DOCUMENT RESUME

ED 291 852 UD 026 052

TITLE	School Community Education Program in New York City 1985-86: Volume III. OEA Evaluation Report.
INSTITUTION	New York City Board of Education, Brooklyn. Office of Educational Assessment.
PUB DATE	Jul 87
NOTE	118p.; For volumes I-IV 1984-85, see ED 278 130-133. For volumes I-IV 1985-86, see UD 026 050-053.
PUB TYPE	Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	Art Activities; Early Childhood Education; Elementary Secondary Education; Logical Thinking; Mastery Learning; Mathematics Instruction; *Program Evaluation; Science Instruction; *Staff Development; *Urban Education; Urban Schools; Writing Instruction
IDENTIFIERS	*New York (New York)

ABSTRACT

During 1985-86 the School Community Education Program (also known as the Umbrella Program), funded by the New York State Legislature, provided a variety of educational and training experiences to some 25,871 participants, including pre-kindergarten children and their parents; and students, teachers and supervisors from kindergarten through grade 12. The program consists of 44 different projects designed to provide innovative solutions to local educational and school problems. The 1985-86 evaluation indicates that in general the program was successful: 38 projects met their stated objectives, and some were highly successful. Of the six projects that did not reach their objectives, five set stringent objective criteria that may have been beyond their grasp. Those projects that failed to meet their stated objective should be closely monitored to identify the reasons for failure. Evaluation reports for each project are presented in four volumes. Each report contains a brief project overview, describes the evaluation methodology, presents the findings, and offers recommendations for improvement. This volume, Volume III, presents evaluation reports of the following staff development projects: (1) Legal Outreach Program; (2) Staff Development in Writing Instruction; (3) STAR LABS; (4) Mathematics Improvement Program; (5) Reasoning/Thinking Skills Program; (6) Arts in General Education (AGE); (7) Enrichment Program K-9; (8) Adventures in Science; (9) Early Childhood Language and Literacy; (10) Discovering Abilities and Improving Achievement; (11) Sum in One; and (12) Mastery Learning Program. Data are presented on 15 tables. Appendices include copies of program-developed assessment instruments. (BJV)

SCHOOL COMMUNITY EDUCATION PROGRAM

IN NEW YORK CITY

1985-86

VOLUME III

EVALUATION SECTION REPORT

Robert Tobias, Administrator
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July, 1987

SCHOOL COMMUNITY EDUCATION PROGRAM

IN NEW YORK CITY

1985-86

VOLUME III

Prepared by the O.E.A.
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EVALUATION SUMMARY

BACKGROUND

The School Community Education Program (also known as the Umbrella Program) provides a variety of educational and training experiences to a wide range of participants, including pre-kindergarten children and their parents; and students, teachers, and supervisors at all grade levels from kindergarten through grade 12. The program consists of 44 different projects designed to provide innovative solutions to local educational and school problems. Ten projects provided basic skills, English, and computer literacy instruction; ten focused on social and environmental studies; five were designed for pre-kindergarten children, and the remaining projects provided a variety of educational experiences to participants. Funds were provided by the New York State Legislature to support program activities.

POPULATION SERVED

During 1985-86, the program served some 24,290 students, the majority of whom were elementary school pupils. In addition, the program served 1,226 teachers and supervisors, 245 pre-schoolers, and about 110 community 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, were varied, most concerned increasing participants' competence in specific skills and abilities.

EVALUATION METHODOLOGY

The evaluation of the program was based on a number of data sources: student performance outcomes on project-developed and standardized tests, pupil writing samples, teacher and student survey questionnaires, attendance rates, number of acceptances to special high schools, and review of two curriculum manuals. Pre-program and post-program data 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.

FINDINGS

The 1985-86 evaluation findings indicate that, in general, the School Community Education Program was successful. Thirty-eight projects met their stated objectives. Three staff development projects (Arts in General Education, Sum in One, and Early Childhood Language and Literacy) and two pre-kindergarten

projects (Brooklyn College Tutorial Center and Pre-School Gifted and Talented) were highly successful. All projects providing instruction in mathematics, writing, English, and computer literacy met their project objectives. In all five pre-kindegarten projects, participants substantially improved their overall performance.

Only six projects did not meet their evaluation objectives. Apart from the Help: Neighborhood Center project that needs extensive project modifications, the other unsuccessful projects set stringent objective criteria which may have been beyond the programs' reasonable grasp.

RECOMMENDATION

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

- Closely monitor those projects which failed to meet their stated objectives to identify reasons for failure to achieve criterion for success.

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 Elias Rosario typed, corrected, and duplicated this report. The unit could not have produced this evaluation without their participation.

INTRODUCTION

In 1985-86, 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 44 different projects designed to provide innovative solutions to local educational and school programs.

The program provided services to about 25,871 participants in the 32 community school districts and selected high schools. The majority of these participants (24,290) were elementary, intermediate, and high school students. In addition, 245 pre-school children, 1,226 teachers and supervisors, and 110 community adults also participated in the Umbrella Program.

Evaluation reports are presented in four volumes. Volume I contains evaluations for ten projects which provided reading, mathematics, writing, English, and computer literacy instruction to elementary, intermediate, and high school students. Volume II includes evaluations for ten projects on social, ethnic, and environmental studies, and instruction on communication and the arts. Three of these projects also provided staff development training. Volume III contains evaluations for 12 staff development projects. The remaining 12 projects, presented in Volume IV, provided a variety of educational experiences to participants. Five of these projects were designed for pre-kindergarten children, two were concerned with the writing of curricula, one provided parenting skills instruction to students with infants, and the other four projects were designed to improve attendance rates, health, opportunities to gain acceptance to special high schools, and to foster career awareness among students.

Each report contains a brief project overview, describes the evaluation methodology, presents the findings, provides recommendations for improvement, and includes copies of program-developed assessment instruments. The reports are listed in order of budgeted function number in the table of Contents.

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VOLUME III

#5001-48-63403

LEGAL OUTREACH PROGRAM, 1985-86

School Community Education Program
Program Coordinator: Jack Isaacs
Project Coordinator: Eliot Salow

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Legal Outreach Program is designed to teach the history and use of legal concepts to junior high school teachers in Community School Districts (C.S.D.s) 5 and 16 and train them to integrate this knowledge into their regular classroom curricula. A recent interview conducted by the districts' resource personnel showed that many residents and students in these areas have become disenchanted with the legal system. To help overcome this negative attitude, the project seeks to make students more aware of the strengths and limitations of our legal system as well as to help them understand their own responsibilities in school and the community.

In 1985-86, the first year the project was implemented, 16 teachers from C.S.D.s 5 and 16 participated in the program. The selection of participants was based on the teachers' willingness to participate in after-school workshops and additional training activities. Project activities involved a series of training workshops which focused on the relationship between the legal system and the community. The curriculum, entitled "Law in the Community," related law to the legal system, the family, the

schools, the neighborhood, and society. Expert consultants conducted these workshops, assisted teachers in the preparation of lesson plans, and provided in-class support. Additional activities involved both teachers and their students who visited court houses, organized mock trials in the classroom, and invited guest speakers to the schools. The New York State Legislature provided $23 thousand to fund the project.

The stated objective for 1985-86 was for participating teachers to learn skills, knowledge, and techniques necessary to implement a law-related instructional program in the classroom. Their competence in these areas was to be measured by a program-developed test.

EVALUATION METHODOLOGY

The evaluation of the project focused on the analysis of participants' scores on a multiple-choice, project-developed test (see Appendix A). The test consists of 20 items dealing with legal concepts, processes and infrastructure, marriage and divorce, child abuse, real estate, crime, and governmental agencies. This test was administered at the beginning and end of the program.

FINDINGS

Complete scores were submitted for 13 teachers (see Table 1). Participants in both districts achieved gains on the posttest. Overall, mean pretest score was 10.9 points (54.3

TABLE 1

Teachers' Mean Raw Scores[a] on a Program-Developed Test, by District
Legal Outreach Program, 1985-86

District	N	Pretest		Posttest		Percent Gain
		Raw Score	Percent Correct	Raw Score	Percent Correct	
C.S.D. 5	8	11.3	56.5%	15.4	77.0%	20.5%
C.S.D. 16	5	10.4	52.0	16.0	80.0	28.0
TOTAL	13	10.9	54.3	15.7	78.5	24.2

[a]Perfect Raw Score = 20.

- Participants in both districts achieved gains of over 20 percentage points.

percent correct), mean posttest score was 15.7 points (78.5 percent correct), for a mean gain of 24.2 percent.

CONCLUSIONS AND RECOMMENDATIONS

The evaluation findings indicate that participants increased their knowledge of the legal system as measured by the program-developed test. Measuring whether the project met its objective remains problematic, however, because the objective was too vague and the testing instrument could not measure it adequately. Undoubtedly, teachers broadened their knowledge of the legal system but it is impossible to tell with the data at hand whether they learned the skills and techniques to implement a law-related instructional program. Appropriate items to measure class implementation of knowledge on the legal system should be included in the test. Alternatively, the program coordinator or the consultant could evaluate teacher performance in the classroom according to a specifically designed checklist. In addition, the test could be revised since most participants knew 50 percent or more of the answers at pretest. This indicates that the test might be too easy. Those items that most participants know at pretest should be eliminated. Finally, project staff should design a specific project objective, including quantitative criteria for successful program completion. For instance, the objective could state, "participants will achieve a gain of at least 25 percent at posttest and/or participants will show mastery of 80 percent

of competency skills in a checklist developed to measure teacher performance in the classroom."

LEGAL OUTREACH PROGRAM

TEACHER TRAINING WORKSHOPS

Pre-test/Post-test

Multiple Choice Questions

1. Which of the following New York agencies provides services to the needy including Medicaid, day care, foster care, and family planning?

   a. the department of labor
   b. the department of social services
   c. the department of health
   d. the board of regents -

2. The highest tribunal in New York State is:

   a. the Appellate Division
   b. the Supreme Court
   c. the Court of Appeals
   d. the Appellate Term

3. Which of the following types of cases does the Family Court of New York not have jurisdiction:

   a. juvenile offenses
   b. child custody and support
   c. divorce proceedings
   d. paternity matters

4. The trial court at the federal level is known as

   a. the district court
   b. the court of appeals
   c. the Supreme Court
   d. the federal Court of New York

5. In civil trials in the State of New York, the jury is composed of how many individuals:

   a. six
   b. eight
   c. ten
   d. twelve

6. The term voir dire refers to:

   a. a grounds for objection by an attorney
   b. a mistrial called by a judge
   c. a process of selecting prospective jurors
   d. the decision made by the jury

7. Plea bargaining is

   a. a process by which a defendant negotiates his fee with the defense lawyer, unless he is a court appointed attorney.
   b. a process utilized by the jurors to reach a decision in a criminal or civil trial.
   c. a process by which the defense lawyer is able to obtain evidence from the prosecutor.
   d. a process by which the opposing attorneys agree on a guilty plea by the defendant in exchange for a lesser charge.

8. Youths aged 14 to 16 whose cases are handled in the adult criminal court are referred to as

   a. youthful offenders
   b. juvenile offenders
   c. juvenile delinquents
   d. youthful delinquents

9. Which of the following statements is true for a fourteen year old girl who desires to marry?

   a. She cannot marry
   b. She must wait until she is sixteen
   c. She must obtain parental consent and the permission of the family court.
   d. She must wait until she is sixteen and obtain parental consent and the consent of the court.

10. Which of the following statements is the most accurate statement of the law in New York:

   a. common law marriages automatically exist if two people live together seven years.
   b. two people who live togehter are not obligated to support one another, unless they expressly agree to do so or "formally" marry.
   c. a common law marriage, in order to be valid, must be certified in a court of law.
   d. common law marriages do not exist in New York.

11. Which of the following is not a grounds for divorce in New York?

   a. abandonment for a year or more
   b. imprisonment for two consecutive years
   c. cruel and inhuman treatment
   d. adultery

12. In cases where child abuse is suspected, an investigator can remove the child when

    a. he senses that the child has been abused.
    b. their is another relative with whom the child can live.
    c. there is imminent danger of harm.
    d. the child is unable to support him or herself.

13. Select the correct definition;
    A neglected child is one whose health is impaired by a lack of (1) proper food (2) clothing (3) shelter (4) education (5) social outlets (6) medical care.

    a. all the above
    b. (1), (2), (3), (4)
    c. (1), (2), (3), (4), (5)
    d. (1), (2), (3), (4), (6)

14. An annulment would not be granted for which of the following reasons:

    a. non-age and proper consent
    b. physical incapacity
    c. fraud or duress
    d. temporary insanity

15. Which of the following is not considered a public assistance program: (1) Medicaid (2) social security (3) food stamps (4) supplement security income

    a. all are public assistance programs
    b. only (1), (2), (3)
    c. only (1), (3), (4)
    d. only (2), (3), (4)

16. In housing matters, the warrant of habitability refers to:

    a. the tenant's obligation to keep the house in good repair.
    b. the landlord's obligation to keep the house in good repair.
    c. the landlord's obligation to maintain the premises in safe and livable condition.
    d. the tenant's obligation to maintain the premises in safe and livable condition.

17. In housing matters, the right of quiet enjoyment refers to:

    a. the tenant's right to make any changes which s/he wants to within the leased space.
    b. the tenant's right to utilize the rented space for any lawful purpose which s/he so desires.
    c. the landlord's right to receive rent payments on time from his tenants.
    d. the tenant's right to use the property without being disturbed by the landlord or other tenants.

18. Under what circumstance is a search by a policeman considered unreasonable without a warrant?

    a. when he has reasonable cause to believe a crime has been committed.
    b. when he is in hot pursuit.
    c. when he has probable cause to believe that a crime has been committed.
    d. when an arrest has been made.

19. When a policeman reasonably believes that a person is about to commit a crime and also believes that his life is in danger, he can

    a. only stop and inquire
    b. stop and frisk
    c. stop and search
    d. search and seize

20. A teacher or administrator can search a student

    a. only if s/he has a warrant.
    b. any time s/he believes that a school rule has been broken.
    c. only when there is a law-enforcement official present.
    d. whenever there is reasonable cause.

LEGAL OUTREACH PROGRAM

TEACHER TRAINING WORKSHOPS

Pre-test/Post-test

Multiple Choice Answers

1. b
2. c
3. c
4. a
5. a
6. c
7. d
8. b
9. c
10. b
11. b
12. c
13. d
14. d
15. a
16. c
17. d
18. a
19. b
20. d

#5001-48-63404

STAFF DEVELOPMENT IN WRITING INSTRUCTION, 1985-86

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Lucy Calkins

Prepared By:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Staff Development in Writing Instruction Project provides training in the teaching of writing to elementary school teachers in 18 Community School Districts (C.S.D.s 5, 6, 8, 9, 10, 11, 13, 15, 16, 17, 18, 20, 25, 26, 27, 28, 29, and 30). District superintendents, school principals, and district curriculum staff members selected various schools in each district to participate in the program. In a few of these schools, some teachers had already been trained in the program; in others, teachers were selected among a group of volunteers who showed interest in improving their instructional skills in writing process.

In 1985-86, more than 300 teachers and some 9,000 students participated in the project. Teachers and their supervisors attended conferences and demonstration lessons conducted by teacher trainers and visiting consultants in topics such as writing as a process, improving writing through personal narrative, revision skills and techniques, and holistic evaluation methods. The project also used previously trained teachers as

models for new participants who visited their classrooms for demonstration lessons.

The objective of the project was for students of the participating teachers to improve their writing skills as measured by holistically scored writing samples. The project was funded for $282 thousand by the New York State Legislature to cover salaries for teacher trainers, consultants, and teacher substitutes.

EVALUATION METHODOLOGY

In 1985-86, project evaluation focused on analyses of students' writing samples which best reflect the instructional skills in writing process of teacher participants. To assess these skills as well as students' writing ability, pupils were given a writing assignment on the first and last day of project activities. Program staff selected a representative sample of students' writing assignments (40 for each district) which was stratified by grade level. The writing samples were then holistically scored by a team of five raters, using scales developed by the project coordinator. Each of the five raters reviewed and scored every writing sample. For kindergarteners and first graders, the raters used a scale drawn from the lists of stages children go through in learning to write by Marie Clay (see Appendix A). For pupils in grades two through eight, the raters used a scale adapted from the Personal Narrative Writing Scale in Cooper and Odell, Evaluating Writing (see Appendix B).

In both cases, students' writing samples were scored on a scale from one to five points.

Pre- and post-program holistic scores were submitted for evaluation. These scores were compared and correlated t-tests were computed to establish if achievement differences 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

Pre- and post-program holistic scores were reported for 720 students. A majority of the pupils' writing samples (89 percent) received a post-program rating of three or more score points on the five-point scale. Table 1 presents holistic scores by grade. Results showed scores to be similar across grades except for kindergarteners who made the lowest pre-program mean score (1.8 score points), and first-grade participants who made the highest post-program mean score (4.2 score points). Students in all grade levels achieved statistically significant and educationally meaningful mean gains, with the highest gains occurring in

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*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 Pre- and Post-Program Holistic Scores[a] on Writing Samples, by Grade
Staff Development in Writing Instruction, 1985-86

Grade	N	Pre-Program Mean	Pre-Program S.D.	Post-Program Mean	Post-Program S.D.	Difference[b] Mean	Difference[b] S.D.	E.S.
K	60	1.8	.9	3.0	1.0	1.2	.5	2.2
1	100	3.0	.6	4.2	.6	1.2	.6	1.9
2	120	2.7	.6	3.1	.5	.4	.4	1.0
3	112	2.8	.7	3.3	.7	.5	.5	.9
4	124	2.8	.6	3.3	.6	.5	.4	1.1
5	92	2.8	.7	3.3	.7	.5	.5	1.0
6	88	2.9	.6	3.4	.5	.5	.4	1.1
7	16	2.8	.5	3.3	.5	.5	.4	1.3
8	8	3.0	.6	3.4	.6	.4	.4	.8

[a]Based on scales from one (low) to five (high).

[b]All mean gains were statistically significant at $p \leq .5$.

- Students in all grade levels achieved mean gains ranging from .4 score points to 1.2 score points. These gains were statistically significant and educationally meaningful.
- Greatest gains were made by pupils in kindergarten and grade one.

kindergarten and grade one (1.2 score points). Mean gains for grades two through eight ranged from .4 to .5 score points.

CONCLUSIONS AND RECOMMENDATIONS

The evaluation findings indicate that the Staff Development in Writing Instruction project was successful in meeting its objective. Students in all grade levels showed an improvement in their writing ability. Mean gains were statistically significant and effect sizes were large, indicating the educational meaningfulness of the gains. The project had a greater impact on the performance of kindergarten and first-grade pupils than on students in other grade levels. Indeed, pupils in kindergarten and grade one achieved the largest mean gains which, as exemplified by the performance of first graders, cannot be solely attributed to low pre-program writing ability.

A comparison of the 1985-86 results with last year's evaluation findings shows that, in general, students then made lower scores and higher gains than this year. This fact raises two possibilities. First, this year's students had already been taught by teachers previously trained in the project, thus, they began the 1985-86 school year with improved writing ability. But the findings also raise questions about the reliability of holistic inter-rater scoring since project staff did not submit the five sets of ratings for each pupil. In the future, the five ratings for each student should be furnished for evaluation in order to establish inter-rater reliability. Further, project

staff should consider establishing a quantitative measure of project success. The following sentence, for instance, could be added to the project objective: "Students will achieve a mean gain of at least one point on a five-point rating scale."

Directions for Administering Writing Sample

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Please give each child a writing sample form and a pencil (only). Help them fill out the heading. (if necessary, fill out the heading for them beforehand). Ask children to draw a picture (with their pencil only) of something they like to do.

After five minutes, ask them to turn the paper over and write or pretend to write about their picture. Don't lead the children into writing except to tell them, "Just put down what ever you can" or "just try it." Repeat the directions if necessary.

*Note: It seems appropriate at this time of year that first graders be allowed to use lined paper. (attach paper to form).

DIRECTIONS FOR ADMINISTERING WRITING SAMPLE

Tell students, "You are invited to take part in a special writing activity. Please write a true story about something that has happened to you." Then provide each student with 2 sheets of paper. Suggest they take time to list possible topics. Once they have selected one, they can begin to write. Let them know they can use as much paper as they need, and that they have plenty of time. Also say, "You can try writing it in rough draft or you can just start writing the final piece."

If some children finish early, ask them to read a book quietly while the others work. After 20 minutes interrupt the children who are still writing. Say to all children, "If you had more time to work on this piece of writing and you wanted to make it into the best that it could be, what would you do next?" On another sheet of paper ask them to write what they would do next. Give them four (4) minutes to do this.

Evaluation Instrument

The Writing Process Project

Teachers College/Umbrella Programs

Because the ultimate goal of this project is to improve the quality of student writing, we will holistically evaluate samples of writing from the first and last day of our work in a district in order to determine whether there has been significant improvement in the writing. On each of these days the assignment will be the same. Students will be asked to select a topic of personal significance to the, and to draft and revise their piece without input from the teacher. The pieces will be dated, saved and then evaluated holistically. These data will be gathered from at least ten classrooms in each of the 14 districts, and these classrooms will be representative of the grade levels involved in the program from that district. We will randomly select ten percent of the children from each of these 140+ classrooms, and the pre- and post- scores will be tabulated for those children. The goal, then is to have a representative sample illustrating the range of districts and grade levels involved.

Methods for holistic evaluation will differ somewhat depending on the age group of the younster. To the best of our knowledge, no one has attempted to evaluate the early writing of primary children in this manner and therefore we have devised our own methods which are explained later. When the students are in grades 2-8, however, we can draw on and adapt methods described in Cooper's test, EVALUATING WRITING.

A group of five raters will each rank all of the written pieces. The raters will achieve reliability because 1) they come from similar backgrounds and 2) they will be carefully trained to reach nearly perfect agreement on samples used for training purposes. The raters will each be a published writer, and they will each have a background in teaching writing. As Cooper suggests, the raters will not use their image of ideal professional writing as an absolute standard of quality, but will instead rate papers relatively according to the range of papers produced.

Because the pieces of writing will be personal narratives, the raters will follow an adaptation of the guidelines from the Personal Narrative Writing Scale on Page 21-24 in Cooper's text (see attached items).

Many of our primary school students will not be able to write at all at the start of our training efforts, and so their growth will need to be evaluated according to developmental sequences of early writing. Again, a team of five raters will

holistically evaluate the samples and again the raters will practice these evaluations with samples of writing so as to achieve reliability. The guiding scale, however, will not be the Personal Narrative Scale but instead a list of stages drawn from Marie Clay's and Susan Sower's descriptions of the stages children go through in learning to write (see attached items). We will identify the stage evidenced in the pre- and in the post-samples. The raters for these pieces will be persons trained in early childhood development and especially in teaching writing in the early grades.

CHILDREN LEARNING TO WRITE (Based on attached list from world renowned researcher Marie Clay)

A Developmental Ladder

Level 1 Children do not appear to be able to differentiate between a drawing and written language.

Level 2 Children begin to use symbols that are used in the culture's system of writing. They write strings of letters or scattered letters but there appears to be little sound-symbol connection.

Level 3 Children label their drawings or write words on the page, generally using initial and final consonants only to represent a word.

Level 4 Words are combined into sentences, and spellings fill out to include some middle consonants and vowels, also some sight vocabulary.

Level 5 Children use the written code for a wide range of purposes: letters, poems, recipe books, signs, etc. They write fluently.

A Developmental Ladder

Level 1 Children are not able to differentiate between a drawing and written language.

Level 2 Children are able to differentiate between a drawing and written language.

Level 3 Children begin to use symbols that are used in the culture's system of writing. The children just write strings of letters, but when one asks them to read what they wrote, the children go on and on.

Level 4 Children try to create an alternative correspondence between spoken language and written language, eg. the written response may be the length of the spoken utterance according to the child's own reasoning.

Level 5 Children begin using the syllabic hypothesis, i.e. using one symbol for one syllable.

Level 6 Children use both the syllabic and alphabetic hypothesis (a relationship between letters and sounds).

Level 7 Children "break code." They are now on their way to developing their written language according to how adults use it in the culture. This is when they begin to grapple with their invented spellings and begin to discover the conventional spellings used in our orthography.

A hierarchy of spelling skills:

1. random string of letters
2. beginning sounds only
3. beginning and ending sounds
4. beginning, middle, and ending sounds

A typical pattern of learning the letters and using them:

1. single consonants
2. long vowels
3. everything else in no special order: other vowel sounds, digraphs, consonant blends or clusters.

(Bowers, Six Questions Teachers Ask About Invented Spelling

Selected elements of Cooper's scale were used for scoring. Raters scored the selected traits with a 2 (low), 6 (middle), or 10 (high) for style or voice, central figure, sequence, and theme. Raters used a 1 (low), 3 (middle), 5 (high) for wording and syntax, spelling and punctuation. The best possible paper could receive these scores:

Trait	Score
Style or voice	10
Central figure	10
Sequence	10
Theme	10
Wording and syntax	5
Punctuation and spelling	5
	50

The lowest scoring paper would receive these scores:

Trait	Score
Style or voice	2
Central figure	2
Sequence	2
Theme	2
Wording and syntax	1
Punctuation and spelling	1
	10

These scores were converted into the same 1-5 scale used for the K-1 samples to facilitate comparison:

10-18 = 1
18-26 = 2
26-34 = 3
34-42 = 4
42-55 = 5

PERSONAL NARRATIVE WRITING SCALE

(in Cooper and Odell, Evaluating Writing, p.21-24)

Note: For the purposes of this evaluation, we will score only the following aspects of the student writing:

I. B. Style or Voice
C. Central Figure
E. Sequence
F. Theme

II. A and B. Wording and Syntax
D and E. Punctuation and Spelling

Appendix A: Personal Narrative Writing Scales

I. General Qualities:

A. Author's Role

The author's role is the relationship of the author to the subject, incident, or person. In *autobiography* the author writes about himself/herself. He/she is the main participant. Most of the time he/she will use the pronouns, I, me, we, us. In *biography* the author writes about some other person. He/she is not involved in what happens; he/she is just an observer. He/she uses the pronouns, he, she, him, her, it, they, them.

High — The author keeps his/her correct role of either participant or observer throughout.

Middle — In autobiography, a few noticeable distracting times the author talks too much about another person's actions; or, in biography, he/she talks too much about his/her own actions.

Low — The author talks about himself/herself or others as participant or observer anytime he/she pleases so that you can barely tell whether it is supposed to be autobiography or biography. There is confusion as to author's role. He/she is not consistently either observer or participant.

B Style or Voice

High The author states what he/she really thinks and feels. Expressing personal experiences, the writer comes through as an individual, and his/her work seems like his/hers and his/hers alone. The voice we hear in the piece really interests us.

Middle The author uses generalizations or abstract language, seldom including personal details and comments. While the piece may be correct, it lacks the personal touch. The voice seems bland, careful, a little flat, and not very interesting.

Low We don't really hear a recognizable voice in the piece. The style seems flat and lifeless.

C. Central Figure

Details about the central figure make him/her seem "real." The character is described physically and as a person.

High The central figure is described in such detail that he/she is always "real" for you.

Middle The central character can be "seen," but is not as real as he/she could be.

Low The central character is not a real living person; he/she is just a name on a page. You cannot see him/her or understand him/her.

D. Background

The setting of the action is detailed so that it seems to give the events a "real" place in which to happen.

High The action occurs in a well-detailed place that you can almost see.

Middle Sometimes the setting seems vivid and real, but sometimes the action is just happening, and you are not really aware of what the setting is.

Low The action occurs without any detailed setting. You see the action, but you cannot see it in a certain place.

E Sequence

The order of events is clear, giving the reader a precise view of the sequence of incidents.

High The order of events is always clear to you even if at times the author might talk about the past or the future.

Middle A few times it is not clear which event happened first.

Low You really cannot figure out which event comes first or goes after any other event.

F Theme

The author chooses the incidents and details for some reason. There

seems to be some purpose behind the choice of subject matter, some *theme* holding it all together and relating the parts to the whole. There seems to be a point to it.

High The importance of the author's subject is either directly explained to you or it is implied in a way that makes it clear.

Middle You can see why the author's subject is important to him/her, but it is not as clearly stated or implied as it could be.

Low You cannot figure out why the subject is important to the author.

II Diction, Syntax, and Mechanics

A. Wording

High Words are employed in a unique and interesting way. While some of the language might be inappropriate, the author seems thoughtful and imaginative.

Middle Common, ordinary words are used in the same old way. The paper has some trite, over-worked expressions. The author, on the other hand, may work so hard at being different that he/she sounds like a talking dictionary, in which case he/she, also, merits this rating.

Low The word choice is limited and immature. Sometimes words are even used incorrectly—the wrong word is used

B Syntax

High The sentences are varied in length and structure The author shows a confident control of sentence structure The paper reads smoothly from sentence to sentence. There are no run-together sentences or sentence fragments.

Middle The author shows some control of sentence structure and only occasionally writes a sentence which is awkward or puzzling Almost no run-ons and fragments

Low Many problems with sentence structure. Sentences are short and simple in structure, somewhat childlike and repetitious in their patterns. There may be run-ons and fragments

C Usage

High There are no obvious errors in usage The author shows he/she is familiar with the standards of edited written English

Middle A few errors in usage appear in the paper, showing the author has not quite been consistent in using standard forms

Low The writing is full of usage errors

D Punctuation

High The author consistently uses appropriate punctuation

Middle Most of the time the writer punctuates correctly

Low The writing contains many punctuation errors

E. Spelling

High All words are spelled correctly

Middle A few words are misspelled

Low Many words are misspelled.

Analytic Scale

Reader_____ Paper_____

	Low		Middle		High
I. General Qualities:					
A. Author's Role	2	4	6	8	10
B. Style or Voice	2	4	6	8	10
C. Central Figure	2	4	6	8	10
D. Background	2	4	6	8	10
E. Sequence	2	4	6	8	10
F. Theme	2	4	6	8	10
II. Diction, Syntax, and Mechanics:					_____
A. Wording	1	2	3	4	5
B. Syntax	1	2	3	4	5
C. Usage	1	2	3	4	5
D. Punctuation	1	2	3	4	5
E. Spelling	1	2	3	4	5
					_____
			Total		_____

Dichotomous Scale

Reader_____ Paper_____

	YES	NO	
I.	_____	_____	Author's role consistent
	_____	_____	Interesting personal voice
	_____	_____	Theme clearly presented
	_____	_____	Background rich and supportive
	_____	_____	Sequence of events clear
	_____	_____	Central figure fully developed
II.	_____	_____	Wording unique and developed
	_____	_____	Syntax correct and varied
	_____	_____	Usage errors few
	_____	_____	Punctuation errors few
	_____	_____	Spelling errors few
			Total Yes_____

#5001-48-63405

STAR LABS, 1985-86

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Samuel Storch

Prepared By:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

STAR LABS is a staff development project designed to assist elementary and high school teachers improve their skills for science instruction. The project was implemented by Community School Districts (C.S.D.s) 21 and 22 in collaboration with the Edward R. Murrow High School.

In 1985-86, 40 teachers from C.S.D.s 21 and 22 participated in the program. They were selected by their school principals based on their need to improve their science instruction. Project activities took place at the E.P. Hubble Planetarium in Edward R. Murrow High School and consisted of two components. First, teacher participants took part in three five-hour training sessions at the planetarium to learn concepts of astronomy and be provided with appropriate lesson plans and materials to use in their classrooms. Secondly, participating teachers and their students visited the planetarium to view shows specifically designed for each grade level, emphasizing the earth's relationship to the sun, moon, planets and other star systems. Finally, a third project component was to take place at C.S.D. 28, using a portable planetarium to train teachers and involve students.

This component, however, was not undertaken. Funds for $37 thousand were provided by the New York State Legislature to acquire audiovisual material, general instructional supplies and support after-school teacher workshops.

The project objective was for teacher participants to demonstrate knowledge in science and techniques, including planning appropriate astronomy lessons, selecting relevant material and involving students in hands-on activities. Teacher performance in these areas was measured by a program-developed test.

EVALUATION METHODOLOGY

Evaluation of the project focused on the analysis of participants' scores on a program-developed test (see Appendix A). The test consists of 20 multiple-choice items on concepts of astronomy and selection of appropriate teaching materials and activities for different grade levels. The test was administered at the beginning and end of the training period. In addition, O.E.A. personnel visited the Planetarium.

FINDINGS

Complete test scores for 30 participants were submitted for evaluation (see Table 1). Overall, teachers achieved a 30 percent increase at posttest. Mean pretest score was 7.6 points (38 percent correct) and mean posttest score was 13.6 points (68 percent correct). A comparison of test scores by district shows

TABLE 1

Participants' Mean Raw Scores[a] on a Project-Developed Test, by District
STAR LABS, 1985-86

District	N	Pretest		Posttest		Gain	
		Raw Score	Percent Correct	Raw Score	Percent Correct	Raw	Percent
C.S.D. 21	13	7.1	35.4%	12.5	62.7%	5.4	27.3
C.S.D.22	17	8.1	40.6	14.6	73.2	6.5	32.6
TOTAL	30	7.6	38.0	13.6	68.0	6.0	30.0

[a]Perfect Raw Score = 20.

- Overall, participants achieved a gain of 30 percent.

that teachers at C.S.D. 22 performed better than teachers at C.S.D. 21.

In addition to these quantitative findings, the Director of the Edwin Hubble Planetarium indicated that students were well prepared for their planetarium visit and "loved it." Several letters, written by teachers, corroborate his statement.

CONCLUSIONS AND RECOMMENDATIONS

The evaluation findings show that STAR LABS was a successful project having an impact on the performance of participating teachers. Additional qualitative findings indicate that their students also benefitted from the program. In the future, however, project staff should consider including in the objective specific quantitative criteria for successful program completion. The following sentence could be added: "For 80 percent of participants, posttest scores will show an improvement of at least 25 percent over pretest scores."

E.P. HUBBLE PLANETARIUM

E. R. MURROW HIGH SCHOOL
1600 AVENUE L, BROOKLYN, NEW YORK 11230
718 [redacted] 258-9283 EXT. [redacted] 17

TEACHER EVALUATION INSTRUMENT

Instructions: Please choose the answer which best completes the statement or answers the question. Mark this answer on the separate answer sheet.

1. What is represented by the center of the common, circular star map? (a) the North Celestial Pole (b) the horizon (c) the zenith (d) the meridian.

2. Which of the following materials would be of greatest value in studying the phases of the moon in preparation for a planetarium demonstration? (a) moon globe, earth globe, chart of phases (b) ball-and-stick models, empty slide projector (c) calendar with lunar phases, diagram of phases, protractors and rulers (d) orrery and flashlight.

3. Which of the following factors is most responsible for a student's inability to see many stars from outside his or her home? (a) air pollution (b) horizons blocked by buildings and trees (c) poor dark adaptation (d) waste lighting.

4. Which of the following would be visible first after dark? (a) Venus (b) the North Star (c) the Orion Nebula in winter (d) the Andromeda Galaxy.

5. Which of the following materials would most graphically demonstrate the distances between planets in the solar system? (a) pencil, roll of adding machine tape, rulers, table of distances (b) chart of the solar system, pictures of planets, table of distances (c) model of the solar system, table of distances, globes of Earth and moon (d) a visit to the planetarium.

6. Which is the correct statement? (a) The sun rises in the east. (b) The sun is on the meridian at noon. (c) The sun sets in the west. (d) The time the sun is above the horizon does not vary.

7. Which statement is incorrect? (a) The moon can be found during daylight on nearly every day of the month. (b) The orbit of the Earth brings it closer to the sun during our winter. (c) The North Star is the brightest star in the sky. (d) A brighter star may actually be more distant than a fainter star.

8. In planning a lesson on "changing time" for young children, which of the following would be a good preparation for a class before a visit to the planetarium? (a) Let children check the time of sunrise and sunset at home using the newspaper times and a watch (b) give the children a diagram showing the meridian and horizon, and the sun's daily path (c) teach the children to tell time using a large clock face (d) use diagrams of cardinal points, sunrise and sunset points, and a sunrise-sunset table.

9. Which of the following is the most appropriate for a fifth grader to use when learning the constellations? (a) a small telescope (b) a celestial globe (c) an umbrella with the stars painted on the inside (d) a pair of binoculars and a star map.

10. Which of the following is the best classroom demonstration to show the changing position of the Big Dipper during the night? (a) a chart of the Northern Skies with Polaris at the center (b) rotating star finders for each student (c) a large umbrella with the northern stars painted on the inside (d) a round flask with stars on the outside and blue tinted water half-filled on the inside.

11. Which concept is most appropriate for a kindergarten class? (a) Are the stars out tonight? (b) A Visit to the Zodiac (c) Locating the Tropic Parallels (d) How we tell time by the Stars.

12. Which of the following is not usually a concept or topic best taught using the planetarium? (a) the motions of the stars (b) the midnight sun (c) the phases of the moon (d) the characteristics of the planets.

13. Why do many planetariums have seating arrangements where students will face south primarily? (a) seating convenience is enhanced (b) most seasonal sky changes occur in the south (c) the entire class can be taught at once with eye contact to the instructor (d) we live in the northern part of the country.

14. Which of the following magazines is most suited for elementary and junior high school/intermediate school students? (a) Sky and Telescope (b) Astronomy (c) Odyssey (d) The Griffith Observer.

15. What is the name for the mechanical model of sun-Earth-moon often found in classrooms? (a) a planetarium (b) an orrery (c) an eidurancon (d) a celestial globe.

16. Which of the following best describes the planetarium? (a) a movie (b) a mechanical model of the solar system (c) a video or laser apparatus for seeing stars (d) projection of a light source through small lenses or pinholes.

17. Which motion of the Earth causes zodiac signs to change over the ages of history? (a) rotation (b) revolution (c) precession (d) nutation.

18. What is the angle between the moon and sun as seen from the Earth when the moon is at first quarter? (a) 45° (b) 90° (c) 180° (d) $23\frac{1}{2}°$.

19. What is the most important function of a telescope? (a) gathering light (b) focussing light rays (c) magnifying an image (d) locating constellation patterns.

20. A planet rises as the sun sets. The planet cannot be (a) Mercury (b) Mars (c) Jupiter (d) Saturn.

TEACHER EVALUATION INSTRUMENT

ANSWER KEY

1. C
2. B
3. D
4. A
5. A
6. B
7. C
8. A
9. D
10. C
11. A
12. D
13. B
14. C
15. B
16. D
17. C
18. B
19. A
20. A

63405

Dec. 2, 1985

Dear Mr. Storch,

I am writing this letter to thank you for a beautiful experience while attending the "Hubble Planetarium" on Friday, Nov. 15, 1985 at 10:30.

My class and I found the trip to be enjoyable as well as educational. The parents, who attended, also remarked that this trip was just outstanding.

Mr. Storch, it is obvious that you are truly a professional in every sense of the word. We all felt that you take great pride in your work and enjoy it as well. You set a fine example for your student helpess, who were very kind and also most professional.

Thank you once again for a lovely morning. "What's Up" is a trip that should get a 10 "star" rating because it is "Out of this World" and maintains its place "In the Center of the Universe."

Cordially,
Miss J. Sokoloff
and Your Pals
In Kgrl. at P.S. 254

ipal. Mr. Gitter - P.S. 254
1501 Avey B'Klyn, N.Y.

#5001-48-63411

MATHEMATICS IMPROVEMENT PROGRAM, 1985-86

School Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Aurora Larocca

Prepared By:
Office of Educational Assessment
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 pupils diagnostic information and prescriptive techniques designed to improve student growth in mathematics. In 1985-86, the program served some 116 teachers and 3,480 pupils in grades two through seven in 12 elementary and five intermediate schools in C.S.D. 32.

The participating schools were selected by the District Mathematics Coordinator and by the school principals. In addition, C.S.D. 14 teachers 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 workshops focused on the development of effective prescriptive techniques. In addition, computers were used to provide individual information about pupils needs, progress, and mastery of specific mathematics skills. The project objective was for 55 percent of participating pupils to

achieve on or above grade level in mathematics as measured by 1985-86 citywide achievement tests.

The New York State Legislature contributed $46 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 curricula materials. The project also shared the resources of the Comprehensive Instructional Management System (CIMS).

EVALUATION METHODOLOGY

Evaluation activities focused on the analysis of student outcomes on the Stanford Diagnostic Mathematics Test. Student scores for April 1985 were compared with those obtained in April 1986. All raw scores were converted to normal curve equivalent (N.C.E.)* scores which express student performance relative to a national norm. U.S. Department of Education Evaluation Model A was used to determine project impact on student achievement in which mean N.C.E. gains are attributed to project services. Correlated t-tests were computed to establish if achievement

*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.

differences were statistically significant. Effect size (E.S.)* which indicates educational meaningfulness of the mean gain or loss for each comparison was also calculated.

FINDINGS

Complete test scores were submitted for 940 students, representing a sample of about 27 percent of the total number of participating students. Table 1 presents findings on student performance on the Stanford Diagnostic Mathematics Test by grade. All gains were statistically significant and, in general, educationally meaningful. Overall, pretest mean score was 23.8 N.C.E.s, posttest mean score was 35.7 N.C.E.s, for a mean gain of 11.9 N.C.E.s. Gains ranged from 4.7 to 21.2 N.C.E.s with fourth graders achieving the largest gain. Second- and seventh-grade pupils made the largest pretest scores but achieved the lowest gains. Effect size was large for all grades except grades two and seven.

Table 2 presents the percentage of students who met the project objective (55 percent of participating pupils will achieve on or above grade level in mathematics). Only about 17 percent of students scored on or above grade level. Grades two

*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
Stanford Diagnostic Mathematics Test, by Grade
Mathematics Improvement Program, 1985-86

Grade	N	Pretest		Posttest		Difference[b]		Effect Size
		Mean	S.D.	Mean	S.D.	Mean	S.D.	
2	246	30.0	13.2	37.3	18.3	7.3	18.2	.4
3	173	21.6	11.9	34.4	13.4	12.8	15.2	.8
4	117	15.8	14.4	37.1	13.1	21.2	12.7	1.7
5	178	22.1	11.5	35.5	14.0	13.4	12.6	1.1
6	133	23.0	11.2	37.0	14.3	14.0	13.6	1.0
7	93	26.0	13.5	30.8	10.0	4.7	11.4	.4
TOTAL	940	23.8	13.3	35.7	14.9	11.9	15.5	.8

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

- Students at all grade levels achieved statistically significant gains, ranging from 4.7 to 21.2 N.C.E.s.

TABLE 2

Students Meeting Project-Set Criterion[a], by Grade
Mathematics Improvement Program, 1985-86

Grade	N	Meeting Criterion	
		N	%
2	246	60	24.4%
3	173	19	11.0
4	117	18	15.4
5	178	32	18.0
6	133	30	22.6
7	93	4	4.3
TOTAL	940	163	17.3

[a]Fifty-five percent of participating pupils will achieve on or above grade level in mathematics.

- About 17 percent of participating students met the project-set criterion of success.

and six had the largest proportion of students meeting the project-set criterion of success while grade seven had the lowest number of successful students.

CONCLUSIONS AND RECOMMENDATIONS

The evaluation findings indicate that although student participants at all grade levels achieved statistically significant gains, the program objective was not met. As formulated, this objective anticipated that 55 percent of pupils would achieve on or above grade level in mathematics but only about 17 percent of participants achieved this objective. As indicated in previous evaluation reports, the objective has been too ambitious and the principal reason for the lack of project success in the last years. If student performance is measured, instead, by their improvement in mathematics by differences between pretest and posttest scores rather than by their posttest score alone, the project would have a more realistic objective. In 1985-86, for instance, mean gains were not only large but also educationally meaningful in all grades except grades two and seven. In the future, project staff should modify the project objective to include a mean gain, for instance, "students will achieve a mean gain of at least five N.C.E. scores."

#5001-48-63417

REASONING/THINKING SKILLS PROGRAM, 1985-86

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Ira Ewen

Prepared By:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Reasoning/Thinking Skills Program was designed by the Division of Curriculum and Instruction in collaboration with the Queens College Center for the Improvement of Education, selected Community School District (C.S.D.) superintendents and the Citywide Umbrella Bureau. The project provides instruction on thinking and reasoning skills models to administrators, teachers, and curriculum specialists. Participants also receive assistance for developing and directing reasoning skills projects in their districts. The goal of the project is for participants to be able to choose the most effective pedagogical approaches to address the particular educational needs of their district.

The project was first implemented in 1985-86. All New York City Community School Districts were invited to select five representatives to participate in the program. They were selected among administrators, supervisors, curriculum officers and teachers who were willing to participate in the project and in the training design. A total of 12 districts were represented.

Project activities were undertaken in two steps. In the first, participants attended seven weekly training seminars to explore and analyze major thinking and reasoning skills models, including those of Bloom, Feuerstein, Guilford, Renzulli, Lipman, and Ennis. During the second part of the project, participants developed and submitted proposals for reasoning skills programs. Project staff consisted of one academic consultant from Queens College. The New York State Legislature provided $15 thousand to cover project expenses.

The objective of the project was for participants to demonstrate knowledge of the major models for reasoning and thinking skills education based upon contemporary educational literature and practices.

EVALUATION METHODOLOGY

Project impact was assessed by an analysis of participants' scores on a project-developed test. The test, consisting of 21 multiple-choice items, was administered on a pre- and posttest basis at the beginning and end of the first phase of project activities (see Appendix A).

FINDINGS

Pretest and posttest scores were reported for 48 participants from nine districts identified by letter rather than by number (see Table 1). All participants made gains from pretest to posttest. Overall, pretest mean raw score was 9.4 points

TABLE 1

Participants' Mean Raw Scores[a] on a Project-Developed Test, by District
Reasoning/Thinking Skills Program, 1985-86

District[b]	N	Pretest Raw Score	Pretest Percent Correct	Posttest Raw Score	Posttest Percent Correct	Gain	%
A	5	10.0	47.6%	19.0	90.5%	9.0	42.9%
B	5	10.8	51.4	17.6	83.8	6.8	32.4
C	6	10.5	50.0	16.7	79.5	6.2	29.5
D	4	8.5	40.5	13.7	65.2	5.2	24.7
F	4	6.7	31.9	15.7	74.8	9.0	42.9
G	7	8.3	39.5	14.4	68.6	6.1	29.1
H	7	8.1	38.6	17.4	82.8	9.3	44.2
J	5	11.0	52.4	18.6	88.6	7.6	36.2
K	5	10.4	49.5	17.2	81.9	6.8	32.4
TOTAL	48	9.4	44.6	16.7	79.5	7.3	34.9

[a]Perfect Raw Score = 21

[b]The coordinator of the project substituted letters for district numbers.

- Participants achieved a mean gain of 34.9 percent.
- Districts A, F, and H outperformed other districts.

(44.6 percent correct responses), posttest mean raw score was 16.7 points (79.5 percent correct) for a mean gain of 7.3 points or 34.9 percent. Pretest scores by district ranged from 6.7 to 11 raw score points, posttest scores had a wider range, from 13.7 to 19 raw score points and gains ranged from 5.2 to 9.3 raw score points (24.7 to 44.2 percentage points).

CONCLUSIONS AND RECOMMENDATIONS

Evaluation findings indicate that the Reasoning/Thinking Skills Program was successful since participants achieved a mean gain of about 35 percent. The fact that the gain is large, shows that participants benefited from their participation in the program. In the future, however, project staff might consider revising the objective to include quantitative criteria for successful program completion. For instance, the following sentence could be added to the objective: "80 percent of participants will achieve a gain of at least 30 percent."

REASONING/THINKING SKILLS PROJECT

EVALUATION TEST FOR PARTICIPANTS

Choose the response that best answers the question from a Reasoning/Thinking Skills perspective.

1. Which of the following is least specific in its relation to teaching Reasoning/Thinking Skills?

   a. American educational tradition
   b. electronic media
   c. authoritarian structures and society
   d. need for responsible citizenship

2. Lipman and de Bono agree on

   a. discussion as the basis for training
   b. the topic specificity of materials
   c. the need for indepth involvement in discussions
   d. the need for creativity

3. Which of the following is least likely to occur in a Reasoning/Thinking Skills lesson?

   a. reading texts
   b. learning facts
   c. brainstorming
   d. problem solving

4. The main distinction in Bloom's Taxonomy is between?

   a. left-brain right-brain
   b. verbal and quantative
   c. cognitive and affective
   d. fact and opinion

5. Which pairs does Ennis' taxonomy not group together?

   a. seek reasons/try to remain relevant to the main project
   b. possibility of corrobation/use of established procedures
   c. expertise/agreement among sources
   d. class logic/interpretation of statements

6. Weinstein and Cannon differ from the other taxonomists calling attention to

   a. formal reasoning
   b. interpersonal reasoning
   c. philosophical reasoning
   d. informal reasoning

7. Project Intelligence is associated with

   a. Perkins
   b. Whimby
   c. Guilford
   d. Paul

8. Sternberg does not endorse

   a. Lipman
   b. de Bono
   c. Jones
   d. Feuerstein

9. Which of these programs does not strongly emphasize classroom strategies

   a. Instrumental Enrichment
   b. Philosophy for Children
   c. Mastery Learning
   d. Hanson, Silver Strong and Assoc.

10. Which program is least culture bound?

   a. Structure of Intellect
   b. Instrumental Enrichment
   c. Mastery Learning
   d. Philosophy for Children

11. Which intellectual ability is not isolated as basic in the Structure of Intellect approach?

   a. cognition
   b. divergent thinking
   c. formal reasoning
   d. evaluation

12. Which attitude is held in common by Instrumental Enrichment and Mastery Learning?

   a. teachers must model reflective thought
   b. spatial reasoning is a key for teaching the culturally deprived
   c. the individual student must learn at his or her own pace
   d. reasoning skills must grow out of the standard curriculum

13. Future Problem Solving is not necessarily related to which subject area?

   a. mathematics
   b. reading
   c. social studies
   d. science

14 Philosophy for Children is based on

a. children's versions of classic philosophical texts
b. discussion of contemporary social problems
c. realistic portrayals of children in novels
d. problems growing out of the pupils classroom and home experiences

15. Talents Unlimited most characteristically enables gifted children to

a. develop discussion skills
b. do independent research
c. read the classics
d. put on talent shows

16. Which area of writing least involves reasoning skills?

a. editing for grammar
b. editing for style
c. editing for consistency
d. editing for organization

17. Reasoning in mathematics characteristically does not involve

a. deductive logic
b. analysis of language
c. inductive logic
d. analogical reasoning

18. Which theoretician has the least to say about reasoning and reading?

a. Feuerstein
b. Lipman
c. Whimby
d. Guilford

19. Reasoning in Social Studies is least likely to occur in

a. discussing the accuracy of historical reports
b. analyzing the role of environment in economics
c. applying past lessons to present problems
d. preparing notes for research projects

20. Computer programming requires the mastery of

a. if-then reasoning
b. nand-nor logic gates
c. algorithms
d. BASIC

21. Scientific reasoning does not invariably require

a. deductive logic
b. inductive logic
c. reasoning by analogy
d. mathematical reasoning

ANSWER KEY

1. a
2. d
3. b
4. c
5. b
6. c
7. a
8. b
9. a
10. b
11. c
12. c
13. a
14. c
15. b
16. b
17. c
18. a
19. d
20. a
21. d

#5001-48-63418

ARTS IN GENERAL EDUCATION (AGE), 1985-86

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Elton Warren

Prepared By:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Arts in General Education (AGE) Project is designed to assist teachers in planning and integrating arts into their regular classroom curriculum. The goal of the project is to improve the instructional skills of teacher participants so that they can provide more stimulating learning experiences to students.

In 1985-86, 62 elementary and high school teachers from 13 Community Schools Districts (C.S.D.s) 2, 3, 6, 8, 10, 12, 13, 19, 22, 24, 26, 27 and 29), La Guardia High School of Music and Art, and John F. Kennedy High School participated in the program. Those teachers willing to participate in the program were selected by school principals. Participants attended a series of workshops on music, dance, folk art, and other fine arts. These were:

- "Music, the Enabler in the Learning to Learn Process,"
- "Liberties with Liberty" (Museum of American Folk Art),
- "A 'Miss Liberty' Banner Workshop,"
- "The Many Languages of Dance: Communicating With, Through and About Movement" (Joyce Theater), and
- "Movement and Music: Catalysts for Nurturing Creativity."

Art specialists conducted the workshops which included demonstration lessons, ballet and modern dance classes, stage presentations and performances. Conferences were provided for principals to support staff development training. Students also attended dance performances at the Joyce Theater. The objective for 1985-86 was for participating teachers to demonstrate their ability to integrate knowledge regarding the arts into the basic instructional program.

The project received $54 thousand in funding from the New York State Legislature. Project staff sought additional resources from foundations and other art-oriented organizations. For example, the Metropolitan Opera Guild Education Department in cooperation with the New York City Board of Education Arts in General Education Network and C.S.D. 6 organized the 1985-86 Met Opera Teacher Workshop series. Twenty-one AGE teachers participated in this program which is not evaluated in this report.

EVALUATION METHODOLOGY

Evaluation activities focused on three areas: 1) teacher response to the AGE workshops; 2) the impact of the workshops on teachers' instructional practices as assessed by their supervisors; and 3) the impact of the program on the participating schools as assessed by the principals.

Teachers' response to the workshops was measured by a workshop Evaluation Form distributed at each workshop (see Appendix A). Teachers were asked to rate their agreement with

five statements about the workshop on a five-point scale from "strongly agree" to "strongly disagree," and to describe the positive and negative features of the workshop. The highest score possible was 25.

The impact of the workshops on the teachers' instructional practices was assessed by a Teacher Survey completed by the teachers' supervisors (see Appendix B). The survey consisted of five statements about the teacher's use of art activities in the classroom and asked the supervisor to rate how frequently the statement was true of the teacher. To facilitate analysis, a numerical value was assigned to each response: never=0, seldom=1, sometimes=2, and frequently=3. Percentages for each response are reported, as well as a mean score for the item.

The impact of the AGE program on the participating schools was assessed by a Principals' Survey (see Appendix C). Principals were asked to respond to four questions rating the extent of project impact on teachers and students at their schools and to cite one specific example of AGE's contribution to the school program. To facilitate analysis, a numerical value was assigned to each response: "a" (most positive) = 3, "b" (less positive) = 2, "c" (negative) = 1, and "d" in Item 3 (most negative) = 0. Ratings are reported by percentages for each response and a mean score for each item.

FINDINGS

Workshop Evaluations

About a third (111) of workshop evaluation forms were submitted for analysis. The findings are presented in Table 1. Individual workshops received ratings ranging from 93.2 to 99.6 percent. Overall rating was 96.1, a highly positive teacher response to workshop activities. In the comments, most teachers uniformly described the workshops as "stimulating, motivating, and creative." Several teachers stated their interest in having more or longer workshops. There were very few negative comments. Some high school teachers indicated that training activities and materials were mostly designed for elementary school children.

Teacher Surveys

Fifty Teacher Surveys were submitted for evaluation. For most of the teachers (26) this was the first year of program participation, 12 had been in the project for two years, and four for three or more years. Eight surveys did not specify the number of years participants had been in the program. Most teachers were reported to perform the target activities "frequently" (see Table 2). Ninety-eight percent of the teachers received the highest rating for encouraging students' creative efforts, and 96 percent of the classes surveyed showed that students responded enthusiastically to arts activities. Instruction in basic arts concepts was the least frequent activity. No teacher received a rating of "never."

TABLE 1

Teachers' Evaluations of the Project Workshops
Arts in General Education, 1985-86

Workshop Title	N	Mean Score[a]	Mean (%)
I. "Music, the Enabler in the Learning to Learn Process"	25	23.3	93.2%
II. "Liberties With Liberty"	15	23.4	93.6
III. "A 'Miss Liberty' Banner"	28	24.2	96.8
IV. "The Many Languages of Dance"	18	24.9	99.6
V. "Movement and Music"	25	24.3	97.2
TOTAL	111	24.0	96.1

[a]Highest Score = 25

- On the whole, the workshops had a 96 percent rating.

TABLE 2

Supervisors' Ratings of Teachers' Use of Arts in Instruction,[a] Arts in General Education, 1985-86

Item	Frequency[b]			
	Seldom	Sometimes	Frequently	Mean[c]
1. Lesson plans indicate integration of arts activities in instruction	2 (4%)	7 (14%)	41 (82%)	2.8
2. Schedules external arts activities for students	--	11 (22%)	39 (78%)	2.8
3. Provides instruction in basic arts concepts	1 (2%)	15 (30%)	34 (68%)	2.7
4. Students demonstrate enthusiastic response to arts activities	--	2 (4%)	48 (96%)	3.0
5. Encourages students' creative efforts	--	1 (2%)	49 (98%)	3.0

[a] N = 50

[b] No item received a rating of "Never".

[c] Seldom = 1, Sometimes = 2, Frequently = 3

- Most teachers were reported to perform all activities frequently.

Principals' Surveys

Principals' Surveys were received from 32 school principals (see Table 3). On the whole, principals were generally positive about the impact of the AGE project on their schools. About 85 percent of them reported that AGE had benefited classroom instruction at their schools and two-thirds thought that both teachers and students benefited from AGE-sponsored external classroom arts programs. Item 2 ("AGE teachers shared their project-related experiences with other teachers at their schools") received the lowest rating. Eighty-seven percent of the principals believed that teachers at their schools were interested in participating in future AGE workshops. The principals most common examples of AGE's contribution to the school program were: increased rapport among teachers, active teacher involvement in the organization of school festivals, and increased motivation among AGE participants.

CONCLUSIONS AND RECOMMENDATIONS

The evaluation findings for 1985-86 show that the Arts in General Education was a highly successful project. Teachers found project activities "stimulating, motivating and creative" and gave the workshops an overall rating of 96.1 Supervisors reported that teachers encouraged student creativity and that most of them responded well to the teachers' efforts. Principals also indicated that the program benefited their schools. Thus the program met its objective of helping teachers to integrate

TABLE 3

Principals' Response to Project Activities[a]
Arts in General Education, 1985-86

Statements	Choices	Percent	Mean
1. Skills learned in AGE workshops benefited classroom instruction at school	a. Considerably b. Somewhat c. No observable effect	84.4% 15.6 0.0	2.8[b]
2. AGE teachers shared their experiences with other teachers at school	a. Frequently b. Somewhat c. Not at all	56.3% 40.6 3.1	2.5[b]
3. Teachers and/or students benefited from participating in AGE-sponsored external classroom special programs	a. Considerably b. Somewhat c. No observable effect d. No special program provided	78.1% 21.9 0.0 0.0	2.8[b]
4. Teachers are interested in participating in future AGE training workshops	a. Considerable interest b. Limited interest c. No interest	87.5% 12.5 0.0	2.9[b]

[a] $N = 32$

[b] "a" = 3, "b" = 2, "c" = 1, and "d" = 0

- In general, evaluation of the program's impact by principals was very positive.
- AGE training workshops benefited classroom instruction in over four-fifths of the cases.

the arts into their basic instructional programs. AGE teachers, however, should be further encouraged to share their learning experiences with other teachers in their schools. Efforts should also be made to have all teacher participants fill in the Workshop Evaluation Form in order to have a complete set of teacher responses. This will improve the evaluation of the project.

Future evaluation objectives should include a quantifiable criterion for each measure of program success (for example,"each workshop will receive a mean rating of at least 20 from teachers. Teachers will receive a rating of at least 12 on the Teacher Survey, and principals will give the program a rating of at least ten on the Principal's Survey).

New York City Board of Education

Division of Curriculum and Instruction
Charlotte Frank, Executive, Director

Office of Special Projects
Lawrence F. Larkin, Director

WORKSHOP EVALUATION FORM

Dear Participant:

Your input from this completed evaluation form will assist us to modify and improve future workshops. Thank you for your cooperation.

DISTRICT_____

DATE OF WORKSHOP_____ WORKSHOP LOCATION_____

WORKSHOP TITLE_____

WORKSHOP LEADER_____

WORKSHOP PARTICIPANT TITLE: SUPERVISOR (ADMINISTRATOR)_____ DISTRICT STAFF_____

OTHER (SPECIFY)_____ TEACHER (GRADE LEVEL)_____ PARAPROFESSIONAL_____

SCHOOL (OPTIONAL)_____ NAME OF RESPONDENT (OPTIONAL)_____

	STRONGLY AGREE 5	AGREE 4	UNDECIDED 3	DISAGREE 2	STRONGLY DISAGREE 1
1. The workshop was effective in presenting the material in a manner that was useful in improving classroom instruction.					
2. The materials used were relevant and appropriate to the topic.					
3. The goals and objectives of the workshop were achieved.					
4. Workshop participants questions were encouraged and answered professionally.					
5. The workshop demonstration leader was knowledgeable about the program?					

RECOMMENDATIONS - GENERAL COMMENTS

4. Firet: Please liet from your profeseional perceptione and workshop experience the three (3) most significant poeitive features, qualities and/or highlights of the workshop you just participated in. Firet impreseions are important. One word or a brief sentence to describe your preeent feeling is adequate.

Positive Features of Workshop:

1. _____

2. _____

_____

5. Second: List anv negative feelings you have about the workshop experience. If none, please write none. Thank you.

Negative Feelings:

1. _____

2. _____

_____

Please use the back of this sheet for any additional recommendations or general comments.

Thank you for your response.

1984-85

ARTS IN GENERAL EDUCATION (AGE)
TEACHERS' SURVEY

TEACHER'S NAME _____ GRADE LEVEL _____

SCHOOL _____ SPECIAL SUBJECT AREA _____

AGE Participation (circle one): Year 1 Year 2 Year 3 More

1. The teacher's lesson plans indicate that she/he integrates arts activities into classroom instruction.

   a. never b. seldom c. sometimes d. frequently

2. AGE teachers scheduled external arts activities for students.

   a. never b. seldom c. sometimes d. frequently

3. The teacher provides instruction in basic art concepts.

   a. never b. seldom c. sometime d. frequently

4. The students' behavior demonstrates enthusiastic response to arts activities.

   a. never b. seldom c. sometimes d. frequently

5. The teacher encourages students' creative efforts.

   a. never b. seldom c. sometimes d. frequently

1984-85

ARTS IN GENERAL EDUCATION (AGE)
PRINCIPALS' SURVEY

PRINCIPALS' NAME_____

SCHOOL_____

1. Skills learned by teachers in AGE training workshops benefited classroom instruction in my school.

   a. considerably b. somewhat c. no observable effect

2. AGE teachers shared their experiences with other teachers at my school.

   a. frequently b. somewhat c. not at all

3. Teachers and/or students at my school benefited from participation in AGE-sponsored external classroom special programs.

   a. considerably b. somewhat c. no observable effect
   d. no external special program provided

4. Teachers at my school are interested in participating in future AGE training workshops.

   a. yes, there is considerable interest
   b. interest is limited to a few teachers
   c. no, teachers do not want to participate

5. Cite at least one specific example of how AGE participation contributed to your school program this year.

#5001-48-63423

ENRICHMENT PROGRAM K-9, 1985-86

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Barbara Slatin

Prepared By:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Enrichment Program K-9 provides staff development workshops to elementary and intermediate school teachers in Community School Districts (C.S.D.s) 11, 21, 24, 25, 28 and 29. The purpose is to motivate and train teachers for them to meet the needs of high-achieving pupils in kindergarten through grade nine.

In 1985-86, about 178 teachers were selected by their principals to participate in the project. They attended five all-day workshops, focusing on such topics as assessment of the instructional needs of gifted students, Taylor's Multiple Talent Theory, and the Enrichment Renzulli Triad Model. The workshops were conducted by district staff and consultants in gifted education who also visited the classroom of each participant to provide assistance in implementing project activities.

The objective for 1985-86 was for participants to improve their knowledge of teaching techniques in the areas of instructional management, reasoning skills, and curriculum enrichment as measured by their performance on a project-developed test. The

project received $108 thousand in funding from the New York State Legislature.

EVALUATION METHODOLOGY

Project impact was assessed by an analysis of teachers' scores on a project-developed test (see Appendix A). The 20-item test measures knowledge of Taylor's Multiple Talent Theory, forms of thinking, and strategies for gifted education. The test was administered on a pretest and posttest basis at the beginning and end of the program.

FINDINGS

Complete test scores were reported for 164 teachers from all districts except C.S.D. 29 (see Table 1). Overall, mean gain was 22 percent. Pretest mean raw score for all districts was 14.3 points (71.5 percent correct responses) and posttest mean raw score was 18.7 points (93.5 percent correct responses). Analysis of test scores by district shows that mean pretest raw scores ranged from 13 to 15.8 points (teachers in all districts correctly answered above 65 percent test items) and posttest raw scores ranged from 17.7 to 19.7 points (teachers in all districts correctly answered above 88.5 percent test items).

CONCLUSIONS AND RECOMMENDATIONS

The Enrichment Program K-9 was successful as it met its stated objective. Teachers in all districts improved their knowledge of teaching concepts and techniques but the average

TABLE 1

Teachers Mean Raw Scores[a] on a Program-Developed Test,
By District
Enrichment Program K-9, 1985-86

District	N	Pretest		Posttest		Gain	
		Raw Score	Percent Correct	Raw Score	Percent Correct	Raw	Percent
11	21	13.0	65.0%	17.7	88.5%	4.7	23.5%
21	18	14.2	71.0	18.7	93.5	4.5	22.5
24	70	15.8	79.0	19.7	98.5	3.9	19.5
25	22	13.3	66.5	19.2	96.0	5.9	29.5
28	33	15.2	76.0	18.2	91.0	3.0	15.0
TOTAL	164	14.3	71.5	18.7	93.5	4.4	22.0

[a]Perfect Raw Score = 20.

- Overall mean gain was 22 percent points.

improvement was low at 22 percent points. The reason for this was that pretest scores were too high to allow for further improvement (ceiling effect). Most teachers knew more than 65 percent of test items at pretest, indicating that the test was too easy for them. Previous evaluation findings and recommendations have indicated that the test needs to be revised, eliminating those items that most teachers know before participating in the project. The Office of Educational Assessment offers the same recommendation made in previous years. In addition, future project objectives should include a quantifiable measure of achievement (for example, 75 percent of the teachers will achieve a gain of at least 30 percent).

APPENDIX A
ENRICHMENT PROGRAM K-9

NAME_____ DATE_____

CLASS_____ SCHOOL_____

1) Calvin Taylor's approach to the teacher-learning process is called the;

   a) multiple talent approach
   b) content process approach
   c) product orientation method

2) In view of what you know o: Taylor's Rationale, which of the statements listed below would best describe a talent implementation program in the classroom?

   a) separately from the acquisition of knowledge
   b) simultaneously with the acquisition of knowledge
   c) alternately with the acquisition

3) Select the component(s) which are invorporated in the complex process of the Multiple Talent Approach to learning:

   a) cognitive
   b) affective
   c) neither of these
   d) both of these

4) If you had a class from a low-socio economic background, what could you expect of them in talent development? Choose the statement you feel is most accurate.

   a) some would be talented in all areas
   b) given enough time 85% would show achievement in several areas
   c) 9 out of 10 employ at least one talent with above-average efficiency both for acquiring knowledge and for solving problems

	T	F
5) When we speak of "gifted" students we are referring to a very homogeneous group of individuals.	___	___
6) The individual intelligence test is the only true indicator of giftedness.	___	___
7) The gifted program should be separate and independent of other school programs.	___	___
8) The gifted program should be concerned with providing learning opportunities and experiences that will make up for deficiencies inthe regular classroom.	___	___

		T	F
9)	It is really important for the gifted program to have a separate and unique identity in your school.	___	___
10)	Divergent thinking is a type of thinking where there is usually one answer.	___	___
11)	Remembering and recognizing information is the student's main job.	___	___
12)	The studen't job is to know the best answer to each problem.	___	___

CHOOSE THE APPROPRIATE COGNITIVE LEVEL IN BLOOM'S TAXONOMY

A) Knowledge
B) Comprehension
C) Application
D) Analysis
E) Synthesis
F) Evaluation

13) Activities calling for selection of appropriate methods and performance of operations required by problem situations _____

14) Activities calling for development and application of a set of standards for judging worth _____

15) Activities calling for the generation of new ideas and solutions _____

16) Activities calling for the recognition of the structure of material, including the conditions that affect the way it fits together _____

17) Explain, reword, recognize, and outline _____

18) Create, develop, originate, devise _____

19) Match, list, write, recite _____

20) Apply, solve, employ, construct, use _____

#5001-48-63431

ADVENTURES IN SCIENCE, 1985-86

School-Community Education Program
Program Coordinator: Jack Isaacs
Project Director: Frank Quinones

Prepared By:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

In 1985-86, the Adventures in Science Project was redesigned to provide an effective science training program to teachers and supervisors in Community School District (C.S.D.) 8. Recognizing the need to improve science instruction and curricula, the project trained and assisted participants in the development and implementation of appropriate science lessons.

About 56 elementary and intermediate school teachers in grades three through five and supervisors participated in the project. School principals selected teacher participants among volunteers who expressed the need for assistance in science instruction. The training program was carried out in in-school and after-school workshops which were conducted by C.S.D. 8 staff and consultants. Teachers received further assistance in the selection and use of classroom materials, organization of classroom science centers as well as through demonstration lessons.

The project objective was for teacher participants to improve their ability to develop and implement appropriate science lessons from material suggested in the N.Y.C. Board of

Education's Minimum Teaching Essentials, as measured by their performance on a project-developed test.

The New York State Legislature provided $30 thousand in funding to purchase training supplies, support teachers' after-school activities, and cover consultants' fees.

EVALUATION METHODOLOGY

Project impact was assessed by an analysis of teachers' scores on a project-developed test (see Appendix A). This test, consisting of 20 multiple-choice items, measures basic knowledge on science concepts and experiments. It was administered as both a pretest and posttest at the beginning and end of the program.

FINDINGS

Pre- and posttest scores were submitted for 42 teachers. Overall, mean raw pretest score was 17.2 points (86 percent correct), mean raw posttest score was 18.3 points (91.5 percent correct), for a mean gain of 5.5 percent. Table 1 shows the performance of teachers according to frequency distribution of mean gains. About 40 percent of teachers did not achieve any gains, 55 percent achieved gains from one to three points and only 4.8 percent achieved gains of five or more points.

CONCLUSIONS AND RECOMMENDATIONS

The evaluation findings indicate that although teacher participants improved their overall performance on the project-developed test at posttest, the mean gain was too small to

TABLE 1

Performance of Teachers on the
Project-Developed Test
Adventures in Science, 1985-86

N	Percent	Gain
17	40.5	0 points
12	28.6	1 point
6	14.3	2 points
2	4.8	3 points
3	7.1	4 points
2	4.8	5 or more points

- Over two-fifths of the participants (43 percent) achieved gains of one or two points.

conclude that the project was successful. The test is obviously too easy since participants correctly answered an average of 86 percent correct responses of test items at pretest which, in turn, did not allow for further improvement at posttest (ceiling effect). This is demonstrated by the fact that about two-thirds of participants achieved gains of one point. In addition, the testing instrument measures conceptual and factual science knowledge but cannot measure the project objective for teachers to improve their ability to develop and implement appropriate science lessons. Project staff should revise the evaluation instrument, deleting those items teachers know before participating in the program and adding items about how to incorporate their knowledge in the classroom. An in-classroom evaluation of teacher performance by school principals, however, would provide more adequate information. Finally, the objective should include specific quantitative criteria for successful program completion.

APPENDIX A

[illegible] SCIENCE
5001.48 [illegible]
CLIMATE UMBRELLA BUREAU
COMMUNITY SCHOOL DISTRICT 8

[illegible]
1985-86

ADVENTURES IN SCIENCE

The following test is a short quiz to find out how much you remember about the Adventures in Science Program. Put an (X) in the space next to the letter that you think is the correct answer for each question on your answer sheet. PLEASE DO NOT WRITE ON THIS PAPER AT ALL.

1. A chemical change is one that:

   a. can not go back to the starting materials
   b. can go back to the starting materials
   c. disappears
   d. will produce no changes at all

2. If you want a liquid to evaporate, you might:

   a. freeze it
   b. burn it
   c. mix it with another liquid
   d. boil it

3. If you take a solution of food coloring dye and water and leave it on a window sill, what will happen to the dye?

   a. it will become invisible
   b. it will get lighter
   c. it will be left in concentrated form after the liquid has evaporated
   d. it will evaporate

4. If we put some apple juice in a warm place it may begin to bubble. This might be happening because of the action of:

   a. evaporation
   b. a physical change
   c. condensation
   d. a chemical change

5. All of the following are needed for burning except:

   a. fuel
   b. oxygen
   c. heat source
   d. carbon dioxide

6. The Solar System is made chiefly of:

   a. stars
   b. planets
   c. planets and asteriods
   d. The sun, the planets and their moons

7. The moon can be seen from the Earth because

   a. it emits light
   b. it is a light color
   c. it reflects light from the sun
   d. it is a satellite

8. Light travels at:

   a. 8 miles per minute
   b. 186,000 miles per second
   c. 100 million miles per day
   d. 60 miles per hour

9. Latitude is measured in

   a. inches
   b. degrees
   c. grams
   d. miles

10. We can not observe stars during the day time because

a. they reflect the sun's light
b. they emit light only at night
c. of the sun's brightness
d. they move in space

11. Green plants use light, water and carbon dioxide to produce

a. bacteria
b. food
c. minerals
d. fungus

12. You can observe your face in a mirror because the mirror:

a. produces light
b. breaks down the light rays
c. reflects light
d. absorbs light

13. Electricity circulates best via:

a. air
b. wood
c. paper
d. wire

14. A dry cell produces electricity because of:

a. wind energy
b. chemical action
c. water energy
d. heat energy

15. Which of the following diagrams represents a complete circuit?

16. When a person "makes a muscle" with his fist and arm, he is causing the bulging muscle to get:

a. longer
b. shorter
c. relaxed
d. none of the above

17. When rays of light strike a rough surface, they are:

a. reflecced in many directions
b. reflected in one direction
c. absorbed by the surface
d. destroyed

18. A mirror can be used for all of the following except:

a. looking over a wall
b. seeing behind you
c. looking around a corner
d. seeing in the dark

19. Patterns of many small objects can be made by using mirrors in a

a. radioscope
b. kaleidoscope
c. gravity scope
d. telescope

20. When the amount of light falling on an object is reduced

a. the image becomes brighter
b. the image is curved
c. the image becomes dimmer
d. the image disappears

#5001-48-63432

EARLY CHILDHOOD LANGUAGE AND LITERACY, 1985-86

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Miriam Sour

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Early Childhood Language and Literacy Project is designed to provide training in communication arts to kindergarten teachers in Community School District (C.S.D.) 9. The purpose of the project is to teach participants the necessary techniques and strategies to actively engage pupils in a structured program in order to improve their listening, reading, and thinking skills. In 1986, the program was presented at the International Reading Association Conference in Philadelphia and at the World Congress of Reading in London.

Although in 1985-86 the project originally intended to serve ten kindergarten teachers, it added an additional teacher in that grade and 12 first-grade teachers. This not only expanded the number of participants in the program but also benefited first-year students who had been involved in the program the previous year. Participants were selected among volunteer teachers from P.S. 73 and P.S. 104 where low pupil achievement indicated a need to improve teaching techniques in communication arts.

The project objective was for teacher participants to achieve an increase in their ability to teach communication arts to kindergarten and first-grade pupils as measured by a program-developed survey. The inventory was administered at the beginning and the end of project activities.

Staff members consisted of a project director and one teacher-trainer consultant who visited the schools and classrooms twice a week to provide project services. These included demonstration lessons, workshops, and articulation of program procedures. Teachers were shown how to organize their classrooms so that there were reading corners, listening centers, art areas, writing centers, and language development game areas. These areas could be used for whole group, small group and individual pupil activities. Specially designed materials such as language development games, big books, a library of books for individual selection and audio-cassettes for student practice in listening skills were used in the classrooms. The New York State Legislature contributed $19 thousand to pay for the consultant's services and to purchase educational supplies.

EVALUATION METHODOLOGY

Project evaluation was based on analyses of teachers' holistic scores on a 16-item program-developed Early Childhood Language and Literacy Survey designed to measure teachers' ability to teach communication arts (see Appendix A). Teacher responses to survey questions were holistically scored by the

C.S.D. 9 project coordinator but the guidelines used for scoring responses were not submitted to the Office of Educational Assessment.

FINDINGS

Holistic pre- and post-program scores for 23 participants were submitted for evaluation together with a written report, detailing project activities and accomplishments. Table 1 presents teacher survey outcomes by grade. Overall, mean pre-program score was 3.3. points (20.7 percent) mean post-program score was 14.4 points (90 percent), for a mean gain of 11.1 points or 69 3 percent. First-grade teachers scored slightly lower than kindergarten teachers when surveyed before starting project activities but achieved a higher gain by the end of the program.

CONCLUSIONS AND RECOMMENDATIONS

The Early Childhood Language and Literacy Project was a successful program having a significant impact on teacher ability to teach communication arts. Teachers achieved an overall mean gain of 11.1 raw points (about 69 percent increase), a very large gain indeed. In spite of this improvement, it remains difficult to determine how teacher survey responses were scored since scoring guidelines were not provided. In the future, these should be submitted together with survey scores. In addition, project staff should expand the program's objective to include a

TABLE 1

Teachers' Mean Raw Scores on a Project-Developed Inventory[a]
Early Childhood Language and Literacy, 1985-86

		Pretest		Posttest			
Grade	N	Raw Score	Percent Correct	Raw Score	Percent Correct	Gain	%
K	11	3.8	23.8%	14.5	90.6%	10.7	66.8
1	12	2.8	17.5	14.3	89.4	11.5	71.9
TOTAL	23	3.3	20.7	14.4	90.0	11.1	69.3

[a]Perfect Score = 16

- Teachers achieved an overall mean gain of 69 percent.

quantifiable measure of successful program completion. The following sentence, for instance, could be added to the objective: "Teacher participants will increase their ability to teach communication arts by at least ten points."

APPENDIX A

Early Childhood Language and Literacy Survey

1. Children who are talking to each other are learning less than children who are working on an individual task.

   Always Usually Occasionally Never

2. A teacher is telling a story to a group of ten pupils. The teacher wants to determine whether the pupils are actively involved in listening. The best way for a teacher to do this is:

   a. Notice if you can make direct eye contact with each pupil

   b. Observe that all ten pupils are sitting quietly and listening to you

   c Ask a question and call on a randomly selected student

   d. Ask a question and call on a volunteer student

   e. Randomly select a student to retell some part of the story

3. What is the necessary prerequisite for beginning reading instruction with Kindergarten children?

   a. Knowing the names of all the letters

   b. Knowing all the initial consonant sounds

   c. Knowing at least eight consonant sounds

   d. Knowing the names of at least eight letters

   e. None of the above

4. What should be the teacher's most important goal in the teaching of writing in the Kindergarten year?

   a. To develop legible handwriting

   b. To develop basic encoding skills

   c. To develop interest in written communication

   d. To extend vocabulary

5. What is the most important consideration for the Kindergarten teacher when arranging the seating in a classroom?

   a. Pupils can see the chalkboard

   b. Pupils can easily talk to each other

   c. Pupils and their activities are clearly visible to the teacher from the front of the room

   d. Pupils have designated seats they always use

   e. Pupils have space for easy movement in the room

6. When is the best time to start teaching a child to read?

   a. At entry into first grade

   b. In the middle of the Kindergarten year

   c. When the pupil has mastered the necessary pre-reading skills

   d. When the pupil shows interest in printed language

   e. As soon as the pupil has reached the operational stage of cognitive development

7. Kindergarten teachers are advised to have a variety of materials in their classrooms. Group games are included to promote particular skills. Select the most valuable aim for using these games.

   a. Vocabulary extension

   b. Small muscle development

   c. Visual discrimination

   d. Eye/hand coordination

   e. Social development

8. At the beginning of the Kindergarten year, the teaching should concentrate on:

   a. Listening and speaking

   b. Listening, speaking and reading

   c. Listening, speaking, reading and writing

   d. Reading

   e. Reading and writing

9. What should be the Kindergarten teacher's attitude toward children's reading errors?

   a. Ignore them, so as not to damage the child's confidence

   b. Correct errors on high-frequency words only

   c. Correct errors that interfere with understanding

   d. Correct all errors as they occur

   e. Correct all serious errors

10. The major portion of an All Day Kindergarten class should be devoted to:

   a. Work on assigned task

   b. Peer group interaction

   c. Individual pupil teaching

   d. Small group instruction

   e. Whole class lessons

11. What is the most effective way of promoting spoken language in the Kindergarten classroom?

   a. Structured vocabulary exercises

   b. Helping pupils to develop correct pronunciation

   c. Talking with small groups of children

   d. Pupils talking to each other

12. To teach reading in a Kindergarten class, the most important resource is:

    a. A pre-primer series

    b. Several different pre-primer series

    c. Trade books with controlled vocabulary

    d. Trade books without controlled vocabulary

13. When children enter school they should be encouraged to express their ideas in writing:

    a. As soon as they enter school

    b. As soon as they can read some words

    c. As soon as they learn to make shapes

    d. As soon as they have learned to write some letters

14. Every Kindergarten classroom should have a sufficient supply of books. The books should be:

    a. In the library area of the room

    b. In every area of the room

    c. In the students' desks or tables

    d. On shelves and distributed by the teacher

15. If you had a choice of the approach to use for teaching reading to Kindergarten children, would you choose:

    a. Phonics approach

    b. Linguistic approach

    c. Sight Word approach

    d. Language Experience approach

    e. Individualized Reading approach

    f. other - please specify

Give reasons for your choice: _____

_____

_____

_____

16. Teacher training is considered an important aspect in growth for all staff. Rank the following methods of training from 1 (the most valuable) to 6 (the least valuable).

Conferences

Observations by your immediate supervisor

Workshops

Curriculum manuals

In-Service Trainings

Demonstrations lessons

On-Site support

College courses

Name: _____ District: ____

Grade: _____ Date: _____

#5001-48-63434

DISCOVERING ABILITIES AND IMPROVING ACHIEVEMENT, 1985-86

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: C. Raseh Nagi

Prepared By:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Discovering Abilities and Improving Achievement Program is designed to train teachers in Community School District (C.S.D.) 22 to diagnose pupil abilities and prescribe appropriate educational activities. This enables teachers to work with both gifted and talented pupils as well as with those in need of remedial instruction. The project, first implemented in 1985-86, served 120 elementary school teachers who were selected by school principals among those willing to participate in the program.

The project coordinator and consultants conducted all-day training workshops during September, 1985. The training design was based on the Structure of Intellect (SOI) model, developed by Dr. J.P. Guilford and enhanced by Dr. Mary Meeker, which focuses on the diagnosis of student abilities and the development of individual prescriptive learning activities. Teachers were trained to develop students' cognitive skills, to differentiate the curriculum for potentially gifted pupils, and to implement a diagnostic/prescriptive classroom program. Project staff also assisted teachers with follow-up activities and classroom visits.

The project objective for 1985-86 was for participants to demonstrate an ability to implement a diagnostic/prescriptive critical thinking program based on the SOI theory. Teacher performance was measured by a project-developed test. The New York State Legislature contributed $9 thousand in funding to cover expenses for substitute teachers.

EVALUATION METHODOLOGY AND FINDINGS

The evaluation of the project was based on analysis of teacher performance on a project-developed test consisting of 16 multiple-choice items (See Appendix A). Pretest and posttest mean raw scores were compared to determine achievement differences.

Complete test data were submitted for 113 teachers. Pretest mean score was 9.6 points (60 percent correct responses); posttest mean score was 11.9 points (74.4 percent correct), for a mean gain of 2.3 points or 14.4 percent. Table 1 presents the frequency distribution of teachers' raw gains. About 43 percent of participants achieved gains from one to five points; about 26 percent achieved gains larger than five and 30 percent did not achieve any gains.

CONCLUSIONS AND RECOMMENDATIONS

The evaluation findings indicate that teachers improved their performance on the project-developed test at posttest. Overall, mean gain was, however, modest (2.3 raw points) and only

TABLE 1

Frequency Distribution of Teachers' Raw Gains
on a Project-Developed Test[a]
Discovering Abilities and Improving Achievement, 1985-86

Raw Gain	N	%
0	34	30.1%
1 - 5	49	43.4
6 - 10	28	24.8
+ 10	2	1.7
TOTAL	113	100.0

[a]Perfect Raw Score = 16

- About a third of teacher participants achieved gains, ranging from one to five raw points.

about 25 percent of participants achieved a gain larger than five points. These findings indicate that the testing instrument might be too easy since participants correctly answered more than 60 percent items at pretest. In addition, the posttest mean score was relatively low which could reflect a lack of correspondence between project activities and what the test actually measures. The test should be revised to eliminate the items teachers know prior to participation in the program and include items that effectively reflect project activities.

A further problem with the testing instrument is that it cannot measure the program objective or the teachers' "ability to implement a diagnostic/prescriptive critical thinking program." Instead, the test measures factual knowledge about the operations of intellectual ability. Thus, it remains difficult to determine whether the project succeeded in meeting its objective in spite of the teachers overall improvement. In order to evaluate effectively teacher ability to implement a diagnostic/prescriptive critical thinking program in the classroom, pertinent questions should be added to the testing instrument, for instance, what skills should be taught, when, in what order, to which students, and so on. Another way of assessing teacher performance would require project staff to appraise teachers in in-classroom situations according to a program-developed teacher evaluation form. Finally, project staff should establish a specific quantitative criterion for successful program comple-

tion. The objective could indicate, for instance, that 80 percent of the participants will achieve a gain of at least 25 percent.

APPENDIX A

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"DISCOVERING ABILITIES AND IMPROVING ACHIEVEMENT

PRE-POST TEST

What area of Intellectual Ability is assessed by these questions.

1. Which sounds (shapes)are alike? Which ones can be put together?

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

2. Alphabetize these words. Put the numbers that are alike together.

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

3. What do these words mean? (vocabulary)

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

4. Do you remember which figure goes with this one?

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

5. What card did I just show you? (playing cards)

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

6. In the story we read, who was the main character? What did he do? Who was his friend? Where was he from? Etc...

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

7. Find two objects that are related to each other. Why are they related?

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

8. Which of these words are related to each other because of the way they are spelled? or sound?

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

9) Which words or ideas go together? Why?

a) cognition b)memory c) evaluation d) convergent production
e) divergent production

10) Put these pictures in order that they should go in.

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

11) What is 1 + 3? (6 - 4? 8 x 2? etc.) What is a four letter word that starts with M and ends with E?

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

12. If you did this particular task, or used this tool, what would your occupation be?

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

13. Make something out of this clay, paper, tile, etc.

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

14. Take all these noses and ears and things and see if you can make new faces.

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

15. Make a new word with the ending letter of this word. Rewrite this song or rhyme.

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

16. Can you write a poem?

a) cognition b) memory c) evaluation d) convergent production
e) divergent production

#5001-48-63436

SUM IN ONE, 1985-86

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Barbara Herman

Prepared By:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Sum in One Program provides staff development services to teachers in order to improve music instruction in elementary schools. By supplementing and upgrading music instructional techniques, the program seeks to involve a cadre of teachers who will, in turn, assist in the development of other teachers. In 1985-86, 80 teachers from Community School District (C.S.D.) 1 participated in the program.

Participants were selected among those teachers who expressed a need for additional training in music instructional techniques and were interested in the project. School principals re ommended them for program participation and they were finally selected by the program coordinator. Instructional activities involved a series of three workshops, conducted by the project coordinator, which were held during regular school hours. The workshop series were the following:

- Music in-Service Workshop
- Staff Recorder Workshops
- Staff Piano Workshops

Instruction focused on techniques to motivate children to make music, organize the room for music lessons, teach basic music

skills, the soprano recorder, and the piano. Project staff consisted of one teacher-coordinator. The New York State Legislature provided $17 thcusand in funding to purchase instructional supplies and equipment.

The program objective for 1985-86 was for 80 percent of teacher participants to increase their ability to extend and enrich their students' music experiences and activities. Teacher performance was measured by three forms of a program-developed test.

EVALUATION METHODOLOGY

Evaluation activities focused on analyses of teacher performance on three forms of a program-developed test (see Appendix A). A different form was administered for each workshop series. Perfect score for each test form was 100 points. Teachers took the test at the beginning and at the end of project activities.

FINDINGS

Complete test scores were submitted for 30 teachers who attended different workshops. Seventeen teachers attended the Staff Piano Workshop (SPW), eight participated in the Music in-Service Workshop (MSW), and five teachers attended the Staff Recorder Workshop (SRW). All participants (100 percent) improved their performance at posttest. Table 1 shows evaluation findings by workshop. Mcan pretest raw scores ranged from 6 to 28.6

TABLE 1

Teachers' Mean Raw Scores[a] on a Program-Developed Test, by Workshop
Sum In One, 1985-86

Workshop	N	Pretest	Posttest	Gain
SPW[b]	17	19.5	83.4	63.9
MSW[c]	8	28.6	92.9	64.3
SRW[d]	5	6.0	87.2	81.2
TOTAL	30			

[a]Perfect raw score on each workshop test = 100.

[b]Staff Piano Workshop.

[c]Music In-Service Workshop.

[d]Staff Recorder Workshop.

- Teacher participants achieved mean gains ranging from about 64 to 81 points.

points, mean posttest raw scores ranged from 83.4 to 92.9 points, for gains ranging from 63.9 to 81.2 points.

CONCLUSIONS AND RECOMMENDATIONS

The Sum in One project was highly successful. Participants (100 percent) met the project objective and achieved considerable mean gains in all three workshop test forms. A comparison of pretest scores, which were relatively low, and posttest scores indicates that the project had a remarkable impact on teachers. In the future, however, project staff should establish specific quantitative criteria for successful program completion. A sentence stating, for example, "80 percent of teacher participants will show an increase of at least 50 percent," should be added to the program objective.

SUM IN ONE: Supplementing and Upgrading Music in District One

PRE/POST EVALUATION: Piano Staff Workshops

NAME_____SCHOOL_____DATE_____

1.2.3.4.5. List 5 ways in which a teacher's piano skills can relate to the student's development and the curriculum.

6.7.8.9.10.11.12.13.14 Write the following scales in both the treble and bass clefs, and name each note.

C Major

C Major

F Major

F Major

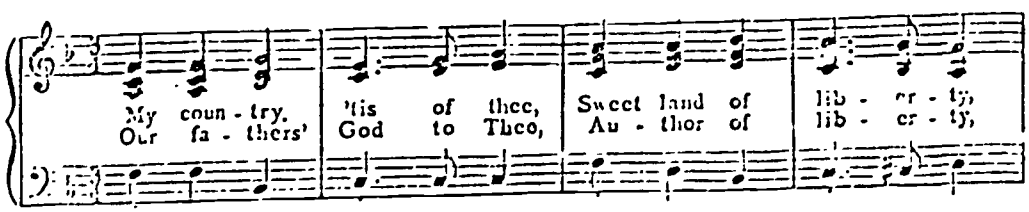
G Major

G Major

15.16.17.18 Write a 4 measure rhythm, choosing from the following symbols:

$\frac{4}{4}$ $\frac{3}{4}$ $\frac{3}{8}$ 𝅗𝅥 𝅗𝅥. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯 𝄽 𝄻 𝅗𝅥 𝅗𝅥.

19.20.21.22.23.24.25.26. Name all the notes in "America."



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Match the words and symbols: (Write the appropriate number in the brackets.)

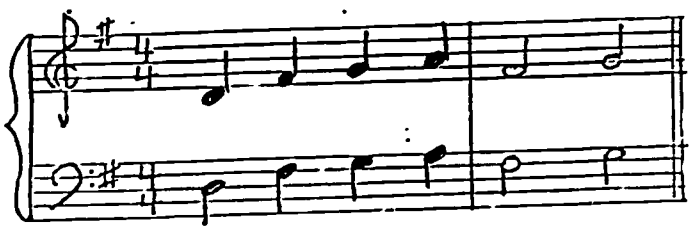
27. eighth note	( )	𝄢
28. dotted half note	( )	𝄢
29. treble clef sign	( )	<
30. bass clef sign	( )	𝄇
31. crescendo	( )	𝅝
32. diminuendo	( )	♪
33. soft	( )	𝆏
34. loud	( )	𝅗𝅥.
35. repeat	( )	>
36 whole note	( )	𝄞

Play a song of your own choice that you have learned in this course.

37.38.notes 39.40.rhythm 41.42.tempo 43.44.touch 45.46.phrasing

Sight read the following 2 measure phrase.

47. Clap the rhythm.
48. Say the note names.
49. Play the right hand.
50. Play the left hand.



NAME _____ SCHOOL _____ DATE _____

PRE/POST EVALUATION: Staff Recorder Workshops

1.2.3.4.5. List five ways in which the study of the recorder will relate to the development of skills necessary for the school curriculum.

6.7.8. What is the articulation: for the high register? _____

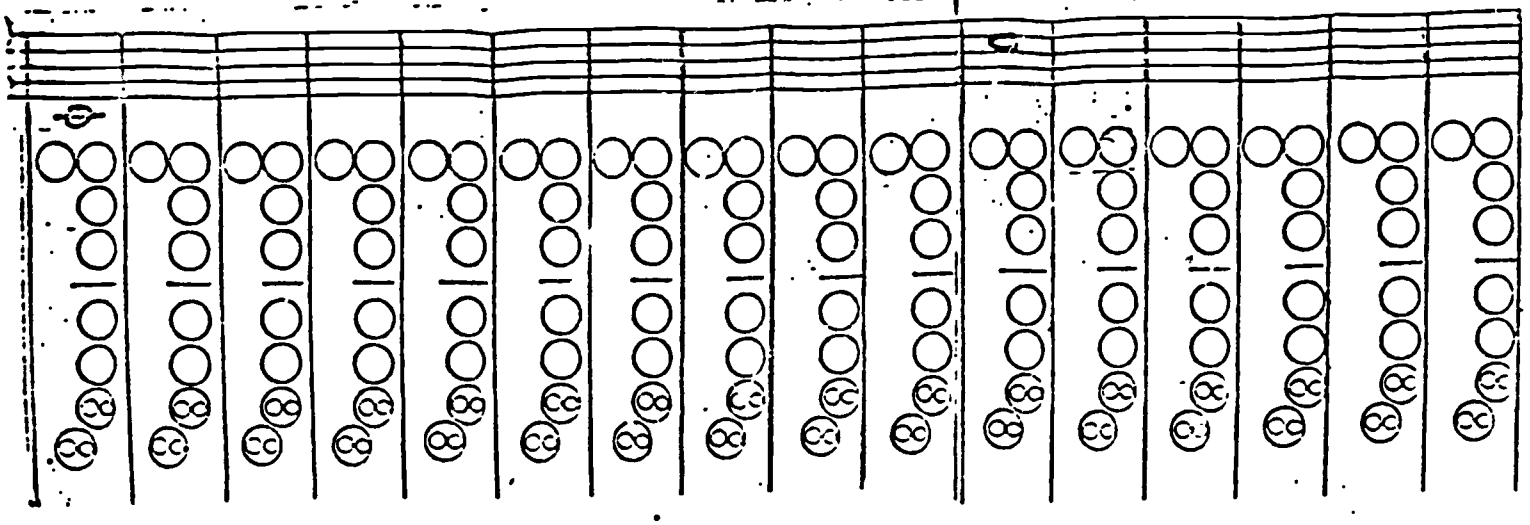
for the middle register? _____

for the low register? _____

10. What are the major differences between German fingering and Baroque or English fingering?

11.12.13.14.15.16.17.18.19.20.21.22.23.24.25. Mark the recorder fingering for the following notes and write the corresponding whole note on the treble staff.

C C# D E F F# G A B♭ B C C# D E F



26.27.28.29. Write a 4 measure phrase choosing from the following rhythm symbols:

$\frac{4}{4}$ $\frac{3}{4}$ $\frac{6}{8}$ $\frac{2}{4}$ 𝅗𝅥 ♪ ♫ 𝅗𝅥 𝄽 𝄻 𝄼 𝅗𝅥. 𝅗𝅥. 𝅝

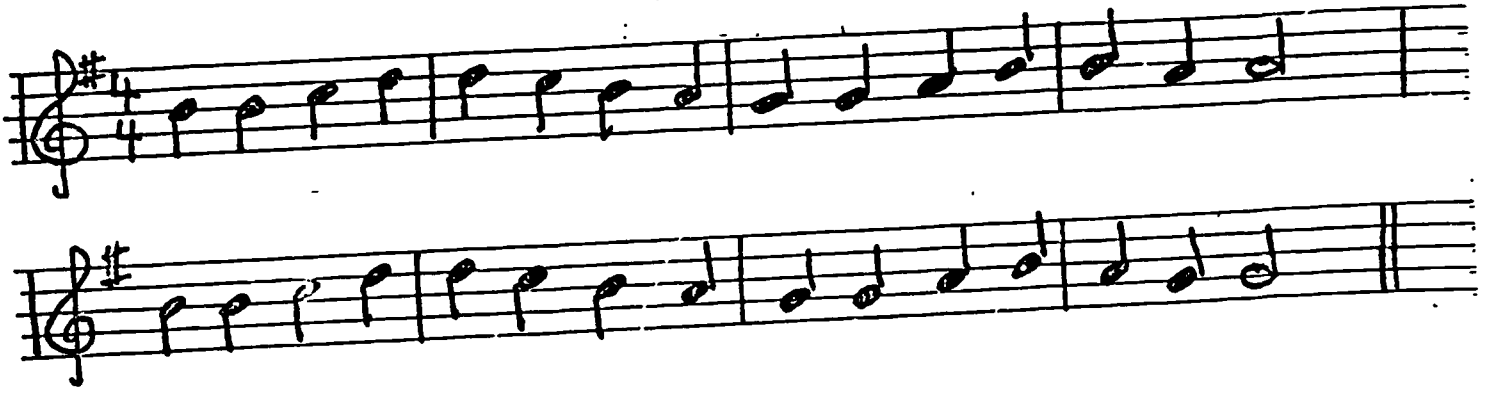
30. Clap the following rhythm:

Choose one of the pieces you have learned to play on the soprano recorder during this course and perform it for the examiner, who will observe your rhythm 31.32., tempo 33.34., fingering 35.36.37., tone 38., articulation phrasing etc., 39.40.

The following song has been chosen for you to sightread on the recorder:

41.42. Conduct the beats.
43.44. Speak the rhythm.
45.46. Say the notes.
47.48.49.50. Play on the recorder.

Chorale Beethoven's 9th Symphony



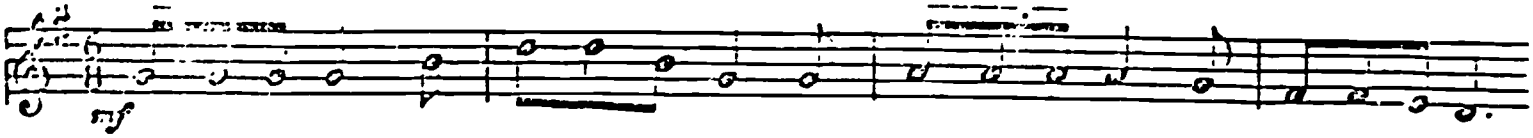
NAME _____ DATE _____ 63436

PRE/POST EVALUATION: Music In-Service Course D14-1.F84

Match each of the following concepts with its most appropriate source. Use this code to show your answer: D=Dalcroze; K=Kodaly; O=Orff; S=Suzuki.

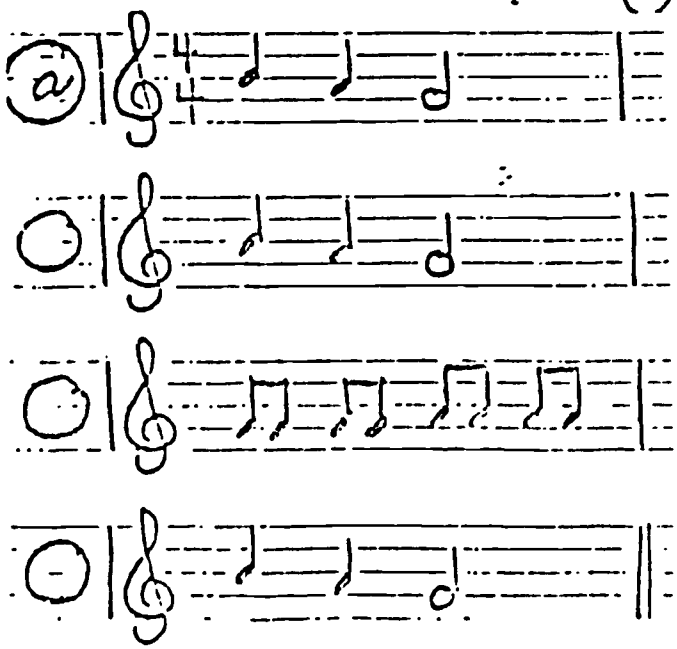
1. _____A person should be able to learn a musical instrument as naturally as a small child learns his mother tongue.
2. _____Features proceeding from speech to instrumental music.
3. _____Promotes fluency in reading and writing music.
4. _____Develops concepts in a logical sequence: prepared, made conscious, practised, written.
5. _____Teaches piano improvisation as a final goal.
6. _____Develops inner hearing.
7. _____A special instrumentarium is the primary means for musical development.
8. _____Singing is used as the primary instrument in general music education.

9, 10. Copy the words and music below.



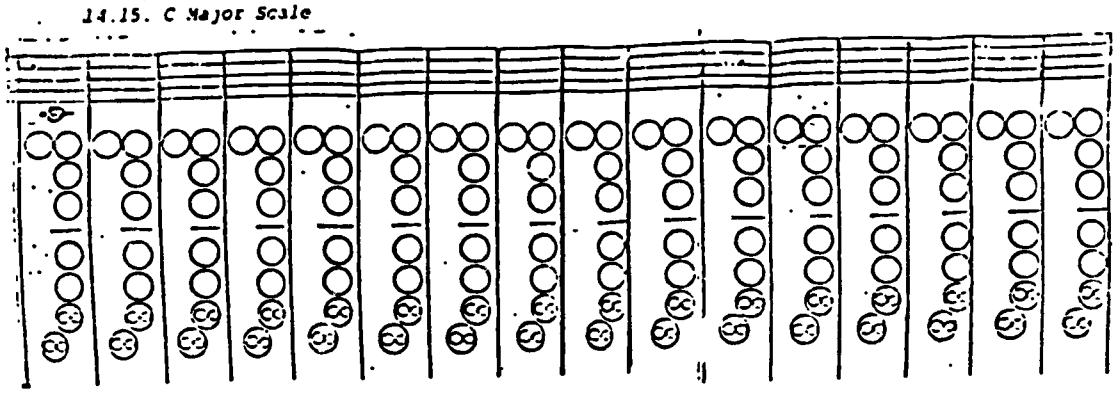
Here we go round the mul-ber-ry bush, The mul-ber-ry bush, the mul-ber-ry bush;

11, 12, 13. The following song has four phrases. Write lower case letters (a, b etc.) in the circles to show the PHRASE FORM. The first phrase (a) is indicated for you

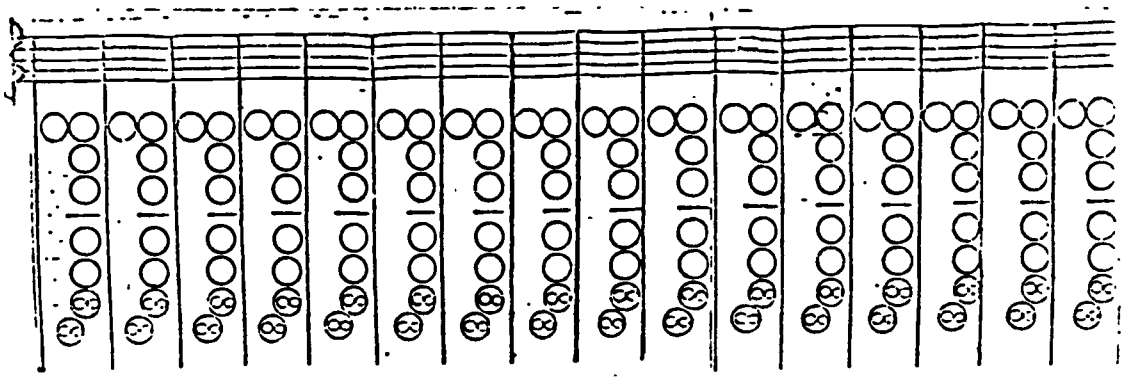


Write the notes for the following scales and indicate the related recorder fingerings.

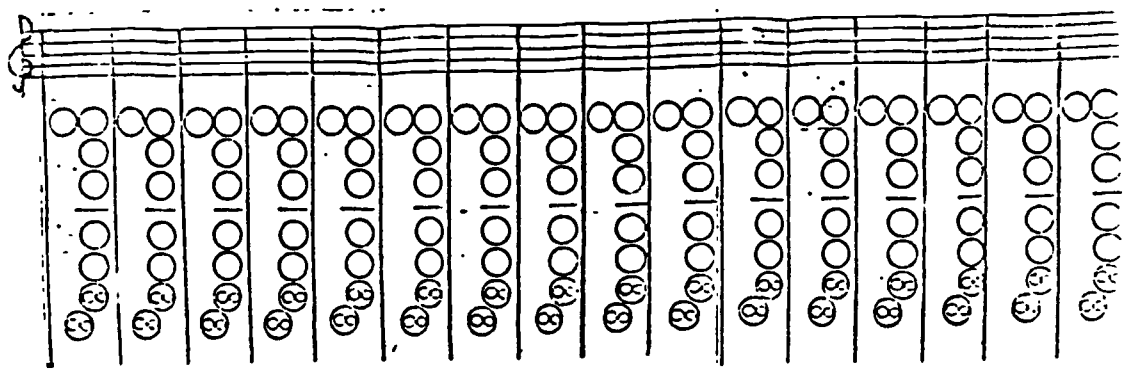
14.15. C Major Scale



16.17. G Major Scale



13.19. F Major Scale



Using the classification system of music instruments devised by Curt Sachs, identify the instrumental family to which each of the following instruments belongs. Use the following code: I=Idiophone; M=Membranophone; A=Aerophone; C=Chordophone; E=Electrophone

20_____casio 22_____piano 24_____clarinet
21_____recorder 23_____xylophone 25_____hand drum

26. Describe a directed listening activity for your students prior to their use of rhythm instruments

27. Describe an arm signal you would develop with your class to prepare for conducting a rhythm band.

List five ways in which music study will relate to the development of skills necessary for the school curriculum.

28.

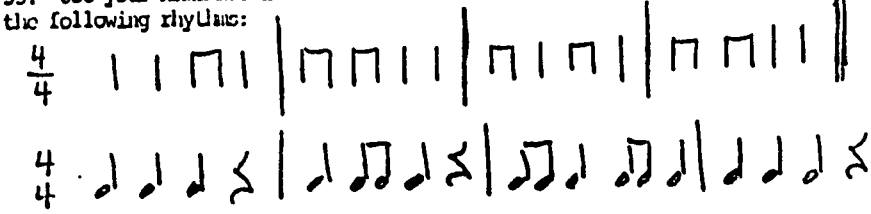
29.

30.

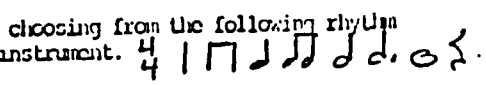
31.

32.

33. Use your homemade instrument or one of the classroom instruments to play one of the following rhythms:



34. 35. 36. 37. Write a four measure phrase choosing from the following rhythm symbols. You may play it on your rhythm instrument.

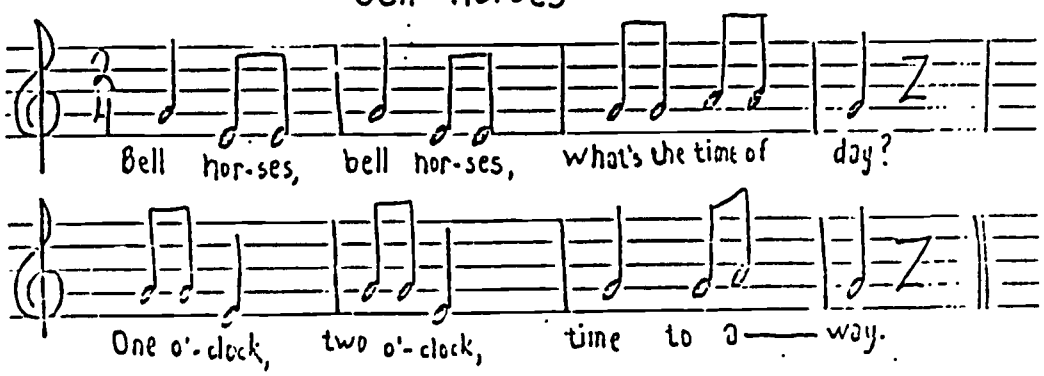


38. 39. 40. 41. Choose one of the pieces you have learned to play on the soprano recorder during this course and perform it for the examiner. 42. 43. 44. 45.

The following song has been chosen for you to sightsing and play on the recorder:

46. Conduct the beats and 47. speak the rhythm.
48. Sing in solfege with 49. hand signals.
50. Play on the recorder.

Bell Horses



#5001-48-63444

MASTERY LEARNING PROGRAM, 1985-86

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Louis Leonini

Prepared By:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

This project is designed to train teachers and supervisors in Mastery Learning (M.L.) methodology which is extended in workshops and through in-class support. M.L. is a teaching strategy to improve student learning skills and attitudes towards the school. Previous experience indicates that students receiving instruction based on M.L. techniques improve their grades and rate of attendance.

In 1985-86, the project served about 146 elementary and intermediate school teachers and supervisors from 20 schools in Community School Districts (C.S.D.s) 9, 20 and 31. School principals selected participants from a list of volunteers. The stated project objective was to introduce Mastery Learning techniques and procedures to teachers and supervisors in three New York City school districts. This was measured by a project-developed test.

One teacher-trainer conducted the workshops and supported teachers by offering in-class training assistance. Instructional activities focused on M.L. theory and practice, and on the development of M.L. tables of specifications, formative tests,

and correctives. The New York Legislature contributed $32 thousand to cover salary expenses.

EVALUATION METHODOLOGY

Evaluation activities focused on the analysis of participants' scores on a project-developed test especially designed to measure knowledge of M.L. principles and teaching techniques. The multiple-choice test consists of two parts. The first one, administered as a pretest, has ten questions formulated to evaluate basic knowledge of M.L. methodology. The second part, administered as a posttest, consists of a different set of more specific questions (see Appendix A).

FINDINGS

Complete test scores were submitted for 89 participants (See Table 1). Overall, mean pretest raw score was 5.5 points (55 percent correct responses) and a mean raw posttest score of 9 points (90 percent correct). The average gain was 3.5 raw score points or 35 percent.

CONCLUSIONS AND RECOMMENDATIONS

The evaluation findings indicate that the Mastery Learning Program was successful. Participants improved their knowledge of the M.L. curriculum. Yet, several problems make it difficult to adequately assess project impact. First, the posttest contains the same or similar questions as the pretest and since participants correctly answered more than half of test items on the

TABLE 1

Participants' Mean Raw Scores on a Project-Developed Test[a]
Mastery Learning Program, 1985-86

	Mean Raw Score	Percent Correct
Pretest[b]	5.5	55.0%
Posttest[b]	9.0	90.0
Gain	3.5	35.0

[a]Perfect Raw Score = 10

[b] N = 89

- Participants achieved a mean gain of 3.5 raw score points.

pretest, they could not possibly make larger gains. Secondly, the project did not clearly specify an objective besides introducing M.L. techniques and procedures to participants. In the future, project staff could consider revising the test, eliminating those items which most participants know at pretest and, preferably, using one test to administer both as a pretest and posttest. The project objective needs to be clearly defined and should include a quantitative criterion for project success.

MASTERY LEARNING - QUESTIONNAIRE I
Pretest

Directions: Please place a check next to the answer you feel is the most appropriate for each of the following ten questions.

1) The theory underlying Mastery Learning was primarily developed by:
   _____ a) James Coleman
   _____ b) James P. Keller
   _____ c) Benjamin Bloom
   _____ d) Richard W. Wolf

2) Mastery Learning is a teaching/learning strategy. It is also
   _____ a) A discipline-inter-related extension exercise
   _____ b) An instructional philosophy
   _____ c) A direct instruction approach
   _____ d) An individually-paced approach to teaching

3) Mastery Learning has had the following affective results on the students
   _____ a) It trains students to become good test takers
   _____ b) It teaches students how to learn
   _____ c) It makes students feel that their teacher is their friend
   _____ d) It makes students learn faster

4) In Mastery Learning the "correctives" can be done by
   _____ a) The student himself
   _____ b) The teacher
   _____ c) The students and the peer tutors
   _____ d) All of the above

5) In Mastery Learning the term "correctives" applies to
   _____ a) Varied test construction, extension activities
   _____ b) Enrichment activities, learning/teaching styles
   _____ c) Alternative texts, re-teaching, tutoring
   _____ d) Teacher praise, public recognition, prizes

6) A "formative test" in Mastery Learning is helpful to both teacher and student in that it
   _____ a) Provides information to both teacher and student regarding the type of enrichment activities required
   _____ b) Provides a psychological framework for teaching and learning to take place
   _____ c) Provides feedback to both the teacher and students about the learning that has occurred up to that point
   _____ d) None of the above

7) A "Table of Specifications" might also be called
   _____ a) A lesson plan
   _____ b) A Table of Contents
   _____ c) An individual pupil profile sheet
   _____ d) A Unit Plan

8) The highest level of cognitive development on the Table of Specifications is:

_____ a) Analysis
_____ b) Evaluation
_____ c) Synthesis
_____ d) Translation

9) The proper sequence of events in the Mastery Learning approach is as follows:

_____ a) Formative Test A, Correctives, Enrichment and Extension, Formative Test B
_____ b) Formative Test, Extension, Correctives, Summative Test
_____ c) Summative Test, Correctives, Formative Test A, Extension Activities, Formative Test B
_____ d) Summative Test, Enrichment and Extension, Formative Test A, Correctives, Formative Test B

10. Which of the following sample phrases or questions is an example of the translation level of cognitive development?

_____ a) "Can you develop a new way"
_____ b) "Which one comes first?"
_____ c) "Which do you consider of greater importance?"
_____ d) "Explain in your own words....."

MASTERY LEARNING - QUESTIONNAIRE II
Posttest

Directions: Please place a check next to the answer you feel is the most appropriate for each of the following ten questions

1) Which of the following is a higher level of cognitive development?

_____ a) Term
_____ b) Principle
_____ c) Translation
_____ d) Process

2) Mastery Learning is an instructional philosophy. It is also
_____ a) An individually paced approach to teaching
_____ b) A discipline-inter-related extension exercise
_____ c) A teaching/learning strategy
_____ d) An instructional cure

3) Mastery Learning has had affective as well as instructional results. One affective result upon the student has been
_____ a) A stepped up student pace of learning
_____ b) A true friendship between teacher and student
_____ c) A greater awareness in the art of test taking
_____ d) Instruction on how to learn

4) The Mastery Learning theory was primarily developed in the 1950's by
_____ a) Ralph W. Tyler
_____ b) Peter Aisasian
_____ c) Richard W. Wolf
_____ d) Benjamin Bloom

5) In Mastery Learning "correctives" can be done by
_____ a) The student himself
_____ b) The teacher designated
_____ c) The students, and teacher assistants
_____ d) All of the above

6) In Mastery Learning the term "correctives" can be applied to
_____ a) Enrichment activities, learning/teaching styles
_____ b) Different types of tests, extension activities
_____ c) Peer tutoring, work sheets, re-teaching
_____ d) Prizes, games, teacher and public recognition

7) The element in Mastery Learning which provides feedback to both the teacher and students about the learning that has occurred up to a certain point is
_____ a) The Formative Test
_____ b) The Psychological framework Analysis Test
_____ c) The Enrichment/Extension Quiz
_____ d) None of the above

8) The proper Mastery Learning sequence is as follows

_____ a) Summative Test, Enrichment and Extension Formative Test A, Correctives, Formative Test B

_____ b) Summative Test, Correctives, Formative Test A, Extension Activities, Formative Test B

_____ c) Formative Test, Extension, Correctives, Summative Test

_____ d) Formative Test A, Correctives, Enrichment and Extension, Formative Test B

9) In Mastery Learning a "Unit Plan" might also be called

_____ a) A Table of Contents

_____ b) A Profile Sheet

_____ c) A Table of Specifications

_____ d) An instructional analysis sheet

10) Which of the following sample phrases or questions is an example of the Evaluation level of cognitive development?

_____ a) "Can you develop a new way"

_____ b) "Which one comes first?"

_____ c) "Which do you consider of greater importance?"

_____ d) "Explain in your own words....."