they should be viewed with caution.

1969-70

Budget

Three funding sources, Title I ESEA, State of Minnesota, and the local school district, financed this program. Funds were administered by the Administrator of the Basic Skill Centers. None of the funds were used for start-up purposes during this second year of operation of the program.

The budget was adequate for the Regular Day Program; additional money was made available to expand the program to the Extended Day and Evening-Saturday Programs.

The estimated expenditures reported here were based on 79.2% of the total year's Regular Day costs since this report covers only the period from September 1, 1969 to June 12, 1970. The summer of 1969 is not included.

Account	Expenditure	% of Total
Salaries	$182,278.19	41.03%
Supplies	14,243.00	3.20
Equipment	5,254.67	1.18
Furniture	390.14	.09
Rental	220,350.24	49.59
Transportation	19,162.36	4.31
Utilities	2,655.04	.60
Total	$444,333.64	100.00%

The program cost $8.56 per pupil for each 40 minute period. This figure was obtained by dividing the total cost of the program by the total number of pupil periods spent at the Centers (the total number of students enrolled multiplied by the average number of days present). The average per pupil cost for the school year was $640.25. This figure is more difficult to interpret than the per pupil period attendance figure since the range of days present was from less than 10 to over 150, with a mean attendance of 75 out of a possible 165 days.

Evaluation Results

The groups referred to in this report are as follows:

a. Experimental Group (N=195) included all students who were pre- and posttested at least seven months apart with the Stanford Primary Achievement Tests. This group was, at times, divided between the North and South Centers. For the statistical analyses it was, of necessity, divided by the level of the tests which were taken (Primary I or Primary II). All students in the Experimental Group were included in the Total Group.

b. Comparison Group (N=97) included students from the same schools as the above group who did not attend the Basic Skill Centers in 1969-70. Comparison students also were divided by the level of the tests which they took.

c. Total Group (N-704) included all students who were registered at any time in the Regular Day Program at either of the Basic Skill Centers regardless of whether they ever were tested. This group was used primarily as the base for descriptive data concerning the population which the Centers served.

The grade level distribution of the Total, Experimental, and Comparison Groups is shown in Table 1. Individual distributions for North and South Centers also are given.

Results of the pre- and posttesting for the Statistical and Comparison

Table 1

Student Distribution by Grade Level and Group

1969-70

Grade	Total Group N=704						Experimental Group N=195						Comparison Group N=97	
	North Center		South Center		Total		North Center		South Center		Total			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
2			26	9.2	26	3.7			1	1.1	1	.5		
3	34	8.0	96	34.2	130	18.5	20	19.0	38	42.3	58	29.7	24	24.8
4	70	16.6	29	10.3	99	14.1	35	33.4	12	13.3	47	24.1	51	52.6
5	64	15.1	20	7.2	84	11.9	10	9.5	5	5.6	15	7.7	11	11.3
6	82	19.4	28	10.0	110	15.6	20	19.0	11	12.2	31	15.9	11	11.3
7	86	20.3	67	23.8	153	21.7	12	11.5	20	22.2	32	16.4		
8	69	16.4	7	2.5	76	10.8	4	3.8	1	1.1	5	2.6		
9	10	2.4	4	1.4	14	2.0	4	3.8	1	1.1	5	2.6		
10 & over	4	.9			4	.6			1	1.1	1	.5		
Not Known	4	.9	4	1.4	8	1.1								
Totals	423	100.0	281	100.0	704	100.0	105	100.0	90	100.0	195	100.0	97	100.0

38

groups are shown in Tables 2 and 3. Analysis-of-covariance, which adjusted for the differences in the pretest means of the two groups, was used to test the differences found on the posttests (Appendix, Tables A-5 and A-6).

Correlational studies (Appendix, Tables A-7, A-8, A-9, A-10, and A-11) were run among the following variables: pretest, posttest, number of Sullivan levels gained, number of days present, and time spent on the Talking Typewriter. The pre- and posttest, which correlated highly with each other, showed some relationship to the number of Sullivan levels through which the students progressed. Time spent on Sullivan materials on the Talking Typewriters was significantly correlated with the number of Sullivan levels gained and with the number of days present. The correlation between time on Sullivan materials on the Typewriter and days present was much higher at the South Center than at the North Center indicating that the latter group spent more time on "enrichment materials" since students were sent to the Typewriters every day. No other correlations were significant. The lack of relationship between the number of days present and the number of Sullivan levels gained would indicate that the pupils indeed were progressing at their own rates.

Students in the Total Group at the North Center showed an average attendance of 62 days (out of a possible 165) compared with 94 at the South Center. Two factors accounted for most of this difference. At the North Center one whole classroom withdrew after the first five weeks of classes and there was a larger turnover at semester time. At the North Center 18% of the students entered the program at some time after the

Table 2

Stanford Primary Achievement Test Results, Primary I, Form W
Raw Scores (R.S.) and Grade Equivalents (G.E.)
(Pre- and posttests given seven months apart)
Experimental and Comparison Groups, 1969-70

Test and Group	Pretest N	Pretest Mean R.S.	Pretest S.D.	Pretest G.E.	Posttest Mean R.S.	Posttest S.D.	Posttest G.E.	Adjusted Posttest[a] Mean R.S.	Adjusted Posttest[a] G.E.	G.E.[b] Gain	Top Possible R.S.	Top Possible G.E.
A. Word Reading											35	3.6
Experimental	142	24.77	7.65	2.0	28.27	6.15	2.3	28.73	2.4	.3		
Comparison	64	27.20	7.69	2.2	29.94	5.56	2.5	28.91	2.4	.3		
								Not significant				
B. Paragraph Meaning											38	4.0
Experimental	142	22.48	11.09	1.8	28.44	9.08	2.1	29.17	2.2	.3		
Comparison	64	26.53	10.76	2.0	30.80	9.01	2.4	29.23	2.2	.3		
								Not significant				
C. Vocabulary											39	5.5+
Experimental	142	26.15	6.78	2.4	29.46	6.14	2.9	29.56	3.1	.7		
Comparison	64	26.45	7.16	2.4	30.91	6.12	3.3	30.77	3.3	.9		
								Significant Difference				

[a]Covariance adjustment for pretest mean differences
[b]Calculated from the grade equivalent of the pretest grand mean

Table 3

Stanford Primary Achievement Test Results, Primary II, Form W
Raw Scores (R.S.) and Grade Equivalents (G.E.)
(Pre- and posttests given seven months apart)
Experimental and Comparison Groups, 1969-70

Test and Group	Pretest N	Pretest Mean R.S.	Pretest S.D.	Pretest G.E.	Posttest Mean R.S.	Posttest S.D.	Posttest G.E.	Adjusted Posttest[a] Mean R.S.	Adjusted Posttest[a] G.E.	G.E.[b] Gain	Top Possible R.S.	Top Possible G.E.
A. Word Meaning											36	7.5+
Experimental	53	22.74	6.69	3.3	25.38	6.70	3.6	26.30	3.7	.2		
Comparison	33	26.03	5.91	3.7	28.82	5.33	4.2	27.33	3.8	.3		
								Not significant				
B. Paragraph Meaning											60	7.5+
Experimental	53	32.66	12.00	3.0	39.83	11.14	3.5	42.03	3.7	.6		
Comparison	33	41.48	12.18	3.6	46.42	8.36	4.2	42.90	3.9	.8		
								Not significant				

[a]Covariance adjustment for pretest mean differences

[b]Calculated from the grade equivalent of the pretest grand mean

semester break whereas only 8% of the South Center's students enrolled that late in the year. This turnover is reflected in the fact that 423 students enrolled in the North Center's Regular Day Program at some time or other while only 281 did so at the South Center. The average attendance of the Experimental Group at the South Center also was higher than at the North Center, though not significantly so.

The reasons given for leaving the Centers reflect, among other things, the differences in record keeping at the two Centers (Table 4). Reasons were unavailable for only 6% of the students at the North Center but were not recorded for 19% of the South Center students. The fact that 62% of the pupils on the South side left because the school year ended and only 48% of those on the North side left for the same reason reflected the high turnover rate at the North Center. This difference also was reflected by the percentages who left because of "Parent, Teacher, or School Request." On the South side only 7% of the pupils fell in this category, whereas 27% of the North side students did so. The percentage who left because they moved or transferred is about what might be expected in Target Area schools. Since the posttests were given in May, the small percentage of students in the Statistical Group who left for reasons other than "End of School Year" were essentially in attendance for the whole year.

Table 4

Reasons for Leaving the Centers
1969-70

Reason	Total Regular Day N=704						Experimental Group N=195					
	North		South		Total		North		South		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Not Available	24	5.7	54	19.2	78	11.1	2	1.9	4	4.4	6	3.1
Finished Course Before End of Session	9	2.1	2	.7	11	1.6	4	3.8			4	2.0
End of School Year	203	48.0	175	62.3	378	53.7	92	87.6	82	91.2	174	89.3
Moved or Transferred	49	11.6	27	9.6	76	10.7	2	1.9	1	1.1	3	1.5
Suspended, Expelled, Detention, Behavior	9	2.1	2	.7	11	1.6						
School Excuse, Homebound	2	.5			2	.3						
Wanted to Return to Home School	6	1.4			6	.8						
Poor Attendance	8	1.9	1	.4	9	1.3						
Parent, Teacher or School Request	113	26.7	20	7.1	133	18.9	5	4.8	3	3.3	8	4.1
Total	423	100.0	281	100.0	704	100.0	105	100.0	90	100.0	195	100.0

1969-70

Discussion

"The more one observes new programs such as Title I reading programs, the more one sees that they do not fit into an easy mold for evaluation...the resulting combination of hardware, software, and personnel is usually stirred together in so big a pot that pinpointing the cause of success or failure defies the evaluation specialist." (Smith, Carl B. p. 66)[1] An additional variable, that of transporting the children to different physical surroundings from those of their home schools, also was added to our melting pot. It must be emphasized that this is a report of the results obtained from the impact of the total program at the Basic Skill Centers, not merely the Talking Typewriters. If it had been possible to evaluate the variables separately it might have been found that some of them contributed to gains in the reading achievement of the attending students whereas others hindered improvement. Other variables which might have affected the results but which were not evaluated for various reasons include the motivation of the students, their reading potentials, their oral language backgrounds, the presence of physical or mental handicaps, parents' attitudes toward reading, and the measuring instruments themselves.[2]

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[1] Farr, Roger (Ed.) Measurement and Evaluation of Reading. New York: Harcourt, Brace and World, 1970.

[2] A research proposal, which sought funds to separate out the variance attributable to the different components of the Basic Skill Centers, was developed by the Research and Evaluation Department and the American Institutes for Research. The proposal was not funded.

The personnel (both paraprofessional and certificated) were dedicated to their work with the children and enthusiastic about the possibilities of the program. Two of the certificated staff were remedial reading specialists and the others were experienced elementary reading teachers. In view of the fact that, in general, smaller gains were made at the North Center where certificated staff changes were made in the middle of the year, it is quite possible that the personnel did indeed have an effect on the growth of the children.

The software which was the backbone of the program, the Behavioral Research Laboratory Sullivan Reading Program, received a thorough evaluation. It had been felt that there were gaps in the software which the staff had tried to fill with enrichment materials but there still was doubt as to its effectiveness. Since progress checks, but no final examinations, were provided with the program, it was decided to readminister the placement test to all the children at the end of the year and compare the results with the levels at which the children were actually reading in the classroom. Great discrepancies were found. Although only 14% of the students were reading Sullivan materials below Level 5, 71% of them scored below Level 5 on the placement test, when given at the end of the year, with 37% scoring at introductory level. Some of these discrepancies might be attributed to the test itself since a number of the pictures used as cues were either unclear or not part of the children's experiential background. Nevertheless, it seemed that the program was not teaching what it purported. Because of these findings any evaluation of the Basic Skill Centers' program in terms of Sullivan levels gained would be meaningless.

Sections of the reading battery of the Stanford Achievement Tests, Primary I and II, were used as standardized pre- and posttests. Since the objectives of the program had been globally stated and the curriculum had not been evaluated at the time of the selection of these measures, questions can be raised concerning the appropriateness of the tests for evaluation purposes.

It often has been charged in the educational research literature that standardised reading tests are unreliable and invalid for most educationally disadvantaged school children. Probably individually administered tests, rather than group tests, would have been more appropriate but the time and expense that would have been required for testing the 704 children who passed through the Centers in the Regular Day Program prohibited that approach.

On the basis of the posttests, adjusted for the pretests, the only significant difference found between the Statistical Group and the Comparison Group showed the latter group to be superior on the Vocabulary section of the Stanford Achievement Test, Primary I. This result was consistent with the findings of previous studies done at the Centers.

Individual gain scores were not tabulated for several reasons. The children were given either Primary I or Primary II on the basis of their Sullivan placement scores. This placement procedure was found to be unsound; up to 40% of the students who took Primary I could not have shown one year's gain because they scored too near the top of the test. The student's attitude toward test-taking also made individual gain scores unreliable in a number of cases, an extreme example being the pupil who

had a pretest raw score of 45, but whose posttest score was only 15.

The lack of statistically significant results obtained does not necessarily condemn the total program. In fact, it is typical of many if not most of the evaluations of such broad, remedial and innovative education programs. The staff felt that many of the children made good gains in reading achievement which the tests were not measuring. A number of recommendations given in the following section were implemented in the 1970-71 school year in the hopes of not only improving the program but also of being able to show its worth with "hard data."

1969-70

Recommendations

1. Behavioral objectives for the Basic Skill Centers should be developed in as much detail as possible.

2. The software, or curriculum materials, should be examined to see if they are consistent with the objectives. If discrepancies are found, new materials must be written to fill in the gaps.

3. Tests should be developed to find out how closely the end results match the original objectives. Such tests should be criterion referenced in which case levels of acceptable performance need to be set. Mastery of the basic skills of reading rather than time spent in learning them would be assessed.

4. Until criterion referenced tests are available, the Gates-MacGinitie Reading Tests should be used rather than the sections from the Stanford Primary Achievement Tests for standardized group testing. There are several levels of the Gates-MacGinitie available so that an appropriate one (usually designed for about two grades below the child's actual grade) can be chosen for the individual child. Also, these tests are used in the citywide testing program so that comparison with different grade levels on Minneapolis norms can be made. This procedure was adopted for 1970-71.

5. An effort should be made to determine each child's reading poten-

tial and his actual reading performance level. If the difference between these two is appreciably smaller at the end of the year, indicating a rise in rate of learning, the remediation aspects of the program may be assumed to have been effective. Although some indications of reading potential may be obtained from the cumulative records, more individual testing would be necessary. Possibly time and staff considerations would limit this approach.

6. Efforts should be made to improve attendance. Intact classrooms should not be sent to the Centers; rather, mixed groups from most of the Target Area schools should attend. In that way a child who moved within (or between) these areas could continue the program.

7. In order to isolate the effect of the Talking Typewriters from the software and the other media approaches, differential scheduling of the children would have to be done. So far this scheduling has seemed administratively infeasible.

Section IV Overview - The 1970-71 Regular Day Program

In Section IV, details for the 1970-71 Basic Skill Centers' operations and results are given.

First, the Regular Day Program is described. This description includes criteria for student selection and a depiction of the schools and students involved.

The 1970-71 budget is presented.

Changes from previous operations are explained in a section called "Innovations in Instructional Materials."

Tests used for evaluation, and evaluation results, then are given. Evaluation results are described in two parts. An interim or midyear evaluation, covering the period of September 1970 to February 1971, is given first, followed by the full year evaluation, September 1970 to June 1971.

Student reactions to the Centers are described.

Finally, a discussion of results is given and recommendations are presented.

1970-71

Regular Day Program

Program Operations

Student Selection Criteria

Procedures for selecting students varied by Center during 1970-71. In the North Center, participating schools listed all possible candidates for the program based on teachers' judgments. The Sullivan Placement Test then was given and an item analysis was made of each test since it had proven unsatisfactory for placement purposes during the previous year. Children who had I.Q.'s of less than 80 or who were in SLDR classes or whose past reading scores were not much below actual grade level were excluded from the program in general. Those few low I.Q. children who did attend were not included in this report. Upon arrival at the Center, students were given an individual oral placement examination based on the Basic Phonics Series.

The Gates-MacGinitie Reading Tests were given as standardized pretests. Primary B (designed for second grade) was given to the elementary grade students. Primary C (designed for third grade) was given to the junior high students. If a student came within two grade levels of the top of the test he was given the next higher level. Students who scored high in all these tests were sent back to their home schools and replacements in greater need of remediation were found.

At the South Center students were selected by the teachers at the home schools. Children had to be one or more years below grade level in reading. This was most often determined by use of the informal reading test based on the American Book Company's reading series. In two schools the Sullivan Placement Test was given to children in grades 4, 5, and 6. In the eight remaining schools, the recommended children went to the Center where they then were given the Sullivan Placement Test. Students who scored too high, generally above level 6, were returned to their home schools.

1970-71

Schools and Students Involved

Seventeen elementary and three junior high schools participated in the program. With the exception of Bremer and Field elementary, all schools were from the inner-city Target Area. Students at North Center came from Bethune, Bremer, Hall, Harrison, Hawthorne, Hay, Lowell, and Willard elementary schools and from Franklin and Jordan Junior High Schools. At the South Center they came from Adams, Bancroft, Field, Irving, Lyndale, Madison, Mann, Seward, and Whittier elementary schools, and from Phillips Junior High School. The students were drawn from grades 4-6 at the elementary level and mostly from the 7th grade in the junior high schools.

Three elementary schools and one junior high school did not reach the

desired racial balance suggested by the Minneapolis Board of Education's Human Relation Guidelines for the 1970's in that their majority group enrollment exceeded the percentage (87%) of majority group enrollment in the district. The remaining schools all had higher percentages of minority group enrollment than that set (26%) as desirable in the Guidelines. Five of the latter schools drew over half their students from minority groups. The percentage of children coming from AFDC families in these schools ranged from 26% in one of the non-Target Area schools to 76% in a Target Area school.

About 60% of the children were boys. Although the average age of the pupils at each of the Centers was 10 years, the distributions of actual grade levels differed between the Centers. Sixth grade children comprised one-fourth of the group at the South Center, but only 2% at the North Center. The South Center drew 10% of its group from the junior high school level while the North Center drew 20% from those grades. The North Center also had more students (79%) from grades four and five than did the South Center (65%). One-third of the North Center's group had attended a Basic Skill Center previously compared with about one-sixth of the South Center group.

Due to the method of selection and the number and kind of schools involved, no appropriate comparison groups were available. The poorest readers from all the Target Area schools were sent to the Centers. While there may have been other pupils in the city who might have benefitted from the program, no other schools were comparable in socioeconomic level to those in which the BSC pupils were enrolled.

1970-71

Budget

Funds for the Basic Skill Centers from July 1, 1970 to June 30, 1971 were provided by the local school district, the State of Minnesota, and Title I of the Elementary and Secondary Education Act of 1965. The federal funds, which provided 17% of the total expenses, were used to cover the costs of teacher aides and evaluation. All funds were administered by the Administrator of the Basic Skill Centers. None of the money was used for start-up purposes in this third year of operation of the program.

Expenditures reported here include those for the entire school year's program, i.e., 1970 Summer School, 1970-71 Regular Day, and 1970-71 Extended Day Programs.

The program cost $8.87 per 40 minute pupil period (50 minute in Summer School). This figure was obtained by dividing the total cost of the program by the total number of pupils in attendance each period in all sessions. An average cost per pupil would be meaningless since the sessions differed in length and the attendance of the students ranged from 1 to 156 days present.

1970-71

Expenditures

Account	Expenditure	% of Total
Salaries	$280,566.82	45.99%
Supplies	34,391.45	5.64
Rental:		
Talking Typewriters	249,360.00	40.88
2500 Park Avenue South	18,060.00	2.96
Transportation	23,010.00	3.77
Utilities	4,630.00	.76
Totals	$610,018.27	100.00%

1970-71

Innovations in Instructional Materials

The Sullivan (BRL) program of instruction was, as it had been in previous years, the curriculum core. However, during 1970-71 many changes and additions were made in the basic materials. Completely new introductory materials were written, a different set at each Center. Each of these programs was about twice as long as the original introduction.

Supplementary materials were developed for Sullivan (BRL) Levels I through IX. The first of these units was added in January 1971, but the last half of them was not available until near the end of the school year. Materials which were used in the classroom and which the children could take home with them included related story booklets, word family and comprehension work sheets, and T-scopes (a manual version of the tachistoscope). Games, such as "Concentration" and block games, were developed for use in the multimedia room. Programs with instruction in word families were automated for the Talking Typewriter.

A variety of follow-up materials was developed for use by the classroom teachers at the home school. These included word lists, suggested related activities, exercise sheets, practice word cards, take-home book-

lets, and a variety of games.

Flow charts specifying the objectives of the Centers' program at each level were developed. The new materials supplemented the Sullivan program to provide a unified complete approach to the stated goals.

1970-71

Tests Used

The Gates-MacGinitie Reading Tests were used for both pre- and posttesting. In general, Primary B (designed for second grade), Form 2, was used for the elementary students and Primary C (designed for third grade), Form 2, was used for the junior high students. If a pupil scored within two grade levels of the top of Primary B on the pretest, he was retested with Primary C. These were not the tests designed for the grade levels in which the children were enrolled, but they more nearly matched the actual reading level of the students who had averaged, depending on grade, from 1.0 to 3.3 years below grade level on their last citywide testing. Both levels had two subtests: Vocabulary and Comprehension. According to the publishers,

> The Vocabulary test samples the child's ability to recognize or analyze isolated words. The Comprehension test measures the child's ability to read and understand whole sentences and paragraphs. This ability includes many skills not involved in the mere ability to recognize words. The child must grasp the total thought if he is to answer correctly.

Although children entered and left the program at various times during the year, every effort was made to ensure that they received both pre- and posttests.

The Basic Skill Centers served 1,229 students from June 1970 to June 1971. Of these students, 701 were in the Regular Day Program. Gain scores on the Gates-MacGinitie Reading Tests were obtained for two-

thirds (460) of these 701 students. The remaining third included those who were in the program such a short time that they were not pretested and those who left for various reasons before they were posttested. Of the latter group, about one-fourth moved out of the schools being serviced and another fourth left because of parent or teacher request.

Since an analysis of results by grade level and by test level within each Center would have resulted in numbers too small to be meaningful, the results reported here are by test level across grades and Centers. The results are differentiated for "Group B" (N=280) and "Group C" (N=180) according to which level of the test was taken.

1970-71

Regular Day Program

Interim Evaluation

September 1970 to February 1971

The program at the Basic Skill Centers for the school year 1970-71 differed in some respects from the one used in previous years. The innovations included new introductory programs, supplements to Books 1-5 of the Sullivan materials, and a multimedia room which had Talking Pages, Language Masters, listening tables, overhead projectors, and a variety of program-oriented games.

In response to the school administration's request for current information to present to the State Legislature, an interim evaluation was conducted at the end of the first semester.

Students Involved in the Report

A random sample of all students on roll in the Basic Skill Centers in February 1971 who had entered with their classes in the fall was selected. The sample consisted of half the eligible students present on the days the tests were administered. Two sampled students in each of the 10 class

periods were randomly drawn to be tested individually. The rest were given the test in a group setting. The individual testing was done by a highly qualified and independent test administrator hired from the University of Minnesota. This small study was conducted to see if there were differences between individual and group testing since all the late entrants and early withdrawals were, of necessity, tested individually. No statistically significant differences between children tested individually and in groups were found so the results which follow include all the children tested in February.

A total of 177 students were tested, including both Centers. The North Center group had more males (68%) than did the South Center group (50%). Although there were two junior highs participating in the program at the North Center and only one at the South Center, more Primary C's (64) were given at the South Center than at the North Center (14). This was because more students, primarily sixth graders, from the South Center "topped" Primary B and were retested with Primary C. The North Center had only nine pupils from sixth grade enrolled during the whole year.

For purposes of analysis the group was divided according to which form of the test was taken rather than by Centers.

The children who took Primary C were, on the average a year older and two grades above those who took Primary B. Their 4th grade Lorge-Thorndike scores were higher, and they had had slightly better attendance this year at the Basic Skill Centers than those who took Primary B. They also had started at a higher level in the Sullivan program at the Centers than had those who took the Primary B test.

Analyses Performed

Two questions were asked:

1) What gains had been made by the students compared with the gains they had been making previous to attendance at the Centers?
2) Was it possible to identify variables which differentiated those who made large gains from those who made little or no gain?

The answer to question one showed that the students at the Centers had gained at a rate considerably above their previous rates. The city-wide testing results of these students on the Gates-MacGinitie were used for establishing previous growth. Those who had last taken the test in third grade had been about a year below grade level, those who had last taken it in fifth grade had been about two years below grade level, and those who had last taken it in sixth grade had been nearly three years below grade level. However, in the three-to-four month attendance span covered by this report, the students who took Primary B gained, on the average, six months on both the Vocabulary and Comprehension sections of the test. Those who were given Primary C gained three months in Vocabulary and five months in Comprehension.

In general, it was impossible to identify variables which would differentiate those who would benefit most from the program. After cor-

recting for pretest scores, the third of the students who made the greatest gains were then compared with the third who made the smallest (including negative) gains on several variables. No differences were found between the two groups with respect to sex, grade level in school, or Center attended. Both the top and bottom groups had been below grade according to their scores on the last Gates-MacGinitie given to them in the city-wide testing program. However, those with the smallest gains had been farther below in Comprehension than had the students with the largest gains. Only one significant difference was found between the two groups on fourth grade Lorge-Thorndike scores. The top third of the students from the Gates, Form B, Comprehension distribution had had significantly higher Lorge-Thorndike Verbal scores. However, the difference was not such that the Lorge-Thorndike scores could be used for selecting individual students for the program.

There were no significant differences in pretest, posttest, or gain scores between those children who had been in the Minneapolis school system their entire academic lives and those who had transferred in after the first grade.

Conclusions

From October 1970 to February 1971 a 50% random sample of eligible

students at the Basic Skill Centers gained in Vocabulary and Comprehension tests at a rate greater than they had been prior to entering the program. These results may be generalized to apply to all students attending the Basic Skill Centers.

It was not possible, using a number of different variables, to identify those students who might benefit most from the program.

1970-71

Year-End Results

The interim evaluation conducted at the beginning of 1971 posed some problems for the full year evaluation. Since students were tested in February and again in May, with the same test, the possibility of a practice effect existed.

Year-end evaluation took the possibility of a practice effect into consideration. Year-end test scores of students who had been tested in February (a randomly selected 50%) were compared with test scores of that half of the student population which had not been tested in February. Differences between the tested and the not tested groups were negligible; therefore, final results are based on the entire population of students attending the Centers.

In brief, the gains exhibited in February held up for the full year. Students at the Centers continued to make gains in Comprehension and Vocabulary far beyond what might have been expected of them, based on their previous rate of growth.

Groups B and C (named for the level of the Gates-MacGinitie test which was taken) both made gains well above what would have been expected from looking at their records in the years previous to their attendance at the Basic Skill Centers. Both groups had been on roll at the Centers for an average of 25 weeks or .65 of the school year, yet they made grade equivalent gains of .8 and .9 of a year in Vocabulary and Comprehension. (The pre- and post- means were calculated with raw scores, then converted to grade equivalents.) In the past these students had been falling behind

in reading nearly half a year for every year they had been in school. Although most of these students would probably still be somewhat below grade level, many of them, especially in Group C, certainly had reached a functional level of reading by the end of the school year (Table 5).

(Group B (N=280) was, on the average, 9.6 years old and in the 4.5 grade. Group C (N=180) was a little over a year older and a grade more advanced. Group B completed an average of 3.4 Sullivan levels while Group C finished 6.2 levels. The smaller number of levels completed by Group B is in part explained by the fact that 67% of them started in the Introductory level of the program which is twice as long as the other levels. In comparison, only 27% of Group C started with the Introductory materials).

Since the number of days present showed no significant relationship with grade equivalent gains, the average attendance was used to make comparisons of time on roll and grade equivalent gains. The distribution of gain scores (Tables 6 and 7 show Vocabulary and Comprehension gains for Group B; tables 8 and 9 for Group C) bore out the above findings but the pretest-posttest time span varied for the individuals. The 4% to 10% who showed no gain may have been among those students with shorter enrollments. It is known, however, that the pretest-posttest span was not more than 8 months yet 25% of Group B and 35% of Group C showed gains of more than 1.5 grade equivalents on the Comprehension tests with 16% of both groups showing gains of over 2 years. According to teachers' judgment, the Vocabulary sections of the tests were not so closely related to the curriculum of the Centers as were the Comprehension sections yet about 12% of both groups showed gains of over 2 years in the 8 months or less between their pre- and posttests.

Tables 6 - 9 show gain score distributions for all Regular Day students regardless of general mental ability as well as distributions for Regular Day students excluding those students with low I.Q.'s. Since the program was not designed basically for extremely low I.Q. students, program administrators felt that including these children in test results would mask gains made by those students for whom the materials were considered more appropriate.

Comparisons of the two distributions, those with and those without low I.Q. children, revealed little difference between the two. Thirty-two low I.Q. children were included in the program although some efforts were made to exclude them in the fall. Gains made by these children were substantial but not as high as gains made by the other children.

For all practical purposes, average gains in reading for the BSC students were uninfluenced by the inclusion of low I.Q. students. Nevertheless, all analyses reported in this section are based on Regular Day students excluding the low I.Q. children.

Pearsonian correlations were run among grade, sex, number of days present, age, grade equivalent gains in both Vocabulary and Comprehension tests, and number of Sullivan levels completed. The number of days present at the Centers correlated significantly with the number of Sullivan levels completed, i.e., the students with higher attendance rates tended to complete more of the Sullivan materials. Correlations among other variables were generally low and not significant.

An interim evaluation, which was not part of the original research design, had been conducted in February 1971 at the request of the school administration. Since the same tests had been used on about 50% of the

children at that time there was a possibility that the gains reported above had been artificially inflated. However, according to a median test, there was no significant difference in the gains made from September to May between the group which had been tested in February and those who had not been tested. The February group, on all tests, made slightly greater gains, but the difference, which may have reflected a practice effect, was negligible.

Table 5

Basic Skill Centers
Summary 1970-71

Gates-MacGinitie Level B (N=280)

	Pretest Mean Raw Score	Pretest Grade Equivalent	Posttest Mean Raw Score	Posttest Grade Equivalent	Grade Equivalent Gain
Vocabulary	25.4	2.2	34.6	3.1	+.9
Comprehension	13.9	1.9	21.8	2.7	+.8

Average number of weeks on roll: 25.2
Average days present: 96.8
Average days absent: 18.0
Average age: 9.6 years
Average grade: 4.5
Average number of Sullivan levels completed: 3.4

69

Gates-MacGinitie Level C (N=180)

	Pretest Mean Raw Score	Pretest Grade Equivalent	Posttest Mean Raw Score	Posttest Grade Equivalent	Grade Equivalent Gain
Vocabulary	28.4	3.1	34.9	3.9	+.8
Comprehension	21.0	2.8	30.4	3.7	+.9

Average number of weeks on roll: 25.4
Average days present: 101.0
Average days absent: 15.1
Average age: 10.9 years
Average grade: 5.7
Average number of Sullivan levels completed: 6.2

This table is based on all regular day students who took both the pre- and posttests, excluding 23 students who, on the basis of the Stanford-Binet or WISC, were identified as having I.Q.'s of 80 or less.

Table 6

Grade Equivalent Gains Distributions
Gates-MacGinitie Reading Test, Level B
Vocabulary
1970-71

Grade Equivalent Gains	Regular Day Students Excluding Those with Low I.Q.'s* N	%	Cum. %	Total Regular Day Students Including Those with Low I.Q.'s N	%	Cum. %
+3.1 to +3.5	3	1.1	1.1	3	1.0	1.0
+2.6 to +3.0	5	1.8	2.9	5	1.7	2.7
+2.1 to +2.5	25	8.9	11.8	25	8.5	11.2
+1.6 to +2.0	31	11.1	22.9	33	11.1	22.3
+1.1 to +1.5	56	20.0	42.9	61	20.6	42.9
+1.0	15	5.3	48.2	15	5.1	48.0
+ .9	14	5.0	53.2	16	5.4	53.4
+ .8	21	7.5	60.7	21	7.1	60.5
+ .7	14	5.0	65.7	15	5.0	65.5
+ .6	6	2.2	67.9	8	2.7	68.2
+ .5	17	6.0	73.9	17	5.8	74.0
+ .4	17	6.1	80.0	19	6.4	80.4
+ .3	16	5.7	85.7	16	5.4	85.8
+ .2	12	4.3	90.0	12	4.1	89.9
+ .1	10	3.6	93.6	11	3.7	93.6
.0	7	2.5	96.1	8	2.7	96.3
- .1 to - .5	8	2.8	98.9	8	2.7	99.0
- .6 to -1.0	2	.7	99.6	2	.7	99.7
-1.1 to -1.5	1	.4	100.0	1	.3	100.0
Totals	280	100.0%		296	100.0%	

Median: +.9 Grade Equivalent Gain

* 16 students were identified as having I.Q.'s of 80 or below on either the Stanford-Binet or WISC test.

Table 7

Grade Equivalent Gains Distributions
Gates-MacGinitie Reading Test, Level B
Comprehension
1970-71

Grade Equivalent Gains	Regular Day Students Excluding Those with Low I.Q.'s* N	%	Cum. %	Total Regular Day Students (Low I.Q. Students Added) N	%	Cum. %
+3.6 to +4.0	3	1.1	1.1	3	1.0	1.0
+3.1 to +3.5	7	2.5	3.6	7	2.4	3.4
+2.6 to +3.0	7	2.5	6.1	7	2.4	5.8
+2.1 to +2.5	27	9.6	15.7	27	9.1	14.9
+1.6 to +2.0	27	9.7	25.4	29	9.9	24.8
+1.1 to +1.5	52	18.5	43.9	56	18.9	43.7
+1.0	10	3.6	47.5	10	3.4	47.1
+ .9	19	6.8	54.3	20	6.8	53.9
+ .8	15	5.3	59.6	15	5.1	59.0
+ .7	11	4.0	63.6	11	3.7	62.7
+ .6	15	5.3	68.9	15	5.1	67.8
+ .5	4	1.5	70.4	5	1.7	69.5
+ .4	16	5.7	76.1	16	5.4	74.9
+ .3	14	5.0	81.1	15	5.1	80.0
+ .2	14	5.0	86.1	14	4.8	84.8
+ .1	10	3.5	89.6	12	4.0	88.8
.0	14	5.0	94.6	17	5.8	94.6
- .1 to - .5	11	4.0	98.6	12	4.0	98.6
- .6 to -1.0	2	.7	99.3	2	.7	99.3
-1.1 to -1.5	2	.7	100.0	2	.7	100.0
-1.6 to -2.0						
Totals	280	100.0%		295	100.0%	

Median: +.9 Grade Equivalent Gain

*15 students were identified as having I.Q.'s of 80 or below on either the Stanford-Binet or WISC test.

Table 8

Grade Equivalent Gains Distributions
Gates-MacGinitie Reading Test, Level C
Vocabulary
1970-71

Grade Equivalent Gains	Regular Day Students Excluding Those with Low I.Q.'s* N	%	Cum. %	Total Regular Day Students Including Those with Low I.Q.'s N	%	Cum. %
+3.1 to +3.5	2	1.1	1.1	2	1.1	1.1
+2.6 to +3.0	9	5.0	6.1	9	4.7	5.8
+2.1 to +2.5	8	4.5	10.6	8	4.3	10.1
+1.6 to +2.0	11	6.1	16.7	12	6.4	16.5
+1.1 to +1.5	34	18.9	35.6	35	18.6	35.1
+1.0	11	6.1	41.7	12	6.4	41.5
+ .9	6	3.3	45.0	6	3.2	44.7
+ .8	14	7.8	52.8	14	7.4	52.1
+ .7	12	6.6	59.4	13	6.9	59.0
+ .6	9	5.0	64.4	9	4.8	63.8
+ .5	7	3.9	68.3	7	3.8	67.6
+ .4	10	5.6	73.9	12	6.3	73.9
+ .3	4	2.2	76.1	4	2.2	76.1
+ .2	8	4.5	80.6	8	4.2	80.3
+ .1	8	4.4	85.0	8	4.3	84.6
.0	9	5.0	90.0	10	5.3	89.9
- .1 to - .5	10	5.6	95.6	11	5.8	95.7
- .6 to -1.0	6	3.3	98.9	6	3.2	98.9
-1.1 to -1.5	2	1.1	100.0	2	1.1	100.0
Totals	180	100.0%		188	100.0%	

Median: +.8 Grade Equivalent Gain

*8 students were identified as having I.Q.'s of 80 or below on either the Stanford-Binet or WISC test.

Table 9

Grade Equivalent Gains Distributions
Gates-MacGinitie Reading Test, Level C
Comprehension
1970-71

Grade Equivalent Gains	Regular Day Students Excluding Those with Low I.Q.'s* N	%	Cum. %	Total Regular Day Students (Low I.Q. Students Added) N	%	Cum. %
+3.4 to +4.0	1	.6	.6	1	.5	.5
+3.1 to +3.5	3	1.6	2.2	3	1.6	2.1
+2.6 to +3.0	7	3.9	6.1	7	3.7	5.8
+2.1 to +2.5	18	10.0	16.1	18	9.6	15.4
+1.6 to +2.0	34	18.9	35.0	35	18.6	34.0
+1.1 to +1.5	32	17.8	52.8	33	17.6	51.6
+1.0	8	4.4	57.2	9	4.8	56.4
+ .9	5	2.8	60.0	5	2.6	59.0
+ .8	9	5.0	65.0	9	4.8	63.8
+ .7	6	3.3	68.3	7	3.8	67.6
+ .6	6	3.4	71.7	6	3.1	70.7
+ .5	4	2.2	73.9	4	2.2	72.9
+ .4	8	4.4	78.3	10	5.3	78.2
+ .3	9	5.0	83.3	9	4.8	83.0
+..2	7	3.9	87.2	7	3.7	86.7
+ .1	3	1.7	88.9	3	1.6	88.3
.0	6	3.3	92.2	7	3.7	92.0
- .1 to - .5	9	5.0	97.2	10	5.3	97.3
- .6 to -1.0	4	2.2	99.4	4	2.2	99.5
-1.1 to -1.5						
-1.6 to -2.0	1	.6	100.0	1	.5	100.0
Totals	180	100.0%		188	100.0%	

Median: +1.1 Grade Equivalent Gain

*8 students were identified as having I.Q.'s of 80 or below on either the Stanford-Binet or WISC test.

Student Questionnaire

Six questions pertaining to the Basic Skill Centers were asked of a random sample consisting of about two-thirds of the students in attendance at both Centers on January 25, 1971. Although the questions and possible answers were read aloud to the students so no reading problems were involved, each student had the complete questionnaire in front of him. Students were told not to put their names on the papers, but to record their responses on them. The first four questions had possible responses of: YES yes no NO. It was explained the "YES" and "NO," which were read emphatically, showed strong feelings, whereas "yes" and "no," read with less emphasis, meant a "little bit" yes or no. If the pupils knew what answers they wanted, but were unsure how to mark them, aides helped them mark but gave no other assistance. For purposes of this report the categories were collapsed, combining YES and yes as well as NO and no.

Results

When asked, "Do you like coming to the Center?," 83% of the children replied Yes although only 60% of them had said that they liked read-

ing class in school last year. More children (24%) at the South Center disliked coming to the Center than at the North Center (10%).

Although these children were one or more years below grade level in the citywide reading tests, 60% of them felt that they had been good readers last year. However, 91% of them felt that they were now better readers.

When asked which of the three parts of the Center they liked best -- the classroom, multimedia room, or the Talking Typewriter -- the multimedia room (46%) was the clear favorite, especially at the South Center (53%). Twenty-nine percent of the students liked the classroom best and 25% preferred the Talking Typewriter.

However, the students felt that the classroom (53%) helped them most to be better readers, especially at the North Center where 63% felt the classroom helped them most. The multimedia room received 28% of the votes and the Talking Typewriters received 19% of the votes. See Table 10.

Discussion of Student Questionnaire

It would be interesting to explore these latter findings. Are they due to a stereotype, which says a classroom is where you go to learn? Are they because new materials first were introduced in the classrooms? Does the increased individual attention, due to the large number of aides, make the difference? Is having fun seen as a nonlearning situation? At this point, we can only wonder.

Table 10

Basic Skill Centers

Student Questionnaire, January 25, 1971 [a]

Question	Response	North Center N	North Center %	South Center N	South Center %	Total Group N	Total Group %
1. Do you like coming to the Center?	Yes	130	90	101	76	231	83
	No	15	10	31	24	46	17
2. Did you like reading class at school last year?	Yes	83	58	80	61	163	60
	No	60	42	51	39	111	40
3. Were you a good reader last year?	Yes	90	62	76	57	166	60
	No	55	38	57	43	112	40
4. Are you a better reader now?	Yes	134	92	119	90	253	91
	No	11	8	14	10	25	9
5. Which part of the Center do you like best? [b]	Cl. Rm.	48	33	32	24	80	29
	MM	58	40	70	53	128	46
	TT	38	27	30	23	68	25
6. Which part of the Center helps you most to be a better reader?	Cl. Rm.	91	63	54	41	145	53
	MM	23	16	54	41	77	28
	TT	30	21	23	18	53	19

[a] Answered by a random sample comprising two-thirds of those in attendance. The questions were read aloud to the students. Four response categories were collapsed for this table.

[b] Cl. Rm. means Class Room; MM means Multi-Media room; TT means Talking Typewriters.

1970-71

Discussion: Full Year Evaluation

The program at the Basic Skill Centers consisted of a multimedia approach to remedial reading. Visual, auditory, and, to a much smaller extent, tactile stimuli were presented to the pupils not only by the Talking Typewriters but also in the multimedia room and in the classroom. The many-faceted program was aimed at affecting the students in three areas: (1) Cognitive domain, in that they would achieve a higher level of comprehension in reading, (2) Affective domain, in that they would have a greater liking for reading, and (3) Psychomotor domain, in that they would be able to make coordinated responses to the printed word by typing, writing, or game playing.

In this third year of the Centers' operation, the results of changes in and additions to the program could be seen. Some of the outcomes could be measured objectively, others had to be subjectively reported.

The Gates-MacGinitie tests which were used in 1970-71 were more closely related to the curriculum developed at the Centers than were the Stanford Primary Achievement tests used previously. It is possible that the change in tests somewhat affected the year's results. However, it could be that greater gains would have been observed in the earlier years of the program had more appropriate tests been used. At any rate, the average gains for 1970-71 showed a rate of growth in reading well above that which the students previously had been achieving.

Responses to the student questionnaire given in January indicated a strongly favorable attitude toward going to the Centers and that students felt they were much better readers than they had been the year before they attended. The Centers' teachers noted that the pupils borrowed more paperback books as the year progressed. This increased interest also was mentioned by several of the home school teachers. The take-home "mini-stories" produced by the Centers were popular.

Positive changes in the psychomotor domain would not be so noticeable in reading as in some other activities. However, improvement was seen in that the students made far fewer letter reversals at the end of the year than they had at the beginning, according to Center teachers.

Comparison groups were not used in 1970-71 for two reasons. Since the program was based on individualized instruction, an acceleration in rate of growth seemed a more meaningful measure for these retarded readers than a comparison with other poor readers who might have been retarded for other reasons. Even if diagnoses of reading difficulties had been available, it would not have been possible to find comparison groups which could match those attending the Centers. The students selected for the Centers' program were the lowest achievers in reading from all 20 Title I inner-city schools. Another such group did not exist in Minneapolis.

The individualized nature of the program was borne out by the low correlations between days present and grade equivalent gains which were observed. Not every child learns at the same rate. The Centers' students apparently benefitted from the individualized pacing and assistance which they received.

The program at the Centers was not intended for the mentally retarded. Although some efforts were made in the fall to exclude them, 32 children later were identified as having I.Q.'s of 80 or lower on individual intelligence tests. The analyses in this report excluded those children. A supplementary analysis which did include the low I.Q. children revealed results similar to those reported. They did in fact make gains, but less so than those on whom this report is based.

The Basic Skill Centers' total program for 1970-71 was quite effective in terms of the goals which had been set for it. It is impossible to pinpoint specific variables responsible for its success, but the approach used in developing the program seems to have worked.

Recommendations

1. Continue the program at the Basic Skill Centers since the year's results showed it to be highly effective in terms of its objectives. An attempt should be made to differentiate the effects of the various components of the program. A cost analysis then could be conducted.

2. Continue the use of the Gates-MacGinitie tests for Comprehension, but discontinue the Vocabulary tests. Although the students made good gains in Vocabulary, a teacher analysis of the tests showed them to be less closely related to the Centers' program than desirable.

3. Use the Word Study Skills sections of the Stanford Primary Achievement tests. These sections test, at both Levels I and II, the auditory perception of beginning and ending sounds. Level I tests phonics and phonograms with auditory stimuli, whereas Level II uses visual stimuli for the same purpose.

4. Level C of the Gates-MacGinitie Comprehension test should be used for sixth graders as well as for junior high students. In 1970-71 over 50% of the sixth grade students who had taken the lower Level B came within two years of the top of the test.

5. Level II of the Stanford test also should be used at sixth grade and above, with Level I being used for fourth and fifth grades.

6. Feedback should be provided for participating schools. The progress at the Centers, in most cases, provides almost all of the students' reading instruction. In 1970-71 such information was provided at the end of the year and was greatly appreciated.

7, Continue, at both Centers, the screening selection process used at the North Center in 1970-71 in an effort to identify those children most in need of remedial help.

8. In the fall of 1971, after the citywide testing, conduct a follow-up study of those students who were in fourth, fifth, and seventh grades in 1970-71 to see how they compare with their peers.

Appendix A

Extended Day Program

and

Summer Programs

1969-70

Extended Day Program

The Basic Skill Centers offered an Extended Day Program of 4 periods after regular school hours. Enrollment was not restricted to the inner-city public schools. Students who attended came from more than 40 different schools, 10 percent of which were parochial. Turnover of students was high. The average attendance of the 400 students who were registered at some time during the year was only 29 days compared with an average of 75 days for the total Regular Day group. By December 1, 1969, 84 of the 260 students who had enrolled by that time already had dropped out.

Only 37 students completed both the pre- and posttests. Since these were divided between two levels of tests the numbers of students were too small to make any meaningful observations concerning results.

Several of the parents of the students who attended for the whole year were enthusiastic about the progress which their children had made. It is suggested that greater cooperation of the parents with the Basic Skill Centers is needed to make this program successful.

1970-71

Extended Day Program

A limited Extended Day Program was conducted in 1970-71. One 50 minute period was held three times a week. A total of 87 children were enrolled at one time or another. The average attendance was for 38 out of a possible 100 days. Forty-two percent of the pupils had previously been enrolled at the Centers at some time or other.

About half the students entered the program at the introductory level. An average of nearly three Sullivan (BRL) levels was completed by the total group.

Pre- posttest results were available for 24 students on the Gates-MacGinitie, Level B, test and for 25 on the Level C test. These numbers are small for making generalizations. However, grade equivalent gains of over .4 were made on both the Vocabulary and Comprehension sections of the tests. These gains were made in about .25 of the school year since this group had averaged 46 days in attendance. The students in the Extended Day Program thus made better than expected gains for the time they were present although their rate of growth was not so rapid as that of the students in the Regular Day Program.

1970

Summer School

Summer School at the Basic Skill Centers ran for 6 weeks from June 27 through August 31. There were six 45 minute periods on each of the 29 days that classes were held. The average attendance of the 409 students who enrolled was 17 days. This included 58 children who attended only a week or less. Enrollment was open to students from all schools in the city. About 15% of the pupils came from parochial schools. Most of the students came from the same grade levels as those in the Regular Day Program, that is grades 4 through 8. Over one-fourth of the students had previously attended the Centers.

Nearly half the students began the program at the introductory --or very lowest--level. More than half of those enrolled completed one or more levels in the Sullivan (BRL) program.

No testing was planned due to the short exposure period.

Appendix B

Summary of Evaluation Results
July 1968 - June 1971

Summary of Evaluation Results
Basic Skills Centers
July 1968 - June 1971

July 1968: Centers opened for partial operation.

1968-69 School Year: Gains apparently favored the Experimental group, but generally children in both Experimental and Control groups were further behind at the end of the year. Vocabulary results favored the Control group. No control for regression.

Summer 1969: No control group, but attendance and Sullivan Books completed correlated significantly with Paragraph Meaning achievement test scores when pretest differences were controlled. Possible sampling bias with only 28% of students available for testing.

1969-70 School Year: Gains not high for either Experimental or Control groups. Vocabulary gains favored Control group. South Center gains significantly higher than North Center. Sullivan Placement Test found to be functioning poorly.

Summer 1970: No testing. Average attendance only 17 days. Eighty-five percent (85%) of students completed 0 or 1 Sullivan Levels during the summer. The modal student entered the program at the introductory level; for all practical purposes these children were nonreaders.

September 1970-February 1971: New selection procedures initiated. Supplementary materials developed. Tests switched from Stanford Achievement--used since 1968--to Gates-MacGinitie.

During a four month period, Center students made about 5 months growth in Comprehension and Vocabulary. No control group, but learning rate was better than expected for "average" students, and substantially better than expected for these severely retarded students.

Individually administered tests yielded results which were similar to results from group testing.

Progress in both Centers generally above expectations.

June 1971: Tests were administered to 460 students whose average length of stay at the Basic Skill Centers was six months. Students

made substantial gains in both reading comprehension and reading vocabulary. Average gain was between eight and nine months on both reading comprehension and vocabulary. About seven out of ten children in the program made gains of six months or more during this six-month period. Almost half of the children made gains of one year (10 months in grade equivalent terms) or more during their six-month period.

Learning rate of Centers' students was better than expected for average children and substantially better than expected for these educationally disadvantaged children who were two to three years below grade level.

Appendix C

Table C-1

Analysis-of-Variance Tests for Significance of Differences
Between Posttest Means Adjusted for Pretests
(Experimental and Comparison Groups)
1969-70

Stanford Primary I, Word Reading

Source	df	M.S.	F		
Unexplained by Pretest	204			Adjusted Means	
Between Groups	1	1.61	< 1.0	28.73	Experimental
Error	203	13.58		28.91	Compariso.

Stanford Primary I, Paragraph Meaning

Source	df	M.S.	F		
Unexplained by Pretest	204			Adjusted Means	
Between Groups	1	1.10	< 1.0	29.17	Experimental
Error	203	41.42		29.23	Comparison

Stanford Primary I, Vocabulary

Source	df	M.S.	F		
Unexplained by Pretest	204			Adjusted Means	
Between Groups	1	67.88	4.59*	29.56	Experimental
Error	203	14.79		30.77	Comparison

*F, .05 (1,200) = 3.89

Since the interaction between pretest and group was shown to be nonsignificant by the F-test in the above cases, the term was included in the error term.

Table C-2

Analysis-of-Variance Tests for Significance of Differences

Between Posttest Means Adjusted for Pretests

(Experimental and Comparison Groups)

1969-70

Stanford Primary II, Word Meaning

Source	df	M.S.	F		
Unexplained by Pretest	84			Adjusted Means	
Between Groups	1	1.25	<1.0 n.s.	26.30	Experimental
Error	83	16.66		27.33	Comparison

Stanford Primary II, Paragraph Meaning

Source	df	M.S.	F		
Unexplained by Pretest	84			Adjusted Means	
Between Groups	1	56.09	1.33 n.s.	42.03	Experimental
Error	83	42.03		42.90	Comparison

Since the interaction between pretest and group was shown to be nonsignificant by the F-test in the above cases, the term was included in the error term.

Table C-3

Analysis-of-Variance Tests for Significance of Differences

Between Posttest Means Adjusted for Pretests

(North and South Experimental Groups)

1969-70

Stanford Primary I, Word Reading

Source	df	M.S.	F		
Unexplained by Pretest	140			Adjusted Means	
Between Groups	1	48.39	3.67 n.s.	27.66	North
Error	139	13.19		28.82	South

Stanford Primary I, Paragraph Meaning

Source	df	M.S.	F		
Unexplained by Pretest	140			Adjusted Means	
Between Groups	1	424.06	10.85 ***	26.57	North
Errors	139	39.08		30.06	South

Stanford Primary I, Vocabulary

Source	df	M.S.	F		
Unexplained by Pretest	140			Adjusted Means	
Between Groups	1	64.59	3.999 *	28.72	North
Error	139	16.15		30.10	South

* F .05 (1,150) = 3.91
*** F .005 (1,120) = 8.18

Since the interaction between pretest and group was shown to be nonsignificant by the F-test in the above cases, the term was included in the error term.

Table C-4

Analysis-of-Variance Tests for Significance of Differences

Between Posttest Means Adjusted for Pretests

(North and South Experimental Groups)

1969-70

Stanford Primary II, Word Meaning

Source	df	M.S.	F		
Unexplained by Pretest	51			Adjusted Means	
Between Groups	1	8.32	<1.0	25.13	North
Error	50	22.26		26.08	South

Stanford Primary II, Paragraph Meaning

Source	df	M.S.	F		
Unexplained by Pretest	51			Adjusted Means	
Between Groups	1	10.29	<1.0	40.10	North
Error	50	54.89		39.09	South

Since the interaction between pretest and group was shown to be nonsignificant by the F-test in the above cases, the term was included in the error term.

Table C-5

Stanford Primary Achievement Test Results, Primary I, Form W

Raw Scores (R.S.) and Grade Equivalents (G.E.)

(Pre- and posttests given seven months apart)

Experimental and Comparison Groups, 1969-70

Test and Group	Pretest N	Pretest Mean R.S.	Pretest S.D.	Pretest G.E.	Posttest Mean R.S.	Posttest S.D.	Posttest G.E.	Adjusted Posttest[a] Mean R.S.	Adjusted Posttest[a] G.E.	G.E.[b] Gain	Top Possible R.S.	Top Possible G.E.
A. Word Reading											35	3.6
North	66	24.82	7.61	2.0	27.68	5.90	2.3	27.66	2.3	.3		
South	76	24.72	7.73	2.0	28.79	6.35	2.4	28.82	2.4	.4		
								No significant difference				
B. Paragraph Meaning											38	4.0
North	66	23.95	10.30	1.9	27.45	9.10	2.0	26.57	2.0	.2		
South	76	21.20	11.65	1.8	29.30	9.04	2.2	30.06	2.3	.5		
								Significant difference				
C. Vocabulary											39	5.5+
North	66	27.68	5.46	2.7	29.79	6.01	3.1	29.04	2.9	.5		
South	76	24.83	7.54	2.3	29.17	6.26	2.9	30.48	3.1	.7		
								Significant difference				

[a] Covariance adjustment for pretest mean differences

[b] Calculated from the grade equivalent of the pretest grand mean.

Table C-6

Stanford Primary Achievement Test Results, Primary II, Form W

Raw Scores (R.S.) and Grade Equivalents (G.E.)

(Pre- and posttests given seven months apart)

Experimental and Comparison Groups, 1969-70

Test and Group	Pretest				Posttest			Adjusted Posttest			Top Possible R.S.	Top Possible G.E.
	N	Mean R.S.	S.D.	G.E.	Mean R.S.	S.D.	G.E.	Mean R.S.	G.E.	G.E. Gain		
A. Word Meaning											36	7.5+
North	39	24.05	6.66	3.5	26.10	6.58	3.7	25.13	3.6	.3		
South	14	19.07	5.44	2.9	23.36	6.82	3.3	26.08	3.7	.4		
								No significant difference				
B. Paragraph Meaning											60	7.5+
North	39	34.00	12.12	3.0	41.03	10.66	3.6	40.10	3.5	.5		
South	14	28.93	11.21	2.7	36.50	12.14	3.1	39.09	3.4	.4		
								No significant difference				

[a]Covariance adjustment for pretest mean differences

[b]Calculated from the grade equivalent of the pretest grand mean.

Table C-7

Correlations of Stanford Primary Achievement Pretests with Posttests, Sullivan Levels Gained, Days Present, and Sullivan Time on Typewriters (Experimental Groups Only)

1969-70

Pretests	N	Posttest	Sullivan Levels Gained	Days Present	Time on Typewriters
Primary I					
Word Reading					
North	66	.86	.44	-.05	.08
South	76	.77	.53	-.19	-.03
Comparison	64	.75			
Paragraph Meaning					
North	66	.74	.39	-.15	.11
South	76	.72	.45	-.26	-.05
Comparison	64	.71			
Vocabulary					
North	66	.68	.08	-.26	-.07
South	76	.82	.21	-.19	-.11
Comparison	64	.84			
Primary II					
Word Meaning					
North	39	.70	.31	-.36	-.07
South	14	.75	.52	-.12	-.06
Comparison	33	.84			
Paragraph Meaning					
North	39	.72	.21	-.47	-.11
South	14	.85	.54	-.09	-.06
Comparison	33	.82			

Table C-8

Correlations of Stanford Primary Achievement Posttests with Sullivan Levels Gained, Days Present, and Sullivan Time on Typewriters (Experimental Groups Only)

1969-70

Posttests	N	Sullivan Levels Gained	Days Present	Time on Typewriters
Primary I				
Word Reading				
North	66	.50	.00	.17
South	76	.48	-.05	.07
Paragraph Meaning				
North	66	.48	-.02	.14
South	76	.43	-.13	.04
Vocabulary				
North	66	.15	-.15	.07
South	76	.14	-.13	.00
Primary II				
Word Meaning				
North	39	.38	-.33	-.01
South	14	.61	.15	.10
Paragraph Meaning				
North	39	.42	-.25	-.19
South	14	.65	-.01	-.05

1969-70

Experimental Groups

Table C-9
Correlations Between Sullivan Levels Gained and Days Present [a]

Experimental Groups	N	r
North, Primary I	66	.135
North, Primary II	39	-.131
South, Primary I	76	-.054
South, Primary II	14	.225
Total	195	Average correlation = .013

Table C-10
Correlations Between Sullivan Levels Gained and Sullivan Time on Typewriters [a]

Experimental Groups	N	r
North, Primary I	66	.299
North, Primary II	39	.326
South, Primary I	76	.373
South, Primary II	14	.110
Total	195	Average correlation = .324

Table C-11
Correlations Between Days Present and Sullivan Time on Typewriters [b]

Experimental Groups	N	r
North, Primary I	66	.299
North, Primary II	39	.170
Total	105	Average correlation = .253
South, Primary I	76	.817
South, Primary II	14	.916
Total	90	Average correlation = .834

[a] Use of an r to z transformation and the chi-square test indicated that an average correlation is appropriate for describing the relationship in this table since no significant differences between correlations were revealed.

[b] Since the chi-square test indicated a significant difference among the correlations in the total Experimental Group, average correlations were calculated separately for the North and South Centers.

	Total Regular Day						Experimental Group					
	North Center		South Center		Total		North Center		South Center		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Table C-12												
Distribution by Sex												
Male	250	59.1	184	65.5	434	61.7	61	58.1	53	58.9	114	58.5
Female	172	40.7	97	34.5	269	38.2	44	41.9	37	41.1	81	41.5
Not Known	1	.2			1	.1						
Total	423	100.0	281	100.0	704	100.0	105	100.0	90	100.0	195	100.0

Table C-13												
Average Days Present at B.S.C. (165 possible)	62.25	37.7	94.36	57.2	74.8	45.3	123.7	75.0	132.7	80.4	127.8	77.4

Table C-14												
Previous Attendance at B.S.C.												
Yes	95	22.5	52	18.6	147	20.9	20	19.0	15	16.7	35	17.9
No	328	77.5	227	81.4	555	79.1	85	81.0	75	83.3	160	82.1
Total	423	100.0	279	100.0	702	100.0	105	100.0	90	100.0	195	100.0

Table C-15

	Average Numbers of Hours on Talking Typewriters Experimental Groups (Sullivan Materials Only)					
	North		South		Total	
	Hours	N	Hours	N	Hours	N
Students Who Started at Level 4 or Below	24.5	66	32.0	76	28.5	142
Students Who Started at Level 5 or Above	21.6	39	30.4	14	24.0	53

Table C-16

	Average Numbers of Sullivan Levels Gained Experimental Groups					
	North		South		Total	
	Levels	N	Levels	N	Levels	N
Students Who Started at Level 4 or Below	6.4	66	8.2	76	7.3	142
Students Who Started at Level 5 or Above	4.8	39	7.1	14	5.4	53

Table C-17

Sullivan Entrance and Exit Levels for Students
in Experimental Groups (N=105)

1969-70

Sullivan Levels	Entrance Levels						Exit Levels					
	North Center		South Center		Total		North Center		South Center		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Introductory	22	21.0	49	54.4	71	36.4						
1	22	21.0	8	8.9	30	15.4						
2	10	9.5	8	8.9	18	9.2			1	1.1	1	.5
3	9	8.6	5	5.6	14	7.2	2	2.0			2	1.0
4	2	1.9	5	5.6	7	3.6	1	1.0	2	2.2	3	1.5
5	4	3.8	6	6.7	10	5.2	16	15.2	5	5.7	21	10.8
6	14	13.3	3	3.3	17	8.7	8	7.6	8	8.9	16	8.2
7	9	8.6	4	4.4	13	6.7	18	17.1	12	13.3	30	15.4
8	7	6.7			7	3.6	6	5.7	11	12.3	17	8.8
9			2	2.2	2	1.0	6	5.7	12	13.3	18	9.2
10							6	5.7	8	8.9	14	7.2
11	2	1.9			2	1.0	8	7.6	10	11.1	18	9.2
12							25	23.8	12	13.3	37	19.0
13							4	3.8	1	1.1	5	2.7
14							1	1.0	2	2.2	3	1.5
15	1	.9			1	.5			1	1.1	1	.5
16	1	.9			1	.5			3	3.3	3	1.5
17	2	1.9			2	1.0			1	1.1	1	.5
18							1	1.0			1	.5
19												
20							3	2.8	1	1.1	4	2.0
Totals	105	100.0	90	100.0	195	100.0	105	100.0	90	100.0	195	100.0

The Sullivan materials are not programmed for the Talking Typewriters above Level 12. Students who continued above Level 12 at the Centers worked on Sullivan programmed materials in the classroom and on enrichment programs in the laboratory.

Table C-18

Sullivan Placement Levels in October, 1969
Of Students in Comparison Group (N=97)
1969-70

Sullivan Levels	Grade 3	Grade 4	Grade 5	Grade 6	Total	%
Introductory	15	11	2		28	28.9%
1	3	11	2		16	16.5
2		5	3		8	8.2
3	1	6			7	7.2
4	2	2	1		5	5.2
5	2	3		1	6	6.2
6	1	3	1	3	8	8.2
7		1			1	1.0
8		4		1	5	5.2
9				1	1	1.0
10			1	1	2	2.1
11				1	1	1.0
12			1	1	2	2.1
13						
14						
15						
16						
17		1		1	2	2.1
18		1			1	1.0
19						
20						
Not Available		3		1	4	4.1
Total	24	51	11	11	97	100.0

Table C-19

Students Serviced by Basic Skill Centers

1970-71

Group	North Center		South Center		Totals	
Group	N		N		N	
Summer 1970	220		189		409	
Regular Day	338		363		701	
Low I.Q.	18		14		32	
Extended Day	40		47		87	
Totals	616		613		1229	
Regular Day	N	%	N	%	N	%
With Gain Scores	249	73.7	211	58.1	460	65.6
No Pretest	27	8.0	50	13.8	77	11.0
No Posttest	62	18.3	102	28.1	164	23.4
Totals	338	100.0%	363	100.0%	701	100.0%
No Posttest-Regular Day						
Reasons for Leaving	N	%	N	%	N	%
Not Available	2	3.2	12	11.8	14	8.5
Finished Course Early			6	5.9	6	3.7
End of Session	8	12.9	15	14.7	23	14.0
Moved	19	30.6	20	19.6	39	23.8
Suspended, Behavior	1	1.6	3	2.9	4	2.4
Special Class	5	8.1	10	9.8	15	9.2
Discipline, Bus			4	3.9	4	2.4
Poor Attendance	7	11.3	10	9.8	17	10.4
Parent or School Request	20	32.3	22	21.6	42	25.6
Totals	62	100.0%	102	100.0%	164	100.0%
No Pretest- Regular Day						
Mean Days Present	8.2		34.1			

Table C-20

Numbers of Students from Participating Schools
1970-71

Regular Day*

North Center		South Center	
School	Number	School	Number
Bethune	32	Adams	43
Bremer	29	Bancroft	37
Hall	35	Field	48
Harrison	34	Greeley	8
Hawthorne	33	Irving	23
Hay	32	Lyndale	43
Lowell	38	Madison	30
Willard	34	Mann	33
		Seward	30
Franklin	29	Whittier	32
Jordan	42		
		Phillips	36
Totals	338		363

* 32 low I.Q. pupils not included

Extended Day

School	Number	School	Number	School	Number
Agassiz	1	Page	3	Ascension	13
Audubon	1	Pillsbury	2	Immanuel Lutheran	2
Bryn Mawr	3	Pratt	2	Powderhorn Christian	1
Douglas	7	Putnam	3	St. Bridget	4
Fuller	1	Webster	4	St. Joseph	2
Fulton	7	Wenonah	2	St. Kevin	3
Harrison	1	Windom	5		
Hiawatha	1				
Holland	4	Bryant	1		
Irving	2	Folwell	1	Totals:	
Lind	1	Jefferson	1	Public	61
Lyndale	1	Lincoln	1	Parochial	25
Madison	1	Vocational	1	Adult	1
Morris Park	3	West	1		87

Table C-21

Distributions by Grade

Regular Day*
1970-71

Grade	North Center N	%	Cum. %	South Center N	%	Cum. %
2				4	1.1	1.1
3				26	7.2	8.3
4	163	48.2	48.2	94	25.8	34.1
5	95	28.1	76.3	87	24.0	58.1
6	9	2.7	79.0	113	31.1	89.2
7	55	16.3	95.3	33	9.1	98.3
8	11	3.2	98.5	3	.8	99.1
9	5	1.5	100.0	2	.6	99.7
Adult				1	.3	100.0
Totals	338	100.0%		363	100.0%	

* 32 low I.Q. pupils not included

Table C-22

Grade Equivalent Distributions
Gates-MacGinitie Reading Test, Level B
Vocabulary (Top Possible: 5.2)
1970-71

North Basic Skill Center

G.E.	Pretest N	Pretest %	Pretest Cum. %	Posttest N	Posttest %	Posttest Cum. %
5.0-5.2				4	2.0	100.0
4.5-4.9	1	.5	100.0	15	7.5	98.0
4.0-4.4	4	2.0	99.5	36	18.0	90.5
3.5-3.9	17	8.5	97.5	33	16.5	72.5
3.0-3.4	6	3.0	89.0	21	10.5	56.0
2.5-2.9	61	30.5	86.0	48	24.0	45.5
2.0-2.4	23	11.5	55.5	20	10.0	21.5
1.5-1.9	65	32.5	44.0	21	10.5	11.5
0.0-1.4	23	11.5	11.5	2	1.0	1.0
Totals	200	100.0%		200	100.0%	
	Median: 2.2			Median: 3.1		

South Basic Skill Center

G.E.	Pretest N	Pretest %	Pretest Cum. %	Posttest N	Posttest %	Posttest Cum. %
5.0-5.2	1	1.2	100.0	9	11.2	100.0
4.5-4.9	2	2.6	98.8	5	6.3	88.8
4.0-4.4				10	12.5	82.5
3.5-3.9	4	5.0	96.2	15	18.8	70.0
3.0-3.4	2	2.4	91.2	6	7.4	51.2
2.5-2.9	24	30.0	88.8	19	23.8	43.8
2.0-2.4	12	15.0	58.8	10	12.5	20.0
1.5-1.9	30	37.6	43.8	6	7.5	7.5
0.0-1.4	5	6.2	6.2			
Totals	80	100.0%		80	100.0%	
	Median: 2.2			Median: 3.3		

This table is based on all regular day students who took both pre- and post-test, excluding 15 students who, on the basis of the Stanford-Binet or WISC, were identified as having I.Q.'s of 80 or less.

Table C-23

Grade Equivalent Distributions
Gates-MacGinitie Reading Test, Level B
Comprehension (Top Possible: 5.4)
1970-71

North Basic Skill Center

	Pretest			Posttest		
G.E.	N	%	Cum. %	N	%	Cum. %
5.0-5.4				3	1.5	100.0
4.5-4.9	3	1.5	100.0	21	10.5	98.5
4.0-4.4	2	1.0	98.5	24	12.0	88.0
3.5-3.9	9	4.5	97.5	21	10.5	76.0
3.0-3.4	6	3.0	93.0	24	12.0	65.5
2.5-2.9	41	20.5	90.0	41	20.5	53.5
2.0-2.4	29	14.5	69.5	31	15.5	33.0
1.5-1.9	73	36.5	55.0	28	14.0	17.5
0.0-1.4	37	18.5	18.5	7	3.5	3.5
Totals	200	100.0%		200	100.0%	
	Median: 1.8			Median: 2.7		

South Basic Skill Center

	Pretest			Posttest		
G.E.	N	%	Cum. %	N	%	Cum. %
5.0-5.4				4	5.0	100.0
4.5-4.9	1	1.2	100.0	12	15.0	95.0
4.0-4.4	1	1.3	98.8	6	7.5	80.0
3.5-3.9	1	1.3	97.5	8	10.0	72.5
3.0-3.4	5	6.2	96.2	8	10.0	62.5
2.5-2.9	10	12.5	90.0	20	25.0	52.5
2.0-2.4	12	15.0	77.5	8	10.0	27.5
1.5-1.9	23	28.7	62.5	9	11.3	17.5
0.0-1.4	27	33.8	33.8	5	6.2	6.2
Totals	80	100.0%		80	100.0%	
	Median: 1.6			Median: 2.7		

This table is based on all regular day students who took both pre- and post-test, excluding 15 students who, on the basis of the Stanford-Binet or WISC, were identified as having I.Q.'s of 80 or less.

Table C-24

Grade Equivalent Distributions
Gates-MacGinitie Reading Test, Level C
Vocabulary (Top Possible: 7.1+)
1970-71

North Basic Skill Center

G.E.	Pretest N	Pretest %	Pretest Cum. %	Posttest N	Posttest %	Posttest Cum. %
7.0-7.1+				1	2.0	100.0
6.5-6.9				2	4.1	98.0
6.0-6.4	1	2.0	100.0			
5.5-5.9	2	4.1	98.0	6	12.3	93.9
5.0-5.4	4	8.2	93.9	4	8.1	81.6
4.5-4.9	5	10.2	85.7	8	16.4	73.5
4.0-4.4	3	6.1	75.5	4	8.1	57.1
3.5-3.9	7	14.3	69.4	12	24.5	49.0
3.0-3.4	11	22.5	55.1	6	12.3	24.5
2.5-2.9	12	24.4	32.6	4	8.1	12.2
2.0-2.4	2	4.1	8.2	1	2.1	4.1
1.5-1.9	1	2.1	4.1	1	2.1	2.0
0.0-1.4	1	2.0	2.0			
Totals	49	100.0%		49	100.0%	
	Median: 3.2			Median: 4.0		

South Basic Skill Center

G.E.	Pretest N	Pretest %	Pretest Cum. %	Posttest N	Posttest %	Posttest Cum. %
7.0-7.1+						
6.5-6.9				5	3.8	100.0
6.0-6.4				2	1.5	96.2
5.5-5.9	1	.8	100.0	14	10.7	94.7
5.0-5.4	2	1.5	99.2	9	6.9	84.0
4.5-4.9	7	5.3	97.7	20	15.3	77.1
4.0-4.4	13	10.0	92.4	19	14.5	61.8
3.5-3.9	23	17.5	82.4	22	16.8	47.3
3.0-3.4	28	21.4	64.9	14	10.7	30.5
2.5-2.9	26	19.8	43.5	12	9.1	19.8
2.0-2.4	13	10.0	23.7	6	4.6	10.7
1.5-1.9	13	9.9	13.7	7	5.3	6.1
0.0-1.4	5	3.8	3.8	1	.8	.8
Totals	131	100.0%		131	100.0%	
	Median: 3.0			Median: 4.0		

This table is based on all regular day students who took both the pre- and post-tests, excluding 8 students who, on the basis of the Stanford-Binet or WISC, were identified as having I.Q.'s of 80 or less.

Table C-25

Grade Equivalent Distributions
Gates-MacGinitie Reading Test, Level C
Comprehension (Top Possible: 7.0+)
1970-71

North Basic Skill Center

G.E.	Pretest N	Pretest %	Pretest Cum. %	Posttest N	Posttest %	Posttest Cum. %
7.0+	1	2.0	100.0			
6.5-6.9				3	6.1	100.0
6.0-6.4	1	2.1	98.0	5	10.2	93.9
5.5-5.9	3	6.1	95.9	4	8.2	83.7
5.0-5.4	3	6.1	89.8	7	14.3	75.5
4.5-4.9	7	14.3	83.7	11	22.4	61.2
4.0-4.4	3	6.1	69.4	4	8.2	38.8
3.5-3.9	6	12.3	63.3	3	6.1	30.6
3.0-3.4	8	16.3	51.0	5	10.2	24.5
2.5-2.9	7	14.3	34.7	3	6.1	14.3
2.0-2.4	3	6.1	20.4	3	6.2	8.2
1.5-1.9	6	12.3	14.3	1	2.0	2.0
0.0-1.4	1	2.0	2.0			
Totals	49	100.0%		49	100.0%	
	Median: 3.4			Median: 4.7		

South Basic Skill Center

G.E.	Pretest N	Pretest %	Pretest Cum. %	Posttest N	Posttest %	Posttest Cum. %
7.0+				2	1.5	100.0
6.5-6.9						
6.0-6.4				5	3.8	98.5
5.5-5.9				4	3.1	94.7
5.0-5.4	2	1.5	100.0	12	9.2	91.6
4.5-4.9	7	5.4	98.5	27	20.6	82.4
4.0-4.4	7	5.3	93.1	14	10.6	61.8
3.5-3.9	7	5.4	87.8	24	18.4	51.2
3.0-3.4	22	16.8	82.4	15	11.4	32.8
2.5-2.9	30	22.8	65.6	10	7.7	21.4
2.0-2.4	15	11.5	42.8	8	6.1	13.7
1.5-1.9	29	22.1	31.3	6	4.6	7.6
0.0-1.4	12	9.2	9.2	4	3.0	3.0
Totals	131	100.0%		131	100.0%	
	Median: 2.5			Median: 3.9		

This table is based on all regular day students who took both the pre- and post-tests, excluding 8 students who, on the basis of the Stanford-Binet or WISC, were identified as having I.Q.'s of 80 or less.

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