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ABSTRACT

The Mobile Learning Centers Project began operations in the 1970-71 school year with funds from Title 1 ESEA, Title III NDEA and local sources. The project was successful, so it was continued in 1971-72. The goal of this program was to raise the rate of reading growth of secondary students in selected Title I schools who were one or more years below grade level in reading. The program was again successful. Eighty percent of the students made grade equivalent gains on comprehension tests over those expected for length of instruction. Sixty-four percent made such gains on vocabulary tests. Gates-MacGinitie tests were used. The project featured the use of TV-like teaching machines and educational materials developed by Dorsett Educational Systems. They were housed in two large trailers located at Lincoln and Bryant Junior High Schools and at North High. Although students operated the machines and tested their own progress at the end of each lesson, assistance was available from the certified reading teacher and aide who staffed each trailer. Costs were less per pupil period than in the previous year since the trailers and most of the machines and programs had been purchased the previous year. Several recommendations, including continuation of the project, were made. (Author/KM)

Minneapolis Public Schools

Mobile Learning Centers of Minneapolis 1971-72

A Title I, ESEA Project

Sara H. Clark, Title I Evaluator

Ideas expressed in this report do not necessarily reflect the official position of the Minneapolis Public School Administration nor the Minneapolis School Board.

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Minneapolis Public Schools

Mobile Learning Centers
1971-72

Summary

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Evaluation reports prepared by the Research and Evaluation Department of the Minneapolis Public Schools typically 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 skip the first three sections describing the City of Minneapolis Public Schools and the Target Area since these descriptions are standard for all reports.

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 1972 was 4.1%, compared with a 5.9% 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 (32%) 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 (26%) are employed as craftsmen, foremen and operatives, and 23% of the work force are professionals, technicians, managers, and officials. One out of five workers is 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, the 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 non-existant 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 non-white citizens live in Minneapolis although their numbers are increasing. In 1960 only three percent of the population was non-white. The 1970 census figures indicate that the non-white population has more than doubled (6.4%) in the intervening 10 years. About 70% of the non-whites are black. Most of the remaining non-white population is Indian-American, mainly Chippewa and Sioux. Only a small number of residents from Spanish-speaking or Oriental origins live in the city. In 1970 non-white 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 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 recent re-election 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 larger cities, the problems are focused in the core city and are related to increasing concentrations there of the poor, many of them non-whites, and of the elderly. For example, nine out of 10 black Americans in Minneapolis live in just one-tenth of the city's area. While Minneapolis contains 11% of the state's population, it supports 28% of the state's AFDC families.

There has been a steady migration to the city by Indian Americans 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. The Indian American population is generally confined to the same small geographic areas in which black Americans live. 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 the city's 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 to the surrounding suburban areas.

The Minneapolis Schools

About 69,477 children go to school in Minneapolis. Most of them, about 61,052 attend one of the city's 98 public schools; 8,425 attend parochial or private schools.

The Minneapolis Public Schools, headed by Dr. John B. Davis, Jr., who became superintendent in 1967, consists of 67 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. Nearly 3,500 certificated personnel are employed.

Control of the public school system ultimately rests with a seven member board which levies its own taxes and sells its own bonds. These non-salaried officials are elected by popular votes for staggered six year terms. The superintendent is selected by the board and serves as its executive officer and professional adviser.

Almost 40 cents of each local property tax dollar goes to support a school system whose annual operating general fund budget in 1972-73 is $78,992,236 up from $74,340,271 in 1971-72. Minneapolis received federal funds totaling 8 million dollars in 1971-72 from many different federal aid programs. The Elementary and Secondary Education Act provided about 6.8 million dollars, of which 3.4 million dollars were from Title I funds. Per pupil costs in the system were $920 in 1970-71 while the range of per pupil costs in the state was from $254 to $1,041.

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.

Based on sight counts on October 17, 1972 the percentage of black American pupils for the school district was 10.6%. Eight years before, the proportion was 5.4%. Indian American children currently comprise 3.8% of the school population, more than double the proportion of eight 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 non-white pupils are enrolled in every elementary school, non-white pupils are concentrated in two relatively small areas of the city. Of the 67 elementary schools, 11 have more than 30% non-white enrollment and four of these have over 50%. There are no all-black nor all-white schools. Twenty-three elementary schools have non-white enrollments of less than 5%.

The Minneapolis School Board has approved a plan which would desegregate the city's schools in September 1973.

The proportion of school age children in AFDC homes has more than doubled from approximately 12% in 1962 to 28% in 1972.

While the median pupil turnover rate for all the city schools in 1970-71 was about 23%, this figure varied widely according to location (turnover rate is the percentage of students that comes new to the school or leaves the school at some time during the school year, using the September enrollment as a base figure). Target area schools generally experience 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 (39%).

The Target Area

The Target Area is a portion of the core city of Minneapolis where the schools are eligible to receive benefits from programs funded under Title I of the Elementary and Secondary Education Act (ESEA). A school is eligible to receive Title I aid if the percentage of families residing in that school's district which receives AFDC payments (in excess of $2,000 a year)-or has an annual income under $2,000-exceeds the citywide percentage for families in those categories.

In 1972-73, nearly 26,871 children attended the 24 elementary schools, five junior highs, three senior highs and seven parochial schools that were eligible to receive this aid. One-third of these students were from minority groups and one-third were 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.

According to 1970 census data, over 170,000 persons resided in the Target Area. Of that group, 11 percent were black and 3½ percent were Indian, more than double the citywide percentage of minority group members. Over half of the Target Area residents over 25 years old had not completed high school, compared to the 35 percent of the non-Target Area residents who did not have high school diplomas. One out of five Target Area residents over the age of 25 had gone to college, and nine percent had completed four or more years. One out of four of the non-Target Area residents had gone to college, and 15 percent had completed four or more years.

The income for an average Target Area family was $9,113 in 1970, over $2,000 less than the citywide average. The homes they lived in had an average value of $10,385, over 40 percent less than the average value of a single family residence in Minneapolis. One out of five Target Area children between the ages of 6 and 17 was a member of a family that is below the proverty level, while only 6 percent of the non-Target Area children had such a family status.

Historical Background

The school year of 1971-72 was the second year of operation of the Mobile Learning Centers. In 1970 the Minneapolis school system had recognized the need for an innovative approach to the reading difficulties of a number of secondary students in Target Area schools and had allocated funds for teaching machines. A group of teachers and administrators from the system had been impressed with the programs and machines presented by the Dorsett Educational Systems at the Aerospace Educational Technology meetings held in Washington, D.C. in January 1970. After further investigation and discussion the Mobile Learning Centers project, incorporating the Dorsett machines and programs, was initiated when monies from NDEA Title III and ESEA Title I---as well as local funds---became available. Two large trailers were bought to serve as classrooms to provide mobility for the project. The use of these Mobile Learning Centers was restricted to Title I schools because of the federal funds which helped support the project.

The project's operations were successful in increasing the rate of progress in comprehension and vocabulary of students who had been one or more years below grade level. A report which describes and gives evaluation results for the first year of the project, may be obtained from the Research and Evaluation Department of the Minneapolis Public Schools.[1]

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[1]Evaluation of the Mobile Learning Centers in Minneapolis Secondary Schools, 1970-71. Minneapolis Public Schools, Research and Evaluation Department, 807 N.E. Broadway, Minneapolis, Minnesota, 55413. C-70-41

Objectives

The goal of this program was to raise the rate of reading growth of secondary students in selected Title I schools who were one or more years below grade level in reading in September 1971. A gain of one month or more in grade equivalents (using Gates-MacGinitie tests) for each month of attendance at the Centers by at least 50% of the students was the specific objective.

Physical Locations of the Mobile Learning Centers

Two Mobile Learning Centers or trailers, as they are generally called, were located in the Target Areas in 1971-72. Target Area schools are those which have been designated as eligible for Title I aid.

The South Trailer was parked outside Bryant Junior High for the entire school year. Although Bryant's enrollment of about 1000 was at the median for the city's junior high schools it ranked far above average in the percentage of students who came from homes receiving AFDC (47%) and in the percentage of minority students (47%).

The North Trailer was stationed at Lincoln Junior High for the first semester, and at North High School for the second semester. Lincoln, with an enrollment of about 600 students was next to the smallest in the city. However it had the highest turnover, the greatest percent (63%) of students

from AFDC homes, and the largest (73%) minority population of any of the city's junior high schools. According to the 1970 census, 43% of persons under 18 in this district were not residing with both parents and 12% of those between the ages of 16 and 21 were unemployed, not in the labor force, not in schools, and had not completed high school.

North High school is in the same neighborhood as Lincoln. Its enrollment of about 1400 students (the city median) had 39% of its students from AFDC homes. Its minority population (31%) and its turnover rate (51%) were both next to the highest in the city for senior high schools. According to the 1970 census roughly one third of the people in the Lincoln-North neighborhood had moved into their present dwellings within the last fifteen months.

Project Operations

A reading project, using Dorsett programs and teaching machines, was used to remediate reading deficiencies of 422 inner-city junior and senior high school students during the 1971-72 school year.

Two large trailers, about 60' by 14', were purchased with the aid of NDEA, Title III, money. Each trailer contained 18 Dorsett teaching machines in semi-private carrels. Since students were assigned to the program for one period a day, up to 90 students could be served daily at each installation. The trailers were carpeted and each had an inviting reading corner with a

lounge and table covered with magazines of high interest level for the students who attended. To avoid breakage the trailers had no windows so they were air-conditioned. The surroundings were, in other words, quite different from those of the regular classroom.

The Dorsett machines look something like TV sets. The lessons are projected on screens from film strips which are sound synchronized with records. Headphones are available for individual listening. The machines are simple to operate so that the students can change the records and filmstrips themselves. The pupils respond to questions in the lesson by pushing buttons which allow multiple or forced choice options. When the correct response is given, the machine proceeds to the next frame in the program. The student is also furnished with a printed version of the lesson which is called a Reading Panel. It contains the story being presented on the screen to which the student can refer at any time. The panel gives the student a chance to reread the material at his own rate of speed and gives him another opportunity to assimilate the program before attempting to respond to questions on the machine.

At the end of each filmstrip a progress check is given which consists of up to ten multiple choice questions. In this way the student's understanding of each lesson is measured as soon as he completes the instruction. Since the test is scored immediately, the teacher can either provide verbal reinforcement and encouragement for good work or, if the student has scored less than 80%, help him find his errors before he repeats the lesson. If he has made only one or two mistakes he can use the Reading Panel to help

make his corrections. This use of the panel incidentally gives him practice in scanning.

The reading course includes programs in vocabulary and comprehension. The curriculum guide provided with the materials states that in the comprehension programs, "The questions are designed to develop reading skills such as recalling details and facts, understanding main ideas and sequence of events, drawing conclusions, and finding and understanding key sentences and words." The 61 programs in this series are arranged in five categories covering first through eighth grade materials. The 80 vocabulary programs are also arranged in five categories, beginning with a series which introduces 800 sight words in sentences and continues through eighth grade words.

The program is flexible. Students are tested when they enter and are then assigned to their appropriate beginning levels. They can work at their own rate. The average time needed to complete a lesson with 100% accuracy is about twelve minutes so that a student working at the rate of three programs a day would just about complete the course in a quarter. At Bryant, where the students were assigned to the trailer for a semester, supplementary materials such as the Reading Attainment series were used after the student had completed the Dorsett program. The posttests were given, however, at the time the Dorsett program was completed.

At first the teachers thought that the novelty of the machines, which intrigued the students, would wear off. However, by the end of the quarter the machines still seemed to be fascinating even though the teachers would like to see programs on subjects more appropriate to the interests of the students. Usually a number of comprehension programs are presented first;

later they are alternated with vocabulary programs. The use of the machines with their headphones does capture the pupils' attention to the extent that they generally ignore visitors who go to observe the project in operation.

Although the students operate the machines themselves there have been relatively few problems with the hardware. The filmstrips do get damaged, however, if they are not properly replaced in their holders.

Participants

Students were selected for the program by recommendations of counselors and teachers based mainly on past city-wide reading test scores. The pupils were either one or more years below grade level or below the twenty-fifth percentile on Minneapolis reading norms and hence were Title I eligible. A total of 423 students were enrolled at some time during the year. The pupils came from grades 7-9 at Bryant and 7 and 8 at Lincoln. About one-fifth of the students enrolled in those schools attended the Mobile Learning Centers. There was a noticeable drop in enrollment at Lincoln for the second quarter. This drop was chiefly due to the fact that most of the students who could have benefited from the program had already been served either in the first quarter or in the previous year. Lincoln is a relatively small school so the percentage of its population enrolled was the same as that at Bryant which is over half again as large.

At North High, 9% of the students in grades 10-12 participated in the program.

The boys slightly outnumbered the girls (57%) at Bryant and at North, though the opposite was true at Lincoln. Descriptive data for the participants from each of the schools is presented in Table 1.

Table 1

Enrollment in Mobile Learning Centers
by School and Grade 1971-72

School and Grade	School Enrollment[1]	Number Enrolled in Center	Percent of School Total
Bryant			
6	108	0	.0
7	309	60	19.4
8	311	89	28.6
9	271	22	8.1
Not Known	---	4	---
All Grades	999	175	17.5%
Lincoln			
7	223	84	37.7
8	171	38	22.2
9	213	0	.0
Special	7	0	.0
All Grades	614	122	19.9%
North			
9	65	0	.0
10	661	92	13.9
11	365	19	5.2
12	296	7	2.4
Special	45	0	.0
Not Known	---	8	---
All Grades	1432	126	8.8%

[1]Pupil Sight Count, 1971-72. Information Services Center, Minneapolis Public Schools, 807 N.E. Broadway, Minneapolis, Minnesota, 55413. Sight Count taken October 19, 1971.

Personnel

Each trailer had two full-time staff members: a certified reading teacher and an aide who had received inservice training from the Dorsett Educational System. This staff provided a teacher-pupil ratio of about one to nine. Although the programs are self-instructional, the teachers select the appropriate programs for each student according to his needs. Teachers also work with students who are having difficulty with particular lessons and administer and score the pre- and posttests used for evaluation. The aides also help the students and assist the teacher in scoring the progress checks completed after each program. Maintaining student records and arranging for machine maintenance are other responsibilities of the aides.

All personnel attempted to promote a good learning situation in a warm and friendly atmosphere to attract students who had been quite irregular in school attendance. Changes were made at the beginning of the year in the personnel at Bryant but the staffing of the other trailer was the same as that of the previous year. No supplemental services were contributed by non-staff members.

Parent and Community Involvement

Open houses were held at the trailers when similar events were sponsored by the PTA's at the respective schools. There was, otherwise, no direct

parental involvement in this program.

Planning and Training

Since this was the second year of the program's implementation, the basic planning had already been done. Although the results from the first year of the project were very gratifying, efforts were made to find ways in which the program could be improved. Teachers wrote a small dictionary incorporating the words from the Dorsett Vocabulary lessons to give the students some practice in dictionary usage and to provide ready definitions of the words which they were learning. Minneapolis personnel also provided some input to new programs which were written for the same reading levels by Dorsett to supplement the existing lessons.

Tests Used

The Gates-MacGinitie Reading Tests were used for assessing student gains. Level D, designed for grades 4-6, was used at the junior high schools and Level E, intended for grades 7-9, was used at the senior high school. These tests were selected because they reflected the reading levels of the students rather than their actual grade placements.

The comprehension section of the tests were used each quarter or semester, depending on the school, throughout the year. According to the

test's publisher, it "measures the student's ability to read complete prose passages with understanding."

The vocabulary section was not used in the fall term but was given in the spring semester beginning in January. It "samples the student's reading vocabulary" according to the publishers. There is some question as to its appropriateness for the students and materials in this project.

Different forms of the tests from those used in the city-wide testing program were administered.

Budget

Title I, ESEA, funds totalling $54,030 were budgeted for the 1971-72 school year. This was 70% of the previous year's budget when the trailers and equipment were purchased. The cost per pupil period ($3.35) was only 57% of that in the previous year. This cost figure was obtained by dividing the total cost of the program by the total number of pupils in attendance each period in all sessions. A higher rate of attendance helped decrease this figure.

The funds, which were adequate for implementation of the program, were allocated as follows:

Account	Budgeted	Actual Expenditures	% of Total
Salaries, including fringe	$37,332	$34,541.70	68.8
Supplies	9,900	10,180.63	20.3
Plant Operations	4,430	3,103.72	6.2
Equipment	2,368	2,368.00	4.7
Total	$54,030	$50,194.05	100.0%

Results

This program achieved its objective of having 50% or more of its students make a gain in reading of one month or more in grade equivalents (using Gates-MacGinitie tests) for each month of attendance at the Centers.

On the comprehension section of the test, 80% of the students made grade equivalent (G.E.) gains over those expected for length of instruction with a range of from 74% to 83% for the schools involved. Table 2 shows the G.E. gains for each of the schools as well as for the total distribution. Gains ranged from nearly four to eight times the gains expected from average children working at the grade levels of these students. Gains of one year or more (G.E.) in reading comprehension were registered by 36% of the Lincoln students, 63% of the Bryant students and 65% of the North High students in this 2 - 3 month period of instruction. It should be noted that the period of instruction at Bryant was nearly twice as long as that at Lincoln and that both of these schools were junior high schools whereas North drew from the senior high school group. Comments on these results are given in the Discussion section.

In the two schools where the vocabulary tests were given, Bryant and North, 56% and 67% of the students gained more than a month in grade equivalents for each month of instruction. Gains distributions for these schools are given in Table 3.

Gain scores were obtained for 66% of the students in the project in 1971-72 compared with 61% in 1970-71. At Lincoln 88% of the project students

Table 2

Mobile Learning Centers
Grade Equivalent Gains Distributions
and
Rates of Gain for Days of Instruction[1]
Gates-MacGinitie Reading Comprehension Test
1971-72

Grade Equivalent Gains	Bryant N	Bryant Cum. %	Lincoln N	Lincoln Cum. %	North N	North Cum. %	All Schools N	All Schools Cum. %
+3.0 or more	10	18.6	4	3.7	19	21.6	33	10.9
+2.5 to +2.9	6	15.0	5	8.3	6	28.4	17	16.5
+2.0 to +2.4	14	28.0	6	13.9	10	39.8	30	26.5
+1.5 to +1.9	16	43.0	8	21.3	12	53.4	36	38.4
+1.0 to +1.4	21	62.6	16	36.1	10	64.8	47	53.9
+ .9	2	64.5	5	40.7	1	65.9	8	56.5
+ .8	2	66.4	4	44.4	3	69.3	9	59.5
+ .7	2	68.2	6	50.0	3	72.7	11	63.1
+ .6	3	71.0	5	54.6	1	73.8	9	66.1
+ .5	5	75.7	8	62.0	4	78.4	17	71.7
+ .4	4	79.4	7	68.5	1	79.5	12	75.6
+ .3	3	82.2	4	72.2	1	80.6	8	78.2
+ .2	2	84.1	2	74.1	2	82.9	6	80.2
+ .1	1	85.0	0	74.1	0	82.9	1	80.5
0 or less	16	100.0%	28	100.0%	15	100.0%	59	100.0%
Total	107		108		88		303	

Bryant	Lincoln	North	All Schools
Median G.E. Gain +1.27	Median G.E. Gain +.70	Median G.E. Gain +1.58	Median G.E. Gain +1.09
Mean attendance was 57 days or .32 school year Rate = 3.97	Mean attendance was 32 days or .18 school year Rate = 3.88	Mean attendance was 34 days or .19 school year Rate = 8.32	Mean attendance was 41 days or .23 school year Rate = 4.74
82% of the students gained 3 or more months in 3 months of instruction.	74% of the students gained 2 or more months in 2 months of instruction.	83% of the students gained 2 or more months in 2 months of instruction.	80% of the students gained 2 or more months in 2 months of instruction.

[1]Rate equals median G.E. gain divided by mean attendance in tenths of a school year. A school year equals 180 days.

Table 3

Mobile Learning Centers
Grade Equivalent Gains Distributions
and
Rates of Gain for Days of Instruction[1]
Gates-MacGinitie Reading Vocabulary Test
1971-72

Grade Equivalent Gains	Bryant N	Bryant Cum. %	North N	North Cum. %	Both Schools N	Both Schools Cum. %
+3.0 or more	0	0.0	8	9.3	8	6.2
+2.5 to +2.9	2	4.7	8	18.6	10	14.0
+2.0 to +2.4	0	4.7	3	22.1	3	16.3
+1.5 to +1.9	6	18.6	10	33.7	16	28.7
+1.0 to +1.4	4	27.9	13	48.7	17	41.9
+ .9	0	27.9	1	49.9	1	42.7
+ .8	2	32.6	1	51.1	3	45.0
+ .7	3	39.6	5	56.9	8	51.2
+ .6	0	39.6	2	59.2	2	52.7
+ .5	3	46.6	0	59.2	3	55.0
+ .4	3	53.6	4	63.9	7	60.4
+ .3	1	55.9	3	67.4	4	63.5
+ .2	1	58.2	0	67.4	1	64.3
+ .1	0	58.2	0	67.4	0	64.3
0	7	74.5	5	73.2	12	73.6
- .1 to - .5	6	88.4	4	77.9	10	81.4
- .6 or less	5	100.0	19	100.0	24	100.0
Total	43		86		129	

Median G.E. Gain +.40	Median G.E. Gain +.85	Median G.E. Gain +.67
Mean attendance was 52 days or .29 school year. Rate = 1.38	Mean attendance was 34 days or .19 school year. Rate = 4.47	Mean attendance was 40 days or .22 school year. Rate = 3.05
56% of the students gained 3 or more months in 3 months of instruction.	67% of the students gained 2 or more months in 2 months of instruction.	64% of the students gained 2 or more months in 2 months of instruction.

[1]Rate equals median G.E. gain divided by mean attendance in tenths of a school year. A school year equals 180 days.

were both pre- and posttested. The attendance rate in the trailer at Lincoln was also high (89%) compared to that at the other locations. At North where the attendance rate was only 71% nearly a third of the students were without gain scores. The trailer staff was the same in both locations and comparable efforts were made to test the pupils. In a nine-week course posttesting should not be done before the last week of the quarter so little time is left for pick-up testing. A lot of the students just didn't show up to be tested.

Discussion

The results noted in the previous section are highly satisfactory in light of the objectives of the project. The data, as presented, are in terms of the Gates-MacGinitie tests. As has been noted, below grade level testing was used. This procedure was used so the tests would be compatible with the reading level of the students and the level of their instructional program. The means of the students' pretest scores were approximately equal to those which the publisher used in studies of both parallel forms and reliability for the two levels of the test. In all instances the standard deviation was less than that which the publisher gave for those means. In view of these observations it is thought that the tests were appropriate for the students in the project.

Recommendations were made at the end of the school year that the

vocabulary section of the Gates-MacGinitie tests not be used again since at neither level was it appropriate to the vocabulary which was being taught. It was, however, used during the second half of this (1971-72) school year. In light of the correlation with the number of Dorsett programs completed (-.14) it can be seen either that the tests were not testing the vocabulary being taught or that the programs were not very good. According to teacher judgment the tests sampled a different vocabulary from that being taught.

One of the teachers had suggested that a possible benefit from the project was that the pupils had practice in reading for 40 - 50 minutes a day which they would not have had otherwise. This sounded reasonable but the correlations between number of days present and grade equivalent gains in comprehension ranged from -.05 through .00 to +.06. However, the correlations between the number of programs completed and grade equivalent gains in comprehension ranged from +.10 to +.28. The latter correlation (+.28) was significant at the .01 level. This significance may not be of practical value but these findings suggest that the programs themselves rather than mere practice in reading contributed to the gains in comprehension.

The gains which these students made are remarkable for students who had been falling a little more behind in their reading test scores each year. The rate of growth at the senior high level is especially noteworthy. Though some of their gains might possibly be attributed by some to the tests being used, there is no doubt but what they made a

great deal of progress in an area in which they had formerly been deficient.

It is impossible to evaluate the part which each component of this program played in the gains which were made without setting up an experimental situation in which some of the students would be denied certain things. Were the gains made because of the programs, the machines, the individualized attention of the teachers and aides, or the fact that the instruction took place in a non-classroom type of surroundings?

Some students showed no gain or a loss between pre- and posttests. Those who showed a loss may be lumped together with those who showed no gain since it might be assumed that they could read at least as well as they did on the pretest. It is likely that they were uncooperative in the testing situation. It would be interesting to examine this group more thoroughly. Could it be that the materials presented in the program were too difficult for them and that they should have been in a more elementary program, or is it possible that some other approach might have reached them? These questions cannot be answered unless a more expensive, experimental program were to be implemented.

Recommendations

1) Continue the program since it was so effective in attaining its objectives.

2) Continue the use of Gates-MacGinitie comprehension tests for evaluation purposes but do not use the vocabulary sections.

3) Develop criterion-referenced tests for vocabulary, based on the instructional materials. The Dorsett programs teach a specific vocabulary. It does not seem to be a random sample from the same domain from which the Gates-MacGinitie has drawn its items.

4) Consider the possibility of using the north side trailer at North High for at least three-fourths and possibly a whole year, concentrating on students from grades 9 and 10. There is a large population from which to draw and students in that group made exceptional gains in 1971-72.