DOCUMENT RESUME

ED 262 132 UD 024 469

TITLE	Sunset Review Report on the Demonstration Programs in Reading and Mathematics. A Report to the California Legislature as Required by Education Code Section 62006.
INSTITUTION	California State Dept. of Education, Sacramento. Planning, Evaluation, and Research Div.
PUB DATE	84
NOTE	35p.
AVAILABLE FROM	Bureau of Publications, State Department of Education, 721 Capitol Mall, Sacramento, CA 95814.
PUB TYPE	Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Academic Achievement; Cost Effectiveness; *Demonstration Programs; *Diffusion (Communication); Disadvantaged Environment; *Disadvantaged Youth; Evaluation Methods; Information Dissemination; Junior High Schools; Low Achievement; Low Income Groups; *Mathematics Instruction; Program Effectiveness; Program Evaluation; *Reading Instruction; State Programs
IDENTIFIERS	*California Demonstration Program in Mathematics; *California Demonstration Program in Reading; California State Department of Education

ABSTRACT

California's demonstration programs in reading and mathematics are the State's only educational programs whose funds are used exclusively to serve low-achieving students from disadvantaged areas at the junior high-middle school level. The purpose of the programs is threefold: to establish exemplary programs in reading and mathematics instruction in Grades 7, 8, and 9; to develop the reading and mathematics competence of low-achieving students; and to disseminate these successful practices to other educators. The findings of a series of annual reports submitted to the Legislature since 1970 show that the demonstration programs have adhered closely to the legislative mandate in serving those students in disadvantaged areas. They also show that low-achieving students in reading and mathematics can equal or surpass expected standards of achievement as the result of the programs' intervention. The report shows, moreover, that the demonstration programs have operated with increasing efficiency over the years, both in use of funds and in promoting student achievement. Finally, the demonstration programs' information and materials have been extensively adapted and utilized by other educational professionals throughout California as the result of dissemination activities. The State Department of Education recommends that the current demonstration programs in reading and mathematics be continued because they have been effective in promoting student achievement. Further, the legislature should consider three additional options: (1) obtaining new information on demonstration program practices; (2) expanding these practices to new schools; and (3) developing new demonstration programs in other curricular areas. (KH)

Sunset Review Report on the Demonstration Programs in Reading and Mathematics

A Report to the California Legislature
as Required by Education Code Section 62006

Division of Planning, Evaluation and Research

California State Department of Education
Bill Honig, Superintendent of Public Instruction
Sacramento, 1984

This legislative report, which was prepared by the Division of Planning, Evaluation, and Research, California State Department of Education, was published by the Department, 721 Capitol Mall, Sacramento, CA 95814. Any questions regarding the report should be addressed to the Division of Planning, Evaluation, and Research (phone 916-445-0297) The report was distributed under the provisions of the Library Distribution Act

1984

CONTENTS

Page

Appendices

List of Tables

EXECUTIVE SUMMARY

The demonstration programs in reading and mathematics were originally mandated by AB 938 (Chapter 1578/1969). More recently, SB 1155 (Chapter 1270/1983) defined a sunset date in 1985 for these programs and required a legislative review in 1984. This report is in response to that directive.

The demonstration programs were intended for schools in "designated areas of disadvantage," which were defined as areas with low-income families, high mobility rates, and low student academic test scores.

The purpose of the programs was threefold: to establish exemplary programs in reading and mathematics instruction in grades seven, eight, and nine; to develop in low achieving students competence in reading and mathematics; to disseminate these successful practices to other professional educators.

The findings in this report were assembled from the series of annual reports submitted to the Legislature since 1970. The findings show that the demonstration programs have adhered closely to the legislative mandate in serving those students in disadvantaged areas. They also show that low-achieving students in reading and mathematics can equal or surpass expected standards of achievement as the result of the programs' intervention. The report shows, moreover, that the demonstration programs have operated with increasing efficiency over the years--both in use of funds and in promoting student achievement. Finally, the demonstration programs' information and materials have been extensively adapted and utilized by other educational professionals throughout California as the result of dissemination activities.

The State Department of Education recommends that the current demonstration programs in reading and mathematics be continued because they have been effective in promoting student achievement.

It is further recommended that the Legislature consider three additional options that would improve the programs while maintaining their basic purposes. These options are: (1) obtain new information on demonstration program practices; (2) expand these practices to new schools; and (3) develop new demonstration programs in other curricular areas.

INTRODUCTION

Senate Bill 1155 (Chapter 1270/1983) requires the State Department of Education to submit a report on the demonstration programs in reading and mathematics to the Legislature and to the Legislative Analyst. The purpose of the report is to assist the Legislature in its review of this categorical program as required by Education Code Section 62006(a). The demonstration programs will cease to be operative, or "sunset," on June 30, 1985, unless the Legislature enacts legislation to continue the programs pursuant to the recommendations of the review. (See Appendix I.)

The demonstration programs are the only educational programs whose funds are used exclusively to serve low-achieving students from disadvantaged areas at the junior high/middle school level in California. They are designed to improve the academic achievement of these students in reading and mathematics. The programs are expected to be exemplary, are mandated to be cost-effective, and are required to share their successful practices with other schools.

This report contains, first, a description of the demonstration programs, including a description of the student population served, how the programs are operated at the local level, and how the programs are administered at the state level. The description is supported by relevant statistical data on program enrollments, student achievement, and funding levels. Next is a discussion of related federal and state programs which may be appropriate for the Legislature to consider in its review of the demonstration programs. Third, an analysis of the programs describes the methods used for the evaluation, and program findings report pupil achievement, program costs, and program effectiveness. Finally, these findings are summarized and recommendations are made for ways to improve the programs while maintaining their basic purposes.

LEGISLATIVE HISTORY

The demonstration programs in reading and mathematics began in 1970 after the Legislature passed AB 938 (Chapter 1578/1969). The programs were originally authorized by Education Code Section 58608 to continue until 1972. However, in 1972, Senators Marks and Moscone introduced SB 375 (Chapter 596/1972); it became the authorizing legislation which permitted the programs to continue until 1975. In 1975, Senator Rains and Assemblyman McVittie co-introduced a bill, SB 420 (Chapter 1127/1975), which continued the programs until September 1, 1978, and strengthened their dissemination requirements. AB 8 (Chapter 282/1979) continued the programs until 1982, when the Legislative Analyst was required to conduct a thorough sunset review study. AB 2196 (Chapter 1354/1980) removed the mention of a termination date by repealing Education Code Section 58608, but left the AB 8 sunset provisions intact. Most recently, SB 1155 (Chapter 1270/1983) changed the sunset date to 1985 and required a legislative review of the programs in 1984 (the year prior to the sunset date) so that school districts and county offices of education would not be subject to disruption in the planning and administration of the programs.

It was originally the intent of the Legislature that the Department of Education, with the approval of the State Board of Education, establish exemplary programs for intensive instruction in reading and mathematics for students in grades seven, eight, and nine who attended school in the most seriously disadvantaged areas in California. The programs were intended to serve as demonstration projects aimed solely at developing, within these students, above-average competence in these two basic skill subjects. The programs also were intended to disseminate their successful practices to other schools which would replicate those practices.

The authorizing legislation specified that the demonstration programs be operated by school districts. Local program approving agencies were granted waivers of the Education Code, if necessary, for the development of the programs. A unique provision in the legislation required the ongoing replacement of projects which were deemed least cost effective by ones of proven effectiveness or by new projects which held promise of increased effectiveness. The Superintendent of Public Instruction was required to submit annual reports to the Legislature on the implementation and evaluation of the demonstration programs.

PURPOSE

The demonstration programs in reading and mathematics are designed to improve the achievement of students living in disadvantaged areas. In addition, demonstration programs are required to act as exemplary programs and to disseminate information on curriculum and other educational practices to schools for the purpose of improving student achievement with cost-effective reading and mathematics programs. According to State Board of Education regulations, "exemplary program" is defined as an innovative, creative program over and above a district's regular program that can serve as a model for future programs. "Designated areas of disadvantage" are those areas which have such factors as the high incidence of low-income families, unemployment, persons receiving assistance under the federal program of aid to families with dependent children (AFDC), and low-achieving students in the schools.

Further, the demonstration programs are required to be designed to create an atmosphere or climate for learning, to motivate the students for further learning, and to assure educational attainment or success in reading and mathematics. The specific goals of the programs are:

1. Development of creative programs to serve as models or guides for improved instruction, generally, and for compensatory education, specifically

2. Experimentation with new curricula and methodology designed to meet the needs of low-achieving pupils

3. Analysis and assessment of the abilities and needs of low-achieving pupils

4. Provision of individualized instruction

5. Employment of a variety of approaches to systematic, sequential skills development

6. Provision of corrective programs for pupils performing one year or more below grade expectancy level

PROGRAM HISTORY AND DESCRIPTION

In the 1969-70 school year, 16 different schools in various areas of the state were approved by the State Board of Education to begin a demonstration program in reading or mathematics (or both) for their seventh grade pupils during the second semester of the 1969-70 school year. The schools chosen were those in low-income areas with high student mobility rates and low academic achievement test scores and whose students would otherwise have found difficulty in achieving future success in high school.

History

Since 1969-70, a total of 47 schools have implemented demonstration programs; these schools have operated a total of 37 reading projects and 23 mathematics projects. Schools have implemented single projects (e.g., reading or mathematics) or dual projects (reading and mathematics). There were 16 original schools when the programs began, which operated 15 reading and 13 mathematics projects. This year, 28 schools are operating 16 reading projects and 13 mathematics projects. Only 4 of the 16 original schools are still operating a reading or mathematics project, and only 1 of them has not had a project terminated. (See Appendix II.) In keeping with the legislative requirement to terminate the least cost effective, 31 projects have either been terminated or have withdrawn voluntarily since the programs' authorization. Ten programs were moved from one school to another because of such unanticipated events as school closure or fire. (See Appendix III.)

Description

The demonstration programs vary from school to school. All projects place students with different achievement levels together in the same classroom, but other program features may vary. Frequently found features include individualized instruction, use of aides in the classroom, learning centers or laboratories, and specially designed curricula, materials, and activities. Each project is designed by the principal, project director, teachers, aides, and other staff at the school and is based on the needs and characteristics of the students and the school. Those same school personnel also make decisions to modify and improve their school's program as needed.

All students at the project grade level participate in the demonstration program at that school. The project moves with the students, serving the same group of students throughout grades seven, eight, and nine in a three-year cycle. However, since the demonstration programs were established, many participating schools have changed from three-year junior high schools to two-year schools. Accordingly, projects at these schools now operate on a two-year rather than a three-year cycle with the same group of students.

In addition to their goal of improving student achievement, all continuing demonstration programs engage in a variety of dissemination activities designed to provide other schools with information and materials about their successful efforts to improve student achievement in a cost-effective manner. All programs make presentations at annual dissemination conferences coordinated by the State Department of Education to which the education community and other interested citizens are invited. Each demonstration program welcomes visitors who want to learn about that program on a first-hand basis. Every program responds to

requests for curriculum materials and information by giving reports, instructional guides, sample materials, and other information so that interested teachers and administrators can use project ideas at their own schools. Many programs use a variety of other means to spread information about their programs, including newspapers, television and radio presentations, slide and tape shows, and workshops.

Demonstration programs are compared with each other annually, and those that are deemed least effective on the basis of student achievement and cost-effectiveness are terminated. Funds from terminated programs are used to replicate cost-effective programs in other schools and in other eligible districts or to add new, potentially effective, programs.

Typical Operation

A typical reading program may take half of the school's seventh grade English classes in a school into a reading center for a three-week period. The reading teachers and aides in the center work with students in small groups or individually, usually on a contract basis agreed to by the teacher and student. Students are pretested and assignments are given only for work which is needed. A variety of methods and materials are used, depending on the students' needs.

After a three-week period, these students return to their English classes and the remaining half of the classes attend the reading center. The students alternate with three weeks in the center and three weeks in the classroom throughout the year.

Although each program is different, great emphasis is placed on a sequential, systematic curriculum with each student working on specific assignments.

A typical mathematics program might begin each class period with a short quiz and quick drill for all students. Each student then begins work on individual contract lessons. After a few lessons, a test is taken to determine if the next series of lessons should be attempted or if review work should be done. Students take many quizzes to make certain that they understand the material that they have been studying and are ready to move on to the next level. Each student might spend every fifth day in a mathematics lab doing hands-on assignments related to the classroom work.

In recent years, computers have been used in some of the programs. Several demonstration programs are now offering in-service workshop sessions in the use of computers in teaching reading and mathematics to students and in program management.

Population Served

The enabling legislation required that students served in the demonstration programs were to be in schools in areas designated as disadvantaged (Education Code Section 58602). Such schools were in low-income areas, typically with large minority populations that had high mobility rates and had students with low academic test scores. It was hoped that intervention by the demonstration programs would reverse the trend of low academic achievement. Approximately 8,000 students per year have been served by the programs. A description of the average demonstration program student population is as follows:

Ethnicity. Sixty-one (61) percent of the average demonstration program school population in 1983-84 is made up of minority students. The average ethnic distribution is as follows: 35 percent Hispanic students, 19 percent black (not of Hispanic origin) students, 5 percent Asian or Pacific Islander students, 1 percent American Indian or Alaskan native students, 1 percent Filipino students. Thirty-nine percent of the students are white (not of Hispanic origin). This compares with 1981-82 data on the statewide ethnic distribution in the public schools: 26 percent Hispanic students, 10 percent black (not of Hispanic origin), 6 percent Asian or Pacific Islander students, 1 percent American Indian or Alaskan native students, 2 percent Filipino students, and 56 percent white (not of Hispanic origin) students. A few of the schools have large populations of only one minority group (for example, one school has 95 percent Hispanic and another has 93 percent black), while the majority have mixed student populations.

Income level. The income level of the programs' designated areas is difficult to assess directly; however, an indirect measure is the number of free lunches served to the students in these areas that qualify under federal AFDC criteria. The average demonstration program school serves a free lunch to 53 percent of its students. The range of free lunches served is from 23 percent to 93 percent.

Academic level. The average achievement of students entering the program in September 1982 was more than one year below grade level in reading or mathematics achievement. (An analysis of students' academic level is found in Table 4, page 13.)

Mobility. Although mobility rate statistics have not been collected, most project directors have stated that the demonstration program schools have had much higher rates than other similar schools in their districts.

State Administration

The Department of Education has one consultant-manager and one half-time secretary assigned to administer the demonstration programs. The manager reviews, processes, and prepares State Board of Education agendas for demonstration programs' applications, revisions, and amendments; offers programs assistance during regular site visits to the programs; coordinates with and provides demonstration program in-service workshop sessions for other Department and professional organization sponsored conferences; plans and conducts in-service programs for program staff; plans, coordinates, and conducts statewide demonstration program in-service conferences; disseminates printed material about the demonstration programs; and serves as liaison for the demonstration programs at the state level. Program evaluation assistance is provided by the Division of Planning, Evaluation and Research.

Funding Level and Enrollment

To be eligible for the funding of a demonstration program, a school district must maintain schools serving low-achieving seventh, eighth, or ninth grade students in the most concentrated areas of poverty as designated by the Superintendent of Public Instruction under provisions of Education Code Section 54483.

The programs were originally funded at the $3,000,000 level from the state General Fund. Because of cost-of-living increases in 1974, 1977, 1980, and 1983, the amount available for fiscal year 1983-84 is $3,771,000.

The program schools are required to use regular district funds for their basic educational programs and to use demonstration program funds only for reading or mathematics program activities not normally provided by the district. Most of the program funds are used for personnel; about 85 percent is spent for certificated and classified salaries and employee benefits; the remainder is used for books, supplies, equipment, rents, leases, utilities, travel, housekeeping, and other services. There is no requirement for districts to match local monies with the extra state funds.

Related Federal and State Programs

There are no other federal or state funded programs which serve only junior high/middle school students in reading and mathematics. While the demonstration programs' funds can be spent to fund only one grade level at a time, districts often use other funding sources to offer a similar program to students in the other grade level(s) not being served; often federal or state compensatory education funds are used in these cases.

The federal National Diffusion Network (NDN) funds the national dissemination of information about validated exemplary programs in all subject areas. However, NDN funds only the national dissemination of programs; it does not fund their ongoing operations. Five of the demonstration programs have been validated as exemplary by the National Joint Dissemination Review Panel, and three have been funded for national dissemination by the National Diffusion Network.

A related program at the state level is the Miller-Unruh Reading Program which provides funds to pay the salaries of reading specialists. However, this program serves elementary school students with reading disabilities; it does not serve junior high/middle school students.

PROGRAM ANALYSIS

Introduction

The program analysis section contains summaries of the general evaluation methodology used by the demonstration programs as well as summaries of the achievement data, program costs data, program cost-effectiveness data, and program dissemination data, which have been described in annual reports since 1971. The aim of this section is to examine trends in these data and to make inferences about the educational significance of the program outcomes.

General Evaluation Methodology

Evaluation Plan

From the outset, projects have reported evaluation data annually to the State Department of Education. These reports contained data about the number of students in a program, pre- and post-test CTBS achievement test data and fiscal information. This information was used primarily to establish rankings of effectiveness among the programs. Prior to 1975-76, rank-ordered test score data appeared in annual reports. In the analysis presented herein, emphasis is placed on the data in the eight annual reports from 1975-76 to the present which contain scaled scores data as well as rank-ordered data.

Data Components

The data components for the demonstration programs' annual evaluation include pupil achievement, program costs, cost-effective indices, and program dissemination information. Brief descriptions of the methods used to analyze the data are described below.

- Pupil achievement

  Demonstration programs are required to administer standardized achievement tests to students in the designated grades on a fall pretest and later on a spring post-test. The achievement test, typically administered in October and May each year, has been the Comprehensive Test of Basic Skills (CTBS), form Q, R, S, or T, level 2, 3, or 4. Achievement gains were expressed as increases in scaled scores from the October pretest to the May post-test, as measured by the subtraction of each project's mean pretest scaled score from the mean post-test scaled score. (The mean scaled scores were obtained by converting each student's raw score to a scaled score, summing the scaled scores, and obtaining the mean.)

  Scaled score increases from pretest to post-test were compared to gains predicted on the basis of the pretest percentile rank and were expressed as a percent increase in scaled score over the increase predicted from October to May. For each project, the percentile rank of the mean pretest scaled score was read from the publishers' norms for October of the correct grade. The predicted post-test scaled score was the scaled score of the same percentile rank on the publishers' norms for May of the correct grade. The rationale for this calculation of predicted

score was that, with no program intervention, project participants would progress at the same relative rate as that which had determined their pretest percentile rank, and their post-test percentile rank would thus be the same as the pretest percentile. The difference between the pretest and the predicted post-test was calculated to give the predicted scaled score increase (for example, actual pretest 381, predicted post-test 400, for a predicted gain of 19 scaled score points). The actual difference between the obtained pretest and post-test was calculated (for example, actual pretest 381, actual post-test 438, for an actual increase of 57 scaled score points). The difference between the actual gain and the predicted gain was calculated (continuing the example, 57 minus 19 equals a difference of 38 scaled score points). The ratio of the difference between the actual score and the predicted score to the predicted score (38/19) was expressed as the percent of increase in scaled score over the predicted increase (200 percent).

Achievement gains also were expressed as months gain in mean grade equivalent scores for each month of instruction between pretest and post-test. First, the gain in grade equivalent scores from pretest to post-test was calculated by the conversion of mean pretest and post-test scores to the equivalent grade equivalent scores according to publishers' norms (for example, a pretest scaled score of 28 equals grade 4.5; a post-test scaled score of 39 equals grade 5.8) and subtracting the pretest score from the post-test score (for example, the gain from 4.5 to 5.8 is 1.3 years or 13 months, with the school year being calculated as ten months in duration).

The increase in scores was then divided by the actual number of months' instruction between pretest and post-test (in this case, 13 months divided by seven months' instruction, or 1.85 months' gain for each month of instruction).

In the analyses reported, the computed gains may be overestimates of the actual gain. This phenomenon occurs when test publishers' norms are based on linear interpolation and intrapolation from few empirical data points.*

- Program costs

With the total project expenditures used as the basis, the percentage of expenditures in each of six major budget categories was calculated across projects. Unaudited end-of-year financial reports provided the data. Expenditures per student were calculated by obtaining the operating expenses reported as of May each year and dividing by the number of students served by the projects. The percent of expenditures in excess of estimated district expenditures per unit of a.d.a. was calculated for each project.

*J. L. Housden and D. R. Sweet, "Problems in Estimating Fall and Spring Norms for Standardized Achievement Tests." Sacramento: California State Department of Education, Office of Program Evaluation and Research, 1977 (staff working paper).

- Cost-effectiveness measures

The enabling legislation specified that the demonstration programs be evaluated and compared with each other in cost-effectiveness. A cost-effectiveness formula was derived from a comparison of two variables--increases in student achievement compared to predicted increases and increases in expenditure over the ordinary or district expenditures per unit of average daily attendance (a.d.a.). The cost-effectiveness formula gave the percent of extra student achievement gained for each 1 percent increase in cost. For example, a cost-effectiveness index of one meant that there was a 1 percent increase in achievement for each 1 percent increase in cost.

- Dissemination and replication activities

The demonstration programs are required to disseminate information (Education Code Section 58601) about their successful practices. Information about this activity was obtained from evaluation reports submitted in June for each program. Fiscal information about dissemination and replication activities was obtained from preliminary fiscal reports which were also submitted annually for each program by June.

Program Findings

Table 1 shows the pre/post-test changes which have occurred across eight years of program operation. The gains of 50 scaled score points on the average in reading and 64 scaled score points in mathematics indicate that the educational practices interposed between the pretest and the post-test had a significant and reliable effect on the reading and mathematics levels of the students.

TABLE 1

Actual Gains in Comprehensive Test of Basic Skills (CTBS)
Reading and Mathematics Scaled Scores

	Reading			Mathematics		
Year	Pre-test	Post-test	Gain	Pre-test	Post-test	Gain
1982-83	481	540	59	462	539	77
1981-82	507	563	56	486	558	72
1980-81	471	524	53	459	527	68
1979-80	504	548	44	487	546	59
1978-79	444	490	46	439	512	73
1977-78	486	527	41	463	527	64
1976-77	452	501	49	448	499	51
1975-76	467	512	45	455	506	51
Averages	477*	527**	50	462*	526**	64

*Chi square test for homogeneity $p > .05$
**T test of overall differences in pretest and post-test mean $p < .05$

Table 1 shows that pupils in the demonstration programs have continually shown increases in reading and mathematics skills over the years. Moreover, these programs have become more efficient in teaching these skills, as indicated by the steadily increasing gain scores. This latter fact may be due to eliminating those programs which are the least effective in improving achievement levels or to increasing success in applying innovative reading and mathematics instructional principles.

Table 2 indicates that the gains in reading and mathematics are clearly greater than one would have expected. Had there been no program intervention, students would have been expected to progress at the same rate, as indicated by the pretest. In fact, their post-test rate was accelerated by 203 percent over the predicted gain on the average in reading and by 392 percent in mathematics.

TABLE 2

Percent of Increase of Actual Gains vs. Predicted Gains in CTBS Reading and Mathematics Scaled Scores

	Reading			Mathematics		
Year	Actual gains	Predicted gains	Percent increase	Actual gains	Predicted gains	Percent increase
1982-83	59	17	247	77	12	542
1981-82	56	18	211	72	14	414
1980-81	53	16	231	68	12	467
1979-80	44	17	159	59	13	354
1978-79	46	16	188	73	12	508
1977-78	41	17	141	64	14	357
1976-77	49	15	227	51	14	264
1975-76	45	15	200	51	14	264
Averages	50	16.5	203	64	13	392

As illustrated in Table 2, the reasons for this accelerated pace may be due to the educational conditions which prevail in the typical demonstration program as follows:

- Students are taught individually or in small groups for at least part of each day.
- Most students study in a learning laboratory at least once per week, working with highly trained teachers, tutors, and aides in learning activities designed especially for them.
- Students with different abilities are grouped together (called heterogeneous grouping).
- Learning activities are planned and directed by the staff of each participating school.

- Learning materials and activities are prescribed on the basis of a diagnosis of each student's ability and learning style.

- Students are made aware of their successes and of the high expectations held for them. As a result, they are motivated to learn more effectively.

- School programs rated least cost effective are terminated.

Table 3 translates this accelerated growth into months of gain for months of instruction. A common educational standard of growth is a one-month gain for each month of instruction. However, in the demonstration programs, students gained 2.3 months for each month of instruction in reading and 2.9 months for each month of instruction in mathematics.

TABLE 3

Month-to-Month Gain in Reading and Mathematics Achievement, as Indicated by CTBS Testing

Year	Month's gain in Reading	Month's gain in Mathematics
1982-83	3.0	3.4
1981-82	2.7	3.0
1980-81	2.2	2.8
1979-80	2.4	3.1
1978-79	2.0	3.6
1977-78	2.0	2.9
1976-77	2.0	2.3
1975-76	1.9	2.1
Average	2.3	2.9

These results suggest that the demonstration programs can be effective in reversing the trend of persistently low academic achievement of students from schools in economically disadvantaged areas.

Table 4 shows that students entering the demonstration programs for the first time in the seventh grade had a CTBS grade equivalent score of 6.1 grades in reading and 5.6 grades in mathematics. This conforms the program intent to serve academically underachieving students.

TABLE 4

Pretest and Post-test CTBS Grade Equivalents in Reading and Math Achievement for Seventh Grade Students

Year	Reading			Math		
	Number of projects	Pretest equiva-lent	Post-test equivalent	Number of projects	Pretest equiva-lent	Post-test equivalent
1982-83	15	6.7	8.4	10	6.4	9.1
1981-82	1	7.6	9.7	3	5.1	7.9
1980-81	10	5.9	7.7	8	6.0	8.5
1979-80	1	6.4	7.8	1	5.4	7.1
1978-79	12	5.7	7.3	7	5.6	8.4
1977-78	2	4.9	6.1	2	5.2	7.0
1976-77	6	5.5	7.2	4	5.8	7.7
Average		6.1	7.7		5.6	8.0

By the end of the school year, these underachieving students were at grade level in reading achievement and above grade level in math achievement.

Table 5 shows operating costs per pupil in the average demonstration program in comparison with regular district expenditures per pupil for the average district conducting a demonstration program.

TABLE 5

District and Demonstration Program Expenditures

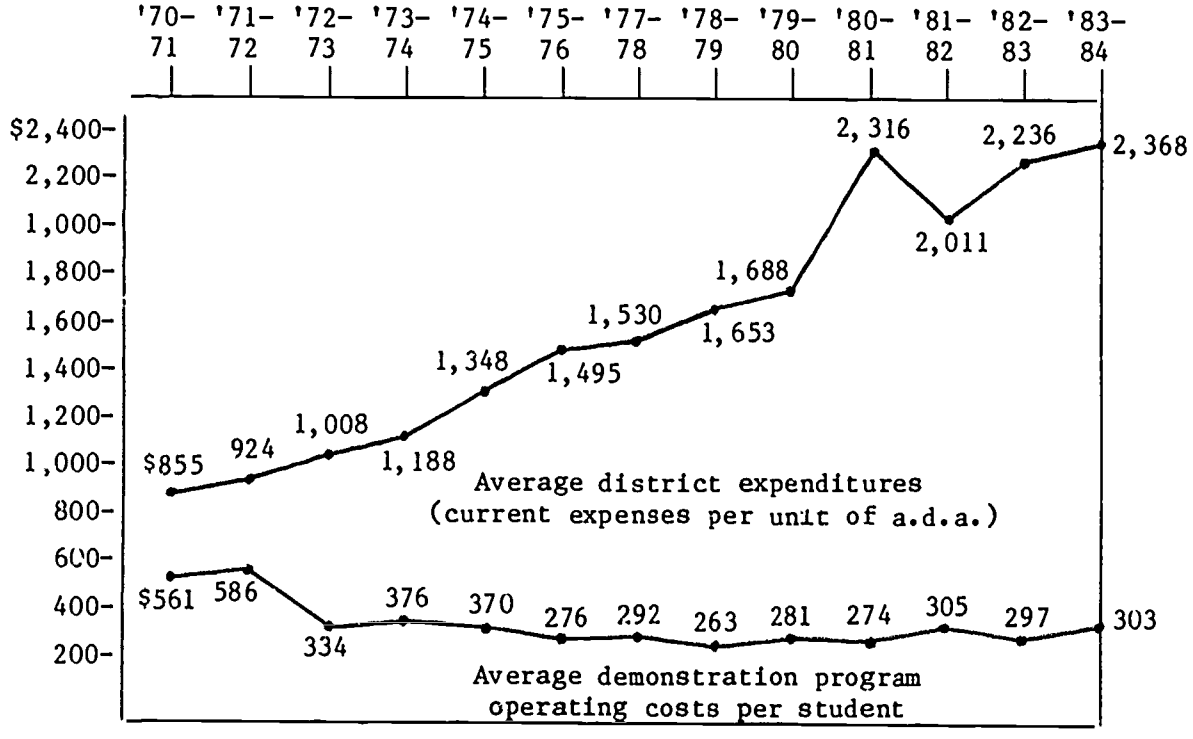


Table 5 illustrates the relative stability of the per-pupil operating costs of demonstration programs across several years of operation. For the same period, regular district expenditures per unit of a.d.a. have risen substantially.

Table 6 shows the cost-effective indexes which have been attained since 1975-76. The cost-effective index is a measure required by the programs' enabling legislation. It is based on a comparison of two variables--increases in student achievement compared to predicted increases in student achievement using CTBS scaled scores and increases in expenditures over the ordinary or district expenditures per unit of a.d.a. The cost-effectiveness formula gives the percent of extra achievement gained for each 1 percent increase in cost. For example, a cost-effectiveness index of two means that there is a 2 percent increase in achievement for each 1 percent increase in cost.

TABLE 6

Cost-Effectiveness Index for Reading and Mathematics Projects

	Reading		Mathematics	
Year	Number of schools	C/E index	Number of schools	C/E index
1982-83	16	20.0	13	55.0
1981-82	14	13.8	12	33.4
1980-81	16	14.8	12	42.8
1979-80	17	14.4	12	28.5
1978-79	15	9.7	9	44.4
1977-78	14	8.4	9	31.4
1976-77	14	10.8	8	24.4
1975-76	16	7.2	8	14.4

Since the cost-effectiveness formula was first developed, there has been a steady increase in program cost effectiveness, as can be seen in Table 6. For the 1982-83 year, a cost-effectiveness index of 20 in reading means that the gain in reading achievement rose 20 percent for each 1 percent increase in program cost; math rose at a 55 percent gain for every 1 percent increase in program cost.

Table 7 shows that, in order for the schools to implement their demonstration programs, they used state funds to obtain personnel, materials, and services beyond that provided by school district resources. The percent of expenditures by budget categories was obtained from the unaudited project end-of-year financial reports.

TABLE 7

A Comparison of Expenditures by Selected Budget Categories for 1982-83, 1979-80, and 1977-78 Fiscal Years

Fiscal year	Salaries		Employee benefits	Contracted services*	Materials and equipment replacement	Capital outlay
	Certified	Classified				
1982-83	43%	27%	16%	6%	6%	3%
1979-80	42%	27%	15%	8%	7%	2%
1977-78	43%	27%	14%	7%	8%	1%

*Utilities, housekeeping, travel, rent, leases, etc.

NOTE: Expenditures may not total 100 percent due to rounding.

Dissemination and Replication Activities and Costs

In addition to increasing the academic achievement levels of students, the goals of the programs have been accomplished by teaching other school staffs about the successful educational practices learned in the demonstration programs, as described in the following paragraphs.

Each program publishes curriculum materials which it has developed and provides them free of charge to any interested school person. During 1982-83, the project directors estimated that they gave information about their curricula to 17,214 school people.

The individual programs conduct dissemination sessions for teachers in their own and neighboring districts and at professional organization meetings. During 1982-83, the average program conducted 33 separate dissemination sessions to demonstrate their successful practices in the teaching of reading or mathematics. Together, the programs conducted 736 dissemination sessions during 1982-83.

As a follow-up to these group dissemination sessions, 251 follow-up sessions were conducted for individual school staffs which requested additional help in replicating a program.

The programs are also considered demonstration sites, and thousands of visitors have observed them in action. During 1982-83, for example, 1,158 educators visited the demonstration programs.

Although the State Department of Education expects each program to disseminate information in a variety of ways, the Department also organizes and coordinates dissemination programs throughout California. Between 1970 and 1982, two major dissemination conferences were held each year, one in northern California and one in southern California. The demonstration programs present workshop sessions and distribute curriculum materials to about 1,000 educators at these yearly sessions. Beginning in 1976, two additional, smaller

dissemination sessions were held annually in the more remote regions of California. About 400 educators each year attended these reading and mathematics dissemination sessions. Beginning in the 1981-82 school year, the large southern and northern meetings were replaced with four regional dissemination programs each year in an attempt to reach even more teachers and administrators.

Demonstration program dissemination meetings have been coordinated by the Department in Alturas, Bakersfield, Bishop, Chico, Crescent City, El Centro, Eureka, Fresno, Monrovia, Oakland, Palm Springs, San Bernardino, San Diego, San Jose, San Mateo, Santa Barbara, Santa Clara, Santa Maria, Santa Rosa, Susanville, and Ukiah.

The demonstration programs' project directors reported that they spent $614,266 in 1982-83 for dissemination and replication activities. Their reports indicated that the average program spent 17 percent of its budget for this purpose. The range was from 6 percent to 39 percent. But this figure does not include any regular salary monies for project directors, teachers, or aides. Some project directors report that half of their time is spent on preparing dissemination materials, conducting workshops, explaining the program to visitors, distributing printed materials, and, in general, teaching others about their programs. For this reason, it is difficult to know exactly how much of each demonstration program's budget should be considered spent for dissemination and replication activities. If the time of those involved in dissemination activities is considered, the actual amount would be considerably higher than the $614,266 listed.

A special study was conducted by the State Department of Education in 1978 on the dissemination and replication activities of the demonstration programs. A questionnaire was sent to a sample of individuals in nondemonstration schools who had had contact with at least one demonstration program. First, directors were asked to submit names of people who they had reason to believe might be using ideas or materials from their programs. A list of over 3,000 names was received from these directors. The Department of Education selected a sample of 1,000 names from this list to receive the questionnaire.

The questionnaires were distributed in March 1978, and 343 usable questionnaires were returned with the following results. Of those questionnaires returned, 63 percent stated they were actually using materials/ideas from programs in some way. The remaining 37 percent of the completed questionnaires represented situations where demonstration program materials/ideas had not yet been used or had been tried but were not in use at the time the questionnaire was completed. Follow-up telephone calls were made to 50 individuals who had responded that they were using program materials and ideas. Nine of the schools from which responses had been received were visited. The purpose of these visits was to verify and clarify information from the questionnaires and to gather additional data regarding the replication of demonstration programs. A summary of selected findings from the study follows:

- Extent of replication

  There were 218 persons, or 63 percent of the completed questionnaires, who said they were using program material/ideas themselves. It is probable that the actual number of users was considerably higher because of sample limitations.

The questionnaire respondents reported passing along materials and information to more than 2,500 persons. Questionnaire responses showed that over 35,000 students in replicating schools had been involved in these programs. This does not represent the total number for the state, of course, but reflects only the findings from the questionnaire sent to a small sample of schools. Project replications are located over the entire state--in small and large districts and in urban and rural areas.

The characteristics of replicating schools were:

- No clear-cut pattern of demographics was found.

- A total of 87 percent of the schools that attempt replications are using some additional financial support from local, state, and/or federal sources for the programs. Just over half of the sample receiving ESEA Title I or SB 90 EDY funds use some of the funds to support the replications. Almost a quarter of the responding schools have special district funds, and 66 percent of these schools use some of this money to replicate demonstration programs.

In effective replication, schools typically reported:

- Support by the school principal.
- More than one contact with demonstration programs.
- Someone had been made responsible for the program at the school.
- The program has been modified to fit local school needs.

In rating the program's effect on student achievement, 95 percent of the responses noted improvement. Ninety-three percent or more of the responses were positive regarding improvement of students' attitudes.

Most of the procedures used to disseminate information about demonstration programs received favorable ratings, with visits to the programs and in-service presentations receiving the highest ratings. Few schools reported that they had chosen to replicate an entire program. Apparently, most schools attempted to modify programs to meet the special needs of their own situations and to encourage greater interest and pride among their own staffs. Although over half of the respondents claimed that their programs represented total replication or replication with only minor modifications, most schools seemed to be using a substantial amount of material from the demonstration programs without necessarily following the procedures from those programs.

The three characteristics most often selected on the questionnaire which promoted and facilitated replications were:

- The material was practical.
- We could get copies of any parts of the program we needed.
- It was easy to understand what was being done.

Respondents interviewed stressed the third point as most important. Interviewees also noted the following:

- Materials designed to fit specific, described needs and to meet specific, described purposes

- Clearly delineated processes
- Readily available materials
- A helpful program director
- Records which document claims of effectiveness ratings

It would appear that the in-service presentations offered an introduction to the programs, and they provided motivation and an opportunity to examine sample materials. Once the selection and the commitment had been made, a visit to the demonstration program became extremely important--particularly where a total program (as opposed to sets of materials) was to be replicated.

SUMMARY OF FINDINGS

The following summary appears warranted based on the foregoing findings and descriptions:

- The legislative intent of the demonstration programs in reading and mathematics is being carried out effectively.
- Students from disadvantaged areas (low-income, high mobility, low student achievement) show consistent achievement improvements in reading and mathematics according to CTBS scores in grades seven, eight, and nine.
- Demonstration programs have become more effective over time with respect to showing greater achievement gains and greater cost-effectiveness.
- Replication and dissemination activities are extensive and ongoing.

RECOMMENDATIONS

The findings clearly show that the demonstration programs in reading and mathematics have been effective in promoting student achievement. For this reason, they should be allowed to continue their exemplary, innovative practices and dissemination activities. Moreover, several additional options exist to improve the programs while maintaining their basic purposes. These specific options are:

I. Obtain new information on the existing demonstration program practices by:

   - Collecting, organizing, and documenting instructional practices and curricular processes for statewide dissemination and for integration into state curricular frameworks (estimated cost: $300,000 one year only).
   - Developing and conducting an evaluation aimed at assessing the extent to which demonstration program models can be replicated in nondemonstration schools (estimated cost: $300,000 for a two-year study).
   - Planning and conducting an evaluation to determine the long-term effect of improved student achievement in reading and mathematics in the seventh, eighth, and ninth grades on high school academic performance.

II. Expand demonstration program practices in reading and mathematics into new schools not represented previously in the demonstration programs (estimated cost: $140,000 annually per school).

III. Develop demonstration programs in new curricular areas, for example, science, using the techniques and processes established by the programs for reading and mathematics projects (estimated cost: $140,000 annually per school).

APPENDIX I

SB 1155 (Chapter 1270 of Statutes 1983)

Ch. 1270

PART 34. EVALUATION AND SUNSETTING OF PROGRAMS

SEC. 9. Section 62000 of the Education Code is repealed.

SEC. 10. Section 62000 is added to the Education Code, to read:

62000. "Sunset" and "sunset date," as used in this part, mean the date on which specific categorical programs cease to be operative and the provisions of Sections 62002, 62003, 62004, 62005, and 62005.5 govern program funding.

The following educational programs shall cease to be operative on the date specified, unless the Legislature enacts legislation to continue the program after the review prescribed in Section 62006:

(a) Sunset date of June 30, 1985:

(1) Demonstration programs in reading and mathematics.

(2) Local staff development and teacher education and computer centers.

(3) Educational technology.

(4) Professional development centers.

(5) Instructional materials.

(b) Sunset date of June 30, 1986:

(1) Miller-Unruh Basic Reading Act of 1965.

(2) School improvement program.

(3) Indian early childhood education.

(4) Economic impact aid.

(5) Bilingual education.

(c) Sunset date of June 30, 1987:

(1) Special education.

(2) Gifted and talented education.

(d) Sunset date of June 30, 1988:

(1) Child development and preschool programs.

(2) Adult education.

(3) Indian education centers.

SEC. 11. Section 62000.5 of the Education Code is repealed.

SEC. 12. Section 62001 of the Education Code is amended to read:

62001. (a) The intent of the Legislature in enacting this section is to assure a thorough review of programs listed in Section 62000 and the funding sources thereof, so that they most effectively, efficiently, and economically meet the needs of pupils and improve schools. It is not the intent of the Legislature in enacting this section to remove resources from students with special needs, or to cease efforts to improve the schools.

(b) It was the intent of the Legislature in enacting this part to ensure that each categorical program is thoroughly reviewed. It was also intended that programs would be reviewed the year prior to the sunset date so that school districts and county offices of education would not be subject to unnecessary confusion and disruption in planning and administering those programs.

(c) It is further the intent of the Legislature that the legislative review of programs specified in Section 62000 shall consider the

appropriateness of state administration by agencies other than by the State Department of Education, such as the Commission on Teacher Credentialing and the Chancellor of the California Community Colleges.

SEC. 12.5. Section 62002.5 of the Education Code is amended to read:

62002.5. Parent advisory committees and school site councils which are in existence pursuant to statutes or regulations as of January 1, 1979, shall continue subsequent to the termination of funding for the programs sunsetted by this chapter. Any school receiving funds from Economic Impact Aid or Bilingual Education Aid subsequent to the sunsetting of these programs as provided in this chapter, shall establish a school site council in conformance with the requirements in Section 52012. The functions and responsibilities of such advisory committees and school site councils shall continue as prescribed by the appropriate law or regulation in effect as of January 1, 1979.

SEC. 13. Section 62006 of the Education Code is amended to read:

62006. (a) The Legislature shall begin immediately a detailed study which shall ensure that each funding source and program be scrutinized regarding, but not limited to, the:

(1) Appropriateness of identification formulas in determining which children have special needs.

(2) Appropriateness of allocation formulas and adequacy of funding.

(3) Effectiveness of programs.

(4) Appropriateness of local control.

(5) Appropriateness of state level involvement in monitor, review, and auditing to assure that funds are being used efficiently, economically, and legally.

(6) Appropriateness of costs of administration at all levels of operating these programs.

(7) Appropriateness of State Department of Education administration of categorical programs.

(8) Interrelationships between and among state and federal categorical programs, as appropriate.

(9) Characteristics of the target population being served.

(10) Need for the program.

(11) Purpose and intent of the program.

(b) In order to facilitate the legislative review, reports shall be developed and submitted to the Legislature pursuant to subdivisions (c), (e), and (f). The reports for programs scheduled to sunset in 1985 shall be submitted to the Legislature by December 1, 1983; for programs scheduled to sunset in 1986, the reports shall be submitted by September 15, 1984; for programs scheduled to sunset in 1987, the reports shall be submitted by September 15, 1985; for programs scheduled to sunset in 1988, the reports shall be submitted by September 15, 1986.

The report by any agency in any given year may comment, within a single report, on all programs scheduled to sunset in the applicable year.

(c) The State Department of Education shall submit a report on the applicable programs pursuant to the schedule provided in subdivision (b) and shall also submit a copy of each report to the Legislative Analyst. The report shall contain, but not be limited to, the following:

(1) A description of the programs, including narrative descriptions of how they are typically operated at the local level and how they are administered at the state level.

(2) The history of the program or programs and previous legislative action.

(3) Relevant statistical data, including enrollment and fiscal data.

(4) Related federal programs, and any provisions of federal law which may be appropriate for the Legislature to consider in its review of the state programs.

(5) Whether there is an unmet need for the intended purposes of the program and, if any, the estimated cost of serving that unmet need.

(6) Findings regarding the program, addressing as many of the issues identified in subdivision (a) as is possible. To the extent appropriate, as determined by the State Department of Education, the report shall include comments on whether any identified problems are implementation issues, or issues that warrant revision of law or regulations.

(7) Recommendations of ways to improve the program while maintaining its basic purposes.

(d) The Legislative Analyst shall review the report submitted by the State Department of Education and, no later than 90 days following the receipt of each report, shall submit findings, comments, and recommendations, as the Legislative Analyst determines appropriate, regarding the program, addressing as many of the issues identified in subdivision (a) as the Legislative Analyst determines is possible. To the extent determined appropriate by the Legislative Analyst, the report shall include comments on whether any identified problems are implementation issues or issues that warrant revision of the law or regulations and shall include recommendations of ways to improve the programs while maintaining its basic purposes.

(e) The Legislative Counsel shall submit a report on the applicable programs, pursuant to the schedule provided in subdivision (b). The report shall include, but not be limited to, the following:

(1) A summary of the law regarding the programs, including applicable regulations.

(2) A summary of related federal law and regulations, if any.

(3) A summary of related court decisions, if any.

(4) A summary of any federal provisions or court decisions which place constraints on the Legislature's alternatives.

(f) Each temporary advisory committee established pursuant to Section 62006.5 shall submit a report on the applicable programs, pursuant to the schedule provided in subdivision (b). The report shall make findings and recommendations on as many of the issues identified in subdivision (a), as is possible.

SEC. 14. Section 62006.5 is added to the Education Code, to read:

62006.5. (a) There are hereby established the following four temporary advisory committees, each to serve for the specified period of time:

(1) A temporary advisory committee on the programs scheduled to sunset on June 30, 1985. This advisory committee shall serve for the period September 1, 1983 through December 31, 1983.

(2) A temporary advisory committee on the programs scheduled to sunset on June 30, 1986. This advisory committee shall serve for the period January 1, 1984 through December 31, 1984.

(3) A temporary advisory committee on the programs scheduled to sunset on June 30, 1987. This advisory committee shall serve for the period January 1, 1985 through December 31, 1985.

(4) A temporary advisory committee on the programs scheduled to sunset on June 30, 1988. This advisory committee shall serve for the period January 1, 1986 through December 31, 1986.

(b) Each temporary advisory committee shall consist of 12 members selected as follows:

(1) Three members selected by the Speaker of the Assembly who shall ensure that his or her appointees consist of one administrator or school board member, one nonadministrative school employee, and one parent, student, or community member.

(2) Three members selected by President pro Tempore of the Senate who shall ensure that his or her appointees consist of one administrator or school board member, one nonadministrative school employee, and one parent, student, or community member.

(3) Six members selected by the Governor as follows:

(i) Two administrators or school board members.

(ii) Two nonadministrative school employees.

(iii) Any combination of two parents, students, or community members.

(c) Members of each advisory committee shall serve without compensation, except for reimbursement of expenses.

(d) The State Department of Education shall provide staff support to each advisory committee.

(e) This section shall remain in effect only until January 1, 1987, and as of such date is repealed, unless a later enacted statute, which is chaptered before January 1, 1987, deletes or extends such date.

SEC. 15. Part 36 (commencing with Section 64000) is added to the Education Code, to read:

DEMONSTRATION PROGRAMS IN READING AND MATHEMATICS
1983-84

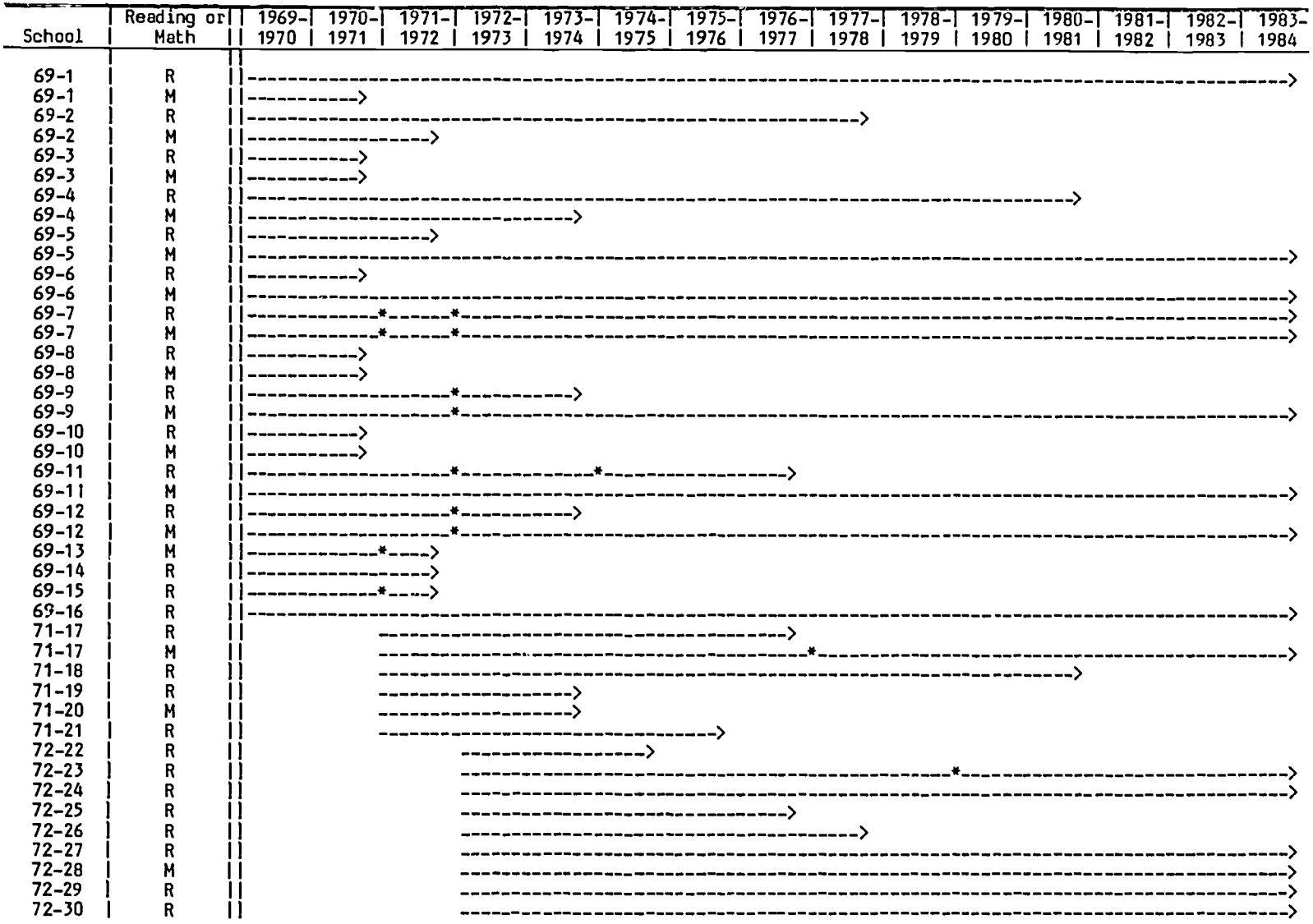
District	**	School	Address	Project Director	Telephone
Bakersfield	R	Compton Junior High	3211 Pico St., Bakersfield, CA 93306	Bill McLean	(805) 872-4690
Bakersfield	R	Sierra Junior High	3017 Center St., Bakersfield, CA 93306	Barbara Clark	(805) 323-4838
Berkeley*	R	Willard Junior High	2425 Stuart St., Berkeley, CA 94705	Dianna Penney	(415) 644-6330
Colton	RM	Terrace Hills Jr. High	22579 DeBerry St., Colton, CA 92324	Marilynn Pagan	(714) 824-4245
El Rancho*	R	North Park Middle	4450 S. Durfee Ave., Pico Rivera, CA 90660	Gaynell Buis	(213) 695-1150
Garvey*	R	Garvey Intermediate	2720 N. Jackson Ave., Rosemead, CA 91770	Charles Haig	(213) 572-4677
Greenfield	R	Greenfield Jr. High	1109 Pacheco Rd., Bakersfield, CA 93307	Evelyn Ferguson	(805) 834-0109
Jurupa*	R	Jurupa Jr. High	8700 Galena, Riverside, CA 92509	James Shearer	(714) 781-1853
Jurupa	M	Mission Jr. High	5961 Oso Ln., Riverside, CA 92509	John Wheeler	(714) 781-1811
Long Beach	M	Franklin Jr. High	540 Cerritos Ave., Long Beach, CA 90802	Steven Fish	(213) 437-8212
Long Beach	M	Washington Jr. High	1450 Cedar Ave., Long Beach, CA 90813	Steven Fish	(213) 437-8212
Los Angeles	M	Pacoima Jr. High	9919 Laurel Canyon Blvd., Pacoima, CA 91331	Elaine Lindsay	(213) 896-5816
Monrovia*	R	Clifton Middle	226 S. Ivy Ave., Monrovia, CA 91016	Joan Escalante	(213) 359-8717
Monrovia	R	Santa Fe Middle	148 W. Duarte Rd., Monrovia, CA 91016	Carol Levinski	(213) 359-7946
Oakland	M	Carter Middle	4521 Webster St., Oakland, CA 94609	Christina Owyang	(415) 654-8936
Oakland	R	Roosevelt Jr. High	1926 19th Ave., Oskland, CA 94606	Arlene Graham	(415) 261-4034
Ontario-Montclair	R	De Anza Jr. High	1450 S. Sultana Ave., Ontario, CA 91761	Ann Glaser	(714) 983-2118
Ontario-Montclair	R	Imperial Jr. High	1450 E. G St., Ontario, CA 91764	Peg Ridley	(714) 983-6590
Pittsburg	R	Central Jr. High	1201 Stoneman Ave., Pittsburg, CA 94565	Jeanne Fuson	(415) 439-9195
Pittsburg	M	Hillview Jr. High	333 Yosemite Dr., Pittsburg, CA 94565	David Ward	(415) 432-8649
Pomona	M	Simons Jr. High	900 E. Franklin St., Pomona, CA 91766	Jerry Carson	(714) 623-5251
Riverside	M	Sierra Middle	4950 Central Ave., Riverside, CA 92504	Donna Fischer	(714) 788-7504
Riverside	M	University Heights Middle	1155 Massachusetts Ave., Riverside, CA 92507	Bernice Tank	(714) 784-0850
San Bernardino*	M	Shandin Hills Intermediate	4301 Little Mountain Dr., San Bernardino 92407	Louise Cundy	(714) 887-6472
San Francieco	R	Ben Franklin Middle	1430 Scott St., San Francisco, CA 94115	Donna Kay LeCzel	(415) 567-0929
San Jose	M	Peter Burnett Middle	850 N. Second St., San Jose, CA 95112	Richard Cirigliano	(408) 998-3155
San Jose	M	Hoover Middle	1635 Park Ave., San Jose, CA 95126	Pauline Perazzo	(408) 287-1111
Santa Barbara	R	Santa Barbara Jr. High	721 E. Cota St., Santa Barbara, CA 93103	James Tucker	(805) 963-3084

*Not funded to disseminate
**Reading or Mathematics

For additional information contact: Earl Watson, Manager, Demonstration Programs
Office of Special Curriculum Services
California State Dapartment of Education
721 Capitol Mall
Sacramento, CA 95814
(916) 323-0404

APPENDIX III

Demonstration Programs in Reading and Mathematics
1969-70 through 1983-84



*The program was moved from one school to another within the same district on this date.

APPENDIX III (cont.)

School	Reading or Math	1969-1970	1970-1971	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977	1977-1978	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984
74-31	R						----------	----------	----------	----------	----------	----------	----------	----------	----------	---------->
74-32	M						----------	----------	----------	----------	----------	----------	----------	----------	----------	---------->
74-33	M						----------	----------	----------	----------	----------	----------	----------	----------	----------	---------->
74-34	R						----------	----------	----------	----------	----------	---------->				
74-35	R						----------	----------	----------	----------	----------	----------	----------	----------	----------	---------->
74-36	R						----------	----------	----------	----------	----------	----------	----------	----------	----------	---------->
74-37	R						----------	----------	----------	----------	----------	----------	----------	----------	----------	---------->
74-38	R						----------	----------	----------	----------	----------	----------	----------	----------	----------	---------->
74-39	R							----------	----------	----------	---------->					
75-40	R							----------	----------	----------	---------->					
76-41	M								----------	----------	----------	----------	----------	----------	----------	---------->
76-42	M								----------	----------	----------	----------	----------	----------	----------	---------->
76-43	M								----------	----------	----------	----------	----------	----------	----------	---------->
81-44	R													----------	----------	---------->
81-45	M													---->		
81-46	M													----------	----------	---------->
81-47	R													----------	----------	---------->

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