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ABSTRACT

This first volume of a four-volume evaluation of the 1988-89 New York City School Community Education Program (also known as the Umbrella Program) comprises reports evaluating 10 innovative projects that provide reading, mathematics, writing, English as a Second Language, and computer literacy instruction. Evaluation sources included student preprogram and postprogram test outcomes, writing samples, teacher and student questionnaires, and the number of acceptances of participants into special high schools. Overall, the program was not as successful in meeting its stated objectives as in previous years, but the Harlem School-Community Tutorial Project and the Mathematics Improvement Program were particularly successful. The report on each project contains a brief project overview, describes the research methodology, presents the findings, and provides recommendations for improvement. The following projects are evaluated: (1) Improving Reading Achievement After School; (2) Harlem School-Community Tutorial Project; (3) Tutoring--Walk and Talk Program; (4) Improving Competency Skills; (5) Mathematics Improvement Program; (6) Students-Parents As Partners; (7) Science Enrichment Program; (8) Computer Literacy Program; (9) Reinforcing Reading; and (10) the Riverdale Preparatory Academy. Statistical data are included on 20 tables. Each report also includes examples of evaluation instruments. (FMW)

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ED 319 869

OREA Report

EVALUATION SECTION REPORT
SCHOOL COMMUNITY EDUCATION PROGRAM
IN NEW YORK CITY
1988-89

VOLUME I

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EVALUATION SECTION
John Schoener, Chief Administrator
April, 1990

EVALUATION SECTION REPORT
SCHOOL COMMUNITY EDUCATION PROGRAM
IN NEW YORK CITY
1988-89

VOLUME I

Prepared by
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April, 1990

SCHOOL COMMUNITY EDUCATION PROGRAM IN NEW YORK CITY EVALUATION SUMMARY*

BACKGROUND

The School Community Education Program (also known as the Umbrella Program), administered by the Division of Curriculum and Instruction, provides a variety of educational and training experiences to a wide range of participants, including pre-schoolers and their parents, and elementary, intermediate, and high school students, teachers, and supervisors. The program consists of 37 different projects designed to provide innovative solutions to local educational and school problems. Ten projects provide basic skills, English as a Second Language, and computer literacy instruction; ten focus on social issues and environmental studies; seven offer staff development workshops; five involve curriculum development, and three are designed for prekindergarten children. The remaining projects provide participants with a variety of educational experiences.

POPULATION SERVED

In 1988-89, the program served some 25,000 students, primarily elementary school pupils. In addition, the program served 1,100 teachers and supervisors and 100 prekindergarten children, as well as neighborhood adults in the 32 community school districts and selected high schools. Each project established different selection criteria for program participation.

PROGRAM OBJECTIVES

Although program objectives were designed for each specific project and therefore varied, most focused on increasing the competence of project participants through mastery of specific skills and abilities. Most objectives also set quantitative criteria to be met by a minimum percentage of participants for the program to be considered successful.

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*This summary is based on the final evaluation report of the School Community Education Program in New York City 1988-89, prepared by the Office of Research, Evaluation, and Assessment/ Instructional Support Evaluation Unit.

EVALUATION METHODOLOGY

The evaluation of the program is based on a number of data sources: student performance outcomes on standardized or project-developed tests, pupil writing samples, teacher and student survey questionnaires, number of acceptances to special high schools, and review of five curriculum documents. These manuals and lesson plans were sent to different units of the New York City Board of Education's Division of Curriculum and Instruction for evaluation. Preprogram and postprogram test outcomes were compared to determine mean differences and, when appropriate, correlated t-tests and effect sizes were also computed to establish statistical significance and educational meaningfulness, respectively. The percentage of participants meeting quantitative project-set criteria for success was also determined.

FINDINGS

The 1988-89 evaluation findings indicate that the School Community Education Program was not as successful as it had been in previous years. Only 15 projects met their stated objectives, compared to 19 in 1987-88. In general, those projects providing staff development training and curriculum development were the most successful. In addition, two projects that provide remedial instruction (Harlem School-Community Tutorial Project, and Mathematics Improvement Program) were also found to be particularly successful. The evaluation also showed that although some projects met their objectives, these results should be treated with caution because of the vagueness of the objectives or because the evaluation instruments could not adequately measure project impact. This is a particular problem shared by staff development projects that seek to measure teacher ability to implement specific teaching skills in the classroom without including instruments which measure these skills.

Four projects were successful in meeting one of their objectives, yet unsuccessful in meeting a second objective. Sixteen projects did not meet their evaluation objectives, and two projects could not be evaluated because test data were lacking. As indicated in previous years' evaluations, a few of these projects need extensive modifications, such as revision of testing instruments to avoid ceiling effect, development of project activities appropriate for different grade levels, or establishment of more stringent participant selection criteria. Most of the unsuccessful projects, however, failed to meet their objectives because their criteria for success were too stringent or because the testing instrument could not adequately measure project objectives. In some of these projects, participants achieved large mean gains, but the percentage of successful participants remained below the percentage established in the project-set criterion for success. In some cases, this criterion was beyond what could be reasonably expected of program

participants.

RECOMMENDATIONS

In addition, to the recommendations made for each project, the following suggestions are made for the overall improvement of the School Community Education Program:

- Closely monitor those projects that fail to meet their stated objectives.
- Assist project staff in making necessary project modifications such as the revision of project activities, revision or replacement of testing instruments, establishment of adequate selection criteria of participants, or amendments in project objectives.

ACKNOWLEDGEMENTS

The production of this report is the result of a collaborative effort of full-time staff and consultants. In addition to those whose names appear on the cover, Maria Cheung undertook the analysis of the statistical data, and Sandra DuBose duplicated this report. The unit could not have produced this evaluation without their participation.

INTRODUCTION

In 1988-89, the New York City Public Schools received $2,375,000 in funding from the New York State Legislature to operate the School Community Education program (also known as the Umbrella program). It consisted of 37 different projects designed to provide innovative solutions to local educational and school programs.

The program provided services to about 25,000 participants in 32 community school districts and selected high schools. While most of these participants were elementary school students, the program also served some 1,000 intermediate and high school students, 100 preschool children, and 1,100 teachers and supervisors. Some projects also included parenting components and/or sought to involve the parents of participating students in project activities.

Evaluation reports are presented in four volumes. Volume I contains evaluations of ten projects that provided reading, mathematics, writing, English as a Second Language, and computer literacy instruction. Volume II includes evaluations of nine projects on social, ethnic, and environmental studies. Four of these projects also provided staff development workshops. Volume III contains evaluations of seven staff development and five curriculum development projects. The remaining six projects, presented in Volume IV, offered a variety of educational experiences to participants. Three of these projects were designed for prekindergarten children, and the other three projects were designed to teach students health maintenance concepts, to improve their acceptance rate to special high schools, and foster career awareness among students.

Each report contains a brief project overview, describes the evaluation methodology, presents the findings, and provides recommendations for improvement. The reports are listed in order of budgeted function number in the Table of Contents.

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#5001-48-93402

IMPROVING READING ACHIEVEMENT AFTER SCHOOL, 1988-89

School-Community Education Program
Program Administrator: M. Morris Speiser
Project Coordinator: Michael D. Carlin
James Campbell

Prepared by:
Office of Research, Evaluation, and Assessment
Instructional Support Evaluation Unit
New York City Public Schools

PROJECT DESCRIPTION

The Improving Reading Achievement After School project is designed to provide basic skills training to first- through sixth-grade students in Community School District (C.S.D.) 5. By exposing participants to diverse communication arts activities, the project seeks to enrich daily classroom experiences and improve students reading achievement and self-esteem. The program objective was for participants to improve their reading ability as measured by annual citywide tests of reading achievement. More specifically, the objective anticipated that participating students would achieve a statistically significant mean gain.

In 1988-89, the program served 100 elementary school students from P.S. 46 and P.S. 123 who had behavior and achievement problems and were referred for participation by school staff, social workers, or counselors. Activities took place three hours a day, five days a week. Teachers, educational assistants and student aides, working under the supervision of project coordinators, provided basic skills activities to

individual and/or small groups of students in order to encourage them to read, write, and express themselves orally. Project activities also included "hands-on" experience in the arts. Pupils were able to choose one art area among those offered at the center: music, dance, drama, and visual arts. Other activities included visits to museums, libraries, and art performances. The New York State Legislature provided $29 thousand in funding to purchase educational supplies and cover admission to museums and other cultural activities.

EVALUATION METHODOLOGY

The impact of the program on student performance was determined by analyzing the change in students' reading achievement scores from 1988 to 1989. Two different tests were administered to participants. The Metropolitan Achievement Test (M.A.T.) was given to students in grades one and two in April 1988 and, again, to second graders in April 1989. The Degrees of Reading Power (D.R.P.) Test was administered to students in grades three through six in the spring of 1988 and 1989. Since those students who were in grade three in April 1987 took two different tests (the M.A.T. in 1988 and the D.R.P. in 1989), D.R.P. posttest scores were converted to comparable test scores on the M.A.T. Scores for all grades were then converted to

normal curve equivalent (N.C.E.)* scores which express student performance relative to a national norm. Mean N.C.E. gains were interpreted as a measure of project impact on student achievement.

Correlated t-tests were computed to establish if achievement gains were statistically significant. Effect size (E.S.)** which indicates the educational meaningfulness of the mean gain or loss for each comparison was also calculated.

FINDINGS

Complete test scores were submitted for 49 students from P.S. 46. Overall, mean pretest score was 50.5 N.C.E. points, mean posttest score was 46.4 N.C.E.s, for a mean loss of 4.1 N.C.E. score points (see Table 1). There was wide variation in student performance across grade levels and within the same grade. Individuals gains ranged from -47 to 65 N.C.E. points.

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*N.C.E. scores are similar to percentile ranks, but unlike percentile ranks, are based on an equal-interval scale. Normal curve equivalent scores are based on a scale ranging from 1 to 99 with a mean of 50 and a standard deviation of approximately 21. Because N.C.E. scores are equally spaced apart, arithmetic and statistical calculations such as averaging are meaningful; in addition, comparisons of N.C.E. scores may be made across different achievement tests.

**The effect size, developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gain. This ratio provides an index of improvement in standard deviation units irrespective of the size of the sample. According to Cohen, 0.2 is a small E.S., 0.5 is a moderate E.S., and 0.8 is considered to be a large E.S. Only effect sizes of 0.8 and above are considered to be educationally meaningful, reflecting the importance of the gains to the students' educational development.

TABLE 1

Students' Mean N.C.E. Scores by Grade
Metropolitan Achievement Test And Degrees of Reading Power Test
Improving Reading Achievement After School, 1988-89

Grade	N	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Difference Mean	Difference S.D.	E.S.
3	11	54.2	16.1	38.1	22.6	-16.1	10.5	-1.5
4	13	48.5	17.3	45.2	14.9	-3.3	15.6	-0.2
5	11	44.6	19.5	52.6	15.2	8.0	25.2	0.3
6	13	56.2	7.3	59.4	7.5	3.2	7.4	0.4
Total	48	50.5	16.4	46.4	16.9	-4.1	18.1	-0.2

- Overall mean gain was -4.1 N.C.E. points. This mean gain was not statistically significant.
- Student performance varied widely between grades.

Students in grade 5 achieved the largest mean gain of 8 N.C.E.'s. Seventy-three percent of fifth-grade students achieved gains on posttest.

CONCLUSIONS AND RECOMMENDATIONS

In 1988-89, the Improving Reading Achievement After School project was not successful in meeting its objective. Overall mean gain was -4.1 N.C.E. points. There was wide variation in student performance across grade levels and within the same grade. Students in grade five achieved the largest mean gain (8.0 N.C.E. points). Individual student gains ranged from -47 to 65 N.C.E. points. This variation in student achievement indicates the uneven effectiveness of the program in 1988-89.

A comparison of mean pretest scores by grade indicates that different criteria were used to select participants. In general, students from grades three, four, and six were performing well before the program began, and their problem may have been their behavior or attitude towards school rather than on their need for remedial instruction. In contrast, it seems that for grade five priority was given to students who showed the greatest educational need for basic skills remediation. Evaluation findings indicate that using two different sets of criteria to select participants precludes the ability of a project to simultaneously remediate the needs of two distinct categories of students. In order to respond to student's needs more effectively, the project coordinators should discuss the type of

students the program aims to serve and modify project activities according to these criteria.

#5001-48-93406

HARLEM SCHOOL-COMMUNITY TUTORIAL PROJECT, 1988-89

School-Community Education Program
Program Administrator: M. Morris Speiser
Project Coordinator: Edythe B. Edwards

Prepared by:
Office of Research, Evaluation, and Assessment
Instructional Support Evaluation Unit
New York City Public Schools

PROJECT DESCRIPTION

The Harlem School-Community Tutorial Project provided intensive basic skills instruction in reading and mathematics to students in Community School District (C.S.D.) 5. Pupils in grades two through twelve, in need of basic skills remediation, were selected on the basis of diagnostic tests and recommendations made by school personnel and parents. Individual and small-group tutorials were held at two neighborhood community centers from 2:00 to 6:30 p.m. Students were expected to receive at least three hours of remedial instruction per week.

In 1988-89, some 224 students completed the program, 139 in reading and 85 in mathematics. The program objective was for participants to achieve a statistically significant mean gain in their performance in reading or mathematics, as measured by citywide standardized tests. Project staff consisted of a program coordinator, ten teachers and four educational assistants. The New York State Legislature provided $29 thousand in funding for the project.

EVALUATION METHODOLOGY

Project impact was assessed by analyses of student performance on the reading or mathematics subtests of the Metropolitan Achievement Test (M.A.T.). Students took the appropriate grade-level form of the M.A.T. as a pretest upon entering the program. Students entered at different periods in the school year. All students were posttested in June when program activities concluded. In order to compare test scores of students who began project activities at different times, grade equivalent scores were converted to scale scores, since there are not mid-year norms for the M.A.T. Correlated t-tests were computed to establish if achievement gains were statistically significant. Effect size (E.S.),* which indicates the educational meaningfulness of the mean gain or loss for each comparison, was also calculated.

FINDINGS

Students in most grades achieved statistically significant mean gains on both the reading and mathematics subtests of the M.A.T. Table 1 reports student performance on the reading

*The effect size, developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gain. This ratio provides an index of improvement in standard deviation units irrespective of the size of the sample. According to Cohen, 0.2 is small E.S., 0.5 is a moderate E.S., and 0.8 is considered to be a large E.S. Only effect sizes of 0.8 and above are considered to be educationally meaningful, reflecting the importance of the gains to the students' educational development.

subtest for all grades. Overall, mean pretest score was 682.3 scale points, mean posttest was 720.5 points, for a mean gain of 38.2 scale points. This mean gain was found to be statistically significant and educationally meaningful. Mean gains varied by grade and ranged from 15 to 50.1 scale points. Mean gains for all grades, except grades 9 and 11, were statistically significant. Students in grade nine achieved a mean gain of 47.5 scale score points although this mean gain was found to be only marginally significant (p=.06) due to the extremely small sample size.

Table 2 presents students' mean scores on the Mathematics test, by grade. Overall mean pretest score was 654.9 scale score points, mean posttest score was 693.9 points, for a mean gain of 39 scale points. This mean gain was found to be statistically significant and educationally meaningful. All grades, with the exception of grade 11, achieved statistically significant mean gains.

CONCLUSIONS AND RECOMMENDATIONS

The evaluation findings indicate that the Harlem School-Community Tutorial Project was a successful program in 1988-89. Students improved their performance on both the reading and mathematics subtests of the M.A.T. In general, pupils achieved large gains. These gains were educationally meaningful for all grades and statistically significant for most grades in both subtests.

TABLE 1

Students' Mean Scaled Scores on the Reading Subtest of the Metropolitan Achievement Test, by Grade Harlem School-Community Tutorial Project, 1988-89

Grade	N	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Difference Mean	Difference S.D.	E.S.
3	15	603.2	42.6	653.3	32.1	50.1[a]	19.6	2.6
4	21	621.6	56.2	669.3	42.7	47.7[a]	28.4	1.7
5	34	675.0	30.5	705.4	25.5	30.4[a]	14.0	2.2
6	18	690.8	39.6	728.1	40.8	37.3[a]	15.3	2.4
7	25	720.2	59.9	760.2	59.0	40.0[a]	25.2	1.6
8	12	712.4	88.2	745.1	85.8	32.7[a]	15.4	2.1
9	2	757.0	17.0	804.5	23.3	47.5	6.4	7.4
10	9	744.5	67.5	780.2	43.1	35.7[a]	31.1	1.1
11	3	860.7	77.4	875.7	64.5	15.0	13.1	1.1
TOTAL	139	682.3	72.7	720.5	65.2	38.2[a]	21.9	1.7

[a]These gains were significant at $p \leq .05$.

- Students in all grades, except grades 9 and 11, achieved statistically significant mean gains. These gains were also educationally meaningful.

TABLE 2

Students' Mean Scaled Scores on the Mathematics Subtest of the Metropolitan Achievement Test, by Grade Harlem School-Community Tutorial Project, 1988-89

Grade	N	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Difference Mean	Difference S.D.	E.S.
3	4	561.7	29.0	602.0	19.4	40.3[a]	13.1	3.1
4	12	565.3	58.0	615.2	35.3	49.9[a]	28.9	1.7
5	15	633.7	33.5	674.5	16.1	40.8[a]	24.8	1.6
6	11	659.1	44.2	701.0	28.3	41.9[a]	21.7	1.9
7	16	671.4	40.9	711.3	31.4	39.9[a]	22.6	1.8
8	10	665.4	76.1	701.9	57.1	36.5[a]	23.3	1.6
9	8	707.6	38.7	734.4	23.6	26.8[a]	22.9	1.2
10	6	719.2	66.3	754.2	62.2	35.0[a]	19.7	1.8
11	3	836.3	101.2	855.7	82.4	19.4	21.2	0.9
TOTAL	85	654.9	76.7	693.9	63.7	39.0[a]	23.5	1.7

[a]These gains were significant at $p \leq .05$.

- Students in all grades except grade eleven, achieved statistically significant gains. These gains were also educationally meaningful.

Analyzed by grade, however, mean gains ranged from 15 to 50 scale points on the reading subtest, and from 19 to 50 scale points on the mathematics subtest. The range of individual student performance was even larger, from -12 to 115 scale score points on the reading subtest and from 0 to 114 points on the mathematics subtest. The range of student performance indicates that the project had a varied impact on individual students. In the future, project staff may wish to intensify individualized instruction, especially for those students in greatest need.

#5001-48-93409

TUTORING: WALK AND TALK PROGRAM, 1988-89

School-Community Education Program
Program Administrator: M. Morris Speiser
Project Coordinator: Eileen Eng

Prepared by:
Office of Research, Evaluation, and Assessment
Instructional Support Evaluation Unit
New York City Public Schools

PROJECT DESCRIPTION

The Tutoring: Walk and Talk Program provides individualized and small-group afterschool instruction in English as a Second Language to students in three elementary schools in Community School District (C.S.D.) 2. Approximately 200 pupils in grades one through six participated in the afterschool program during 1988-89. The students were recent immigrants mainly from China and Southeast Asia. "Walk and Talk" field trips are used to acquaint participants with New York City and encourage them to speak English.

Participants were selected on the basis of teacher recommendations, scores on the Language Assessment Battery (LAB) Test, and other measures of language proficiency. Project activities included an orientation to American culture, individual and group work in reading language arts, assistance with homework, and "Walk and Talk" trips. Contact time ranged from 80 to 160 hours, depending on students' needs.

The program objective was for participants to improve their language skills by achieving a statistically significant mean gain as measured by pre- and posttest on the Language Assessment

Battery (LAB), a standardized test of language achievement. Project staff consisted of one coordinator, licensed teachers, educational assistants, student aides, and a family worker. The program received $22 thousand in funding from the New York State Legislature.

EVALUATION METHODOLOGY

Project impact was assessed by analyses of students' scores on the Language Assessment Battery Test. This test was administered to all participants on a pretest and posttest basis at the beginning and end of the program. Raw scores were converted to normal curve equivalent (N.C.E.)* scores which express student performance relative to national English-proficient norms. Mean N.C.E. scores were compared and correlated t-tests were computed to establish if achievement differences were statistically significant. The effect size (E.S.)**, which indicates the educational meaningfulness of the

*N.C.E. scores are similar to percentile ranks, but unlike percentile ranks, are based on an equal-interval scale. Normal curve equivalent scores are based on a scale ranging from 1 to 99 with a mean of 50 and a standard deviation of approximately 21. Because N.C.E. scores are equally spaced apart, arithmetic and statistical calculations such as averaging are meaningful; in addition, comparisons of N.C.E. scores may be made across different achievement tests.

*The effect size, developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gain. This ratio provides an index of improvement in standard deviation units irrespective of the size of the sample. According to Cohen, 0.2 is a small E.S., 0.5 is a moderate E.S., and 0.8 is considered to be a large E.S. Only effect sizes of 0.8 and above are considered to be educationally meaningful, reflecting the importance of the gains to the students' educational development.

mean gain or loss for each comparison, was also calculated.

FINDINGS

Complete test scores were available for 177 pupils. Table 1 reports the performance of students on the Language Assessment Battery Test. Overall, mean pretest score was 10.5 N.C.E. points, mean posttest score was 22.9 N.C.E. points, for mean gain of 12.4 N.C.E. score points. Mean gain scores by grade ranged from 8.6 N.C.E.'s to 28.9 N.C.E.'s. Mean gains for all grades were statistically significant and educationally meaningful. Individual student performance varied widely between and within grades as indicated by the large standard deviations of mean posttest scores and mean gains. Gains achieved by participants ranged from a negative difference between posttest and pretest scores of minus seven N.C.E.s to a gain of 65 N.C.E.s.

CONCLUSIONS AND RECOMMENDATIONS

In 1988-89, the Tutoring: Walk and Talk Program was successful in meeting its objective. All grades achieved mean gains and these mean gains were statistically significant and educationally meaningful. Mean gain ranged from 8.6 N.C.E.'s for grade five to 28.9 N.C.E.'s for grade one. This variation in performance is particularly notorious in the gains students made; these gains ranged from a negative gain or no gain to a large gain of 65 N.C.E.s.

On the basis of these evaluation findings, it would seem that students would benefit even more from their participation in

TABLE 1

Students' Mean N.C.E. Scores on the Language Assessment Battery Test, by Grade
Tutoring: Walk and Talk Program, 1988-89

		Pretest		Posttest		Difference[a]		
Grade	N	Mean	S.D.	Mean	S.D.	Mean	S.D.	E.S.
1	13	9.7	6.8	38.6	16.9	28.9[a]	13.0	2.2
2	13	6.3	9.7	20.8	5.8	22.5[a]	18.4	1.2
3	36	15.4	9.6	28.1	9.0	12.7[a]	7.9	1.6
4	45	10.9	7.7	20.6	10.8	9.7[a]	9.8	1.0
5	41	6.9	4.3	15.5	9.4	8.6[a]	8.0	1.1
6	29	11.2	10.8	20.8	13.4	9.6[a]	8.7	1.1
TOTAL	177	10.5	8.6	22.9	13.5	12.4[a]	11.5	1.1

[a]These mean gains were significant at $p \leq .05$.

- Mean gains for all grades were statistically significant and educationally meaningful.
- Overall, mean gain was 12.4 N.C.E. scores.
- First-grade pupils achieved the largest mean gain.

the program if they were grouped in sessions according to their pretest scores rather than by grade. Alternatively, project staff may wish to provide more individualized instruction to those pupils who seem to make little progress.

#5001-48-93410

IMPROVING COMPETENCY SKILLS, 1988-89

School-Community Education Program
Program Administrator: M. Morris Speiser
Project Coordinator: Judith D. Murphy

Prepared by:
Office of Research, Evaluation, and Assessment
Instructional Support Evaluation Unit
New York City Public Schools

PROJECT DESCRIPTION

The Improving Competency Skills program is designed to provide basic reading and mathematics skills instruction to in- and out-of-school youth and adults. The goal of the project is to help participants further their education and improve their competency at seeking better educational and employment opportunities. Using an individualized, diagnostic-prescriptive approach, the project also seeks to prepare participants for passing the General Education Development Test, Civil Service Exams, and similar entrance examinations.

In 1988-89, about 40 youths and adults participated in the program. Adults were chosen from those who needed to develop their skills in reading and/or mathematics. High school students in grades nine to twelve, were recommended for participation in the program by school teachers, counselors and parents. Those applicants showing the greatest educational need were given placement priority. The project objective was for 80 percent of participants to achieve an increase of at least 20 percent in reading or mathematical skills as measured by the

General Educational Development (G.E.D.) Practice Test.

Classes for adult participants were held at the Bronx Center for Youth two nights a week for two hours. High school students attended two-hour sessions at Truman High School twice a week after regular school hours. To facilitate individualized instruction, each session had less than 20 participants. The program curriculum consisted of mathematics concepts, arithmetic operations, and computer-based instructional activities. It also focused on reading comprehension, vocabulary development, and word usage skills. Classroom materials included education kits, G.E.D. texts, duplicating materials, and minicomputers. Project staff consisted of three teachers and one supervisor. The New York State Legislature contributed $6,600 in funding.

EVALUATION METHODOLOGY

The evaluation of the project was based on analyses of participants' scores on the mathematics and reading subtests of the G.E.D. Practice Test. The mathematics subtest consists of 25 problems with multiple-choice responses and the reading subtest consists of 20 multiple-choice items based on selections from diverse reading materials. Both tests were administered on a pre- and posttest basis at the beginning and end of the project. Mean gains for participants with complete test information were computed and compared. In addition, the number of students meeting the project criterion for success was also determined.

FINDINGS

Complete test scores were submitted for 40 participants for the mathematics subtest and for 20 participants for the reading subtest. Table 1 shows test outcomes on the mathematics subtest. Overall, mean pretest raw score was 11.2 points (44.8 percent correct responses), and mean posttest raw score was 15.8 points (63.2 percent correct), for a mean gain of 4.6 raw score points or 18.4 percent. No reading scores were provided for participants at Truman High School. Only those participants from the Bronx Center for Youth were administered the reading subtest of the G.E.D. practice test. Mean pretest raw score was 10.0 points (50 percent correct responses), and mean posttest raw score was 13.4 points (67 percent correct), for a mean gain of 3.4 points or 17 percentage points.

Table 2 presents the percentage of students meeting the project-set criterion for success. Overall, forty-seven percent of all students taking the mathematics subtest met or surpassed the project-set criterion for success. Truman High School had the largest percentage of successful students (75 percent). On the reading subtest, 40 percent of the students at the Bronx Center for Youth met or surpassed the project-set criterion. No test scores for the reading subtest were submitted from Truman High School.

TABLE 1

Participants' Mean Raw Scores[a] on the Mathematics Subtest of the General Educational Development Practice Test, by Site Improving Competency Skills, 1988-89

Site	N	Pretest Mean		Posttest Mean		Mean Gain	
		Raw Score	Percent Correct	Raw Score	Percent Correct	Raw Score	Percent Correct
Bronx Center for Youth	20	11.2	44.8%	14.1	56.4%	2.9	11.6%
Truman High School	20	11.2	44.8	17.5	70.0	6.4	25.6
TOTAL	40	11.2	44.8	15.8	63.2	4.6	18.4

[a]Perfect raw score = 25.

[b]Adults attended classes at the Bronx Center for Youth. High School students attended classes at Truman High School.

• Overall, participants achieved a mean gain of 4.6 raw score points or 18.4 percent increase.

TABLE 2

Percentage of Participants Meeting Project-Set Criterion[a] on the General Educational Development Practice Test Improving Competency Skills, 1987-88

Site	Subtest	N	Meeting Criterion N	Meeting Criterion %
Bronx Center for Youth	Reading	20	8	40.0
	Mathematics	20	4	20.0
Truman High School	Mathematics	20	15	75.0

[a]Eighty percent of participants will achieve an increase of at least 20 percent in reading or mathematics skills.

- Forty-seven percent of all students taking the Mathematics subtest met or surpassed the project-set criterion for success.

CONCLUSIONS AND RECOMMENDATIONS

In 1988-89, the Improving Competency Skills project did not meet its objective of 80 percent of student participants increasing their performance on either the mathematics subtest or reading subtest by at least 20 percent at posttest. Only 40 percent of participants on the reading subtest and 47 percent of participants on the mathematics subtest met the project-set criterion. On the Mathematics subtest, seventy-five percent of participants at Truman High school met or surpassed the project-set criterion. The greater success of the program at Truman High School is not surprising considering that these participants were also attending regular classroom instruction.

Mean gains were relatively low for adult participants at the Bronx Center for Youth. This finding seems to indicate that project activities did not provide sufficient remedial instruction to participants or that the test used does not reflect the instruction provided. In the future, project staff should give more emphasis to individualized instruction. The number of participants per session should also be reduced. In addition, program staff should correlate the skills present in the G.E.D. test with the skills taught in the curriculum. Finally, test scores should be submitted for both subtests.

#5001-48-93411

MATHEMATICS IMPROVEMENT PROGRAM, 1988-89

School-Community Education Program
Program Administrator: M. Morris Speiser
Project Coordinator: Akhtar Khan

Prepared by:
Office of Research, Evaluation, and Assessment
Instructional Support Evaluation Unit
New York City Public Schools

PROJECT DESCRIPTION

The purpose of the Mathematics Improvement program is to provide support services to teachers in elementary and intermediate schools in Community School Districts (C.S.D.s) 14 and 32. These services include diagnostic information and prescriptive techniques designed to improve student growth in mathematics. In 1988-89, the program served 120 teachers and 3,480 students in grades two through eight from the 12 elementary and five intermediate schools in C.S.D. 32. In addition, six teachers from C.S.D. 14 were selected by school principals to participate in a lesson plan writing activity.

Both district and Board of Education staff trained participating teachers. Staff development training workshops focused on the development of effective prescriptive techniques. Computers were used to provide individual information about student needs, progress, and mastery of specific mathematics skills. The project objective was for the overall percentage of participating pupils scoring at or above grade level on the New York City standardized Mathematics test to increase by at least 5 percent as compared to 1987-88.

The New York State Legislature contributed $62 thousand to support project activities. The bulk of these funds were used in C.S.D. 32 for instructional supplies, data processing equipment, and equipment repairs. The remaining funds were used by teachers in C.S.D. 14 to develop mathematics curriculum materials. The project also shared the resources of the Comprehensive Instructional Management System (CIMS) program.

EVALUATION METHODOLOGY

Evaluation activities focused on the analysis of C.S.D. 32 student performance on the Metropolitan Achievement Test (MAT). Students took the test in the spring of 1987 and the spring of 1988. Students' raw scores were converted to normal curve equivalent (N.C.E.)* scores which express student performance relative to a national norm. Mean N.C.E. gains were interpreted as a measure of project impact on student achievement.

It was not possible to evaluate the program utilizing the current objective of a five percent increase of students scoring at grade level as compared with 1987-88 student performance because the 1987-88 data reported to the Office of Research

*N.C.E. scores are similar to percentile ranks, but unlike percentile ranks, are based on an equal-interval scale. Normal curve equivalent scores are based on a scale ranging from 1 to 99 with a mean of 50 and a standard deviation of approximately 21. Because N.C.E. scores are equally spaced apart, arithmetic and statistical calculations such as averaging are meaningful; in addition, comparisons of N.C.E. scores may be made across different achievement tests.

Evaluation and Assessment was not in the form of Grade equivalents and cannot be obtained. As a result, the project was evaluated according to the objective utilized in 1987-88 which states that "50 percent of program participants will achieve a gain of at least 5 N.C.E.'s at posttest."

The completed documents produced by the teachers in C.S.D. 14 were reviewed by the district's Mathematics Coordinator according to an Evaluation Checklist (see Appendix A). The Evaluation Checklist is designed to establish the effectiveness of the documents and determine if they meet the requirements of the New York State Regents, the State Education Department, and the New York City Board of Education.

FINDINGS

Complete test scores on the MAT were reported for 1,208 students from 12 elementary and five intermediate schools in C.S.D. 32. Table 1 presents students' mean N.C.E. gains by grade. Overall mean gain was 8.4 N.C.E. score points. Grade two students achieved the largest mean gain of 24 N.C.E. score points.

Two documents were produced by C.S.D. 14; one for use in grade two and another for use in grade five. Both documents were rated positively by the reviewers in all categories on the document review checklist. The reviewers stated that many of the

Table 1.

Students Mean N.C.E. Gains on the MAT
by Grade
Mathematics Improvement Program, 1988-89

Grade	N	Mean N.C.E. Gain
2	254	24.0
3	147	9.2
4	180	10.9
5	176	4.8
6	150	1.3
7	137	-2.4
8	164	0.3
Total	1208	8.4

- Overall mean gain was 8.4 N.C.E. score points.
- Second grade students had the largest mean gain.

Table 2.
Percentage of Students Meeting
Project-Set Criterion[a], by Grade
Mathematics Improvement Program, 1988-89

Grade	N	Meeting Criterion N	Meeting Criterion %
2	254	214	84.2%
3	147	88	59.9
4	180	120	66.7
5	176	87	49.4
6	150	56	37.3
7	137	33	24.1
8	164	54	32.9
Total	1208	652	54.0

[a]Students will achieve a five N.C.E. gain from pretest to posttest.

- Overall, 54 percent of participants met or surpassed the project-set criterion.
- Second grade students had the largest percentage of students who met the project-set criterion.

requirements of the New York State Regents, the State Education Department, and the New York City Board of Education were met. For the grade two document, the reviewer stated that although the manual did integrate reasoning/thinking skills activities this section could be expanded. No other comment was provided.

CONCLUSIONS AND RECOMMENDATIONS

In 1988-89, the Mathematics Improvement Program was successful in meeting its objectives of producing instructional materials to assist teachers in diagnostic prescriptive instruction. Two manuals were produced, one for grade two and another for grade five. Both manuals were rated positively on all areas of the Document Review Checklist.

It was not possible to evaluate the program's second objective of a five percent increase of students scoring at grade level as compared with 1987-88 student performance because the 1987-88 data reported to the Office of Research Evaluation and Assessment was not in the form of Grade equivalents and it was not possible to attain that information. As a result the project was evaluated by means of the objective utilized in 1987-88 which states that "50 percent of program participants will achieve a gain of at least 5 N.C.E.'s at posttest." Evaluation in accordance with this revised objective shows that this component of the program was successful. Over 54 percent of participating students achieved gains of 5 or more N.C.E.s at

posttest. There was a wide variation of scores between grades. In general, performance declined as the grade level rose. This finding parallels the findings of previous years and suggests that the program should concentrate more on grades six, seven, and eight since students in these grades appear to have the greatest need of remedial instruction.

It is recommended that the objective be revised. The current objective of a five percent increase in students scoring at grade level compared to the previous year's evaluation is not an accurate measure of student achievement in the current year. It ignores the individual student's pretest level. If you have a great number of students performing at grade level on pretest, evaluating performance using the current objective would yield no information as to gains these students may have achieved. It is also possible to have students who score below grade level on posttest but who achieved large gains. Again, the evaluation using the current objective would not recognize these large gains. Therefore, it is recommended that the objective be revised to state "students will achieve a statistically significant mean gain at posttest."

APPENDIX A
93411

Citywide Umbrella Program
Evaluation Report for Curriculum Projects Manuals
and Other Documents. (1988-89)

Umbrella Program Name:_____ Date:_____

Name of Person Completing the Review:_____

Title:_____

Introduction

The State Education Department requires that all Umbrella Programs be evaluateed. In order to help us meet this requirement, we are asking that you examine this document, and evaluate it using this form. Thank you for your cooperation.

1.	The manual follows the New York State syllabus and the New York City curriculum.	Y	N	NA

Explain:_____

_____

2.	The manual includes information and requirements indicated by the Regents Action Plan.	Y	N	NA

Explain:_____

_____

3.	The manual integrates reasoning/ thinking skills activities.	Y	N	NA

Explain:_____

_____

4.	The manual contains lesson plans that present suitable strategies for achieving reasonable goals.	Y	N	NA

Explain:_____

_____

5. The manual contains objectives and concepts that are clearly defined. Y N NA

Explain: _____

_____

6. The manual contains classroom activities and materials that are relevant and consistent with the stated objectives and teaching strategies. Y Y NA

Explain: _____

_____

7. The manual contains criterion referenced tests that include higher-level thinking questions. Y N NA

Explain: _____

_____

8. The manual contains technical and non-technical language that is consistent with the highest standards of the Office of Professional Development and Leadership Training. Y N NA

Explain: _____

_____

9. The manual could be circulated citywide. Y N NA

Explain: _____

_____

10. The manual meets the goals specified in the objective of the original proposal.

Explain: _____

_____

#0265

#5001-48-93422

STUDENTS-PARENTS AS PARTNERS, 1988-89

School-Community Education Program
Program Administrator: M. Morris Speiser
Project Coordinator: Melineze Lenhardt

Prepared by:
Office of Research, Evaluation, and Assessment
Instructional Support Evaluation Unit
New York City Public Schools

PROJECT DESCRIPTION

The Students-Parents as Partners program provides after school instruction in reading and mathematics to pupils in grades three through six at P.S. 54 in Community School District (C.S.D.) 13. The purpose of the program is twofold. First, it seeks to provide children with an additional opportunity to improve their educational skills. Second, it is designed to work with parents who volunteer as English tutors to help limited English proficient (L.E.P.) children function better in the society in which they live. Students receive individualized and small-group instruction based on a diagnostic-prescriptive approach. A second program component trains parent volunteers as English as a Second Language (E.S.L.) tutors.

In 1988-89, some 37 students participated in the program. Program students were selected on the basis of their need for remedial instruction as determined by their schools' records, as well as by referrals from school principals, guidance counselors, and teachers. Parents were recruited through recommendations from the community relations teacher. Five parents were trained as tutors in E.S.L. classes. Students attended two-hour after

school sessions twice a week. Project staff consisted of a teacher, a parent program assistant, educational assistants, and a teacher-trainer. The New York State Legislature provided $6 thousand to fund the project.

The project objective for 1988-89 was for 75 percent of participants to demonstrate a 30 percent improvement in mathematics and language arts, as measured by their performance on project-developed reading and mathematics achievement tests.

EVALUATION METHODOLOGY

Project impact was assessed by analysis of student performance on project developed reading and mathematics tests. Two forms were prepared for each test: one for third and fourth graders (see Appendix A) and another for fifth and sixth graders (see Appendix B). The tests were administered on a pretest and posttest basis in November 1988 and May 1989, respectively.

FINDINGS

Pre- and posttest scores for 37 students were submitted for evaluation. Table 1 shows student performance on the reading test, by grade. Mean pretest raw scores ranged from 6.7 to 9.3 points, mean posttest raw scores ranged from 12.7 to 16.3 points, and mean gains ranged from 6.0 to 7.3 points. Fifth graders achieved the largest mean gain (7.3 raw points or 36.5 percent increase).

Table 2 presents students' mean scores on the mathematics test, by grade. Mean pretest raw scores ranged from 4.5 to

TABLE 1

Students' Mean Raw Scores[a] on Project-Developed Reading Tests,[b] by Grade
Students-Parents as Partners, 1988-89

Grade	N	Pretest Mean		Posttest Mean		Mean Gain	
		Raw Score	Percent Correct	Raw Score	Percent Correct	Raw Score	Percent Correct
3	19	6.7	33.5%	12.7	63.5%	6.0	30.0%
4	7	9.3	46.5	15.7	78.5	6.4	32.0
5	7	9.0	45.0	16.3	81.5	7.3	36.5
6	4	8.0	40.0	14.7	73.5	6.7	33.5
Total	37	7.8	39 0	14.2	71.0	6.4	32.0

[a]The Reading test consists of two different forms: one for grades three and four; another for grades five and six. Perfect raw score for each test = 20.

[b] Mean gains ranged from 30 to 36.5 percentage points.

TABLE 2

Students' Mean Raw Scores[a] on Program-Developed Mathematics Tests,* by Grade
Students-Parents as Partners, 1988-89

Grade	N	Pretest Mean		Posttest Mean		Mean Gain	
		Raw Score	Percent Correct	Raw Score	Percent Correct	Raw Score	Percent Correct
3	19	4.5	22.5%	9.8	49.0%	5.3	26.5%
4	7	7.3	36.5	13.9	69.5	6.6	33.0
5	7	6.3	31.5	13.0	65.0	6.7	33.5
6	4	5.8	29.0	9.8	49.0	4.0	20.0
Total	37	5.5	27.5	11.2	56.0	5.7	28.5

[a]The Mathematics test consists of two different forms: one for grades three and four; another for grades five and six. Perfect raw score for each test = 20.

* Sixth graders with complete test information showed a 25.5 percent gain.

7.3 score points, mean posttest raw score ranged from 9.8 to 13.9 score points, with mean gains ranging from 5.3 to 6.7 score points. Fifth graders again achieved the largest mean gain (33.5 percent increase).

Table 3 reports the percentage of students achieving a 30 percent increase at posttest on both the reading and mathematics tests, by grade. Overall, 59.5 percent of the participants on the reading test, and 43.2 percent of the participants on the mathematics test, met the project-set criterion for success.

CONCLUSIONS AND RECOMMENDATIONS

In 1988-89, the Students-Parents as Partners Project was not successful in meeting its objective of 75 percent of participants achieving a 30 percent increase in mathematics and language arts. Overall, only 59.5 percent of the participants on the reading test, and 43.2 percent of the participants on the mathematics test, met the project-set criterion for success. Although the project was not judged to be successful by the present objective, it did appear to be having a positive impact on participating students. All students made positive mean gains, with some students receiving mean gains as high as 12 score points (60 percent).

It would appear that the project is having a positive effect on students' reading and mathematics skills, but that the present objective is too ambitious. Therefore, it is recommended that

TABLE 3

Percentage of Students Meeting Project-Set Criterion[a], by Grade
Students-Parents as Partners, 1988-89

Grade	N	Meeting Criterion			
		Reading		Mathematics	
		N	%	N	%
3	19	11	58.9%	7	36.8%
4	7	5	71.4	4	57.1
5	7	4	57.1	4	57.1
6	4	2	50.0	1	25.0
Total	37	22	59.5	16	43.2

[a]Seventy-five percent of participants will demonstrate a 30 percent increase in mathematics and language arts.

- Overall, 59.5 percent of participating students met the project-set criterion for success on the Reading test and 43.2 percent on the mathematics test.

the project objective be revised. The objective should be revised to state "60 percent of participating students will make a 20 percent increase."

STUDENTS - PARENTS AS PARTNERS
P.S. 54K
MATHEMATICS (GRADES 3-4)

APPENDIX A
93422

NAME: _____ DATE: _____

---

1. 73 +14 — A) 87 B) 97 C) 60 D) 61 E) NG

2. 29 +32 — A) 17 B) 511 C) 57 D) 61 E) NG

3. 14 + 29 = ____ — A) 15 B) 43 C) 313 D) 163 E) NG

4. 452 +451 — A) 803 B) 8,103 C) 001 D) 903 E) NG

5. 1471 +1229 — A) 3258 B) 16,910 C) 2,690 D) 2,700 E) NG

6. 56 -12 — A) 48 B) 44 C) 34 D) 68 E) NG

7. 71 - 19 = ____ — A) 52 B) 68 C) 90 D) 62 E) NG

8. 783 +160 — A) 943 B) 620 C) 173 D) 623 E) NG

9. 117- 23 = ____ — A) 140 B) 84 C) 147 D) 347 E) NG

10. 402 +191 — A) 593 B) 211 C) 891 D) 391 E) NG

11. 4 ONES AND 5 TENS = — A) 9 B) 54 C) 20 D) 1 E) NG

12. 3 ONES 8 HUNDREDS AND 6 TENS = — A) 17 B) 386 C) 683 D) 863 E) NG

13. SEVEN THOUSAND ONE HUNDRED = — A) 7,001 B) 7,100 C) 70,100 D) 7,010 E) NG

14. THE GREATEST NUMBER SHOWN BY USING THE DIGITS 1, 7, 3, ONLY ONCE EACH IS: _____.

15. 32 TENS = _____.

16. PETER HAS 43 CENTS. HE SPENDS 8 CENTS.
HOW MUCH DOES HE HAVE LEFT? _____.

17. JIM TOOK 2 PENSILS FROM A BOX OF 1 DOZEN.
HOW MANY PENCILS WERE LEFT? _____.

18. WHICH OF THESE NUMBERS IS THE LARGEST?
A) 923 B) 892 C) 907 D) 889

19. COMPLETE THE PATTERN
21, 24, _____, 30, _____

20. COMPLETE THE PATTERN
41, 39, _____, _____

#5001-48-93425

SCIENCE ENRICHMENT PROGRAM, 1988-89

School-Community Education Program
Program Administrator: M. Morris Speiser
Project Coordinator: Herbert Ross

Prepared by:
Office of Research, Evaluation, and Assessment
Instructional Support Evaluation Unit
New York City Public Schools

PROJECT DESCRIPTION

The Science Enrichment program provides after-school science instruction to elementary school students in Community School District (C.S.D.) 23. Recognizing the need to improve the level of student academic achievement in science, the project seeks to supplement and enrich regular science courses. In 1988-89, the project served 420 students in grades three through six in 14 elementary schools. Teachers and school principals selected students according to their need for the program and their willingness to participate in the program.

Students attended two-hour after-school sessions two days per week. Classroom instruction focused on electricity, friction, gravity and motion, the solar system, weather and climate, water, basic chemistry and physics, and the environment. To encourage the development of pupil reasoning and thinking skills, the program emphasized hands-on instruction, pupil experimentation, and problem-solving activities. The Silver-Burdett Master Equipment Package served both to train teachers and to involve students in hands-on and laboratory-like instructional experiences. In 1988-89, the project had two

objectives: sixty percent of participating students to increase their knowledge of science concepts and information by 20 percent, as measured by a project-developed test; and seventy percent of participating teachers to receive a rating of 20 points or more on a mastery checklist.

C.S.D. 23 staff members and the district science coordinator supervised the program, and licensed teachers provided classroom instruction. The New York State Legislature contributed $44 thousand to pay for teachers' after-school instructional activities, and to purchase the Silver-Burdett Master Equipment Package and teacher training tapes.

EVALUATION METHODOLOGY

Evaluation activities for the first objective focused on the analysis of student performance on a project-developed test (see Appendix A). The test consists of 25 multiple-choice items on conceptual and factual science knowledge. The test was administered both as a pretest and posttest at the beginning and end of program activities.

The second objective was analyzed through teachers scores on a district-developed mastery checklist (see Appendix B). Teachers were rated on six areas designed to measure their effectiveness in implementing the program. Maximum possible score was 30 points.

FINDINGS

For the first objective, data was received for 311 students from 13 schools for whom valid pre- and posttest scores were available (see Table 1). Overall, mean pretest raw score was 10.3 points (41.2 percent correct responses), and mean posttest raw score was 15.6 points (62.4 percent correct responses), for a mean gain of 5.3 points, or 21.2 percent. While mean pretest scores by school ranged from 8.6 to 12.4 raw score points, there was a wider range of mean posttest scores (from 10.3 to 19.5 raw score points), and of mean gains (from 0.6 to 8.8 raw score points). Pupils from P.S. 178 made the largest mean gains.

When test scores were analyzed individually, student performance showed a wide range of variability (see Table 2). Overall, 57.2 percent of participants increased their knowledge of science concepts and information by 20 percent. By school, students from P.S 41, 150, 156, 165, 178, 183, and 284 met or surpassed the project-set criterion.

For the second objective, ratings were received for 25 teachers on the mastery checklist. Overall mean was 24.4 points out of a possible 30. Twenty-one (84.4 percent) of the teachers met or surpassed the project-set criterion of receiving a rating score of 20 on the implementation of the program. Only four teachers did not meet this criterion, and all four of these teachers received a rating of 19.

TABLE 1

Students' Mean Raw Scores[a] on a Project-Developed Test,
By School
Science Enrichment Program, 1988-89

School	N	Pretest Mean		Posttest Mean		Mean Gain	
		Raw Score	Percent Correct	Raw Score	Percent Correct	Raw Score	Percent Correct
P.S. 41	21	9.8	39.2%	15.3	61.2%	5.5	22.0%
73	33	8.6	34.4	11.8	47.2	3.2	12.8
137	11	10.2	40.8	14.1	56.4	3.9	15.6
150	21	9.9	39.6	14.9	59.6	5.0	20.0
156	14	11.5	46.0	15.9	63.6	4.4	17.6
165	30	11.8	47.2	19.5	78.0	7.7	30.8
178	32	10.5	42.0	19.3	77.2	8.8	35.2
183	13	11.2	44.8	17.3	69.2	6.1	24.4
184	31	12.4	49.6	16.5	66.0	4.1	16.4
284	30	9.5	38.0	16.8	67.2	7.3	29.2
298	38	10.4	41.6	15.3	61.2	4.9	19.6
327	12	8.6	34.4	13.5	54.0	4.9	19.6
332	25	9.7	38.8	10.3	41.2	0.6	2.4
TOTAL	311	10.3	41.2	15.6	62.4	5.3	21.2

[a]Perfect Raw Score=25

- Overall, mean gain was 21.2 percent.
- Students at P.S. 178 achieved the largest mean gain.

TABLE 2

Percentage of Participants Meeting Project-Set Criterion,[a] by School
Science Enrichment Program, 1988-89

School	N	Meeting Criterion N	Meeting Criterion %
P.S. 41	21	14	66.7%
73	33	12	36.4
137	11	3	27.3
150	21	13	61.6
156	14	9	64.3
165	30	26	86.7
178	32	25	78.1
183	13	9	69.2
184	31	11	33.3
284	30	26	86.7
298	38	22	57.9
327	12	5	41.7
332	25	3	12.0
TOTAL	311	178	57.2

[a]Sixty percent of participants will increase their knowledge of science concepts and information by 20 percent.

- Overall, 57.2 percent of participants met the project-set criterion for success.

CONCLUSIONS AND RECOMMENDATIONS

In 1988-89, the Science Enrichment Program succeeded in meeting one of its objectives and was partially successful in meeting the other. For the first objective, the evaluation findings show that the project was partially successful. While students at all schools increased their knowledge of science concepts and information, this improvement varied considerably between schools and between students. Overall, mean gain was 21.2 percent but mean gains by school ranged from 2.4 to 35.2 percent. The percentage of students who met the project-set criterion for success by school showed a wide range of variability. Students from 7 of the 13 schools met the project-set criterion. In the rest of the schools, this percentage ranged from 12 to 58 percent of successful students. The overall percentage of students who met or surpassed the project-set criterion was 57.2 percent rather than 60 percent.

The second objective was for 70 percent of teachers to receive a rating of at least 20 on their effectiveness in implementing the program. In 1988-89, the Science Enrichment program was successful in meeting this objective. Overall, 84.4 percent of the teachers met or surpassed the project-set criterion. Only four teachers did not meet this criterion and all four of these teachers received ratings of 19 instead of 20. Two of these four teachers taught at P.S. 178, although this

school displayed one of the highest rates of student success (78 percent).

With the information provided to the Office of Research, Evaluation, and Assessment, it is not possible to determine why some schools performed better than others. The participating teachers all received high ratings on their implementation of the project, yet only half of the participating schools' students met the project-set criterion. Those students who are in real need of remedial instruction may require more individualized or small group instruction. In order to improve the impact of the project on student growth, project staff may wish to emphasize small group or individualized instruction.

PRE- TEST AND POST-TEST FOR THE
SCIENCE ENRICHMENT PROGRAM
(PROGRAM 93401 (#25)

School:_____ Grade:_____

Student's Name:_____ Date:_____

Directions: Circle the answer for each question.

1. A liter is used to measure

   a) length
   b) volume
   c) mass
   d) temperature

2. If you wanted to measure the length of your pencil, you would use

   a) centimeters
   b) meters
   c) kilometers
   d) grams

3. If you were asked to measure which is heavier,a crayon or a pencil, you would use a

   a) ruler
   b) scale
   c) thermometer
   d) graduated cylinder

4. In the metric system, temperature is measured in

   a) Fahrenheit
   b) Celsius
   c) millimeters
   d) centigrams

5. When reading the thermometer, you should

   a) hold it at the top
   b) read it at eye level
   c) keep it in the material whose temperature you are reading
   d) all of the above

6. During photosynthesis a plant needs all of the following except

   a) chlorophyll
   b) carbon dioxide
   c) soil
   d) sunlight

7. In what part of the plant does photosynthesis take place

a) root
b) stem
c) leaf
d) flower

8. The primary function of a flower is

a) reproduction
b) photosynthesis
c) absorption of water and minerals
d) passageway for food and water.

9 An example of a stem is

a) broccoli
b) celery
c) a potato
d) a carrot

10. All of the following are examples of parts of a plant except

a) pupa
b) sepal
c) pistil
d) stem

11. Seeds are spread by

a) wind
b) birds
c) water
d) all of the above

12. Caterpillars become

a) flies
b) spiders
c) butterflies
d) beetles

13. If an animal has 6 legs, 3 body parts, 2 pairs of wings and 2 antennae it is

a) an insect
b) a fish
c) a bird
d) a spider

14. All of the following are examples of stages in the life cycle of a butterfly except

a) egg
b) pupa
c) larva
d) sepal

15. Which of the following is not part of a seed

a) embryo
b) stigma
c) seed coat
d) cotyledon

16. Electricity flows along a path called a

a) circuit
b) cable
c) battery
d) conductor

17. To open or close an electrical circuit you could use a

a) bulb
b) light
c) switch
d) watt

18. Magnets attract

a) silver things
b) iron and steel
c) aluminum
d) wood

19. Electrical wires are usually made of copper because copper is

a) a good insulator
b) shiny
c) a heavy material
d) a good conductor

20. All of the following will be attracted to a magnet except a

a) nail
b) penny
c) cork
d) paperclip

21. If you use your five senses to learn about something, you are using the process skill of

a) prediction
b) observation
c) classifying
d) measuring

22. If you take a set of objects and group them into those that are attracted to a magnet and those that are not attracted to a magnet, you are using the process skill of

a) inferring
b) communicating
c) classifying
d) formulating a hypothesis

23. If you first take the temperature of two cups of water, and then make a statement about what will happen to the water's temperature if you mix them together, you are making a

a) prediction
b) observation
c) measurement
d) classification

24. While performing an experiment about pendulums, you make the following statement: If I shorten the string on the pendulum, then the number of swings will increase. This is an example of a

a) classification
b) hypothesis
c) measurement
d) prediction

25. If you pour 30 ml. of water into a graduated cylinder, you are using the process skill of

a) communicating
b) measuring
c) predicting
d) classifying

END END END END

#5001-48-93433

COMPUTER LITERACY PROGRAM, 1988-89

School-Community Education Program
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Prepared by:
Office of Research, Evaluation, and Assessment
Instructional Support Evaluation Unit
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PROJECT DESCRIPTION

The Computer Literacy program is designed to provide students with basic computer knowledge and to expose them to career opportunities in the field of computers. In 1988-89, the program served some 800 students in grades two through nine at Community School Districts (C.S.D.s) 11, 12, 27, and 28. School principals selected students for participation in the program.

Students attended 45-minute sessions two or three days a week. Classes were held in model computer centers containing between five and ten computers and appropriate software. Class activities focused on computer languages, use of the equipment, and work with pre-programmed Computer Assisted Instruction programs in various curricula areas.

The objective of the program was for 75 percent of the participants to demonstrate a 30 percent increase in the understanding of computer literacy by composing and executing simple programs, executing basic computer commands, and identifying careers related to the computer field. Student

growth was measured by pre- and posttest outcomes on a project-developed test.

Project staff consisted of tax-levy teachers already working in the participating schools, and school principals who supervised all program activities. The New York State Legislature contributed $110 thousand to pay primarily for computer equipment and instructional supplies.

EVALUATION METHODOLOGY

Evaluation activities focused on analysis of student performance on a project-developed test (see Appendix A). The test consisted of five separate sections. The first section contained 15 multiple-choice items on basic computer uses, terms, and applications. Each of the other four sections contained 10 multiple-choice items on specific programming languages or software such as LOGO, word processing, basic programming and data base. All districts were required to complete the first section and each district had to complete two of the other four sections which best reflected the emphasis of the program in that district. The test was administered at the beginning and end of project activities.

FINDINGS

Table 1 reports the progress of 156 students from three districts for whom valid pretest and posttest scores were available. All of the districts completed the general and

TABLE 1

Students' Mean Raw Scores[a] on a Program-Developed Test, By District
Computer Literacy Program, 1988-89

District[b]	N	Pretest Mean		Posttest Mean		Mean Gain	
		Raw Score	Percent Correct	Raw Score	Percent Correct	Raw Score	Percent Correct
11	49	21.8	62.3%	25.8	73.7%	4.0	11.4%
12	80	19.2	54.6	28.3	80.9	9.1	25.7
27	27	14.6	41.7	18.6	53.1	4.0	11.4
TOTAL	156	19.3	55.1	25.7	73.4	6.6	18.9

[a]Perfect Raw Score=35
[b]All C.S.D.s completed the general section and the word processing section of the test. In addition, C.S.D. 11 completed the Basic programming section; C.S.D. 12 the LOGO section; and C.S.D. 27, the Data Base section.

- Overall, mean gain was 6.6 raw score points or 18.9 percentage points.

the word processing sections of the test. Each district completed one additional section of the test for an overall maximum score of 35 points: C.S.D. 11 completed the basic programming section; C.S.D. 12, the LOGO section; and C.S.D. 27, the data base section. Overall, mean pretest raw score was 19.3 points (55.1 percent correct responses), and mean posttest raw score was 25.7 points (73.4 percent correct responses), for a mean gain of 6.6 points or 18.9 percent.

Table 2 presents the percentage of students from each district who met the project-set criterion of a 30 percent increase. Overall, twenty-seven percent of participating students met this criterion. District 11 achieved the highest success rate, with 50.0 percent of participants meeting the project-set criterion.

CONCLUSIONS AND RECOMMENDATIONS

In 1988-89, the Computer Literacy program was not successful in meeting its objective of 75 percent of the participants achieving a 30 percent gain in computer literacy. Overall, only 27.6 percent of the students met this objective.

In 1988-89, the testing instrument was revised replacing one general test with the current version utilizing the various sections. This was done to accommodate the individual needs of each district. There was a variation in scores across districts.

TABLE 2

Percentage of Students Meeting Project-Set Criterion,[a] by District Computer Literacy Program, 1988-89

District	N	Meeting Criterion N	Meeting Criterion %
11	49	1	2.0%
12	80	40	50.0
27	27	2	7.4
Total	156	43	27.6

[a]Seventy-five percent of participants will achieve a gain of at least 30 percent from pretest to posttest.

- Twenty-seven percent of participants met the project-set criterion for success.

It is difficult to assess what could have caused this difference. One possible explanation is a variation in the difficulty levels of each section of the test. For example, students scored the lowest mean gain on the data base section of the test and the largest mean gain on the LOGO section of the test. Because those students who took the data base section did not also take the LOGO section, it is impossible to adequately assess whether these differences are a function of the testing instrument or variations in teaching or students abilities across districts.

All of the students completed the general section of the test on basic computer uses, terms, and applications. Mean pretest scores by district ranged from 9 to 13 score points out of a maximum of 15 possible score points. Such high pretest scores preclude any improvement on posttest (ceiling effect) and indicate that this section of the test is too easy. It is recommended that this section of the test be revised to increase the difficulty level of the questions.

Another possible explanation for the variation of scores across districts is the grade level of the students: C.S.D. 11 reported scores for students in grades 5 to 9, C.S.D. 12 reported scores for students in grade seven, and C.S.D. 27 reported scores for students in grade four.

In 1987-88, complete test scores were reported for 749 students. This year, data was reported for only 156 students.

Much of the data that was received was incomplete or incorrectly filled out. In the future, an effort should be made to provide a complete set of scores for all students participating.

GENERAL COMPUTER LITERACY - MODULE I
PRE - POST-TEST
(B/E #5001-48-83433)

Directions: Enter your answers on a separate answer sheet. Do not leave any blanks on your answer sheet.

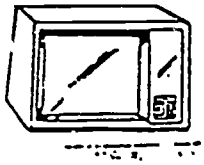
1. This part of a computer system is the:

(a) disk drive.
(b) monitor.
(c) printer.
(d) keyboard.
(e) abacus.

2. This part of a computer system is the:

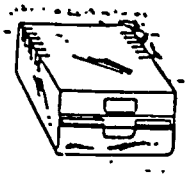
(a) monitor.
(b) printer.
(c) keyboard.
(d) scanner.
(e) disk drive.

3. This part of a computer system is the:



(a) disk drive.
(b) monitor.
(c) scanner.
(d) keyboard.
(e) printer.

4. This part of the computer system is the:



(a) printer.
(b) monitor.
(c) abacus.
(d) disk drive.
(e) keyboard.

5. The name of the symbol that appears on the video screen that shows us where the next character to be typed is the:

(a) disk.
(b) period.
(c) cursor.
(d) semicolon.
(e) comma.

GO ON

ITEM ANALYSIS FOR BASIC PROGRAMMING

NOTE: This module consists of a 10 items.

Statements	Programming
1 (PRINT)	2 (Use of line number)
7 (GOTO)	5 (Use OF END statement)
8 (LET)	6. (Use of comma and semicolon)

Commands	Calculating
3 (RUN)	4

String Variable

10

ANSWER KEY FOR THE BAS C PROGRAMMING MODULE

Item analysis sheet attached for copy.

	ANSWER	TOPICS
1.	B	PRINT Statement
2.	C	Use of a line number
3.	B	RUN Command
4.	C	Output of a program
5.	D	Programming
6.	B	Programming
7.	E	GOTO Statement
8.	A	LET Statement
9.	B	LET Statement
10.	C	String variable

9. The output for this program is:

```
10 LET C = 14
20 PRINT C
30 LET N = C + 10
40 PRINT N
50 END
RUN
```

(a) 14
    10
(b) 14
    24
(c) 24
    14
(d) 24
(e) 14

10. The output for this program is:

```
10 LET B = 16
20 LET B$ = "DIVISION"
30 PRINT B, B$
40 END
RUN
```

(a) B, B$
(b) DIVISION, 16
(c) 16 DIVISION
(d) B, DIVISION
(e) 16, DIVISION

STOP STOP STOP STOP STOP STOP STOP STOP STOP

7. The output for this program is:

```
10 PRINT "I LIKE BURGERS"
15 GOTO 40
20 PRINT "I LIKE SODA"
30 PRINT "I LIKE FRIES"
40 PRINT "I LOVE FOOD"
50 END
```

(a)
```
I LIKE BURGERS
I LIKE SODA
I LOVE FOOD
```

(b)
```
I LIKE SODA
I LIKE FRIES
I LOVE FOOD
```

(c)
```
I LIKE BURGERS
I LOVE FOOD
I LIKE FRIES
```

(d)
```
I LIKE BURGERS
I LIKE SODA
I LIKE FRIES
I LOVE FOOD
```

(e)
```
I LIKE BURGERS
I LOVE FOOD
```

8. The output for this program is:

```
10 LET X =  8
20 LET Y = 10
30 LET Z = 12
40 PRINT X, Y , Z
50 END
RUN
```

(a) 8 10 12
(b) X Y Z
(c) PRINT X Y Z
(d) 30
(e) none of the above.

GO ON

5. What is wrong with this program?

```
10 PRINT "STARS"
20 PRINT "APPLES"
30 PRINT "HOUSE"
40 PRINT "GAMES"
50 PRINT "FLOWERS"
60 PRINT "SKIES"
RUN
```

(a) There are no statements.
(b) There are no commands.
(c) There are no periods.
(d) There is no END statement.
(e) There is no line number for RUN.

6. The output for this program is:

```
10 PRINT "HOME", "HOTEL"
20 PRINT "HOME"; "HOTEL"
30 END
RUN
```

(a) HOME HOTEL
    HOME HOTEL
(b) HOME HOTEL
    HOMEHOTEL
(c) HOME HOTEL
    HOME HOTEL
(d) HOTEL HOME
    HOTEL HOME
(e) HOMEHOTEL HOMEHOTEL

GO ON

BASIC PROGRAMMING - MODULE V
PRE - POST TEST
(B/E #5001-48-83433)

Directions: Enter your answers on a separate sheet.
Do not leave any blanks on your answer sheet.

1. If you typed this on the screen, the computer would display:

```
PRINT "METS"
```

(a) "METS"
(b) METS
(c) STEM
(d) PRINT METS
(e) "PRINT METS"

2. Each instruction in a program must start with a:

(a) capital letter and a comma.
(b) comma and a period.
(c) line number.
(d) quotation mark.
(e) command.

3. The RUN command tells the computer to:

(a) stop working.
(b) do something immediately.
(c) erase a program
(d) create a line number.
(e) clear the screen.

4. The output for this program:

```
10 PRINT 16 + 4
20 END
RUN
```

(a) PRINT 20
(b) 4 + 16
(c) 20
(d) 64
(e) 16 + 4

GO ON

Item: Analysis for the Word Processing Module

Note: This Module consists of 10 items

Meanings		Functions	
1	Word Processor	2	(Word Processor)
3	TAB	9	(Word Processor)
4	FORMAT	10	(Word Processor)
5	EDIT		
6	SAVING		
7	DELETE		
8	INSERT		

ANSWER KEY FOR THE KEY WORD PROCESSING MODULE

	Answer	Topics
1	C	Meaning of a Word Processor
2	D	Function of a Word Processor
3.	B	Meaning of a TAB
4.	C	Meaning of FORMAT
5.	A	Meaning of EDIT
6.	E	Meaning of FILE
7.	A	Meaning of DELETE
8.	E	Meaning of INSERT
9.	B	Function of a Word Processor
10.	C	Function of a Word Processor

10. If you find a mistake in a letter while you are printing, you are:

(a) unable to correct the mistake by using the word processing program.
(b) unable to stop the printing to correct the mistake.
(c) able to stop the printing and correct the mistake.
(d) able to stop the printing, but unable to correct the mistake.
(e) able to check for more mistakes, but unable to correct them.

STOP STOP STOP STOP STOP

5. When you edit using a word processing program, you can:

(a) correct mistakes.
(b) set the margins on the paper.
(c) identify the number of lines you need.
(d) identify the type of print you need.
(e) set the number of words on a page.

6. Saving a file means:

(a) erasing it from the computer's memory.
(b) correcting mistakes in a file.
(c) formating a file.
(d) using a word processing program.
(e) keeping the information on a disk.

7. When you delete something, it means you:

(a) remove it.
(b) add to it.
(c) copy it.
(d) underline it.
(e) save it.

8. When you insert something in a paragraph, you:

(a) save it.
(b) remove it.
(c) erase it.
(d) underline it.
(e) add it.

9. If you wanted a person to notice an important sentence in a letter, you could use the word processing program to:

(a) copy the important sentence throughout the letter.
(b) underline the sentence where it appears in the letter.
(c) print only the important part of the letter and leave out the remaining part of the letter.
(d) increase the speed in which the letter is printed.
(e) none of the above.

GO ON

WORD PROCESSING - MODULE IV
PRE - POST TEST
(B/E #5001-48-83433)

93433

Directions: Enter your answers on a separate answer sheet. Do not leave any blanks on your answer sheet.

1. The best definition of a word processor is:

   (a) a computer program that allows people to type their work but not correct it.
   (b) a computer program that allows people to complete their work but not save it.
   (c) a computer program that allows people to write and correct their work.
   (d) a computer program that allows people to compare their work with others.
   (e) none of the above.

2. A word processing program can be used to do all these jobs EXCEPT:

   (a) show all of the work before it is sent to a printer.
   (b) correct the errors on the screen.
   (c) move words and paragraphs around on the screen.
   (d) write a letter without the input of a person.
   (e) print more than one copy of a letter without retyping it.

3. To save time when you have to begin a new paragraph in a letter with 6 paragraphs, you can:

   (a) set an index for each new paragraph.
   (b) set a tab to be used for each new paragraph.
   (c) set a page margin for each new paragraph.
   (d) set the cursor using the spacebar each time you must begin a new paragraph.
   (e) set the automatic display key to six.

4. When you format using a word processing program, you can:

   (a) edit mistakes on a letter.
   (b) complete difficult math problems.
   (c) set the margins.
   (d) create tables and graphs.
   (e) type out a finished letter.

GO ON

Item: Analysis for Data Base Module

NOTE: This module consists of 10 items.

	Meanings	Procedures
1	(data base)	5
2	(field)	7
3	(retrieval)	8
4	(menu)	
9	(SORT)	
10	(RETRIEVAL)	

Use of a Data Base

6

ANSWER KEY FOR THE DATA BASE MODULE

	ANSWER	TOPICS
1.	C	Meaning of Data Base
2.	D	Meaning of a field
3.	B	Meaning of retrieval
4.	A	Meaning of of menu
5.	D	Procedures for a data base
6.	C	Use of a Data Base
7.	E	Procedures for a Data Base
8.	C	Procedures for a Data Base
9.	B	Meaning of SORT
10.	A	Meaning of RETRIEVAL

6. A teacher could use a data base for:

(a) constructing a maze.
(b) writing a letter.
(c) listing the addresses of children.
(d) editing a letter.
(e) marking a test.

7. When you enter information into your data base, you must:

(a) complete more than one record at a time.
(b) print it before you complete it.
(c) remove the name of the field.
(d) delete all the information in the field
(e) complete one record at a time.

8. Before you can use a disk to save your data base file, you must:

(a) erase the entire field.
(b) use the TAB key.
(c) initialize the disk.
(d) create a new field.
(e) none of these.

9. If teachers wanted to examine the "last names" of their students' data base records, they must:

(a) rename their records.
(b) save their records.
(c) edit their records.
(d) delete their records.
(e) sort their records.

10. If you have forgotten the name of your data base file, which of these would you need to retrieve:

(a) a list of files.
(b) a new menu of commands.
(c) a list of instruction for saving your file
(d) a set of directions for creating a new file.
(e) a menu for deleting your files.

STOP STOP STOP STOP STOP

DATE BASE - MODULE III
PRE - POST-TEST
(B/E #5001-48-83433)

Directions: Enter your answers on a separate sheet.
Do not leave any blanks on your answer sheet.

1. A data base program helps people to:

   (a) organize and save stories.
   (b) create pictures and drawings for books.
   (c) organize and save information.
   (d) create games and puzzles.
   (e) print long stories without pictures.

2. To make a new data base you must:

   (a) create bases.
   (b) create filers.
   (c) crea e tabs.
   (d) create fields.
   (e) create drives.

3. If you wish to work again on an old file, you must do the following:

   (a) highlight it.
   (b) retrieve it.
   (c) underline it.
   (d) delete it.
   (e) position it.

4. A MENU is a:

   (a) list of things a program can do.
   (b) list of files on a disk.
   (c) list of fields on a screen.
   (d) list of records on a disk.
   (e) list of data on a storage disk.

5. After you have created fields, you can now:

   (a) remove the information.
   (b) sort the information.
   (c) count the information.
   (d) enter the information.
   (e) review the information.

GO ON

ITEM: Analysis for the LOGO Module

NOTE: This Module consists of 10 items.

Knowledge of Primitives

1
2 (LT and RT)

Meaning of Commands

3 (PU or PENUP)
4 (PD or PENDOWN)

Knowledge of Geometry

5 (triangle)

Knowledge of LOGO

6 (spacing)
7 (HOME Command)
8 (REPEAT Command)
9 (Draw a square)
10 (FD 40 Command)

ANSWER KEY FOR THE LOGO MODULE

	ANSWER	TOPICS
1.	D	Knowledge of Function Keys
2.	C	Knowledge of Function Keys
3.	A	Meaning of Commands
4.	E	Meaning of Commands
5.	D	Knowledge of Geometry
6.	D	Knowledge of LOGO
7.	E	Knowledge of LOGO
8.	A	Knowledge of LOGO
9.	B	Knowledge of LOGO
10.	C	Knowledge of LOGO

6. Following FD, you must leave a _____ before typing how many steps the turtle should move:

(a) comma.
(b) period.
(c) zero.
(d) space.
(e) colon

7. One way to return the turtle to the center of the screen is to:

(a) clear the screen using the EDIT key.
(b) erase the lines using the PE command.
(c) use the RETURN key more than once.
(d) move the turtle by using the BACK command.
(e) type HOME.

8. When you use the REPEAT command in a LOGO program:

(a) the commands between the brackets need to be typed.
(b) there is no longer a need for commands.
(c) commands need to be written more than once.
(d) there is no longer a need for numbers or directions.
(e) the turtle draws lines and erases them.

9. The commands below will draw this figure:

```
TO SURPRISE:
FD 30
RT 90
FD 30
RT 90
FD 30
RT 90
FD 30
RT 30
END
```

(a) circle
(b) square.
(c) triangle.
(d) cube.
(e) rectangle.

10. The command FD 40 makes the turtle:

(a) move downward 40 turtle steps.
(b) move upside down 40 turtle steps.
(c) move forward 40 turtle steps.
(d) move backward 40 turtle steps.
(e) move upward 40 turtle steps.

STOP STOP STOP STOP STOP

LOGO - MODULE II
PRE - POST TEST
(B/E #5001-48-83433)

Directions: Enter your answers on a separate answer sheet. Do not leave any blanks on your answer sheet.

1. If the pen is down, all of these commands would make the turtle draw a line EXCEPT:

   (a) FD 75
   (b) FD 40
   (c) BK 300
   (d) LT 85
   (e) BK 2

2. The two commands that make the turtle TURN are:

   (a) UP 60; DOWN 20
   (b) FD 50; BK 80
   (c) LT 40; RT 70
   (d) CS ; PD
   (e) HOME ; PU

3. This command allows you to move the turtle to a new location on the screen without drawing a line:

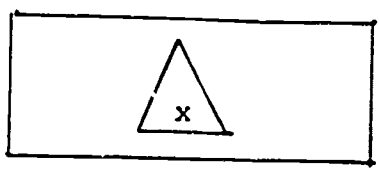
   (a) PU or PENUP.
   (b) DP or DOWNP.
   (c) UP or PENP.
   (d) PD or PENDOWN.
   (e) CS or CLRSC.

4. This command PD or PENDOWN allows the turtle to:

   (a) stop drawing and turn.
   (b) clear the screen.
   (c) move to a new location and draw a line.
   (d) move only backward.
   (e) get ready to draw again.

5. Figure "x" is an example of a:

   (a) square.
   (b) rectangle.
   (c) circle.
   (d) triangle.
   (e) cube.



GO ON

Items Analysis for the Core Curriculum

NOTE: This module consists of 15 items.

Computer Parts
1. Keyboard
2. Printer
3. Monitor
4. Disk drive

Meanings
5. Cursor
6. Software
8. Input device
9. BASIC

Computer Care
7
12

Computer Usage
10 (supermarket)
11 (legal use)

Computer Commands
13

Computer History
14

Flowchart
15

ANSWER KEY FOR THE GENERAL COMPUTER LITERACY MODULE

	ANSWER	TOPICS
1.	D	Computer parts (Keyboard)
2.	B	Computer parts (printer)
3.	B	Computer parts (monitor)
4.	D	Computer parts (disk drive)
5.	C	Meaning of cursor
6.	E	Meaning of Software
7.	D	Computer care
8.	B	Meaning of input device
9.	A	Meaning of BASIC
10.	B	Computer usage
11.	E	Computer usage
12.	D	Computer usage
13.	E	Meaning of Computer Commands
14.	A	Computer History
15.	E	Flowchart

12. The step that is INCORRECT when working with a computer is:

(a) putting a disk in a disk drive and loading a program.
(b) turning on disk drive, a monitor, and a keyboard before you begin to work.
(c) putting a floppy disk in a disk drive before it is turned on.
(d) eating at the computer.
(e) turning off a computer after you have saved your work.

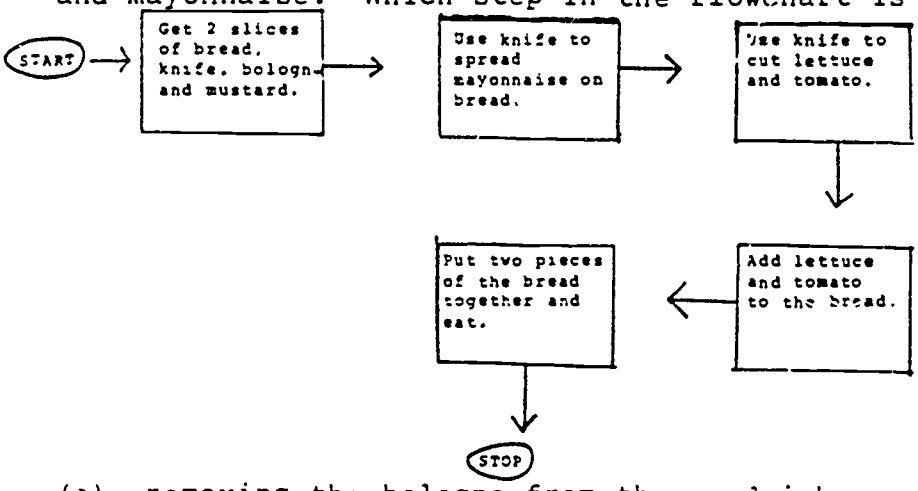
13. If you want to move the cursor FORWARD, you must:

(a) press the DELETE key.
(b) press the LEFT ARROW key.
(c) press the ESCAPE key.
(d) press the CLEAR SCREEN key.
(e) press the RIGHT ARROW key.

14. Blaise Pascal got the idea for his calculator from this machine:

(a) abacus.
(b) water clock.
(c) sewing machine.
(d) printing press.
(e) piano.

15. Below is a flowchart to make a bologna sandwich with lettuce and mayonnaise. Which step in the flowchart is missing?



(a) removing the bologna from the sandwich.
(b) adding the mayonnaise to the sandwich.
(c) removing the tomato and the lettuce.
(d) adding a tomato to the sandwich.
(e) adding bologna to the sandwich.

STOP STOP STOP STOP STOP

6. An example of software is a:

(a) keyboard with 32 letters.
(b) disk drive with a hard disk.
(c) scanner reader used in banks.
(d) color monitor.
(e) storage device containing computer programs.

7. In order to prevent damage to floppy disks, people should:

(a) store them upright without a dustproof container.
(b) always touch the recording surface of the disks.
(c) store them in a warm place that is damp.
(d) place them in protective envelopes when they are not being used.
(e) none of the above.

8. All the following are examples of input devices EXCEPT:

(a) cassette tape recorder.
(b) printer.
(c) disk drive.
(d) card reader.
(e) keyboard.

9. BASIC is a:

(a) computer language.
(b) number system.
(c) special type of keyboard.
(d) disk with no data.
(e) part of the computer used to store memory.

10. A computer is used in a supermarket to:

(a) hand deliver groceries.
(b) compute a person's final bill.
(c) hand mark prices on canned goods.
(d) weigh and cook fresh food.
(e) measure the height, weight and age of customers.

11. Business computers can be used <u>legally</u> to do all the following EXCEPT:

(a) word processing.
(b) doing inventory.
(c) electronic mail.
(d) keeping a record of messages.
(e) changing the records of other companies.

GO ON

#5001-48-93435

REINFORCING READING, 1988-1989

School-Community Education Program
Program Administrator: M. Morris Speiser
Project Coordinator: Linore Lindy

Prepared by:
Office of Research, Evaluation, and Assessment
Instructional Support Evaluation Unit
New York City Public Schools

PROJECT DESCRIPTION

The goal of Reinforcing Reading is to expose students to diversified communications arts activities designed to enrich their regular classroom experiences, and resulting in improved self-image, enhanced self-esteem and increased reading success. The New York State Legislature provided $22 thousand in funding for this project.

Two hundred students in grades three through six participated in after-school workshops. Students were selected for participation in the program based upon their test performance, school records, and attendance. Participating students were screened to determine their needs in reading, writing, attitude toward school and attendance. Student needs were determined through informal diagnostic testing and student-teacher conferences.

After-school workshops were held at five elementary schools in Community School District (C.S.D.) 16. Each site held two after-school classes; one for third and fourth grade students, and another for fifth and sixth grade students. Students received individualized remedial services based on their diagnostic information. Each student received at least four-and-

-a-half hours of remedial assistance per week. Staff consisted of licensed teachers selected by the district, and the project coordinator, who provided supportive assistance.

The objective was for participating students to achieve a statistically significant mean gain of seven Normal Curve Equivalent (N.C.E.)* score points from pretest to posttest on the Degrees of Reading Power (D.R.P.) Test.

EVALUATION METHODOLOGY AND FINDINGS

Project impact was assessed by analyses of students' scores on the Degrees of Reading Power (D.R.P.) Test administered in the spring of 1988 and the spring of 1989. Raw scores were converted to normal curve equivalent (N.C.E.) scores, which describe student performance relative to national norms. Mean N.C.E. scores were compared, and correlated t-tests were computed to establish if achievement differences were statistically

*N.C.E. scores are similar to percentile ranks, but unlike percentile ranks, are based on an equal-interval scale. Normal curve equivalent scores are based on a scale ranging from 1 to 99 with a mean of 50 and a standard deviation of approximately 21. Because N.C.E. scores are equally spaced apart, arithmetic and statistical calculations such as averaging are meaningful; in addition, comparisons of N.C.E. scores may be made across different achievement tests.

significant. An effect size (E.S.)*, which indicates the educational meaningfulness of the mean gain or loss for each comparison was also calculated.

An evaluation of this year's project was not possible because no data was received by the Office of Research Evaluation and Assessment.

CONCLUSIONS AND RECOMMENDATIONS

An evaluation of this year's project was not possible because no data was received by the Office of Research Evaluation and Assessment. In the future, it is recommended that a greater effort is made to provide the data necessary for evaluation.

*The effect size, developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gain. This ratio provides an index of improvement in standard deviation units irrespective of the size of the sample. According to Cohen, 0.2 is a small E.S., 0.5 is a moderate E.S., and 0.8 is considered to be a large E.S. Only effect sizes of 0.8 and above are considered to be educationally meaningful, reflecting the importance of the gains to the students' educational development.

#5001-48-93439

RIVERDALE PREPARATORY ACADEMY, 1988-89

School-Community Education Program
Program Administrator: M. Morris Speiser
Project Coordinator: Ralph Di Fiori

Prepared by:
Office of Research, Evaluation, and Assessment
Instructional Support Evaluation Unit
New York City Public Schools

PROJECT DESCRIPTION

The Riverdale Preparatory Academy operates as a minischool for junior high school students in Community School District (C.S.D.) 10. At the minischool, students receive a full academic program that focuses on an intensive review of basic skills and special enrichment activities, and return to the main school only for subjects such as physical education and industrial arts.

In 1988-89, the project operated at two sites, Junior High Schools 45 and 141, and served some 270 seventh and ninth grade students who were selected by their schools on the basis of two criteria: evidence of average or above average ability and below grade level reading scores on citywide reading tests; and pupils who scored well on tests but achieved at a lower level than expected. Project activities included basic-skills instruction with an emphasis on the classics in literature, special writing projects, practical experiments with mathematics concepts, use of visual media, and attendance of diverse cultural events.

The project had two objectives: student participants, who were reading on or below grade level, were expected to achieve a statistically significant mean gain on annual citywide reading; and 75 percent of participants were expected to improve their

academic averages, based upon major subject scores.

School principals were responsible for the overall implementation of the program in their schools, and a teacher-in-charge was assigned to coordinate and supervise the mini-school activities. Funding of $22 thousand from the New York State Legislature was used for instructional supplies and enrichment activities.

EVALUATION METHODOLOGY

Evaluation activities focused on the analysis of student performance on the Degrees of Reading Power (D.R.P.) Test. To assess the first project objective, raw scores were converted to Normal Curve Equivalent (N.C.E.)* scores which express student performance relative to a national norm. Mean N.C.E. gains are interpreted as a measure of project impact on student achievement. Correlated t-tests were computed to establish if achievement differences were statistically significant.

*N.C.E. scores are similar to percentile ranks, but unlike percentile ranks, are based on an equal-interval scale. Normal curve equivalent scores are based on a scale ranging from 1 to 99 with a mean of 50 and a standard deviation of approximately 21. Because N.C.E. scores are equally spaced apart, arithmetic and statistical calculations such as averaging are meaningful; in addition, comparisons of N.C.E. scores may be made across different achievement tests.

Effect size (E.S.)*, which indicates the educational meaningfulness of the mean gain or loss for each comparison, was also calculated. Since two different criteria were used to select participants, pretest N.C.E. scores also served to distinguish between those students scoring at or below grade level (at or below 50 N.C.E.s) and those achieving above average reading scores (above 50 N.C.E.s)

The second project objective was assessed through analysis of students' incoming final grades and their final grades at the end of the current year in the subject areas of english, social studies, mathematics, and science.

FINDINGS

Complete test scores on the D.R.P. were reported for 197 students, 58 percent of whom scored at or below grade level at pretest and the remaining 42 percent scored above grade level at pretest (see Table 1). By grade, 91 percent of the seventh grade students scored at or below grade level as compared to 37 percent of the ninth grade students who fell in this category. Overall, mean pretest score was 47.9 N.C.E.s and mean posttest score was 53.9 N.C.E.s, for a mean gain of 6.0 N.C.E. points. This mean

*The effect size, developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gain. This ratio provides an index of improvement in standard deviation units irrespective of the size of the sample. According to Cohen, 0.2 is a small E.S., 0.5 is a moderate E.S., and 0.8 is considered to be a large E.S. Only effect sizes of 0.8 and above are considered to be educationally meaningful, reflecting the importance of the gains to the students' educational development.

Table 1

Students' Mean N.C.E. Scores
on the D.R.P., by Group[a]
Riverdale Preparatory Academy, 1988-89

Group	N	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Difference Mean	Difference S.D.	E.S.
At or Below Grade Level	115	36.7	9.6	44.1	10.0	7.4[b]	8.1	0.9
Above Grade Level	82	63.7	7.9	67.7	9.1	4.0[b]	7.9	0.5
Total	197	47.9	16.0	53.9	15.1	6.0[b]	8.2	0.7

[a]Students were broken into two groups: students at or below grade level at pretest (at or below 50 N.C.E.s), and students above grade level at pretest (above 50 N.C.E.s).

[b]These mean gains were statistically significant at $p \leq .05$

- Overall, students achieved a mean gain of 6.0 N.C.E.s. This mean gain is statistically significant and represents a moderate effect size.

gain was statistically significant and represented a moderated effect size. Students scoring at or below grade level at pretest made the largest mean gain of 7.4 N.C.E.s. This gain was statistically significant and educationally meaningful. Students scoring above grade level at pretest also made a statistically significant mean gain, yet because of the large variation in scores, this represented only a moderate effect size.

Students' mean grades for the major subject areas are presented in Tables 2 through 5. Overall mean gains and percentages of students making gains for each subject area are as follows: English mean gain was 3.9, with 58 percent of students making a gain; social studies mean gain was 2.36, with 54.7 percent of students achieving a gain; mathematics mean gain was 1.4, with 45 percent of students achieving a gain; and science mean gain was 0.1, with 40 percent of students demonstrating a gain. Overall, students in grade nine achieved larger gains than students in grade seven across all four subject areas.

CONCLUSIONS AND RECOMMENDATIONS

In 1988-89, The Riverdale Preparatory Academy project was successful in meeting one of its objectives. With regard to the first objective, students achieved a statistically significant mean gain in reading, as measured by their performance on the annual citywide reading test. Students scoring at or below

Table 2

Students' Mean Scores in English[a], by Grade
Riverdale Preparatory Academy, 1988-89

Grade	N	Pretest Mean	Posttest Mean	Mean Gain	Percent of Students Achieving Gain
7	98	74.6	75.2	0.6	41.8
9	127	75.2	81.6	6.4	70.9
Total	225	74.9	78.8	3.9	58.2

[a]Performance in the major subject areas was measured by a comparison of participants' incoming final grades with their final grades at the end of the current school year.

- Overall, 58.2 percent of all participating students achieved gains on their final grades in English.

Table 3

Students' Mean Scores in Social Studies[a], by Grade
Riverdale Preparatory Academy, 1988-89

Grade	N	Pretest Mean	Posttest Mean	Mean Gain	Percent of Students Achieving Gain
7	98	76.4	74.6	-1.8	40.8
9	127	75.3	80.9	5.6	65.4
Total	225	75.8	78.2	2.4	54.7

[a]Performance in the major subject areas was measured by a comparison of participants' incoming final grades with their final grades at the end of the current school year.

- Overall, 54.7 percent of participating students achieved gains in their final social studies grades.

Table 4

Students' Mean Scores in Mathematics[a], by Grade
Riverdale Preparatory Academy, 1988-89

Grade	N	Pretest Mean	Posttest Mean	Mean Gain	Percent of Students Achieving Gain
7	98	75.6	74.6	-1.0	41.8
9	127	77.3	80.9	3.6	47.2
Total	225	76.6	78.2	1.6	44.9

[a]Performance in the major subject areas was measured by a comparison of participants' incoming final grades with their final grades at the end of the current school year.

- Overall, 44.9 percent of participating students achieved gains on their final grades in mathematics.

Table 5

Students' Mean Scores in Science[a], by Grade
Riverdale Preparatory Academy, 1988-89

Grade	N	Pretest Mean	Posttest Mean	Mean Gain	Percent of Students Achieving Gain
7	98	75.3	75.7	0.4	36.7
9	127	75.2	75.1	-0.1	42.5
Total	225	75.2	73.3	0.1	40.0

[a]Performance in the major subject areas was measured by a comparison of participants' incoming final grades with their final grades at the end of the current school year.

- Overall, 40 percent of participating students achieved gains in their final science grades.

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