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ABSTRACT

The 1985-86 Chapter 1 Reading Skills Center Program which provides supplementary individualized instruction in reading and writing to eligible students in grades four through eight attending nonpublic schools in New York City is the subject of this evaluation report. The Chapter 1 Reading Skills Center Program aims to enable students to achieve reading scores of at least grade level. Following a summary that presents the program purpose and objective, eligibility requirements and student population served, the introductory section discusses program evaluation, as well as the scope of that evaluation. The next section deals with program organization and funding, curriculum, and staff development. Student data, such as attendance and achievement results, are presented in the subsequent section, while the final section deals with conclusions and recommendations for the program in the future. An appendix briefly describes reimbursable 1985-86 programs. Six tables of data are also included. (MM)

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EVALUATION SECTION REPORT

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October, 1987

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CHAPTER I  
READING SKILLS CENTER PROGRAM  
1985-86

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BUREAU OF NONPUBLIC SCHOOL REIMBURSABLE SERVICES  
CHAPTER I READING SKILLS CENTER PROGRAM

Year of Operation: 1985-86

Number of Partipants: 585

Director: Margaret O. Weiss

Program Coordinator: Roberta Spiegelman

## EVALUATION SUMMARY 1985-86

### BACKGROUND

The Chapter I Reading Skills Center Program provides supplementary individualized instruction in reading and writing to eligible students in grades four through eight attending nonpublic schools in New York City. Its goal is to enable students to achieve reading scores of at least grade level. In 1985-86, one coordinator and 16 teachers served 585 students in nine schools. Total Chapter I funding for the program was \$894 thousand.

In this program, each teacher worked with small groups of students -- no more than five or six -- in sessions lasting about 45 minutes, two to five times a week. The teachers' approach was diagnostic-prescriptive, and related materials were used to design and implement a sequence of learning activities to meet the students' needs in skills development.

### EVALUATION CRITERIA

Program evaluation focused on student achievement as measured by the difference between pretest and posttest scores on the California Achievement Test. The program's criterion for success was for students at all grade levels to show gains of at least five normal curve equivalent (N.C.E.) units on each subtest. In addition, the effect size (E.S.) of the average gain was calculated to ascertain whether the gains were educationally meaningful.

### FINDINGS

The program was generally successful in meeting its objectives. Students made overall mean gains of 11.9 N.C.E.s on the Reading Comprehension subtest, 7.3 N.C.E.s on the Language Expression subtest, and 7.2 N.C.E.s on the Language Mechanics subtest, with E.S.s of .8, .5, and .5, respectively; these mean gains were statistically significant. Grades four and seven nearly trebled, and grade six more than doubled, the criterion on the Reading Comprehension subtest; and, with the exception of grade eight on both the Language Expression and Language Mechanics subtests, the gains of all grades surpassed five N.C.E.s. Grade eight did least well on all the subtests, and the total number of scheduled days of attendance for grade eight was the lowest of all grades.

## RECOMMENDATIONS

Based on the findings and other information presented in this report, the following recommendations are made to enhance student achievement:

- Students in grade eight should be programmed for more sessions per week.
- Staff development meetings should be scheduled earlier in the fall semester, to allow for and encourage the development and implementation of teaching skills and approaches during the course of the school year.

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## I. INTRODUCTION

### PROGRAM PURPOSE AND FEATURES

The Chapter I Reading Skills Center Program provides supplementary individualized instruction in reading and writing to eligible students in grades four through eight attending nonpublic schools in New York City. Students are eligible if they live in a targeted low-income area and if they score below grade level in reading on either standardized or state-mandated tests.

The goal of the Reading Skills Center Program, in operation since 1974, is to use individualized instruction to enable students to achieve reading scores of at least grade level. The program uses a modified diagnostic-prescriptive approach. In this system, teachers identify the weaknesses of individual students in reading skills, develop instructional objectives for each student, and assign a variety of reading material from a set of resources categorized by grade level and skill focus. The writing component provides for the assessment of each student's writing; remedial activities within the writing component include the writing of book reports and story summaries, as well as other exercises growing out of the student's reading, in order to motivate, integrate, and reinforce writing skills.

Several other Chapter I programs are also available for students enrolled in the Reading Skills Center Program. Students participated in the Corrective Math Program. In addition, those students who appear to have social and/or emotional problems that interfere with their learning are referred to the Clinical and

Guidance Program for diagnostic and counseling services.\*

### ELIGIBILITY

Eligibility for Chapter I programs depends on one's score on the test given as part of the nonpublic schools' annual testing program, generally in April. The majority of participating schools use either the Scott-Foresman Test or the Comprehensive Test of Basic Skills. In 1985-86, pupils were eligible for Chapter I services if they scored at or below the following grade equivalents (G.E.s):

Grade	Cutoffs (Grade Equivalent)**
4	3.9
5	4.7
6	5.7
7	6.7
8	7.7

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\* See Appendix A for a brief description of all Chapter I Instructional Programs.

\*\* A G.E. is the grade placement (year and month) of students for whom a given score is typical. Grade equivalents are not directly comparable across different tests. Moreover, because G.F.s are not equally spaced, they cannot be used in arithmetic or statistical calculations. A G.E. represents the level of work a student is capable of doing. For example, a ninth-grade student who performs at a G.E. of 11.6 does not belong in the eleventh grade; rather, this score indicates that the student scores as well as a typical eleventh-grader would have scored on the ninth-grade level test. Thus, while this score may signal above average achievement, it does not indicate that the ninth-grader is ready for eleventh-grade level work.

### STUDENTS SERVED

In 1985-86, the Reading Skills Center Program served 585 students in grades four through eight. As Table 1 shows, three-quarters (74 percent) of the students were in either grades six, seven, or eight, with grades six and seven accounting for well more than half (56 percent) the students in the program. The smallest proportion of students (nine percent) came from grade four.

Table 2 shows the length of time students have been in the Reading Skills Center Program. Close to one half (47 percent) of students were in the program for the first time in 1985-86. Twenty-nine percent of students in the Reading Skills Center Program were in their second year, and 24 percent were in their third year.

Table 3 shows the number of students from the Reading Skills Center Program who participated in other Chapter I programs as well. Seventy-two percent of the Reading Skills Center students also participated in the Clinical Guidance Program, while the I.E. Program provided services to 16 percent of Reading Skills Center students.

### PROGRAM OBJECTIVE

The objective of the 1985-86 Reading Skills Center Program was that students participating in the program would make at least an average gain of five normal curve equivalent (N.C.E.)

TABLE 1  
 Reading Skills Center Program Students,  
 Participation by Grade, 1985-86

Grade	N	%
4	54	9%
5	98	17
6	166	28
7	162	28
8	105	18
TOTAL	585	100

- Three-quarters (74 percent) of the students in the program were in grades six, seven, and eight.
- Students in grades four and five accounted for approximately one-fourth of students in the program.

TABLE 2  
 Reading Skills Center Program Students,  
 Participation by Grade and Years in Program, 1985-86

Grade	N	1		2		3	
		N	%	N	%	N	%
4	54	48	89%	6	11%	--	--
5	98	58	59	30	31	10	10%
5	166	67	40	72	44	27	16
7	162	78	48	36	22	48	30
8	105	26	25	26	25	53	50
TOTAL	585	277	47	170	29	138	24

- Close to one-half of the students (47 percent) were in the program for the first time in 1985-86.
- Nearly 30 percent of the students were in the program for a second year.

TABLE 3

Student Participation in the Reading Skills Center (R.S.C.)  
and Other Chapter I Components, 1985-86

Grade	R.S.C.	R.S.C. and		R.S.C. and I.E.	
	Total N	<u>Clinical</u> N	<u>Guidance</u> %	N	%
4	54	39	72%	--	
5	98	83	85	--	
6	166	104	63	61	37%
7	162	108	67	24	15
8	105	89	85	16	15
TOTAL <sup>a</sup>	585	423		101	
PERCENT OF TOTAL		(72%)		(17%)	

<sup>a</sup>Because some Reading Skills Center students may have participated in the Clinical and Guidance Program and/or I.E. while others may have not, column totals are independent of each other.

- Nearly three-quarters of the Reading Skills Center students also received Clinical and Guidance Program services.
- Seventeen percent of the Reading Skills Center students also participated in I.E., a supplement to the program.

points\* on the Reading Comprehension, Language Expression, and Language Mechanics subtests of the California Achievement Test (CAT).

#### PROGRAM EVALUATION

The 1985-86 evaluation of the Reading Skills Center Program focused on student achievement as measured by their performance on the CAT. The Reading Comprehension, Language Expression, and Language Mechanics subtests were used to measure student growth. Pretests and posttests were administered in the fall and spring, respectively; and the score gain from pretest to posttest was used as an index of achievement. A score gain of five N.C.E.s from pretest to posttest was the program's criterion of success.

Data were analyzed for those of the 585 students for whom both pretest and posttest information was available. The Chapter I Evaluation Model A was used to assess the program's impact on the achievement of participating students. Model A uses national norms to estimate what the performance of students would have been in the absence of the program. Model A assumes that, without any intervention, such as the special instruction of the Reading Skills Program, students would score at the same N.C.E.

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\*Normal curve equivalent scores are similar to percentile ranks but, unlike percentile ranks, are based on an equal-interval scale. The N.C.E. scores are based on a scale ranging from one to 99, with a mean of 50 and a standard deviation of approximately 21. Because N.C.E. scores are spaced equally, arithmetic and statistical calculations such as averages are meaningful; in addition, comparisons of N.C.E. scores may be made across different achievement tests.



on the posttest as they did on the pretest. Thus, any score gain between pretest and posttest could be assumed to be a result of participation in the program.

In order for Model A to be used, pretest and posttest scores were converted to N.C.E.s. Gain scores were calculated for each student for whom both pretest and posttest scores were available, and correlated t-tests were done to assess the statistical significance of the gains. To ascertain whether the gains were educationally meaningful, an effect size (E.S.),\* which expresses mean gain scores in terms of standard deviation units, was also calculated for each grade level.

#### SCOPE OF THE EVALUATION

The purpose of this evaluation report is to describe and assess the implementation and effect of the 1985-86 Chapter I Reading Skills Center Program. The first chapter of this evaluation describes the purposes of the program and its salient features. This chapter also reports the criteria for eligibility to participate in the program, including cut-off scores at each grade level; provides information on the students served; outlines the objectives of the program; and describes the methods of evaluation. Program organization and funding are described in

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\*The E.S., developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gain. The ratio provides an index of improvement in standard deviation units irrespective of the size of the sample. According to Cohen, .2 is a small E.S., .5 is a moderate E.S., and .8 is considered a large E.S. Only E.S.s of .8 and above are considered to be educationally meaningful.



Chapter II; student outcome and achievement data are presented in Chapter III; and conclusions and recommendations are offered in Chapter IV. A description of 1985-86 Chapter I Nonpublic School Reimbursable Programs is included as an appendix.

## II. PROGRAM ORGANIZATION

### PROGRAM ORGANIZATION AND FUNDING

During 1985-86, staff for the Reading Skills Center Program included one coordinator and 16 teachers serving 585 students in nine schools. Students received Reading Skills Center services apart from the regular classroom. In eight of the nine schools, two teachers shared a room. Each teacher worked with five or six students for a period of 45 to 60 minutes, depending on the school and its organization. Students were scheduled for between two to five sessions each week. Total Chapter I funding for this program was \$894 thousand.

### CURRICULUM

During 1985-86, the Reading Skills Center Program used a structured curriculum with a variety of materials, including workbooks, reading kits, trade books, and audiovisual materials. Chapter I staff with training and experience in the Reading Skills Center Program categorized and labeled the material by grade level and instructional objective.

Teachers used books that combined high interest with a text of easy ability. These books were designed not only to develop students' reading comprehension skills, but also to provide students with the opportunity to apply their newly gained skills. Among the books used were the Sports series, Raintree Books, the Need to Read series, and Mind Machine. A parallel array of materials that emphasized cognitive strategies and the process of

writing were available for writing instruction.

Classroom activities comprised both individual work and work for the entire group. Group discussions were used both for pre-reading and pre-writing activities, as well as for book conferences and for reading comprehension activities focused on finding the main idea, gathering supporting details, and using context clues. The teaching of writing was generally prescriptive: sentence-combining and sentence-expansion techniques were used for developing increasingly complex sentences; and a technique called "semantic mapping," in which children prepare charts showing the connotations and definitions of newly acquired words, was used for vocabulary development.

Students read assigned materials silently and then wrote about them, by themselves. When students completed specific assignments, signalling the attainment of skills objectives, they completed formal and informal tests, including cloze paragraphs and oral reading. Subsequent activities depended on individual student performance: the student might continue with additional work toward the same skill objective or begin work on the development of another skill. In most classes, two or three students would be tested each day. Progress charts and samples of student writing, displayed on classroom bulletin boards, served as records of and rewards for student achievement.

#### STAFF DEVELOPMENT

During 1985-86, Reading Skills Center teachers participated in 17 workshops. Of these, two were single-day workshops held in

early and mid-fall, as well as two more single-day workshops in early and mid-spring. There was also a four-day workshop, in late February, and a five-day, end-of-year meeting, which included both workshops and data collection activities.

Among the workshop topics were:

- September: Review of Professional Literature  
Current Trends in Information Processing  
Story Grammar Update: Creating Interactive Readers
- November: Review of Current Literature  
Review of the Auditory Vocabulary Development Program: Using a Thematic Approach  
Story Grammar and its Effect on Comprehension: Extending Story Grammar With Mystery Stories
- February: Reading and Writing Skills Workshops (two days)  
Interactive Strategies for Content Area Instruction  
Vocabulary Instruction and Semantic Mapping: Update on Instructional Strategies  
Critical Reasoning and Thinking Skills
- March: Communication Arts Workshop  
Intersentential Reading and its Effect on Comprehension
- May: A Metacognitive Approach to Developmental Reading
- June: Strategies that Worked to Facilitate Comprehension  
Modeling the Metacognitive Process  
Streamlining Vocabulary Development Strategies  
Reasoning Skills and Classroom Applications  
Can Children Learn to Use Metacognitive Strategies?  
Auditory Vocabulary  
Data Collection Activities

In addition, many staff conferences included a review of professional and related literature. In general, the focus of training was on both curriculum development and pedagogical

strategies for the improvement of critical thinking, vocabulary development, and writing.

### III. STUDENT OUTCOME DATA

Students' school achievement, as shown by their performance on the Reading Comprehension, Language Expression, and Language Mechanics subtests of the CAT, was used to measure the effectiveness of the Reading Skill Center Program. Student gains from pretest to posttest were analyzed by grade and length of time in the program; these analyses, as well as student attendance, are discussed in this chapter.

#### ATTENDANCE

Each Reading Skills teacher worked with five or six students per period, which was between 45 and 60 minutes long depending on the school, for as many as five sessions a week. The average number of sessions per week was approximately four, and the average length of each session was approximately 45 minutes. Average attendance of all children involved in the program was 95 percent.\*

#### SCHOOL ACHIEVEMENT FINDINGS

According to program objectives for the 1985-86 Reading Skills Center Program, the criterion for success was a minimum of a five-N.C.E. mean gain by students from pretest to posttest. The tests used to assess student achievement were the Reading Comprehension, Language Expression, and Language Mechanics subtests of the CAT. Data were analyzed by subtest for all

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\*Aggregate attendance information was provided by program administration to O.E.A.

students for whom pretest and posttest data for that subtest were available. Mean pretest, posttest, and gain scores were calculated both for all participating students and for each grade level. In addition, scores were also analyzed in terms of the number of years of student participation in the program. To ascertain whether the gains were statistically significant, t-tests were computed, and the E.S.s. of mean gain scores were also calculated to determine whether the gains were educationally meaningful.

Tables 4, 5, and 6 show the mean pretest, posttest, and gain scores in N.C.E. units, as well as the E.S.s, for the three subtests of the CAT. The mean gain scores for all grades combined indicate that the program had a positive impact on student achievement in all subtest areas, with mean gains of 11.9 N.C.E.s for Reading Comprehension, 7.3 N.C.E.s for Language Expression, and 7.2 N.C.E.s for Language Mechanics.

As shown in Table 4, mean gain scores for all grades substantially exceeded five N.C.E.s, the evaluation's criterion of program success, on the Reading Comprehension subtest of the CAT. Grades four and seven nearly trebled the criterion, and grade six more than doubled it. Grade eight showed the smallest mean gain, 8.7 N.C.E.s. All mean differences were statistically significant. These changes represented moderate to large E.S.s.

As shown in Table 5, mean gains for all grades but grade eight exceeded five N.C.E.s on the Language Expression subtest of the CAT. Grade six had the greatest mean gain, 9.7 N.C.E.s, and both grades four and seven achieved a mean gain of 6.3 N.C.E.s.

TABLE 4

Mean N.C.E. Scores on the Reading Comprehension  
Subtest of the CAT of Reading Skills  
Center Program Students, by Grade,  
1985-86

Grade	N	Pretest		Posttest		Difference <sup>a</sup>		Effect Size
		Mean	S.D.	Mean	S.D.	Mean	S.D.	
4	50	25.4	16.1	39.9	10.9	14.5	15.4	.9
5	94	29.6	13.9	38.6	13.4	9.0	15.1	.6
6	159	27.6	15.9	39.6	12.5	12.0	14.5	.8
7	147	30.1	15.1	44.6	10.8	14.5	14.0	1.0
8	96	34.1	14.4	42.8	12.8	8.7	12.9	.7
TOTAL	546	29.5	15.3	41.4	12.3	11.9	14.5	.8

<sup>a</sup>All mean differences were significant at  $p \leq .05$ .

- All mean differences exceeded eight N.C.E.s.
- Grades four and seven achieved the greatest mean gains.
- Mean gains represented moderate to large E.S.s.



TABLE 5

Mean N.C.E. Scores on the Language Expression Subtest  
of the CAT of Reading Skills  
Center Program Students, by Grade,  
1985-86

Grade	N	Pretest		Posttest		Difference <sup>a</sup>		Effect Size
		Mean	S.D.	Mean	S.D.	Mean	S.D.	
4	46	32.6	14.2	38.9	14.8	6.3	14.8	.4
5	94	34.1	13.6	42.3	17.6	8.2	16.1	.5
6	159	35.0	15.7	44.7	12.0	9.7	14.5	.7
7	143	35.7	13.7	42.0	12.3	6.3	12.3	.5
8	96	39.8	12.1	44.3	12.3	4.5	11.7	.4
TOTAL	538	35.7	14.2	43.0	13.5	7.3	13.9	.5

<sup>a</sup>All mean differences were significant at  $p < .05$ .

- All grades approached or exceeded the program's criterion of five N.C.E.s.
- The mean gains represented small to moderate E.S.s.

TABLE 6

Mean N.C.E. Scores on the Language Mechanics Subtest  
of the CAT of Reading Skills  
Center Program Students, by Grade,  
1985-86

Grade	N	<u>Pretest</u>		<u>Posttest</u>		<u>Difference<sup>a</sup></u>		Effect Size
		Mean	S.D.	Mean	S.D.	Mean	S.D.	
4	50	40.3	18.7	48.3	15.0	8.0	13.0	.6
5	94	41.6	17.8	47.7	18.5	6.1	19.3	.3
6	158	44.3	15.7	52.0	15.1	7.7	12.7	.6
7	147	41.2	16.8	50.0	13.7	8.8	15.4	.6
8	96	48.2	15.4	52.4	14.8	4.2	11.3	.4
TOTAL	545	43.3	16.8	50.5	15.4	7.2	14.6	.5

<sup>a</sup>These differences were significant at  $p \leq .05$ .

- Mean gains for all grades, except grade eight, exceeded six N.C.E.s.
- Mean gains represented small to moderate E.S.s.

All mean differences were statistically significant. These changes represented small to moderate E.S.s.

As shown in Table 6, mean gains for all grades but grade eight exceeded five N.C.E.s on the Language Mechanics subtest of the CAT. Grade seven had the greatest mean gain, 8.8 N.C.E.s; the grade with the lowest gain exceeding the criterion was grade five, with an increase of 6.1 N.C.E.s. All mean differences were statistically significant. The mean gains represented small to moderate E.S.s.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### CONCLUSIONS

The Chapter I Reading Skills Center Program provided supplementary individualized instruction in reading and writing to students with below-grade-level scores on standardized achievement tests. The goal of the program was to enable students to increase their reading and writing scores by an average of five N.C.E.s on subtests of the CAT, and to do well in their classes. The program also included a series of faculty development meetings and workshops, most of which were held between February and June. A workshop was held for four consecutive days in February, and another for five consecutive days at the end of June.

According to the analysis of the pretest, posttest, and mean gain score data for students in the 1985-86 Reading Skills Center Program, the program was generally successful in meeting its objectives. Overall mean gain scores for each subtest exceeded five N.C.E.s, the evaluation's criterion for program success, with mean gains of 11.9 N.C.E.s for Reading Comprehension, 7.3 N.C.E.s for Language Expression, and 7.2 N.C.E.s for Language Mechanics. The E.S.s for the Reading Comprehension subtest were moderate to large; for the Language Expression and the Language Mechanics subtest, they were small to moderate. In addition, with the exception of grade eight on both the Language Expression and Language Mechanics subtests, the mean gains of all grades

surpassed five N.C.E.s. By comparison, grade eight performed poorly on all subtests.

### RECOMMENDATIONS

Based upon these findings and other information in this report, the following recommendations are made for program improvement:

- Schedule students in grade eight for additional weekly sessions.
- Schedule staff development meetings earlier in the fall semester to allow for and encourage the development and implementation of teaching skills and approaches during the course of the school year.

## APPENDIX A

### Brief Description of Chapter I Nonpublic School Reimbursable 1985-86 Programs

#### CORRECTIVE READING PROGRAM

The Chapter I Corrective Reading Program provides supplemental individualized instruction in reading and writing skills to Chapter I-eligible students who score below grade level in reading on standardized tests. The program's goal is to enable students to reach grade level and to perform well in their regular classrooms. The program uses a modified diagnostic-prescriptive approach. During 1985-86, program staff included one coordinator, three field supervisors, and 173 teachers who worked with 10,832 students in grades one through twelve at 238 schools.

#### READING SKILLS CENTER PROGRAM

The Chapter I Reading Skills Center Program provides supplemental individualized instruction in reading and writing skills to Chapter I-eligible students who score below grade level in reading on standardized tests. The program's goal is to enable students to reach grade level and to perform well in their regular classrooms. The program uses a modified diagnostic-prescriptive approach. One coordinator and 16 teachers worked with 510 students at nine schools.

#### CORRECTIVE MATHEMATICS PROGRAM

The Chapter I Corrective Mathematics Program provides remedial mathematics instruction to Chapter I students in grades one through twelve with diagnosed deficiencies in mathematics. The main goals of the program are to alleviate deficiencies in mathematical concepts, computation, and problem solving and to assist students in applying these concepts and skills in everyday life. One coordinator, two field supervisors, and 129 teachers served 8,825 students in 186 nonpublic schools.

#### ENGLISH AS A SECOND LANGUAGE (E.S.L.) PROGRAM

The Chapter I E.S.L. Program provides intensive English language instruction to Chapter I students whose first language is not English. The main goal of the program is to provide students with opportunities to use oral and written English in

situations similar to those they might encounter in everyday life. The program in 1985-86 was staffed with one coordinator, two field supervisors, and 80 teachers. They provided services to 4,305 students in 111 nonpublic schools.

CLINICAL AND GUIDANCE PROGRAM

The Chapter I Clinical and Guidance Program consists of diagnostic services and counseling support for nonpublic school students enrolled in Chapter I remedial programs. Chapter I teachers refer students who show signs of social or emotional problems thought to inhibit academic performance. The Clinical and Guidance Program is seen as a service helping students to overcome obstacles standing in the way of better academic achievement. Program staff consisted of two coordinators, three field supervisors, 123 guidance counselors, 57 clinicians, and 23 social workers serving 10,533 students in 201 schools.