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ABSTRACT

This report is an evaluation of a selected New York City Umbrella program funded under a special grant from the New York State Legislature. The program, which served eighty children in two Brooklyn schools, focused on the early identification of learning problems and the remediation of these problems in first and second grade children in each of these schools. Forty children selected from each school were given remedial work in reading and mathematics. Four educational assistants under the supervision of the reading specialists of each school comprised the staff. The specific evaluation objectives of the program were that participants attending fifty percent or more of the scheduled program sessions show statisticaly significant improvement in reading and mathematics skills over the anticipated gain as measured by a comparison of pre and post-test scores using the historical regression formula. The Stanford Early School Achievement Test II and the Metropolitan Achievement Test were used to measure functioning in reading and in mathematics. An analysis of the data yielded mixed results with statistical significance only partly achieved. The results must be regarded as tentative due to the short duration of the program (one semester), the use of two instruments instead of one, and the small sample sizes. Data summaries and a list of recommendations are included in the report. (Author/BS)

EVALUATION REPORT

Function # 20-63438

EARLY IDENTIFICATION PROGRAM

(School Year 1975-1976)

Dr. John S. Hicks,

Program Evaluator

An Evaluation of Selected New York City Umbrella Programs funded under a Special Grant of the New York State Legislature performed for the Board of Education of the City of New York for the 1975-1976 school year.

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Chapter I: THE PROGRAM

The Early Identification Program was operated from February of 1976 until June of 1976 in P.S. 139 Brooklyn and P.S. 152 Brooklyn. It focused on the early identification of learning problems, and the remediation of these problems in first and second grade children in each of those schools. Children were selected on the basis of achievement scores being one year below expected grade level for the second graders, and on the basis of indications of serious learning problems in reading and mathematics for first graders. Second graders were selected as a result of testing at the end of the first grade in the Spring of 1975. First graders were selected on the basis of a score of 5 or below on the Search Test for screening children with potential learning disabilities.

A total of eighty children participated in the program, forty from each school. The forty children selected from each school were given remedial work in both reading and mathematics. Children were tested using diagnostic reading and mathematics tests, usually administered by the reading specialists in each school. A total of four Educational Assistants were employed in the program to work directly with the children under the supervision of the reading specialists of each school. Each Educational Assistant worked with twenty children, seeing each child daily for a period of thirty to forty minutes in groups of two to four children.

The instruction of the children followed the educational prescription which had been developed and was supervised by the reading specialists. Each of the children received daily tutorial or small group instruction in both reading and mathematics. The instructional program consisted of practice in basic sound discrimination, letter recognition, phonics work, the identification

of beginning words in reading, and visual and auditory perceptual task practice as a part of reading readiness activities. The work in remedial mathematics included work on number concepts, number sequences, simple addition and subtraction facts, problem solving, concepts of space and size as well as other elementary mathematics constructs. Both the remedial reading and math instruction utilized a great variety of games, puzzles, and highly motivating activities to reinforce and facilitate the learning.

The first project objective focused on the goal of helping students achieve statistically significant growth in reading skills during this very early phase of their elementary school program. A second program objective focused on providing statistically significant growth in mathematics functioning during this first and second year of school. Hopefully, this program would identify students who might later be serious academic problems, and would provide appropriate remedial work at this early point so that the problems would not become magnified at a later date.

Chapter II: EVALUATIVE PROCEDURES

Apart from the discrepancy analysis, this project had two major evaluation objectives as listed below.

Evaluation Objective #1: As a result of participating in the program, pupils attending 50% or more of the scheduled program sessions will improve significantly in reading skills over the anticipated gain as measured by a comparison of pre-test and post-test scores using the historical regression formula.

Evaluation Objective #2: As a result of participating in the corrective mathematics component those pupils attending 50% or more of the scheduled sessions will improve significantly in mathematics over the anticipated gain as measured by a comparison of pre-test and post-test scores using the historical regression formula.

For the first evaluation objective, significant improvement in reading, two instruments were used. Pre-testing was done during the month of February and early March of 1976, and the post-testing was done during the last week of May 1976. All first grade pupils were tested in reading using the S.E.S.A.T. II (Stanford Early School Achievement Test II.) For the second grade pupils both the S.E.S.A.T. II and the Metropolitan Achievement Test (M.A.T.) were used to measure functioning in Reading. Forms B and F of the Primary Battery of the Metropolitan Achievement Test were used for pre-testing and Form G for the post-testing.

There were fifty-seven pupils tested with the reading sub-tests of the S.E.S.A.T. II on a pre and post test basis. This instrument reports scores on both a raw score and a percentile score basis. It should be noted that contrary to the proposal, second grade pupils were tested using the S.E.S.A.T. II instead of the M.A.T. A correlated t test was run between pre-test scores and post-test scores using the "Pre-test/ Post-test (no controls) Design."

An additional seventeen (17) second grade pupils were tested using the reading sub-test of the Metropolitan Achievement Test on a pre and post basis. The "Real (treatment) Post-Test vs. Anticipated (without treatment) Post-Test Design" was used for this analysis. A total of 74 pupils were both pre and post tested. Three pupils transferred out of the program during the program. An additional three pupils were absent for the post-testing. A total of 80 pupils were served in the Reading program as specified in the project proposal.

For the second evaluation objective, significant improvement in mathematics functioning, two instruments were used. Pre-testing was done

during the month of February and early March of 1976, and the post-testing was done during the last week of May 1976. All first grade students and some of the second grade students were tested using the S.E.S.A.T. II (Stanford Early School Achievement Test II). Some of the second grade students were tested using the Metropolitan Achievement Test. Forms B and F of the Metropolitan Achievement Test, Primary Battery, were used for pre-testing and Form G for the post-testing.

There were fifty-six students tested with the mathematics sub-test of the S.E.S.A.T. II on a pre and post test basis. This instrument reports scores on both a raw and a percentile basis. Since part of this sample were second grade students, for whom there are no percentile norms, that part of the data was analyzed using raw scores only. A correlated t test was run between scores for pre and post tests using the "Pre-test / Post-test (no controls) Design."

An additional seventeen (17) second grade students were tested using the mathematics sub-test of the M.A.T. on a pre and post basis. The "Real (treatment) Post-test vs. Anticipated (without treatment) Post-test Design" was used for this analysis. In the second evaluation objective a total of 73 students were tested on a pre and post basis. Three of the students were transferred out of the program, and four students failed to complete the post-testing. A total of 80 students were served in the Mathematics program as specified in the project proposal.

Chapter III: FINDINGS

The first objective related to significant improvement in reading skills, for all students who participated in at least 50% of the sessions. As was indicated earlier in this report, the types of testing presented the need for several analyses. Thirty-one first graders were pre and post-tested using the S.E.S.A.T. II, which is designed to be used in the first grade and gives percentile equivalents for several times within the first year of school. Table 1 presents the data on those first grade students.

Table 1 - Summary of Reading Data from First Grade S.E.S.A.T. II, Pre and Post Testing.

Group	N	Value of t	Level of Significance	Pre-Test Mean	Post-Test Mean
Grade 1	31	+ 1.030	N.S.	14.6 %	16.3%

Table 1 suggests that while there was some improvement from March to May of 1976, 14.6 percentile to 16.3 percentile, the degree of growth was not significant at the .05 level. Table 2 presents the data for those second grade students who were tested using the S.E.S.A.T. II, which does not give percentile norms for second graders. Thus the analysis was done and the results are given in terms of raw scores.

Table 2 - Summary of Reading Data from Second Grade Raw Scores on S.E.S.A.T. II, Pre and Post Comparison.

Group	N	Value of t	Level of Significance	Pre-Test Mean	Post-Test Mean
Grade 2	26	+ 5.504	.01	110.31	122.69

Table 2 suggests a significant positive shift in raw scores on the

S.E.S.A.T. II for the second grade students who were tested with this instrument.

There were also 17 second grade students who were tested using the Metropolitan Achievement Test (M.A.T.) in agreement with the project design. Table 3 presents the data for these students using the historical regression formula requested in this part of the evaluation design, comparing the actual post-test score with an anticipated post-test score.

Table 3 - Summary of Reading Data for Second Grade Students on the M.A.T., Using the Historical Regression Analysis:

Group	N	Value of t	Level of Significance	Pre-Test Mean	Anticipated Post Mean	Actual Post Mean
Grade 2	17	- 3.527	.01	1.45	1.53	1.36

Table 3 suggests that the students who were tested using the Metropolitan Achievement Test presented a decrease in functioning from March to May of 1976. The post test mean score for the group did not exceed the anticipated post mean score calculated using the historical regression formula. The actual post test mean was significantly lower than the mean which had been anticipated.

The second objective of this project focused on significant improvement in mathematics functioning as a result of the remediation provided in the program. As in the case of the data on the reading functioning, the data for the mathematics functioning had to be analyzed in three separate groups, since different instruments were used for the different grade levels, and since some of the second graders used a test which was normed on first grade students and those scores could not be changed to percentile scores and grouped with the first grade scores. Table 4 presents the data for

30 first grade students who were tested using the S.E.S.A.T. II, mathematics sub-test, in terms of percentile scores.

Table 4 - Summary of Mathematics Data for First Grade on the S.E.S.A.T. II, Using Percentile Scores.

Group	N	Value of t	Level of Significance	Pre-Test Mean	Post-Test Mean
Grade 1	30	+ 3.533	.01	9.8 %	19.0 %

Table 4 suggests that the first grade students in this program went from a percentile mean of 9.8 % up to a mean percentile at the post test of 19.0 %. The t value of +3.533 was significant at the .01 level of significance suggesting that there was significant improvement in mathematics functioning. Table 5 presents the data for the second graders (26) who were tested using the S.E.S.A.T. II. Since no conversion tables were used, only raw scores could be dealt with in this comparison.

Table 5 - Summary of Mathematics Data from Second Grade Raw Scores on the S.E.S.A.T. II, Pre and Post Comparison.

Group	N	Value of t	Level of Significance	Pre-Test Mean Score	Post-Test Mean Score
Grade 2	26	+ 2.673	.05	38.1	41.3

Table 5 suggests that there was a significant positive shift in the raw scores from the pre-test to post-test application of the S.E.S.A.T. II.

A group of second grade students from P.S. 139 were given the M.A.T. mathematics sub-test on a pre and post basis. These results provided grade equivalent scores, and allowed an historical regression analysis where anticipated post means were compared with actual post mean scores.

Table 6 presents the data for the second grade students (17) from the historical regression using mathematics sub-scores on the Metropolitan Achievement Test.

Table 6 - Summary of Mathematics Data from Second Grade Students on the M.A.T., Using the Historical Regression Analysis.

Group	N	Value of t	Level of Significance	Pre-Test Mean	Anticipated Post Mean	Actual Post Mean
Grade 2	17	+ 1.343	N.S.	1.29	1.35	1.42

Table 6 suggests that while the group of second grade students did make progress, and did exceed the anticipated post test mean, the difference between the actual and the anticipated post test means was not significant at the .05 level.

Several other aspects of the project should be noted at this time. The evaluation report from last year made two basic recommendations for improvement of this project. Firstly, it was recommended that the program be funded for a longer period of time, specifically for the whole school year and not only the late spring months. Financial constraints did not allow this to be implemented during the 1975-76 school year. Secondly, it was recommended that further supplies and materials be made available to the program, and this recommendation was implemented. The facilities for use within the program varied. One of the schools, P.S. 139, provided a separate room for the Educational Assistants to use. The other school, P.S. 152, preferred the Educational Assistants to work directly in the classroom with the regular teachers and consequently did not provide a separate room for the program. In each case, however, the materials and supplies needed seemed adequate for the job.

The program appeared to be very close to that described in the project proposal. Very few discrepancies existed, and it seemed apparent that the project was servicing the 80 children suggested in the proposal. The children being served were low functioning children, having difficulties in learning to read and function in mathematics. The program appeared to be able to identify children with needs for remediation, and attempted to begin the remediation process.

Chapter IV: SUMMARY OF MAJOR FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This project was funded in the middle of the school year, pre-testing began in late February and instruction by the Educational Assistants began in March. The time elapsed between pre and post testing was approximately two to three months. The attendance in the program was exceptionally good and the activities and materials available were very appropriate. The project met the goal of servicing eighty children who showed signs of problems of learning how to read and function in mathematics. The identification phase of the project was very successful.

The results of the testing suggest mixed results. Evaluation objective #1, which focused on the remediation of reading problems in first and second grades presented mixed success. The first graders did not display significant positive results on the S.E.S.A.T. II. The second graders were split between one school which applied the S.E.S.A.T. II in error to the second grade. The results of this school provided significantly positive results. The school which correctly used the M.A.T. with second graders to measure growth in reading skills presented significantly negative results. The children did not achieve at the anticipated level.

Objective #2, which focused on functioning in mathematics, also presented mixed results. Grade one presented significant growth in mathematics functioning on the S.E.S.A.T. II. The group of second graders who used the S.E.S.A.T. II incorrectly presented significant changes in raw score data. The group of second graders who used the M.A.T. appropriately produced positive but not significant results on the historical regression analysis. This group of second grade students did surpass the anticipated level, but not significantly.

The statistical results have to be looked upon with caution. The program was very short; two to three months hardly accounts for the standard error of the instruments. Secondly, the use of two instruments instead of one which would measure across first and second grade was a seemingly poor choice. Since each analysis had to be broken down into groups of 31, 26 and 17 instead of 74, the sample size of the groups is relatively small. For all of the above reasons, the statistical evidence has to be considered tentative.

There are several recommendations which this evaluator should like to suggest for the improvement of the project.

1. Such a program should begin at the beginning of the school year, and it would be the recommendation that instead of serving the first and second grades, the program might better serve second and third grade students. This evaluator would be hesitant to try to identify students in the first year of school as potential learning problems, unless the child had been in a Kindergarten program in that same school and the child had been known to the school for at least a year.

2. Given the level of training and the backgrounds of the Educational Assistants in the public schools, it would seem essential that the reading

specialist in each participating school be given time to supervise these Educational Assistants. To be done effectively, it can not be taken out of lunch time, etc., but should be in the program. Perhaps another professional in the district could have time available to coordinate, train, and supervise the two Educational Assistants.

3. While the schools involved in this current project varied in their approach to the physical placement of the Educational Assistants, it would be the recommendation of the evaluator that a school should provide a work room for the small group sessions if the school wished to retain the program in future years. The level of skill of the Educational Assistants seemed to make it a very difficult task for this moderately trained staff member to function within the regular classroom with all of the distractions of the regular instructional program in the same classroom.

4. Finally, the instruments used for the collection of data could be more appropriate for the task. A great deal of confusion was evident because of the fact that two instruments were being used. There are several instruments on the market which are just as diagnostic and would still cover both the first and the second grades. These instruments should be considered to replace both the Stanford Early School Achievement Test and the Metropolitan Achievement Test. Possible replacements would be the California Achievement Test, the Peabody Individual Achievement Test, or the Keymath Test, all of which are diagnostic and would cover the needed spread in class functioning even if the program were to include third graders next year. In any case, uniformity of testing should be maintained.

While the statistical results were mixed in this program, much of the non-statistical data suggests that the project has a tremendous amount of value. The diagnostic work which was done by the reading specialists was excellent. The individual or small group instruction appeared to be on target, and the children certainly seemed in need of the remedial instruction. To refund this project on a late spring basis would appear to be of little value. Given the fact that such a program could be started in September with some of the recommendations implemented, this evaluator would strongly recommend the refunding of this project as a very appropriate attempt to intervene in the school lives of young children in a very positive and probably significant manner. It is recommended that it be continued at the same level for the whole academic year 1976-77.