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ABSTRACT

The available project data for participants in projects for neglected and delinquent in New York State are reviewed in this evaluation report. The data are organized by the State Education Department to present as comprehensive an overview as possible. Emphasis is placed on examining the reported norm-referenced achievement test results in the priority areas of reading and mathematics. The foci of the report include the following: program overview (data source, participants served, teacher-pupil ratio and inservice training); project characteristics (project session, project location, grade levels served, and needs assessment); program effectiveness (procedure, constraints, reading achievement overview, reading achievement summary, mathematics achievement overview, mathematics achievement summary, exemplary projects, and achievement summary). The report concludes that the available achievement data in reading and mathematics suggest that a certain measure of success is being obtained by projects serving neglected and delinquent children. Among the recommendations made are the following: the improvement of data collection procedures, the isolation and dissemination of alternative measurement devices for assessing pupil achievement, and the substitution of a more valid test instrument for the Wide Range Achievement Test used in the testing program. (Author/AM)

New York State Program for Neglected and Delinquent Children 1974

Funded under a grant from Title 1 ESEA 1965

	[illegible]	.Purchase
1978	Alexander J. Allan, Jr., LL.D., Litt.D.	.Troy
1981	Joseph C. Indelicato, M.D., L.H.D.	.Brooklyn
1986	Kenneth B. Clark, A.B., M.S., Ph.D., LL.D., L.H.D., D.Sc.	.Hastings on Hudson
1983	Harold E. Newcomb, B.A.	Owego
1988	Willard A. Genrich, LL.B., L.H.D., LL.D.	.Buffalo
1982	Emlyn I. Griffith, A.B., J.D.	.Rome
1977	Genevieve S. Klein, B.S., M.A.	.Bayside
1981	William Jovanovich, A.B., LL.D., Litt.D., L.H.D.	.Briarcliff Manor
1983	Mary Alice Kendall, B.S.	.Irondequoit
1984	Jorge L. Batista, B.A., J.D.	.Bronx
1982	Louis E. Yavner, LL.B.	.New York
1979	Laura B. Chodos, B.A., M.A.	.Clifton Park
1980	Martin C. Barell, B.A., I.A., LL.B.	.Great Neck

President of The University and Commissioner of Education
Ewald B. Nyquist

Executive Deputy Commissioner of Education
Gordon M. Ambach

Deputy Commissioner for the Office of Elementary, Secondary, and Continuing Education
Thomas D. Sheldon

Assistant Commissioner for the Office of ESC Educational Opportunity Programs
Irving Ratchick

Director, Division of Federal Education Opportunity Programs, Title I ESEA
John L. House

Chief, Federal Education Opportunity Programs, Title I ESEA (Upstate)
William C. Flannigan

Chief, Federal Education Opportunity Programs, Title I ESEA (New York City)
Paul Hughes

Associate Commissioner for the Office of Research, Planning and Evaluation
John W. Polley

Director, Divisions of Research and Evaluation
Carl E. Wedekind

Director, Division of Evaluation
Alan G. Robertson

C[illegible], Bureau of Urban and Community Programs Evaluation
Leo D. Doherty

New York State Program

for Neglected and Delinquent Children 1974

(Funded under a grant from Title I ESEA 1965)

The University of the State of New York
The State Education Department
Bureau of Urban and Community Programs Evaluation
Albany, New York 12234

Foreword

The Elementary and Secondary Education Act of 1965 (Public Law 89-10) provided money to supplement the education of selected deprived children. In 1967, Public Law 89-750 amended the Law to include children residing in institutions for the neglected or delinquent as being fundable for such education.

The program in New York State operates in several ways. Some of the eligible children attend local, public schools. Others attend an on-campus school which may be a public school whose district is encompassed by the institutions bounds. The third type of child funded through the Local Education Agency (LEA) is the child in the county jail. All of these children are funded at reduced rate. Another type of institution is the school conducted by the State on institutional grounds. The State agency programs receive full supplemental funding. State agency programs are operated by the Division for Youth, Drug Abuse Services and Department of Correctional Services. This report covers only one State agency, the Division for Youth.

The administration of the program for neglected and delinquent children is under the auspices of the ESEA, Title I program. This program, under Irving Ratchick, Assistant Commissioner for Compensatory Education and John L. House, Director, Division of Federal Education Opportunity Programs, reviews the proposals made by school districts and the New York State Division for Youth and then monitors those funded LEAs.

The Bureau of Urban and Community Programs Evaluation of the Office of Research, Planning and Evaluation under John W. Polley, Associate Commissioner, provided the evaluation staff to assemble and analyze the data reported herein. The data were collected by Robert F. Miller, who in collaboration with Robert F. Sumislawski, prepared the report.

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CHAPTER I

PROGRAM OVERVIEW

The New York State Program[1/] for Institutionalized Neglected and Delinquent Children, funded under the Amendment P.L. 89-750 to ESEA 1965, P.L. 89-10 consisted of two parts: 1) Serving children in local institutions who might attend local schools or schools upon the grounds of their institution, 2) Serving children in State operated institutions, who are charges of the New York State Division for Youth.

Since the funding procedure is different for each population, it is proposed to report the parts as two programs. In order to distinguish between them, the program for children in local institutions will be called the P.L. 89-10 program, and that serving children in State operated institutions, P.L. 89-750 program.[2/]

In total, 52 projects in the 89-10 program and 11 projects in the 89-750 program were eventually approved by the State Education Department (SED). This followed a review process in which appropriate SED units participated. Such units included finance, evaluation and relevant subject matter units. Each unit was responsible for reviewing and making recommendations on relevant content submitted in the project proposals. Recommendations for approval, modification or disapproval were then made to the Title I program office which dealt directly with the local education agency (LEA).

The total reported cost for the two programs was $2,867,566. This involved $1,926,767 for the 89-10 program and $940,809 for the 89-750 program. These funds were budgeted to provide supplementary educational services for the neglected and delinquent participants. Figures 1 and 2 present the reported cost distributions by major component areas for the 89-10 and 89-750 projects respectively.

1/Throughout this report these definitions will apply:

1. Program - The statewide effort to educate neglected and delinquent children. There were two such programs (89-10 and 89-750).
2. Project - Local implementation of the State program.
3. Component - Areas of emphasis and activity within projects, such as reading, mathematics, or bilingual.

2/P.L. 89-10 will refer to children in local institutions for neglected or delinquent children. These children reside in local institutions and are educated at the local public school or at an institutional (public) school located on the grounds of the institution, or at a nonpublic school operated by the institution. For the purposes of generating funds, these children are funded at the rate of 1/2 the per pupil expenditure level of the State, ratably reduced (which is the relationship of the appropriation to the authorization.)

P.L. 89-750 will refer to children in State institutions for neglected or delinquent children. These children reside in State agencies and are educated in State agencies. For the purposes of generating funds, these children are funded at the rate of 1/2 the per pupil expenditure rate of the State. The funds generated by these children are not ratably reduced, and so, they are fiscally known to be fully funded.

Figure 1

Reported Distribution of 89-10 Program Funds
by Major Component Areas

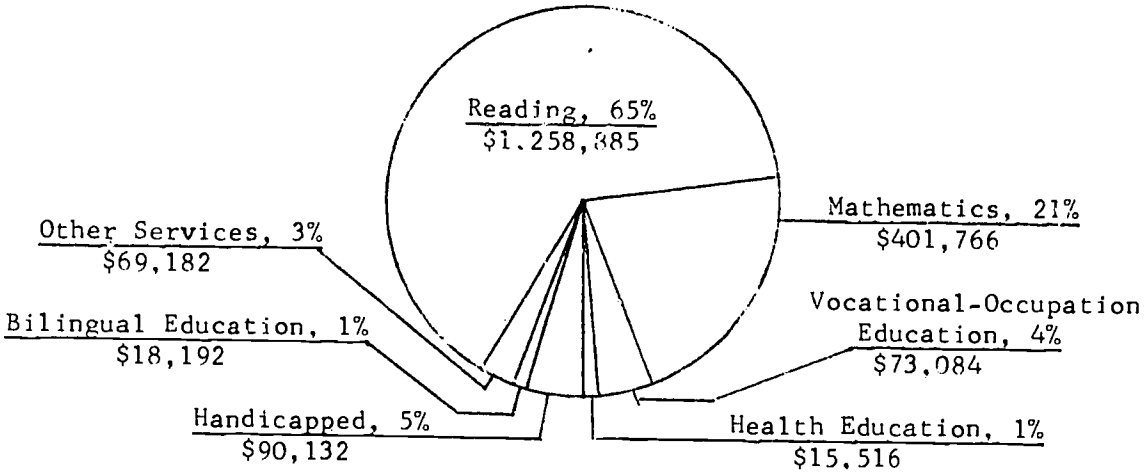
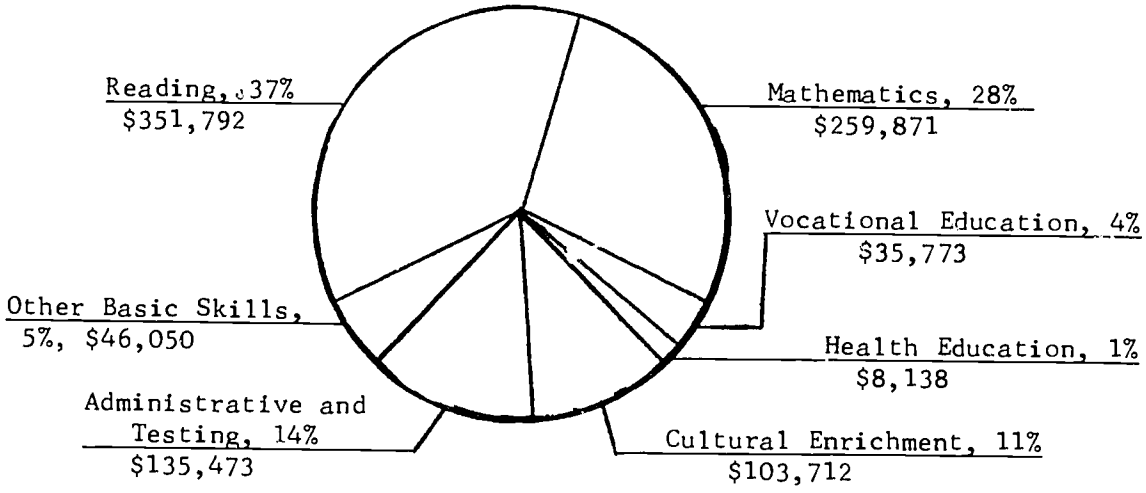


Figure 2

Reported Distribution of 89-750 Program Funds
by Major Component Areas



Data Source

The majority of the information available on the implementation of the Neglected and Delinquent (N & D) projects was obtained from the Mailed Information Reports (MIR's) submitted. This data collection system consisted of a 3-part questionnaire which project staff were expected to complete. Each of the three sections was to be submitted periodically during the project's operation in order to assure effective monitoring. Projects were required to detail information on any modifications made, component costs, number of participants served, staffing and available achievement results.

Complete returns for the 3-section MIR were received for 32 projects, 29 of the 89-10 and three of the 89-750. An additional 15 projects submitted partially completed MIR's (See Appendix A for a listing of these projects.) The complete returns represented approximately 62% of the 89-10 and 27% of the 89-750 projects approved for funding. The data loss due to the lack of complete information from all the projects will limit the generalizability of the results to be presented. The problem will be seen in the next section where the number of participants is shown to be close to the number of children expected. The difficulty is that without complete MIR returns, it cannot be determined whether the population was so distributed that most are accounted for, or whether the school count could have reached over 10,000 in the 89-10, and over 3,000 in the 89-750 classification. The Federal census figures used to allocate the funds were closer to the reported as expected in the next section, but they were one year old. This lowers the confidence in the generalizability of the data.

In addition to the incomplete reporting situation encountered, the manner in which the 89-10 participant data were reported further complicated attempts to present an overview of the program. These projects served both the educationally disadvantaged (Title I) child and the neglected or delinquent child. Achievement data for the neglected and delinquent participants in a given project were not always presented separately from the rest of the project's Title I population served. Project personnel had never been instructed to separate the two populations. We will return to this in our recommendations. This situation restricted the accuracy of the estimates to be reported for component costs, staffing, inservice training and other related elements. Any review of these areas must, therefore, take this reservation into consideration.

Participants Served

Projects were planned to serve an expected total of 5,785 neglected and 810 delinquent children in the 89-10 classification. The actual numbers reported as served were 5,565 neglected and 847 delinquent children. Figure 3 provides the distribution by major component areas (duplicated count) of the actual participants reported served. The projects emphasized services to participants in the priority basic skill areas of reading and mathematics.

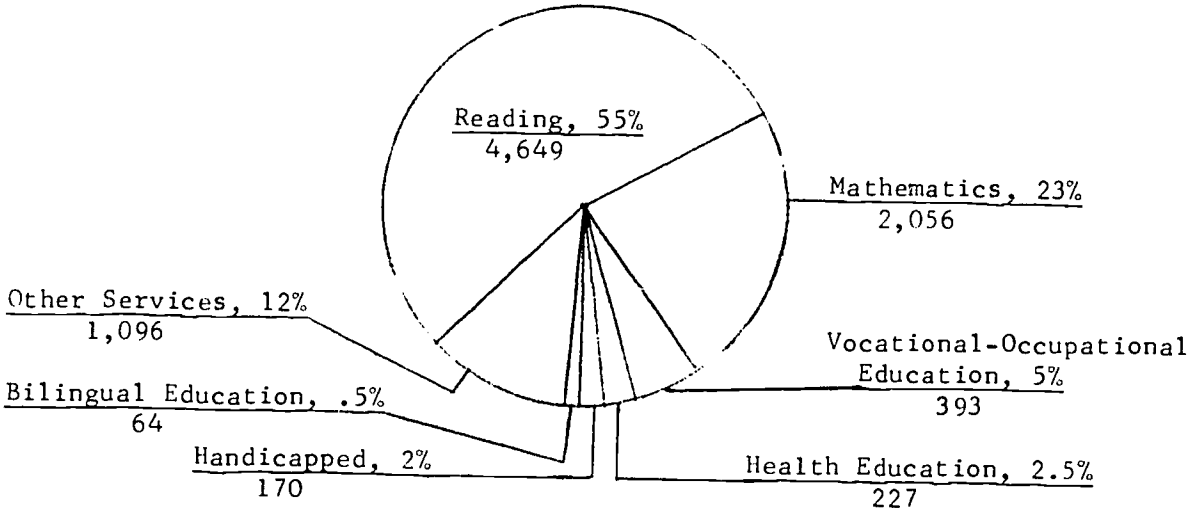
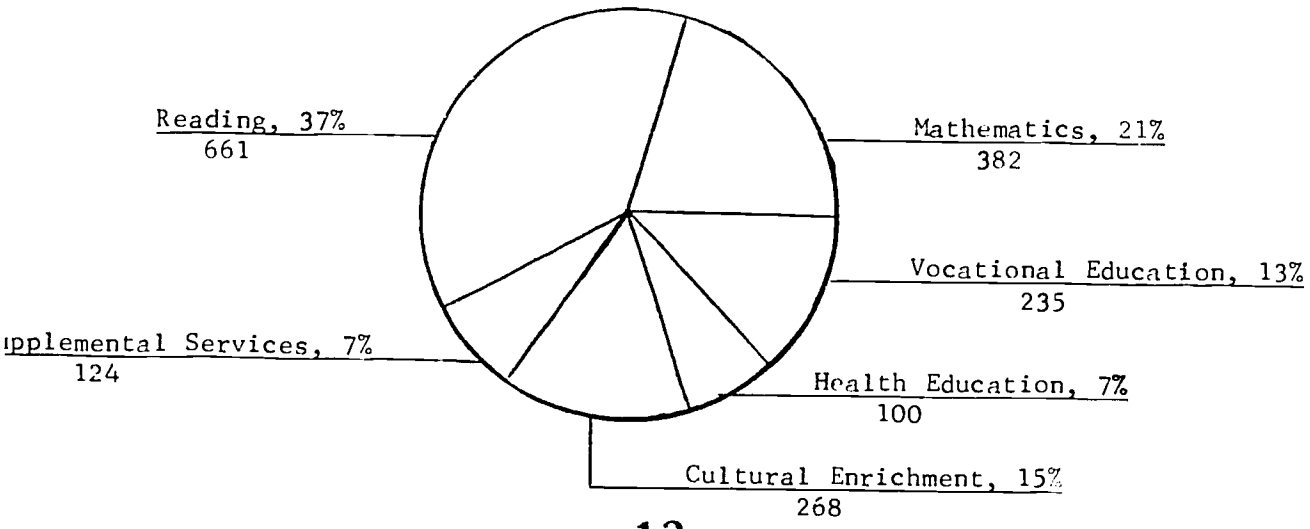


Figure 4

Distribution of PL 89-750 Participants
Served by Major Component Areas



Teacher-Pupil Ratio

The average reported teacher to pupil ratio for the 89-10 projects was 1 teacher to 29 students. This ratio was reduced to 1 for 21 when the number of teacher aides working in an instructional capacity was added to the teacher figures to obtain an instructional staff to pupil ratio. This second ratio is probably a more appropriate representation of the attention being given to the participants. The exact ratio may well be lower, but reporting difficulties prevented a more precise determination.

The reported data for 89-750 project indicated a teacher to pupil ratio of 1:46. The instructional staff to pupil ratio was 1:31. However, the anticipated teacher to pupil ratio based on staff estimates from project proposals was 1 teacher to 12 pupils. This discrepancy was likely due to either overestimation in the proposal or to the incomplete reporting situation which points out the need to obtain complete information on the MIR's from the participating LEA's.

Inservice Training

Six of the 89-10 projects reported conducting some form of inservice training. Determination of whether this was specifically related to working with neglected and delinquent children was difficult to make because of the consolidated data reporting system already discussed. As said earlier, the projects served both the educationally disadvantaged child and the neglected and/or delinquent child. No distinction was asked in staff count to identify specifically the population to be served.

None of the 89-750 projects reported inservice training. One possible explanation was that the project staff was perceived adequate to work with the target participants. Project staff were usually regular institutional personnel whose background and training were geared to working with this type of student.

CHAPTER II

PROJECT CHARACTERISTICS

Several characteristic variables were distinguishable in projects for neglected and delinquent children in New York State. One such variable, major component areas emphasized, has already been considered in the review of funding costs and participants detailed in figures 1-4. No attempt will be made to further illustrate this characteristic since with two exceptions, all projects placed their primary emphasis on the basic skill areas of reading and mathematics. Other features which varied sufficiently to warrant consideration included: project session, project location, and grade levels served. Each of the features will be reviewed separately for the two program classifications.

Project Session

Project session refers to the time period during which the project was conducted. Figure 5 details the distribution of 89-10 projects by the sessions in which they were held. The 89-750 projects were all full-year (regular school year and summer) programs.

Project Location

Location of the project was a relevant variable for the 89-10 projects. They fell into one of three categories. Projects were either conducted: 1) at the institutional location where the participants resided, 2) at a local public school district, or 3) within a residential institution setting which was classified as a regular public school district. Figure 6 illustrates the distribution of these three location categories. Since all of the 89-750 projects were conducted on the institutional premises, no similar illustration is provided.

Grade Levels Served

The grade levels reported as served by each project can only be illustrated for the 89-10 projects. Projects funded by P.L. 89-750 used the ungraded classification to identify their participants. Figures 7-10 present the expected and actual grade level distributions for both neglected and delinquent participants (separately) in the 89-10 projects. The expected figure is the estimated population number for which the project was proposed, the actual is the count of children served.

Figure 5

Distribution of PL 89-10
Projects by Session

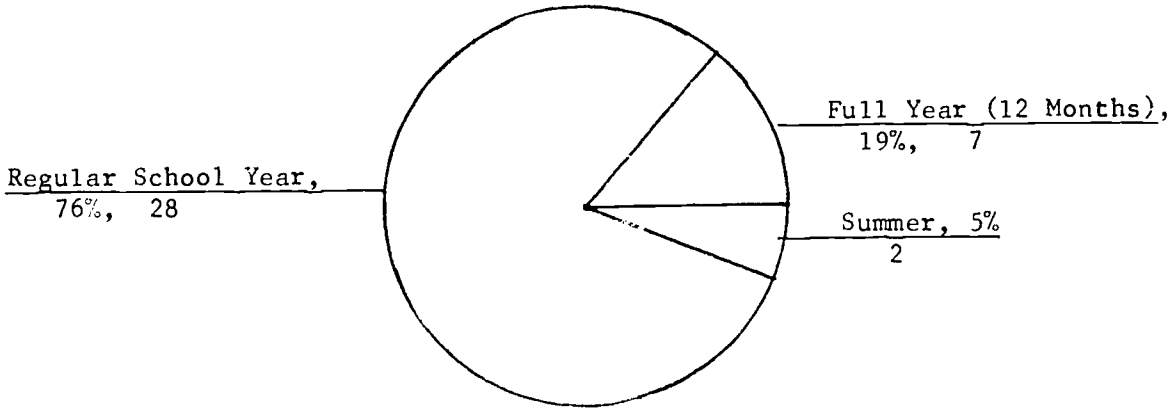


Figure 6

tribution of PL 89-10
Project Locations

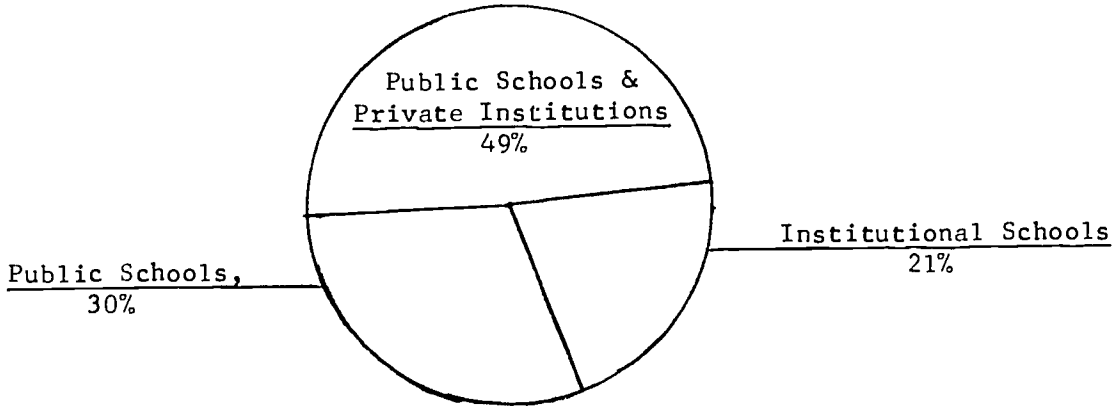


Figure 7

Distribution of Expected Neglected Participants
by Grade Level for the PL 89-10 Projects

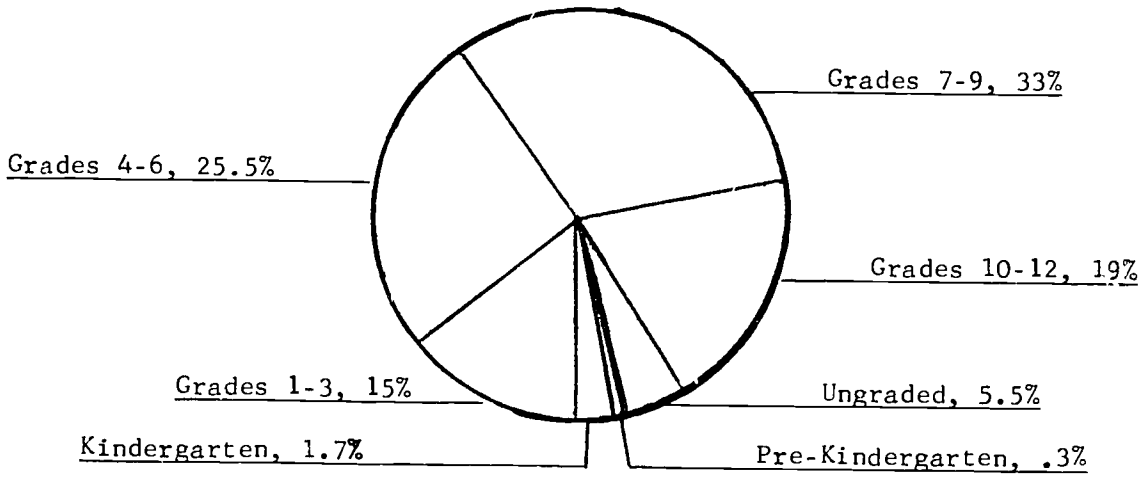


Figure 8

Distribution of Actual Neglected Participants
by Grade Level for the PL 89-10 Projects

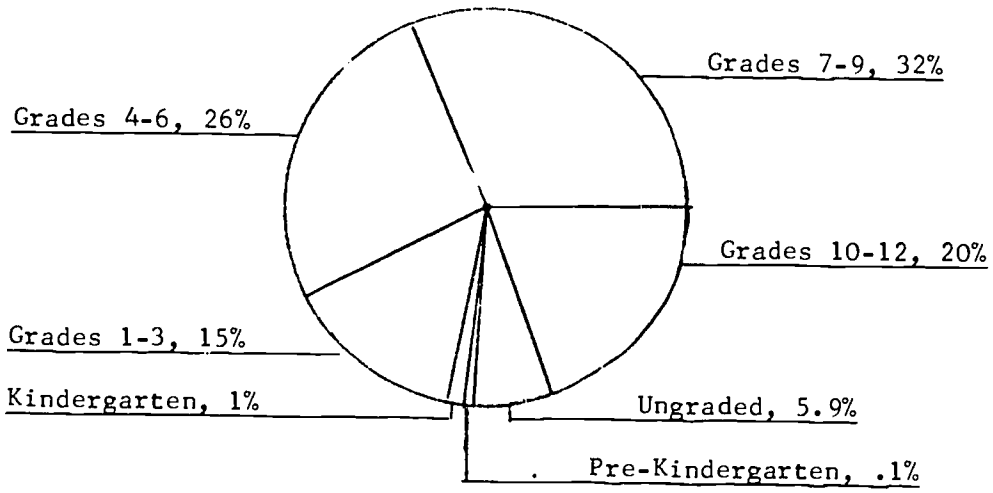


Figure 9

Distribution of Expected Delinquent Participants
by Grade Level for the PL 89-10 Projects

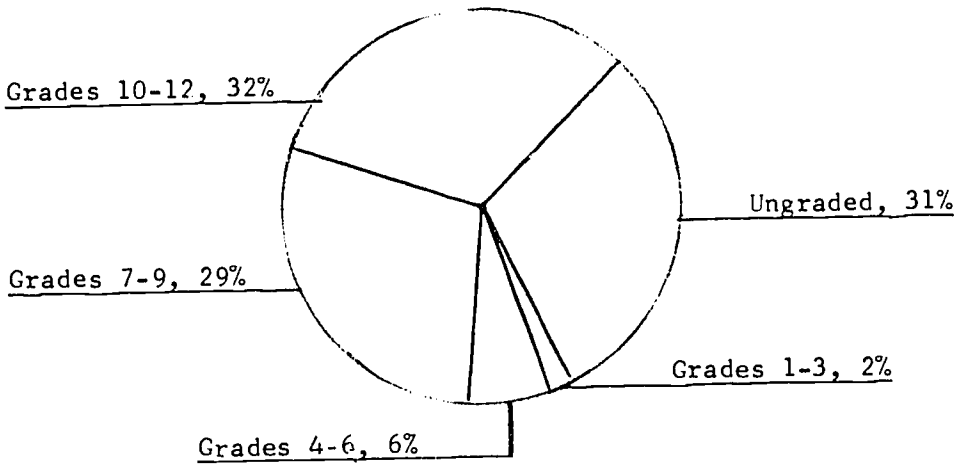
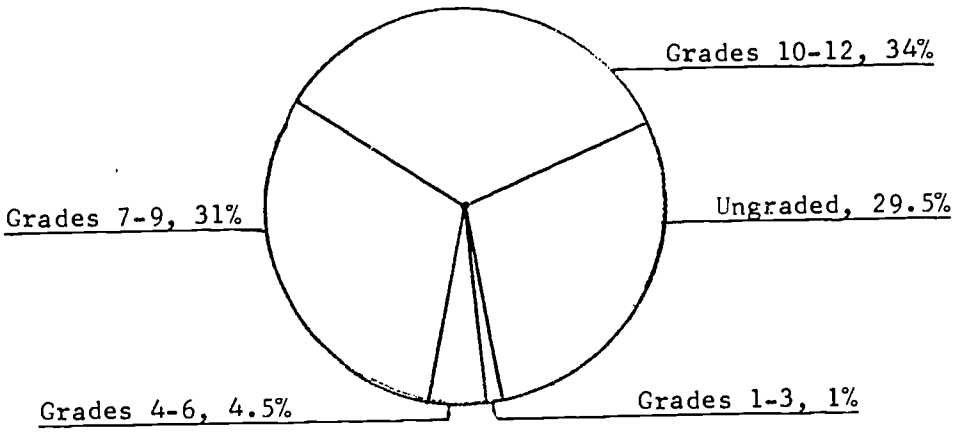


Figure 10

Distribution of Actual Delinquent Participants
by Grade Level for the PL 89-10 Projects



Needs Assessment

Effort has been expended within the New York State programs for the neglected and delinquent to estimate the magnitude of the academic deficiencies of the participants. Particular emphasis was placed on the priority areas of reading and mathematics. A review of the Fall, 1972 test data for the P.L. 89-750 participants was conducted in order to determine the average grade level (in grade equivalent units) prior to treatments supported by ESEA, Title I.[1/] These results from the California Achievement Test for grades 4-12 are provided in table 1 for reading and table 2 for mathematics.

Table 1

Magnitude of Deficiencies in Reading by Grade Level, Fall 1972[1/]
(89-750)

Grade	Sample Size	November Mean*(years)(G.E.)	Mean Distance Below Expected Grade Level(years)
4	3	1.73	2.47
5	8	1.54	3.66
6	10	1.80	4.40
7	29	2.24	4.96
8	55	3.67	4.53
9	131	4.69	4.59
10	285	5.08	5.12
11	237	5.59	5.61
12	94	7.49	4.71

*Grade Equivalent (GE) units.

1/ Tables 1 and 2 are quoted from a 1972-73 Neglected and Delinquent project, #DY73-011.

Table 2

Magnitude of Deficiencies in Mathematics by Grade Level, Fall 1972 1/
(89-750)

Grade	Sample Size	November Mean (GE)	Mean Distance Below Grade Level (years)
4	3	2.37	1.83
5	7	2.64	2.56
6	11	2.36	3.84
7	22	3.16	4.04
8	51	4.43	3.77
9	129	5.01	4.19
10	289	5.18	5.02
11	240	5.78	5.42
12	93	6.98	5.22

The magnitude of academic deficiency tended to increase with increases in grade level for both areas. By 8th grade, average participant performance was over four and one-half years behind grade level in reading and over three and one-half years in mathematics. These results emphasize the need for remedial instruction in both reading and mathematics. The following section on Program Effectiveness will provide information as to how well these needs are being addressed.

1/See note 1/ on previous page.

CHAPTER III

PROGRAM EFFECTIVENESS

This chapter will review the reported achievement data for the P.L. 89-10 and P.L. 89-750 projects. The preceeding sections have provided needed descriptive information on the types of projects conducted, their component costs, the participants served, and the staff required. This information, although important, is insufficient for making an adequate assessment of program success. A careful review of the available achievement data in the areas of emphasis is required.

Procedure

Norm-referenced achievement data in the priority areas of reading and mathematics were examined. The section entitled Needs Assessment has already pointed out the need for addressing these basic skill areas.

The primary source for the achievement data was reported through the appropriate items in the Mailed Information Report (described in an earlier section). The format of these items minimally required that arithmetic means be used to describe pre-and post-test results for each project. The available data were then grouped by the particular test instrument used, the grade levels tested and the number of months between pre-and post-testing.

These data were organized into a tabled format consisting of the needed group descriptors, pre-and post-test means, the difference between these means (gains) and the average monthly rate of gain observed. The average monthly rate of gain (.1 G.E./month) was computed by 1) subtracting the pre-test mean from the post-test mean, 2) multiplying this difference by ten, and 3) dividing the product by the number of months elapsed between pre and post testing. (e.g. children in project A scored as follows: $\bar{X}_1=2.5$; eight months later, $\bar{X}_2=3.4$.

$$\frac{3.4 - 2.5(10)}{8} = \frac{9}{8} = 1.25$$

Here children exhibited a learning rate of 1.125 or .1125 G.E./month.

Project staff conducted one of two types of analyses on their data. The first consisted of a simple pre versus post treatment comparison of means. This analysis examined the differences between pre-and post-test means to determine if the differences were attributable to something more than chance (or error) variation. This simplest of analyses simply shows whether the difference between the obtained means is real. It would be very difficult to infer any effect due to treatment. The second analysis is the comparison of the observed post-test score with the post-test score that was predicted from the pre-test score. The procedure used to calculate the predicted post-test score is given in

Appendix B. The predicted score estimated the achievement level to be anticipated had the participant not received the treatment. By comparing the predicted and actual post-test means, the analysis made possible inferential statements detailing achievement with and without the program treatment. As a result, it made it possible to discuss the effect of the supplementary Title I treatment.

Constraints

Several considerations should be taken into account when reviewing the available achievement data. These concerns are particularly relevant to the 89-10 test data, but to a lesser extent may apply to the 89-750 data as well. First, not all of the projects implemented were able to provide achievement data based on norm-referenced testing. Only 36 of the 89-10 projects reported usable data in this form. Some projects, particularly those conducted in the summer, made use of criterion referenced testing. Other projects were unable to provide any data or only partial data because of problems in implementation or because of situational factors. Target group participants were often subject to transfer or removal from an institutional location by legal authorities on short notice. All these features combined to restrict the representativeness of the available data. Therefore, inferences related to the entire population served could not be made. These data must be considered representative of only those tested and reported herein.

The variety of project variables already considered, served to make any across-project comparison extremely difficult. The 89-10 projects varied in the length of time between pre-and post-testing, the grade levels tested and the instruments used for the testing. The 89-750 projects varied on the age level data available and the length of time between testing. Age levels were used to identify participants in 89-750 projects because an ungraded classroom system was in force. These participants were not selected on the basis of a pretest score, rather the only criterion for selection was their legal status of being either neglected or delinquent. The degree of correlation between the status of selections and the score on the post-test is unknown. This negates any calculation of the regression effects. One could be tempted to use pre-to post-test correlation in the formula since the pre-and post-tests are the same in each case. However, the tests do not have norms that apply specifically to the population of neglected or delinquent. This makes it very difficult to estimate the extent or the nature of the regression.

Since the larger number of projects operated for the regular school year (10 months) or longer, it is being assumed that the tests used are appropriate to the population of neglected or delinquent and the greatest error contribution comes from each tests' standard error of measurement. This same assumption holds for the short duration projects (1-1/2 month summer), but here one is cautioned that the instruments were not designed for this degree of accuracy. However the gains may well be real, but they can also contain a certain degree of error. Since it cannot be assumed the error is either positive or negative, it must be

assumed to be random and, therefore, self-cancelling. Likewise, the reader is cautioned to employ care in making inferences regarding projects with fewer than 30 participants. Knowing that small number and short durations can offer problems in interpretation, the results are nevertheless presented to give the reader knowledge, although limited.

Reading Achievement Overview

Achievement in reading was one of the primary concerns of the New York State Programs for Neglected and Delinquent Children. An attempt was made in an earlier section to describe the achievement levels found in a population of these children. It was shown that their levels of achievement were considerably below the norms for children of like age. The U.S. Office of Education has found that disadvantaged learners typically achieve at a rate of less than .7 grade equivalent per year.1/ This means that the child gains less than seven months for every ten months in a regular school program. It also means that were this to continue, the gap would widen by .3 G. E. each year! These two sets of data indicate a definite need for remediation so that it might be possible to halt further increases in this achievement deficiency and perhaps begin closing the gap.

For purposes of this review, gains in excess of the .7 rate will serve as the minimal acceptable level of performance in reviewing neglected and delinquent project results. Gains of one month for each month of participation or in excess of this rate will be viewed as higher levels of achievement and indicative of project success. Such rates would halt the expansion or begin the reduction of achievement gap. These two rates of gain (.7 and 1.00) will, therefore, be used as reference points in reviewing program effectiveness.

Reading achievement results for P.L. 89-10 and P.L. 89-750 participants were considered separately. Use was made of tables and figures to present an overview of the data. For the 89-10 data, this involved the presentation of two general tables, and several figures depicting test-specific performance across grade intervals. The 89-750 data lent itself well to presentation in figure form and so was illustrated exclusively in that format. A coordinated testing program was conducted for these projects in which only one test instrument, the Wide Range Achievement Test (WRAT), was used. The data resulting from both programs were grouped by number of months between pre-and post-testing, grade or age levels served and where appropriate by test instruments used.

Table 3 presents the summer session achievement data in reading for the 89-10 participants. All the gains reported exceeded the 1.00 rate. Sufficient grade level results as to warrant a more detailed

1/United States Office of Education. The Effectiveness of Compensatory Education: Summary and Review of the Evidence. Washington: Department of Health, Education, and Welfare, (1972), p. 7.

figure presentation were available only for participants tested with the WRAT. These data are illustrated in figure 11. The left side of the figure provides the average pre-test scores for each grade interval. The right side indexes the average observed gains from pre-to post-testing. Please note that the scale on the right side has been expanded and reads in tenths of (months) a grade equivalent. Therefore, the graph would be read: the average child in the 4-6 grade level was measured as achieving at the 4th grade in the 4th month at the beginning of the 1-1/2 month program and gained .44 grade equivalent (4.4 months) during the succeeding month and a half. Thus, such projects appear to have achieved good results, although it is not known whether they offered more intensive instruction.

Table 3

Reported Reading Achievement Data for P.L. 89-10 Participants in the Summer Projects

Time elapsed between pre-test & post-test administrations	Grade	Measurement Device	Number of Pupils Tested	Pretest Mean (Years) (GE)	Actual Posttest Mean (Years) (GE)	Difference (GE) (Years)	Rate of Gain per Month 1/
1-1/2 months	7-9	CAT 2/	58	2.9	3.6	.70	4.6
	1-3	WRAT	104	1.92	2.08	.16	1.06
	4-6	WRAT	138	4.40	4.84	.44	2.93
	7-9	WRAT	101	5.28	5.69	.41	2.73
	4-6	SAT	29	3.7	4.1	.40	2.66
	1-3	MAT	16	1.93	2.45	.52	3.466
	4-6	MAT	8	3.28	4.01	.73	4.866

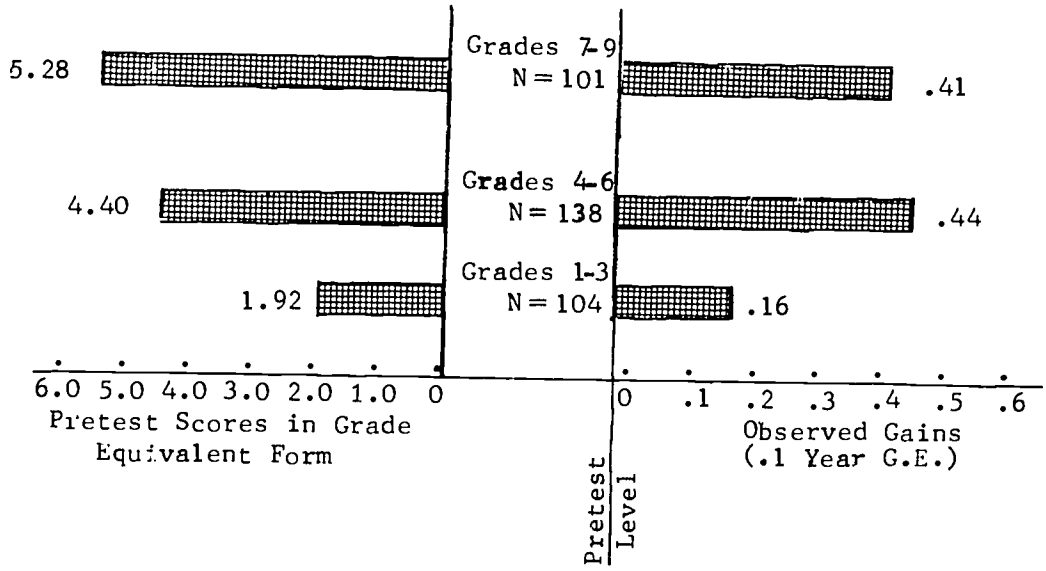
1/ $\frac{10 \times \text{G.E. difference}}{\text{No. of mths. duration}}$ = Rate

2/See Appendix C

Figure 11

Pre-Test Scores (WRAT Grade Equivalent) and Average Observed Gains for PL 89-10 Participants in Reading by Grade Intervals

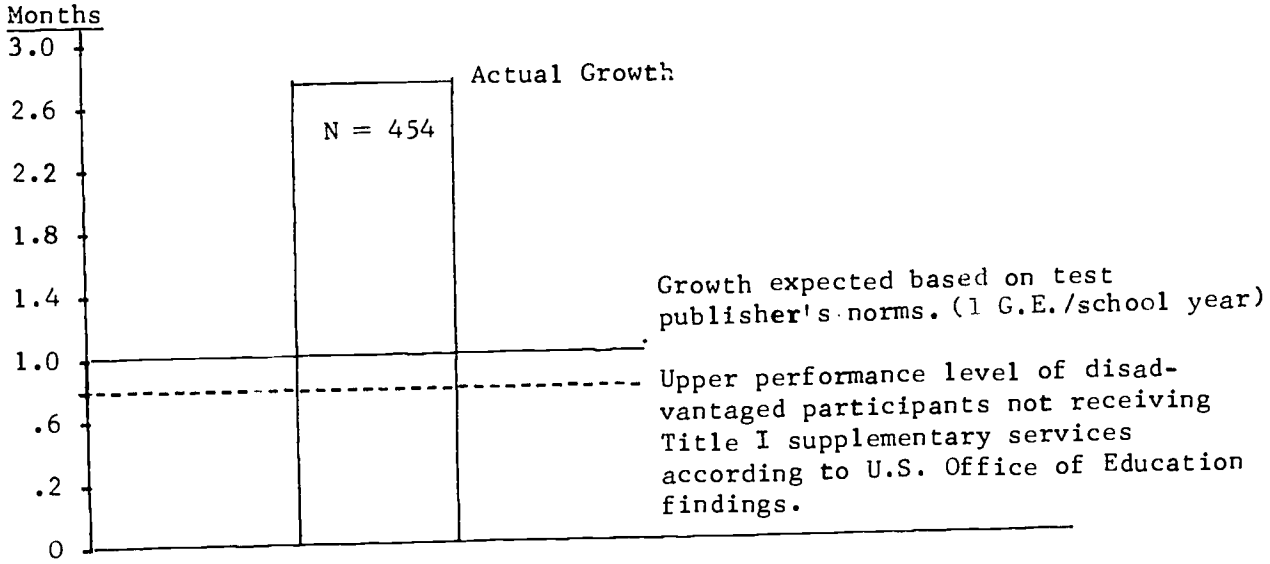
Average Project Length = 1 ½ Months



The weighted mean rate of growth for the 454 summer participants tested in reading is presented in figure 12. The actual growth rate obtained can be compared with the rates expected by publisher's norms or by U.S. Office of Education findings for disadvantaged participants not receiving supplemental services. The actual rate was well above the comparison rates. High learning rates are often obtained for intensive short-term projects such as those conducted in summer sessions. These results should be interpreted with some measure of caution since measurement device inadequacies and statistical artifacts likely account for a portion of the gains observed. In addition, it is entirely possible to offer more intensive instruction during summer sessions. However, at this point in time, it is not known how often this occurred.

Figure 12

Rate of Reading Achievement for Summer Session
PL 89-10 Participants in Growth Per Month



The reported results for the regular session projects are provided in table 4. The duration between pre-and post-testing varied from 4 to 9 months. Learning rates exceeded the 1.00 rate for all of the 4, 5 and 7 month data presented. This criterion rate was also exceeded in four of the ten data entries for the 8-month projects and one of the five 9-month projects. When viewed across the data entries, only four of the twenty-two entries in table 4 failed to achieve the .7 learning rate which served as the minimal acceptable level of performance. Where available, the predicted post-test means based on the actual versus expected gains analysis are provided. Actual post-test means exceeded those predicted in all but one of the cases reported. These results suggest that the project participants made larger gains than would have been expected without intervention.

Table 4

Reported Reading Achievement Data for PL 89-10 Participants in Regular Session Projects

Time elapsed between pre-test & post-test administrations (months)	Grade	Measurement Device 1/	Number of Pupils Tested	Pretest Mean (G.E.)	Predicted Posttest Mean (GE)	Actual Posttest Mean (GE)	Difference (GE, (Years)	Rate of Gain per Month 2/
4	7-9	SDRT	41	5.3	5.57	5.85	.55	1.375
	10-12	SDRT	16	5.48	5.72	6.37	.89	2.225
5	7-9	SAT	8	6.89	7.41	7.46	.57	1.14
	4-6	SAT	26	4.18	4.6	5.21	1.03	2.06
6	4-6	Gates McGinitie	5	3.47	3.82	3.85	.38	.633
7	10-12	Nelson-Denny	49	7.12	7.51	8.36	1.24	1.77
	7-9	CAT	154	6.0	6.38	7.32	1.32	1.88
8	1-3	Gates-McG	99	2.22	2.85	3.66	1.44	1.8
	4-6	Gates-McG	37	3.63	3.93	4.01	.38	.47
	7-9	Gates-McG	90	4.57		5.83	1.26	1.57
	10-12	Gates-McG	81	4.67		5.53	.86	1.07
	1-3	MAT	55	1.67		2.32	.65	.81
	4-6	MAT	168	3.13		3.90	.77	.96
	7-9	MAT	111	4.01		4.61	.60	.75
	10-12	SRA	30	5.95	6.47	6.13	.18	.22
	1-3	SAT	182	3.06		3.74	.68	.85
	10-12	CAT	8	6.63	6.84	7.81	1.18	1.475
9	10-12	WRAT	99	5.81		6.58	.77	.85
	1-3	WRAT	42	2.01		2.74	.73	.81
	4-6	WRAT	27	3.27		4.05	.78	.86
	10-12	MAT	58	6.8		7.38	.58	.64
	10-12	CAT	225	4.5	5.4	8.9	4.40	4.89

1/See Appendix C.

2/Based upon grade equivalent units.

The results for the three most widely used test instruments in table 4 have been presented separately in figures 13-15. This was done in order to provide a more descriptive overview of reading achievement. Use was again made of the double-bar figure to display the average pre-test scores and observed gains.

Figure 13

Regular Session Pre-Test Scores (MAT Grade Equivalent) and Average Observed Gains for PL 89-10 Participants in Reading by Grade Intervals

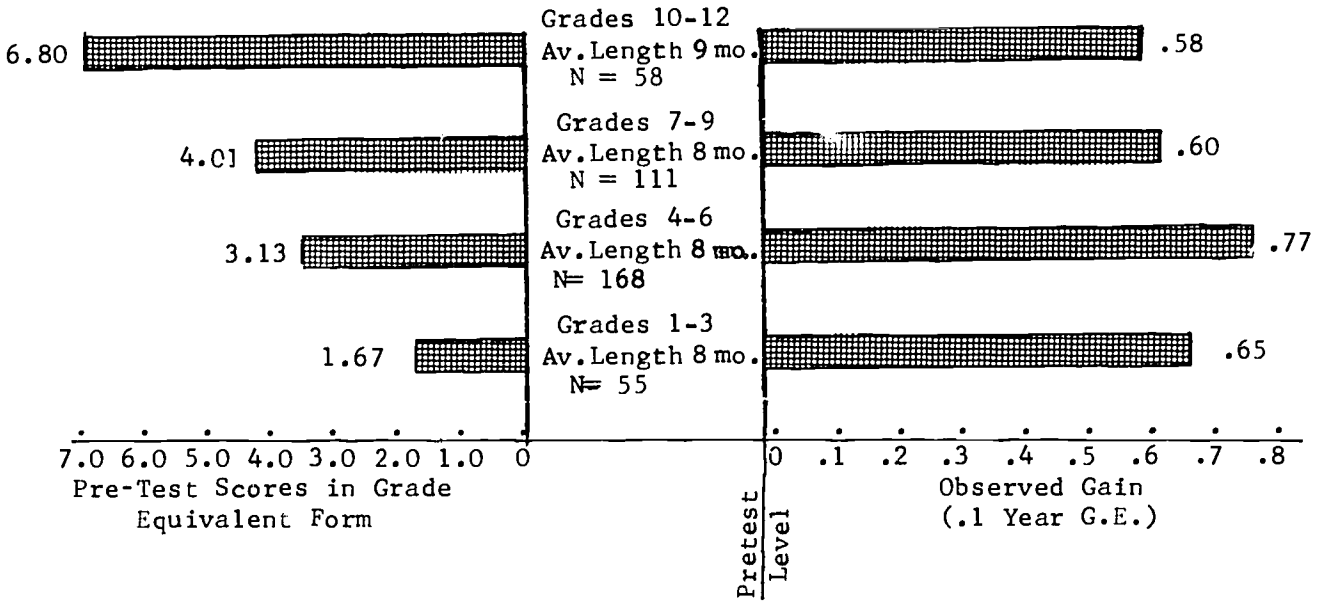


Figure 14

Regular Session Pre-Test Scores (Gates-MacGinitie Grade Equivalent) and Average Observed Gains for PL 89-10 Participants in Reading by Grade Intervals

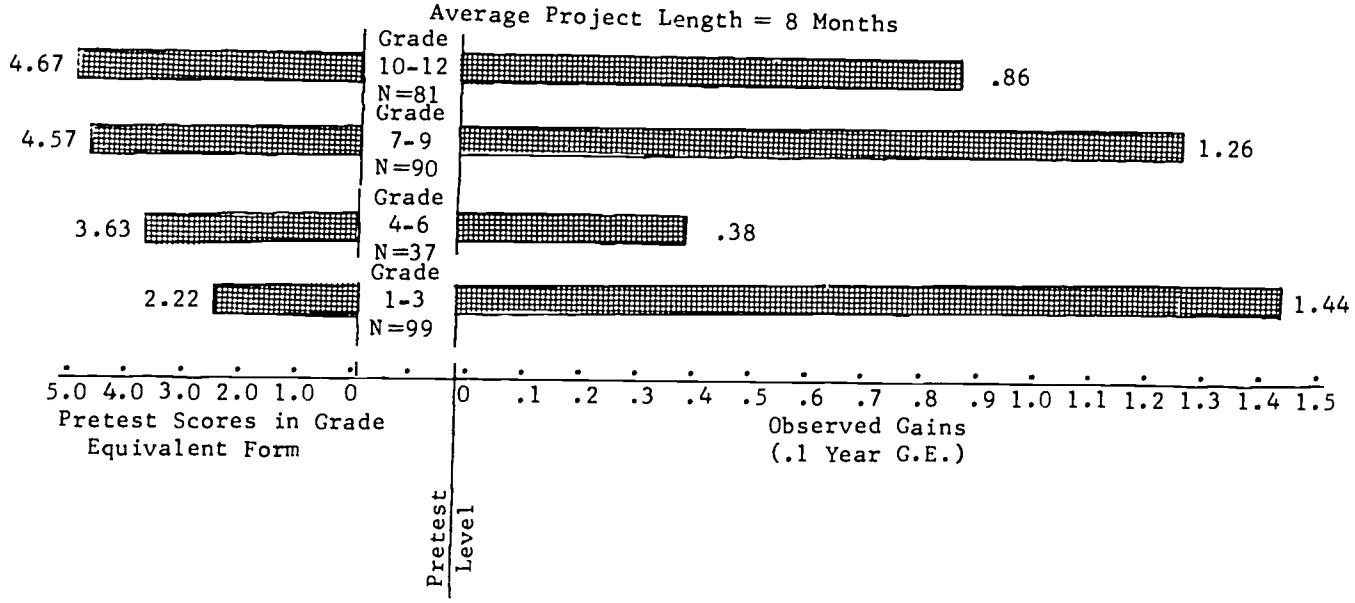


Figure 15

Regular Session Pre-Test Scores (WRAT Grade Equivalent) and Average Observed Gains for PL 89-10 Participants in Reading by Grade Intervals

Average Project Length = 9 Months

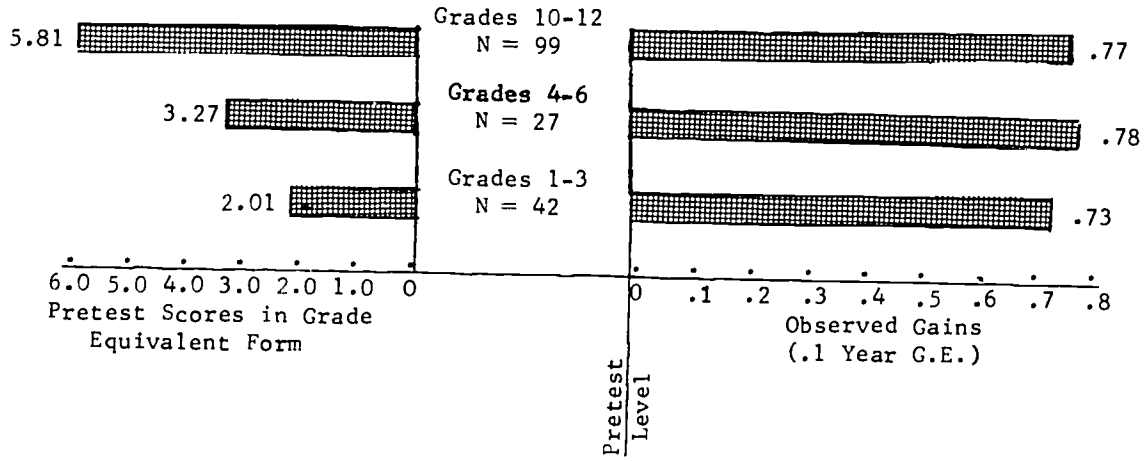


Figure 16 details the range of growth rates anticipated for regular session participants without supplemental services. This range of rates can be compared to the weighted mean growth rate obtained for the 1,616 participants tested. On the average, participants were gaining beyond the month for a month rate. Performance maintained at this level would enable the target population to begin to close the achievement gap.

Figure 16

Rate of Reading Achievement for Reading Session PL 89-10
Participants in Growth Per Month

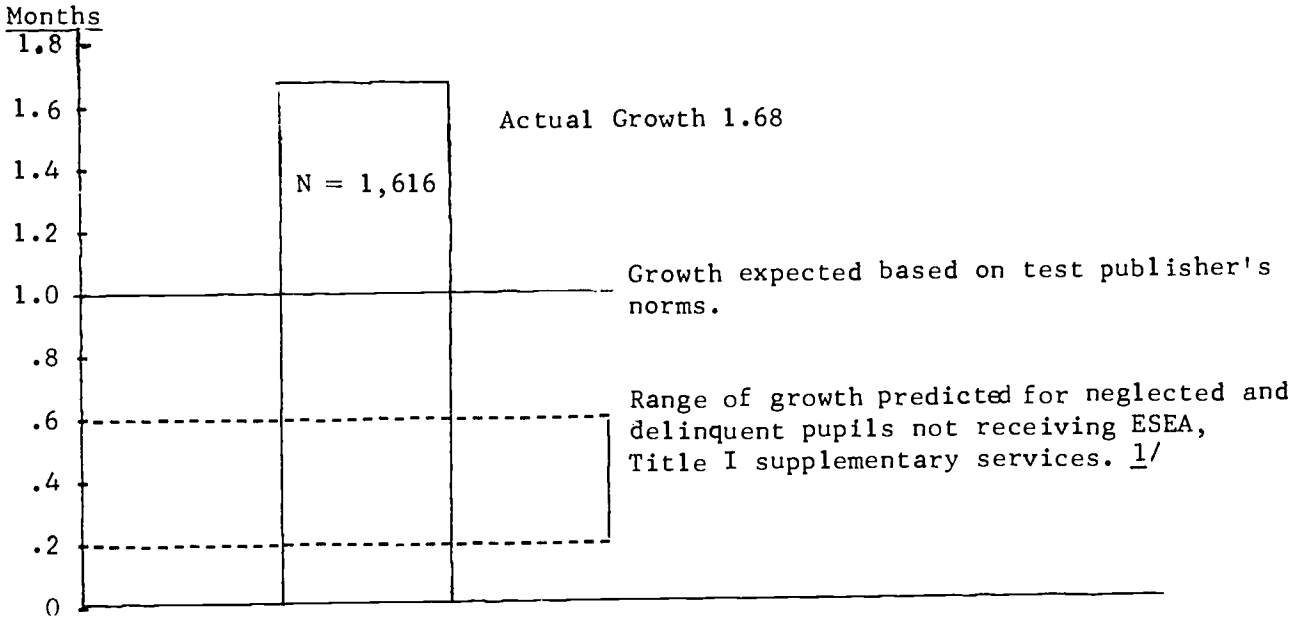
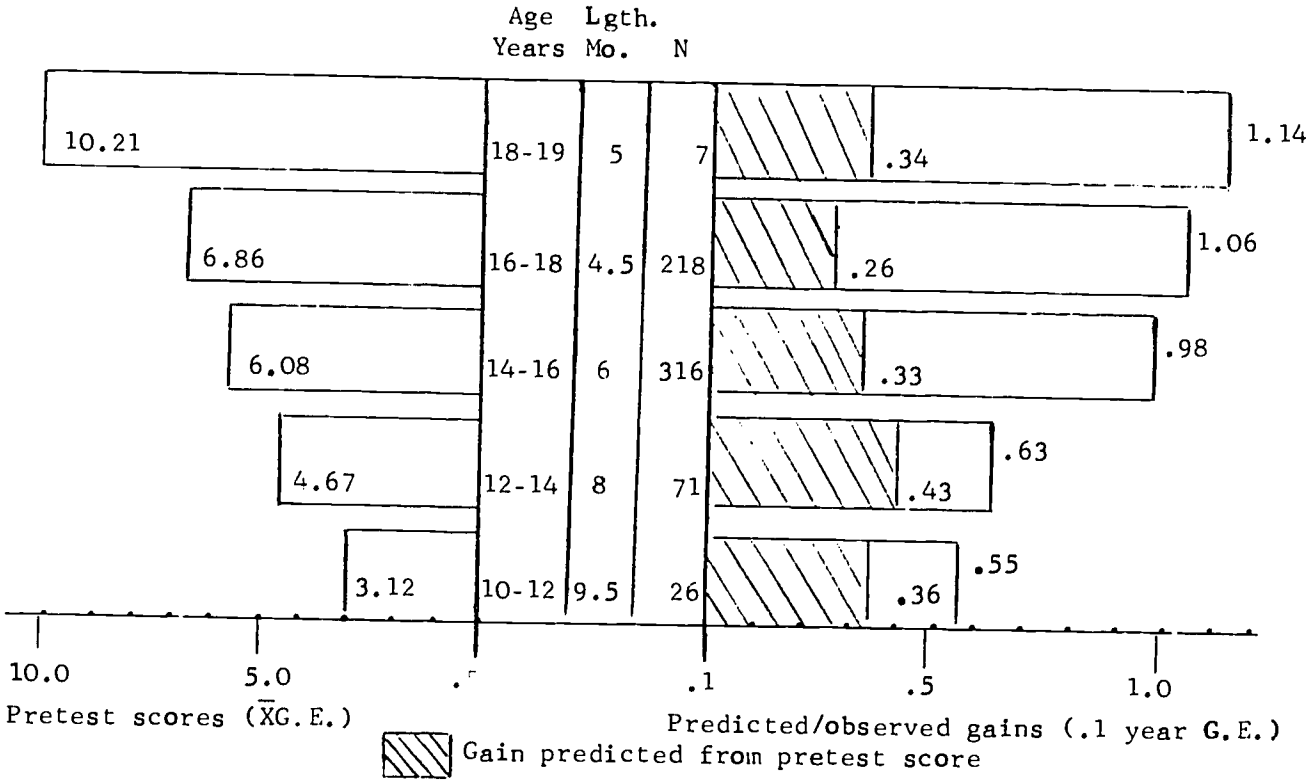


Figure 17 illustrates the results reported for the P.L. 89-750 participants in reading as measured by the Wide Range Achievement Test. The data were grouped by the age intervals of the pupils tested and the average time span between pre-and post-testing. Average pre-test scores are provided on the left side of the figure for each age interval. The corresponding predicted and observed gains are given on the right side. Observed gains exceeded those predicted for all age intervals. The average learning rates can be determined by dividing the observed gains in months by the average length in months between pre-and post-testing. These rates exceeded the 1.00 criterion for the three oldest age group intervals (Age 14-16, 16-18, and 18-19). The age 12-14 group exceeded the .7 rate, while the youngest group (10-12) failed to reach this level. However, it should be pointed out that the small number of cases in certain age groupings make such interpretation somewhat tenuous.

1/ See formula on page 12.

Figure 17

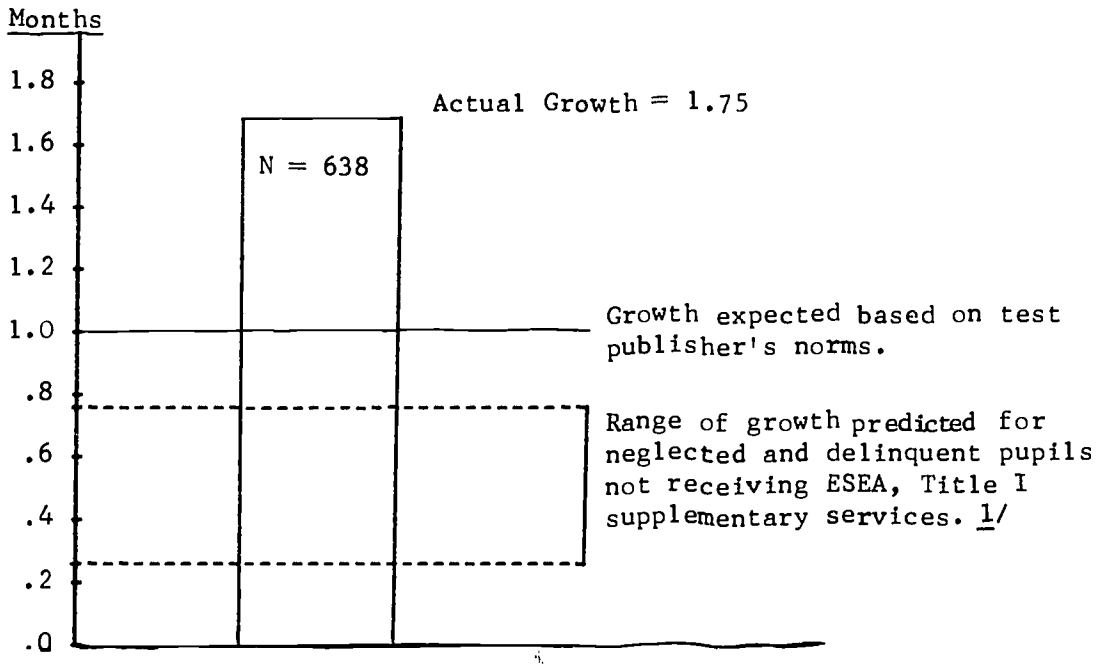
Mean Pre-Test Scores (WRAT Grade Equivalent) and Average Predicted and Observed Gains for PL 89-750 Participants in Reading by Age Intervals



The range of learning rates anticipated for the 89-750 participants tested in reading is presented in figure 18. A comparison of this range with the weighted mean growth rate actually obtained indicated that participants substantially exceeded the upper level of the expected range. The 1.68 rate occurred during the treatment, leaving the suggestion that the treatment was acting to reduce the achievement deficits in the remedial area.

Figure 18

Rate of Reading Achievement for PL 89-750
Participants in Growth Per Month



Reading Achievement Summary

Reading achievement results as measured by norm-referenced tests were available for 2,070 participants in the 89-10 projects and 638 participants in the 89-750 projects. Average learning rates for both funding sources were calculated and found to be in excess of the 1.00 level established as a satisfactory indicator of project success. Therefore the participants for whom test scores were reported were able to demonstrate average gains of more than one month for each month of the project treatment. The more detailed results were also generally favorable and were presented in tabled format by major project characteristics. Within the constraints outlined at the beginning of the chapter, the results were indicative of effective project outcomes. Taken collectively these results would infer an effective New York State Program for Neglected and Delinquent Children.

1/ See formula on page 12.

Mathematics Achievement Overview

Achievement in mathematics was also a priority in projects for the neglected and delinquent. Results were reviewed with essentially the same set of success indicators as were used for reading. Learning rates were computed by dividing the average observed gains in months by the average number of months between pre-and post-testing.

The .7 learning rate based on U.S. Office of Education findings was used as the minimal acceptable level of performance. Since participant achievement deficits in mathematics were similar to those in reading, it was desirable for learning rates to meet or exceed the 1.00 level. Rates at this level or greater could indicate that project participants were beginning to close the achievement gap or at least ceasing to fall further behind.

The mathematics data are presented separately for the 89-10 and 89-750 projects. Both table and figure presentations were used. Table 5 displays the reported summer mathematics data for 89-10 participants. Gains for six of the eight grade interval entries exceeded the 1.00 rate. The remaining two entries failed to achieve the minimal acceptable learning rate level.

Table 5

Reported Mathematics Achievement Data for PL 89-10 Participants in Summer Session Projects

Time elapsed between pre-test & post-test administrations	Grade	Measurement Device	Number of Pupils Tested	Pretest Mean (Years) (GE)	Actual Posttest Mean (Years) (GE)	Difference (GE) (Years)	Rate of Gain per Month 1/
1 1/2 months	1-3	WRAT 2/	48	2.23	2.23	.09	.60
	1-3	MAT	17	1.99	2.68	.69	4.60
	4-6	WRAT	79	3.71	3.79	.08	.53
	4-6	MAT	7	1.65	2.05	.40	2.66
	4-6	SAT	52	4.50	4.70	.20	1.33
	7-9	CAT	29	6.10	7.50	1.40	9.33
	7-9	WRAT	77	4.30	4.87	.57	3.80
	10-12	WRAT	45	4.46	4.94	.48	3.20

1/ $\frac{10 \times \text{G.E. diff.}}{\text{no. months duration}}$ = Rate

2/See Appendix C.

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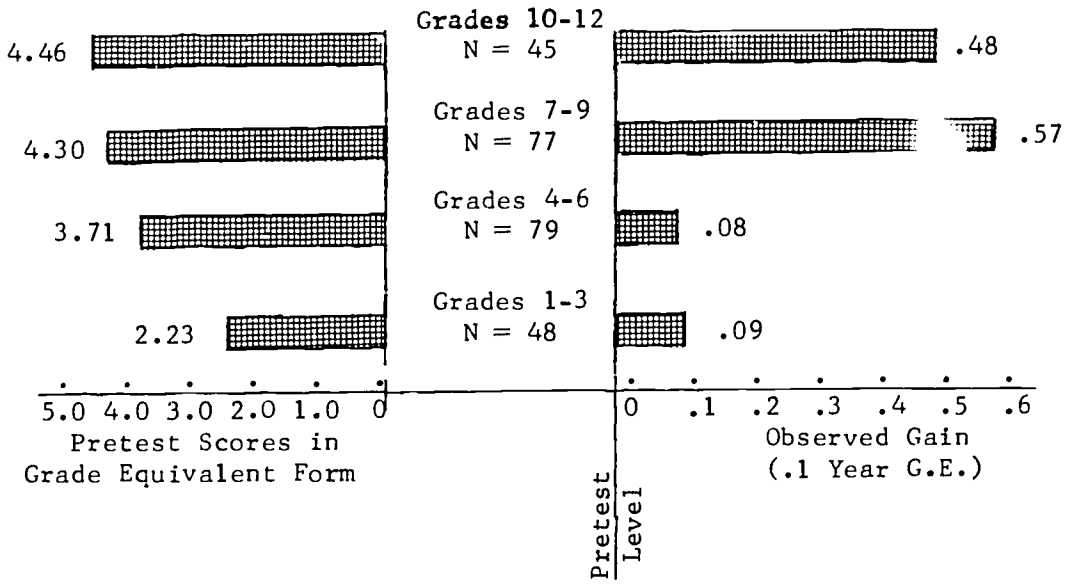
The grade interval data for the WRAT were taken from table 3 and are displayed in figure 19. This was done to effect a clearer presentation of the results. Average pretest scores are provided on the left hand side of the figure and average observed gains on the right. It is interesting to note that the average pretest score for grades 1-3 indicates little if any achievement deficit. Therefore, possible ceiling effects (in this instance pretest scores approaching normal grade level performance) might account for the relatively small observed gains.

Figure 19

Mean Pretest Scores (WRAT Grade Equivalent)
and Average Observed Gains for PL 89-10 Participants
in Mathematics by Grade Intervals

Average Summer Project Length = 6 Weeks



The observed weighted mean rate of growth per month is presented in figure 20 for the 353 summer session participants tested in mathematics. This observed rate was over three times the upper level of the U.S. Office of Education rate for disadvantaged pupils not receiving any supplementary assistance. High rates of gain are relatively typical for short-term projects emphasizing specific remediational services. A higher intensity of instruction may explain this. The possibility of some measurement error accounting for a portion of the gains made should also be taken into consideration.

Figure 20

Rate of Mathematics Achievement for Summer Session PL 89-10 Participants in Growth Per Month

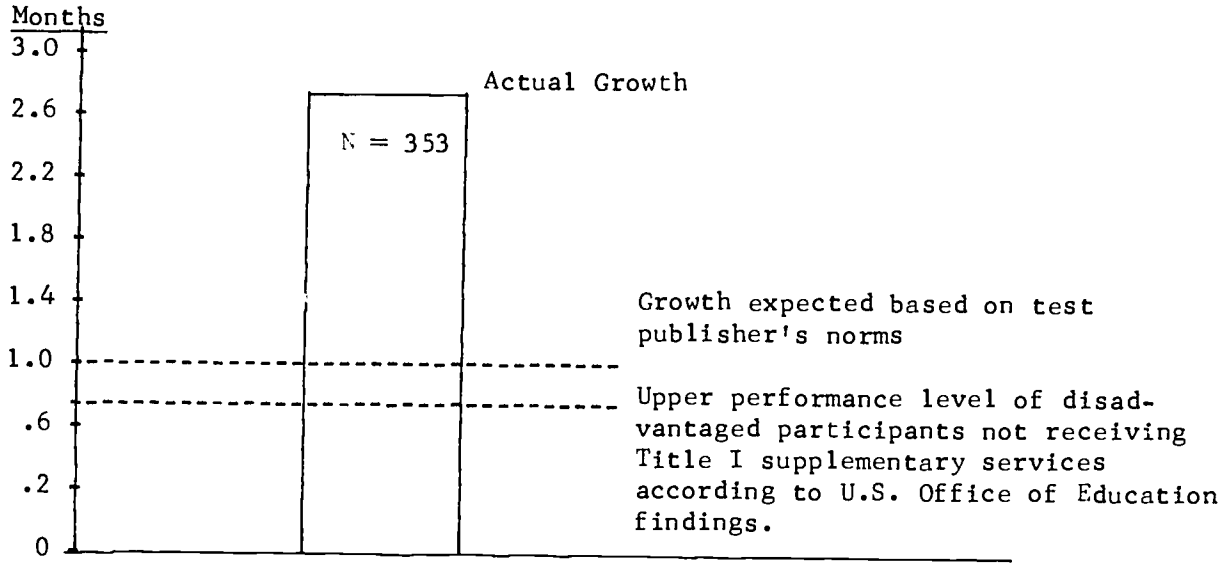


Table 6 presents the regular session mathematics data for 89-10 participants. The results are organized by the number of months between pre-and post-testing. Predicted post-test means where available are also provided. These were based on the actual versus expected gains analysis reviewed earlier. All but one of the actual post-test means exceeded those predicted. The computed learning rates exceeded the 1.00 criterion in eight of the eleven data entries. Two of the remaining three entries failed to meet the minimal .7 rate.

Table 6

Reported Mathematics Achievement Data for PL 89-10 Participants in Regular Session Projects

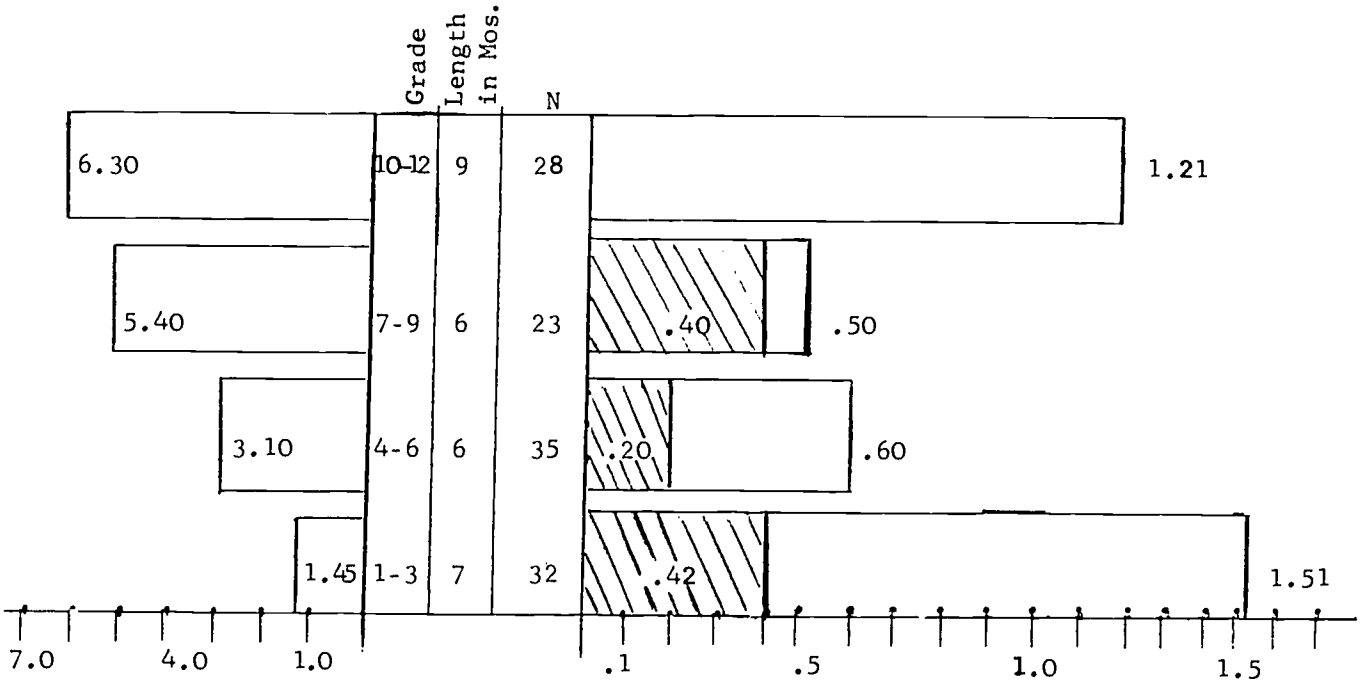
Time elapsed between pre-test & post-test administrations in Months	Grade	Measurement Device	Number of Pupils Tested	Pretest Mean (GE)	Predicted Posttest Mean (GE)	Actual Posttest Mean (GE)	Difference (GE) (Years)	Rate of Gain per Month 1/
3	10-12	CAT	8	6.01	6.27	6.33	.32	1.06
4	7-9	SDAT	41	5.34	5.64	5.91	.57	1.42
	10-12	SDAT	16	6.11	6.40	7.28	1.17	2.92
	10-12	MAT	10	7.10	7.30	7.2	.1	.16
6	4-6	MAT	35	3.10	3.30	3.70	.6	1.00
	7-9	MAT	23	5.40	5.80	5.90	.5	.83
7	1-3	MAT	32	1.45	1.87	2.96	1.51	2.16
	7-9	SDAT	10	6.33	6.65	7.80	1.47	2.10
9	4-6	CAT	5	2.91	3.13	3.51	.60	.666
	7-9	CAT	14	5.89	6.22	7.16	1.27	1.411
	10-12	MAT	28	6.30		7.51	1.21	1.34

1/ $\frac{10 \times \text{G.E. difference}}{\text{No. of Mths. Duration}} = \text{Rate}$

The performance of participants tested with the Metropolitan Achievement Test is depicted by grade interval in figure 21. This figure was developed from the data in table 6 in order to increase the descriptive adequacy of the presentation. Observed gains for all four grade intervals exceeded those predicted. The obtained learning rates all exceeded the .7 level with three of the four intervals at or above the 1.00 rate.

Figure 21

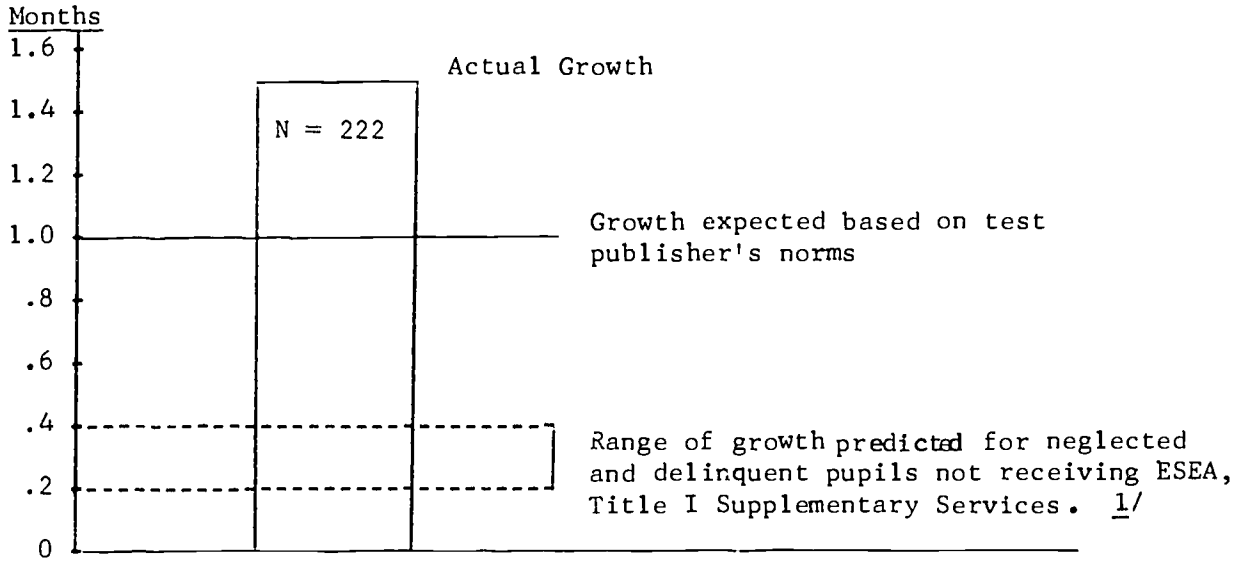
Mean Pretest Scores (MAT Grade Equivalent) and Average Predicted and Observed Gains for PL 89-10 Participants in Mathematics by Grade Intervals



The weighted mean observed growth rate for the regular session mathematics participants can be compared with the range of growth rates expected without program treatment in figure 22. The average actual growth rate for the 222 pupils tested was over three times the upper level of the expected range of rates without the treatment. This achievement could indicate that the program was having a positive impact in that participants were beginning to close the achievement gap.

Figure 22

Rate of Mathematics Achievement for Regular Session PL 89-10 Participants in Growth Per Month

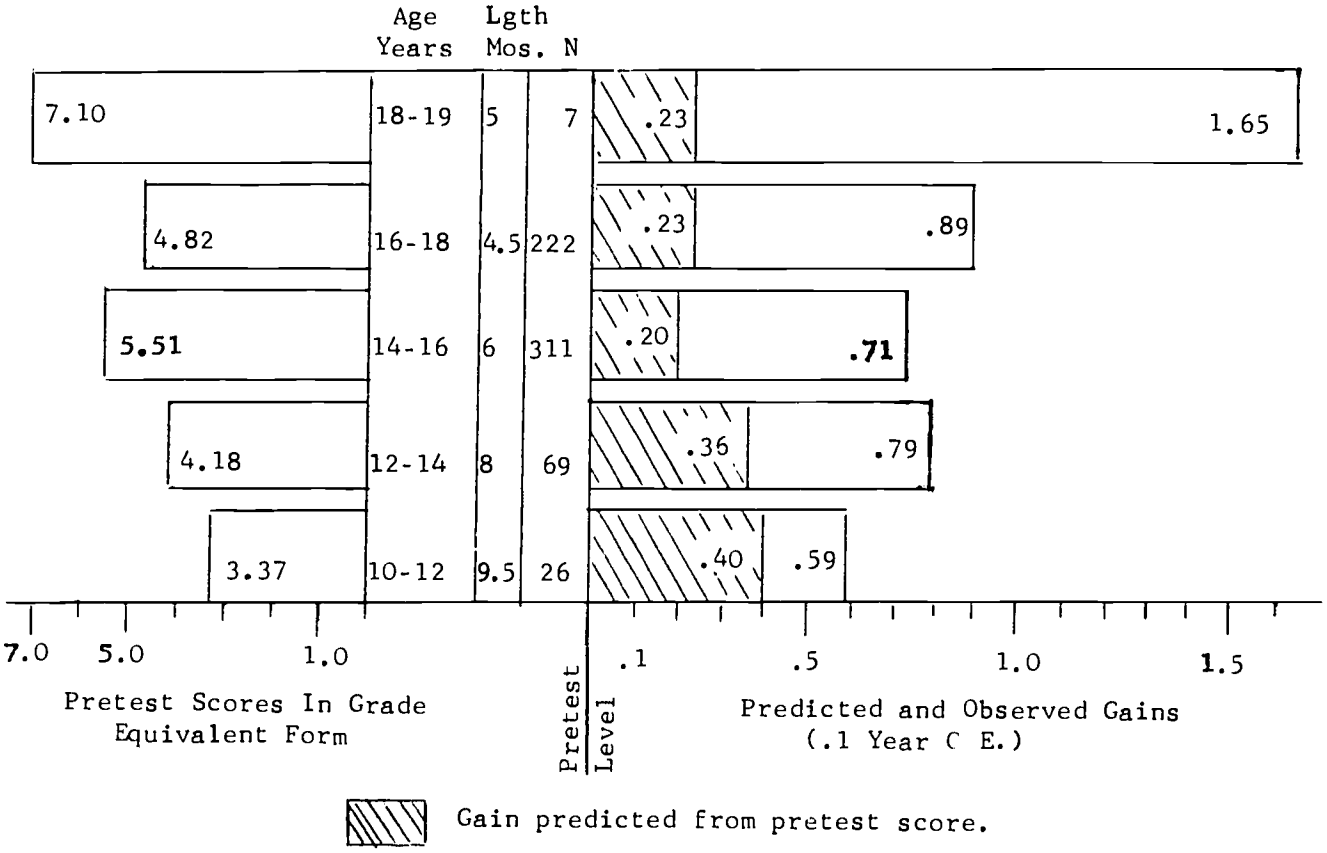


The mathematics data for P.L. 89-750 participants on the WRAT is displayed in figure 23. Average pre-test scores are indicated on the left side of the figure. The average predicted and observed gains are provided on the right side. Observed gains exceeded predicted gains for all five age intervals used in presenting the results. The learning rates for four of the five age intervals essentially met or exceeded the 1.00 rate criterion. Only the lowest age group interval (10-12) demonstrated an average learning rate below the .7 minimal acceptable level.

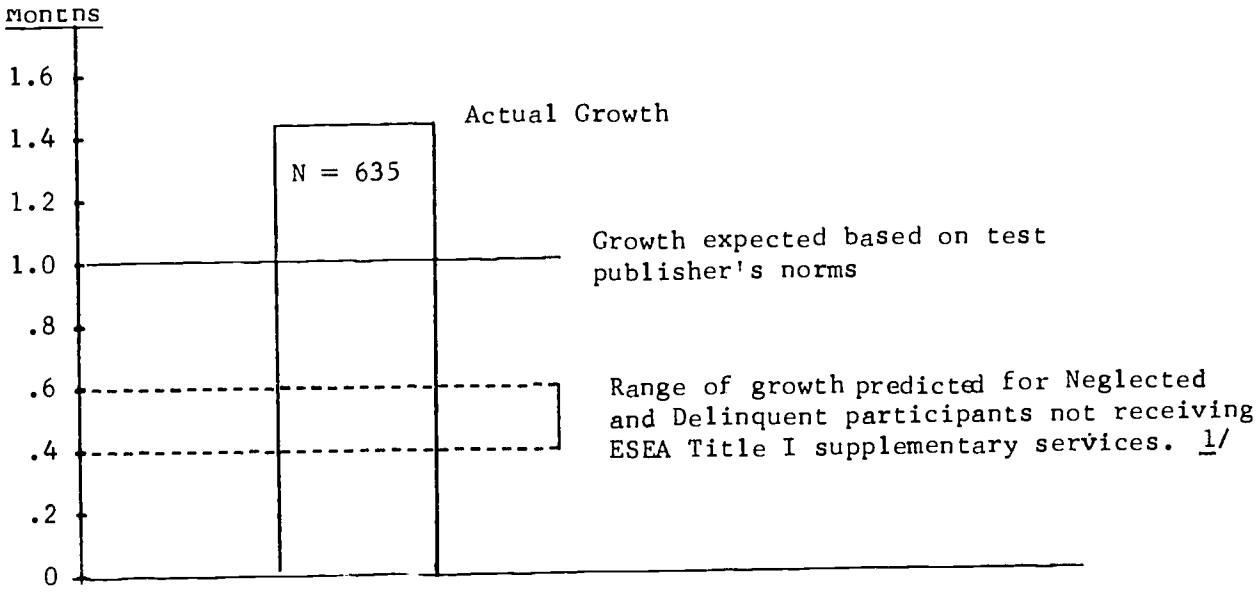
1/ See formula on page 12.

Figure 23

Mean Pretest Scores (WRAT Grade Equivalent) and
Average Predicted and Observed Gains for PL 89-750
Participants in Mathematics by Age Intervals



A consolidated presentation of the P.L. 89-750 participants' mathematics achievement is presented in figure 24. The weighted average growth rate obtained can be compared with the range of growth rates expected without some form of remedial treatment in the target area. The average actual growth rate for the 635 pupils tested was over twice the upper range limit of the expected rates without supplementary treatment. This finding would tend to suggest that the program was positively influencing achievement in mathematics.



Mathematics Achievement Summary

The available data indicated that with few exceptions, neglected and delinquent participants made acceptable gains in mathematics achievement. The project data were reviewed separately for each of the two major funding sources. Where appropriate, the data were categorized by project session, test instrument used, duration between pre-and post-testing and grade levels served. Both detailed table and figure presentations were used in reporting the data.

Rates of gain per month for the total sample tested averaged over 1.00 (one month for each month of treatment). Only a few of the more detailed project variable data entries demonstrated learning rates lower than the minimal acceptable level of .7 . Overall, the results suggest satisfactory progress toward closing the achievement gap. Whether a lasting turnaround of learning rates has occurred, can be seen only in a longitudinal study.

1/ See formula on page 12.

Exemplary Projects

In order that a project or a component be used as an example there were certain criteria to be met. These criteria include the adequacy of the proposal and the indication of effectiveness, as shown by pupil achievement results.

Being an example began with the proposal and its completeness in addressing major project evaluation elements. These included: a clear identification of the pupils' needs, well-stated (behavioral) objectives, and a valid evaluation design with a plan for data analysis. The reason for such stringency in selection was to make it possible for a project to be replicated by persons who might be interested. It was felt that the above criteria were the minimum required for replication.

By selecting projects as examples which in addition to meeting the proposal requirements, also exhibited positive gains above one of the criteria listed earlier, (i.e., exceeded prediction, exceeded .7 month/month, or exceeded 1 month/month) the choice is necessarily limited. This limitation does not offer a student the opportunity to survey the entire program and to analyze the reason for success or failure. Rather it offers an incomplete picture, but one from which a person can begin to observe a project which has exhibited some success. Since the reason for the program is to find ways of alleviating the educational disadvantage of this specific population this selection is in order. This is one method of showing those ways.

These abstracts were developed to serve as models for future projects serving neglected and delinquent children in similar situational settings. The abstracts may only review one or more components of projects consisting of multiple components. They are meant to be summaries only of those project components which met the selection criteria detailed above. The abstracts follow immediately after the Achievement Summary.

Achievement Summary

Considerable growth was revealed, as shown by test score gains in the review of reported achievement data for participants in projects for neglected and delinquent children. Average gains in both reading and mathematics exceeded one month gain for each month of project treatment. Observed gains exceeded those predicted in all the project data categories for which predicted gains were available. With a few exceptions the results strongly suggested that the participants were making headway toward reducing their achievement deficits.

Institution: LaSalle Institute (Reading)

District: City School District of Albany

Budget: $13,886

Participants: Grades 7 and 8 - 26

Per Pupil Cost: $534

Duration: September - June

Major Objective:

Participants will make gains in reading in excess of one month for each month of participation.

Project Description:

The project served neglected boys in residence at the Institute. These children had shown a pattern of failure traceable mainly to their inability to read, speak properly or their having any meaningful cultural experience on which to base their academic efforts. Remedial reading was given the highest priority by the staff. Students received reading instruction daily or at least several times a week from the full-time remedial teacher who worked closely with the Institute's reading specialist. A prescriptive treatment program making use of a wide range of supplementary materials in both individual and small group sessions was carried out. Close interdisciplinary cooperation among all staff members with regard to improving reading was stressed and proved quite successful within the tight-knit setting in which the program functioned.

Findings:

Participants exhibited a mean gain in reading of slightly over 2 months for every month in the program on the Gates-MacGinitie Reading Test (Survey E). A t-test was conducted between the observed mean and that predicted by the historical regression procedure. The obtained t-ratio was significant ($p < .05$).

Institution: St. Joseph's Home (Reading)

District: City School District of Peekskill

Budget: $25,602

Participants: 55 pupils in grades 1-9

Per Pupil Cost: $466

Duration: September - June

Major Objective:

Participants will gain 6 months in reading comprehension.

Project Description:

The Home serves neglected children who have had a history of rejection and deprivation of cultural and learning experiences. The children in the project were enrolled in the regular school district program but also received special supplemental help in reading. A team teaching approach was used to reinforce word attac skills. Individualized plans were developed for each child in the comprehension area. Two remedial reading teachers were available to work with the children. They coordinated their activities with the regular classroom teachers. A wide variety of professionally developed learning materials were used in both the individual and small group sessions. Periodic testing with short teacher-developed tests and the use of worksheets was carried out in order to effectively monitor the student's progress.

Findings:

Pre and posttest scores were available for 47 participants on the MAT. The mean gain was slightly over 6 months for the 8 month period between testing. The objective specified for the pupils was attained. A learning rate in excess of .7 was also attained. ($\geq$ .75)

Institution: Cardinal Hayes Home for Children (Reading and Mathematics)

District: Millbrook Central School

Budget: $8,000

Participants: 40 pupils in grades 1-9

Per Pupil Cost: $200

Duration: July - August

Major Objective:

Participants will make gains of three to six months in reading and mathematics.

Project Description:

The participants served were forty neglected dependent children from the Cardinal Hayes Home for Children. These children had a history of disrupted social and educational experiences. Truancy, emotional problems and the lack of even the most basic reading-mathematics skills characterized many of the participants.

An initial project screening was conducted to identify the individual needs of each pupil. Instructional groups ranged in size from 2 to 6 students. A multi-media approach was taken in order to enhance interest and to serve the individual needs of each child. Instructional time was flexible to adjust to the attention span and abilities of the pupils served. The basic skills program was integrated with other co-curricular activities such as art, hand skills, music and dance. Five teachers and 3 teacher aides were involved in implementing the project.

Findings:

MAT test data were available for 24 participants in reading and mathematics. The mean gain was greater than 5 months in both areas for the two-month period between pre-and posttesting. The results were viewed as indicative of effective project implementation.

Institution: St. Colman's Home (Reading)

District: North Colonie Central School

Budget: $16,100

Participants: 40 pupils in grade K-6

Per Pupil Cost: $402

Duration: September - August

Major Objective:

Participants will demonstrate at least six months gain in reading.

Project Description:

Emphasis was placed on the areas of reading and speech at St. Colman's Home. The home serves neglected children. The project participants had attained little success in school environments. A full-time remedial reading teacher and a speech teacher worked with the children. The reading teacher met with the participants on a daily basis usually in small groups. The speech teacher was available for 3 days a week. Use was made of a wide variety of media including: listening stations, cassette recorders, overhead and film projectors and phonographs. Provision was made for physical education and music education experiences.

Findings:

Pre and posttest scores on the MAT were available for 29 participants in grades 1-6. The mean gain was slightly over one month for each month between testing. Participants appeared to be making a start at closing the achievement gap.

Institution: St. Anne Institute (Reading)

District: City School District of Albany

Budget: $18,148

Participants: Grades 8-12 - 58 pupils

Per Pupil Cost: $313

Duration: September - June

Major Objectives:

Participants will demonstrate gains significantly beyond those predicted using the 6-step historical regression procedure. The participating students would improve their communication skills (reading, writing, speaking, listening).

Project Description:

This project was conducted within a treatment-oriented center for adolescent girls with emotional problems. A serious effort was made to determine the needs of the individual student. Once specific problems had been identified, a wide variety of materials and approaches was used to improve the student's skills (programmed workbooks, labs, audio-visual aides, etc.). Individual and small group instruction (1:5 teacher to pupil ratio) with student-to-student tutoring were the prevailing classroom structures. New program entrants were often found to have negative learning attitudes and problems impeding adjustment to the new situation. These features may have tended to deflate the pretest scores. These problems were generally of short duration since the reading teacher assisted by other staff members made a concerted effort to foster a positive, supportive atmosphere. This usually freed the student to concentrate her efforts in more appropriate areas. All these elements were viewed as contributing to the results obtained from pre to posttesting.

Findings:

Data for 49 tested participants in Grades 8-12 indicated a mean gain of over 12 months for the 7 months between pre- and post-testing with the Nelson-Denny Reading Test. This gain was also found significant using the 6-step historical regression procedure.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

This evaluation report has reviewed the available project data for participants in projects for neglected and delinquent in New York State. The report was prepared in accordance with the Federal Guidelines (Section 116.31) of the ESEA Act of 1965, P.L. 89-10 as amended. Information for this report was obtained from the Mailed Information Report submitted for each project by the participating local education agencies (LEA's). These data were organized by the SED to present as comprehensive an overview as possible. Emphasis was placed on examining the reported norm-referenced achievement test results in the priority areas of reading and mathematics.

Summary of Findings

Below, the data are summarized to provide the reader with an overview of the New York State Program for Neglected and Delinquent Children.

Basic statistics. Projects were categorized on the basis of the two major programs funded (P.L. 89-10 and P.L. 89-750). Relevant MIR data were reviewed separately for each program. Approximately 8,655 participants (not an unduplicated count) were reported as served by the 89-10 projects and 1,770 by the 89-750 projects. Reported funding source costs were $1,926,757 for the 89-10 and $940,809 for the 89-750 projects.

The reported instructional staff to pupil ratio averaged 1 teacher to 21 pupils for the 89-10 projects and 1:31 for the 89-750 projects. Teacher inservice training was conducted in less than 20% of the 89-10 and in none of the 89-750 projects.

A number of project characteristics were identified and reviewed for each funding source. These variables consisted of project session, location and the grade or age levels served. The review of the available achievement data was presented relating to length of session and grade or age levels served.

Achievement. Data were presented which gave some indication of the achievement deficits in reading and mathematics of the target population. The available project norm referenced achievement test data were examined to determine if the supplemental services provided were having an impact on these deficits.

Project test data were presented by test instrument used, project session, grade levels served and the length of time between pre-and post-testing. Rates of gain per month were computed to make comparisons across these project variables possible. Based on the achievement deficiency information and U.S. Office of Education findings, two levels of performance expectations were set up. The first and lowest level of acceptable performance required average learning rates to exceed .7

(seven months gain for 10 months of treatment). The second level required learning rates at or in excess of 1.00 (one month gain for each month of treatment). Attainment of this second criterion level would indicate that participants had arrested or were beginning to reduce the achievement gap.

The weighted mean learning rates for the reported sample of participants tested in reading exceeded the 1.00 criterion level for both programs. The rates of gain were highest for the summer projects. The more detailed review of the data by major project characteristics revealed that four of the P.L. 89-10 data entries failed to demonstrate achievement in excess of the .7 level. Two of the P.L. 89-750 entries did not reach this minimal acceptable level.

The reported mathematics results for project participants provided a similar picture of achievement to that obtained in reading. Weighted mean learning rates for the sample of participants tested exceeded the 1.00 level in both programs. For the tabled P.L. 89-10 data two of the summer project data entries and two of the regular session entries did not demonstrate gains in excess of the .7 rate. Only one of the P.L. 89-750 entries failed to achieve the .7 level.

Implication. The available achievement data in reading and mathematics suggested that a certain measure of success was being obtained by projects serving neglected and delinquent children. The failure to obtain complete information on all the participants served, greatly restricted the generalizability of the findings. Nevertheless, the results for both priority areas were encouraging. At least for the participants tested, evidence was available for inferring that the programs favorably influenced achievement.

Recommendations

A review of the important aspects of the New York State Programs for the Neglected and Delinquent has led to the following recommendations for future programs.

1. Data collection procedures should be improved. The problem of obtaining complete information on the Mailed Information Report for all neglected and delinquent participants has been emphasized. The failure of the responsible LEA's of both programs to properly organize and report the information required on the MIR has resulted in a substantial proportion of missing data. A more concerted effort locally is required. (See Appendix A)

2. Alternative measurement devices for assessing pupil achievement should be isolated and disseminated. The use of norm referenced achievement tests for assessing pupil progress in the areas of reading and mathematics is a satisfactory evaluative procedure for regular school year projects. However, for summer projects which usually last less than two months, the precision of the scores obtained from norm referenced devices is less than adequate. The

use of criterion-referenced measurement instruments in place of the norm-referenced devices would largely offset the reliability consideration. Such instruments are currently available in reading and mathematics. A number of neglected and delinquent summer projects have successfully made use of this approach and were able to submit their data on a form prepared by the evaluation unit. The use of these procedures for all short-duration projects should be advocated.

3. Projects attaining less than satisfactory achievement results should avail themselves of appropriate advisory sources for conducting program revisions. A number of projects failed to demonstrate acceptable levels of achievement. Many of these projects will need to make appropriate changes in their future program proposals. They should not be recycled until changes have been made. These revisions will hopefully lead to an increase in effectiveness. Such revisions may require appropriate technical assistance in various areas. The SED provides a ready source for such assistance. Subject matter specialists, financial and evaluative units are available to assist local educational agencies.

4. The substitution of a more valid test instrument for the WRAT used in the 89-750 testing program should be implemented as soon as possible. The testing program conducted for 89-750 participants has made exclusive use of the WRAT to assess achievement in reading or mathematics for their full-year projects. This instrument was initially used during the 1972-73 year. Pretest data based on another instrument had been lost and since copies of the WRAT were readily available, it was substituted and maintained for the 1973-74 year. The device can appropriately be used as an initial screening device or placement test, but has been considered inadequate as an achievement test used to assess pre-to post-test gains.[1/] There is, therefore, a definite need to adopt some alternative to this instrument which will more adequately fulfill the validity requirements of the testing situation. At this writing, projects failing to comply will be recommended as "disapproved." The selection of an appropriate test with both reading and mathematics assessment capabilities from the Anchor Series might provide a reasonable alternative.

1/See review of the WRAT in the Third and Seventh Mental Measurement Yearbook.

APPENDIX A

Listing of 89-10 Projects' MIR Status and Allocation

	Number	Name	Allocation
Submitted Complete MIR's	01010074051	Albany	$ 18,149
	01010074101	Albany	$ 21,455
	01010074101S	Albany	$ 38,000
	010605	N. Colonie	$ 22,500
	030200	Binghamton	$ 28,800
	030701	Chenango Valley	$ 2,000
	061700	Jamestown	$ 17,594
	130801	Hyde Park	$ 38,954
	13190174001	Greer School	$ 46,521
	13220174001	Millbrook	$ 13,287
	140709	Sloan	$ 9,280
	141603	Our Lady of Charity Refuge	$ 9,200
	151102	Lake Placid	$ 10,205
	30000074043	New York City	$778,546
	30000074073S	New York City	$141,120
	440202	Pius XII	$ 17,915
	500301	S. Orangetown	$ 70,915
	500402	Spring Valley	$ 24,200
	500414	Lakeside	$ 71,460
	580405	Half Hollow Hills	$ 19,003
	580603	Little Flower	$ 32,135
	610327	George Jr. Rep.	$ 63,568
	620600	Kingston	$ 7,000
	660411	Echo Hills	$ 56,551
	660412	St. Christopher's	$ 13,126
	660801	Mt. Pleasant	$ 10,500
	660803	Hawthorne Knolls	$ 66,777
	660805	Valhalla	$ 1,200
	66150074002	Peekskill	$ 26,515
	66150074003	Peekskill	$ 15,259
	661501	St. Peter's	$ 24,744
	662101	Somers	$ 66,290
	662200	White Plains	$ 33,200
	662300	Yonkers	$ 45,751

	Number	Name	Allocation
Submitted Incomplete MIR's	03027401	Binghamton	$ 12,800
	050100	Auburn	$ 13,820
	14020374001	Williamsville	$ 10,197
	491700	Troy	$ 11,696
	520101	Burnt Hills	$ 2,400
	660804	Cottage	$ 36,860
	66150074001	Peekskill	$ 13,365
	66210174001S	Somers	$ 28,628
Did Not Submit MIR's	100308	Berkshire Farm	$ 53,111
	131801	Rhinebeck	$ 13,308
	131892	Rhinecliff	$ 9,400
	140600	Buffalo	$ 11,533
	141603	Hopevale 1/	$ 9,200
	441600	Newburg	$ 6,600
	500108	Nanuet	$ 74,625
	530600	Schenectady	$ 10,000
	660410	Graham School	$ 31,786
	660413	Abbott School	$ 52,700
	660400	Mt. Vernon	$ 900
	650501	Lyons	$ 2/

1/It was discovered just prior to publication that data from Hopevale had been misfiled due to its having become a public school district. Although cited above the data are summarized here:

Cost	Delinquent Children Served				Results						
	Expected	Actual	Tested	Academic Area	Pretest G.E. X_1	Date	Predicted $\hat{X}_2$	Posttest $\bar{X}_2$	Date	$\hat{X}_2 - \bar{X}_2$	Statistical Significnce
9200	25	20	11	Reading	4.85	11/73	5.65	5.55	6/74	-0.1	nsd

2/Lyons was allocated money based on 1972 jail population which did not exist in 1973. Therefore, the money was not allocated to the school district.

Listing of 89-750 Project's MIR Status and Allocation

	Number	Name	Allocation
Submitted Complete MIR's	DY75001	Hudson	$ 75,682
	003	Highland	$ 73,140
	006	Industry	$120,760
Total:			$269,582
Submitted Incomplete MIR's	DY75002	Tryon	$ 91,789
	004	Goshen	$ 48,162
	008	Warwick	$ 92,788
	009	Albany	$344,189
	011	Albany	$309,747
Total:			$866,675
Did Not Submit MIR's	DY75010	Albany	$ 61,620
	013	Albany	$ 77,438
	014	Albany	$150,283
Total:			$289,341

APPENDIX B

Excerpted From:

ACTUAL POST-TEST COMPARISON TO
THE PREDICTED POST TEST SCHEME OF DATA ANALYSIS

Real (treatment) Post-test versus anticipated (without treatment) Post-test design.

Step 1. Obtain each pupil's pretest grade equivalent.

Step 2. Subtract 1 (since most standardized tests start at 1.0).

Step 3. Divide the figure obtained in step 2 by the number of months the pupil has been in school to obtain a hypothetical (historical regression) rate of growth per month. (Ignore Kindergarten months. 1 school year = 10 months.)

Step 4. Multiply the number of months of Title I treatment by the historical rate of growth per month.

Step 5. Add the figure obtained in step 4 to the pupil's pretest grade equivalent (step 1).

Step 6. Test the difference for significance between the group predicted post-test mean and the obtained post-test mean with a correlated t-ratio.

In September, a diagnostic reading teacher administered the Metropolitan Achievement Test (as a pretest) to thirty disadvantaged fourth grade learners who had scored below minimum competence on the New York State Reading PEP Test.

The thirty pupils participated for the first time in an ESEA Title I remedial project conducted from the first week in October through the last week in May (treatment time = 8 months). The Reading Diagnostician readministered an equivalent level form of the Metropolitan Achievement Test (as a post-test) during the first week of June to the thirty pupils.

From the September (pretest) administration, the Diagnostician calculated the individual predicted June scores based upon the pupils historical rate of gain (using the method described in steps 1 through 4 above) that would have been anticipated if the ESEA Title I treatment had not intervened in addition to the regular classroom reading instruction. The Diagnostician then compared the predicted post-test scores to the actual post-test scores by the statistic called the t-ratio (critical ratio) to determine whether the thirty pupils achievement was beyond expectation.

The pupils have had 30 months of regular school at the time of the pre-test.

Step 1. Pupil #1's pre-test score was 2.5

Step 2. Subtract 1 from 2.5 = 1.5

Step 3. Divide 1.5 by 30 (months) = .05

Step 4. Add .4 to (the pre-test) 2.5 = 2.9
This figure is the anticipated post-test score (2.9) for pupil #1.

Repeat for each pupil

Record each pupil's May Post-test score

Subtract each predicted post-test score from the actual (May) post-test score [d]

Sum the differences [Σd] and square that sum [$(\Sigma d)^2$]

Square the differences individually

Sum the squared differenced $\Sigma(d^2)$

$$t = \frac{\Sigma d}{\sqrt{\left[N \Sigma(d^2) - (\Sigma d)^2\right]/(N-1)}}$$

$$t = \frac{9.2}{\sqrt{\left[30 \quad (4.62) - (9.2)^2\right]/(30-1)}} \quad \frac{= 9.2}{\sqrt{\frac{53.96}{29}}} = \frac{9.2}{\sqrt{1.86}} = \frac{9.2}{1.36} = 6.76$$

The degrees of freedom (df)=N-1. Look in the t table under df = 29 for the value of t under columns .05 and .01 (two tailed tests). Since our t of 6.76 is greater than the table value of 2.756, at the .01 level of probability, we may infer that this target population achieved beyond expectation in the Title I funded treatment.

APPENDIX B (CONT.)

Pupil	Pretest	Post-Test Predicted	Post-Test Actual	Difference	Difference Squared
1	2.5	2.9	3.2	+ .3	.09
2	2.8	3.3	3.5	+ .2	.04
3	2.2	2.5	2.6	+ .1	.01
4	1.8	2.0	2.0	0	.00
5	2.9	3.4	3.8	+ .4	.16
6	3.0	3.5	3.9	+ .4	.16
7	2.8	3.3	3.2	- .1	.01
8	2.5	2.9	3.2	+ .3	.09
9	2.3	2.7	2.8	+ .1	.01
10	2.0	2.3	2.8	+ .5	.25
11	2.1	2.4	3.0	+ .6	.36
12	2.7	3.1	3.2	+ .1	.01
13	2.0	2.3	2.5	+ .2	.04
14	2.5	2.9	3.5	+ .6	.36
15	2.4	2.8	2.7	- .1	.01
16	2.2	2.5	2.7	+ .2	.04
17	2.6	3.0	3.2	+ .2	.04
18	2.3	2.7	2.9	+ .2	.04
19	2.2	2.5	3.0	+ .5	.25
20	2.5	2.9	3.7	+ .8	.64
21	2.3	2.7	2.9	+ .2	.04
22	2.8	3.3	3.9	+ .6	.36
23	1.5	1.6	1.8	+ .2	.04
24	2.7	3.1	3.4	+ .3	.09
25	2.3	2.7	3.1	+ .4	.16
26	2.5	2.9	3.2	+ .3	.09
27	2.1	2.4	2.8	+ .4	.16
28	2.2	2.5	3.0	+ .5	.25
29	2.3	2.7	3.6	+ .9	.81
30	2.7	3.1	3.0	- .1	.01
	SUM	82.9	92.1	+9.2	4.62
N = 30	MEAN	2.76	3.07		

APPENDIX B (CONT.)

THIS TABLE CAN BE FOUND IN

Ferguson, George A., Statistical Analysis in Psychology and Education. 2nd ed. New York: McGraw-Hill Book Company, 1966, p. 406.

Critical values of t*

df	Level of significance for one-tailed test					
	.10	.05	.025	.01	.005	.0005
	Level of significance for two-tailed test					
	.20	.10	.05	.02	.01	.001
1	3.078	6.314	12.706	31.821	63.657	636.619
2	1.886	2.920	4.303	6.965	9.925	31.598
3	1.538	2.353	3.182	4.541	5.841	12.941
4	1.533	2.132	2.776	3.747	4.604	8.610
5	1.476	2.015	2.571	3.365	4.032	6.859
6	1.440	1.943	2.447	3.143	3.707	5.959
7	1.415	1.895	2.365	2.998	3.499	5.405
8	1.397	1.860	2.306	2.896	3.355	5.041
9	1.383	1.833	2.262	2.821	3.250	4.781
10	1.372	1.812	2.228	2.764	3.169	4.587
11	1.363	1.796	2.201	2.718	3.106	4.437
12	1.356	1.782	2.179	2.681	3.055	4.318
13	1.350	1.771	2.160	2.030	3.012	4.221
14	1.345	1.761	2.145	2.624	2.977	4.140
15	1.341	1.753	2.131	2.602	2.947	4.073
16	1.337	1.746	2.120	2.583	2.921	4.015
17	1.333	1.740	2.110	2.567	2.898	3.965
18	1.330	1.734	2.101	2.552	2.878	3.922
19	1.328	1.729	2.093	2.539	2.861	3.883
20	1.325	1.725	2.086	2.528	2.845	3.850
21	1.323	1.721	2.080	2.518	2.831	3.819
22	1.321	1.717	2.074	2.508	2.819	3.792
23	1.319	1.714	2.069	2.500	2.807	3.767
24	1.318	1.711	2.064	2.492	2.797	3.745
25	1.316	1.708	2.060	2.485	2.787	3.725

*Abridged from Table III of R.A. Fisher and F. Yates, Statistical tables for biological, agricultural, and medical research published by Oliver & Boyd, Ltd., Edinburgh, by permission of the authors and publishers.

Table continued

APPENDIX B (CONT.)

df	Level of significance for one-tailed test					
	.10	.05	.025	.01	.005	.0005
	Level of significance for two-tailed test					
	.20	.10	.05	.02	.01	.001
26	1.315	1.706	2.056	2.479	2.779	3.707
27	1.314	1.703	2.052	2.473	2.771	3.690
28	1.313	1.701	2.048	2.467	2.763	3.674
29	1.311	1.699	2.045	2.462	2.756	3.659
30	1.310	1.697	2.042	2.457	2.750	3.646
40	1.303	1.684	2.021	2.423	2.704	3.551
60	1.296	1.671	2.000	2.390	2.660	3.460
120	1.289	1.658	1.980	2.358	2.617	3.373
	1.282	1.645	1.960	2.326	2.576	3.291

If assistance in interpreting this table is required, please contact:

The Bureau of Urban and Community Programs Evaluation
Division of Evaluation
The State Education Department
The University of the State of New York
Albany, NY 12234

(518) 474-3889

APPENDIX C

Tests and Abbreviations Used

CAT	California Achievement Test
Gates-McG	Gates-McGinnitie Reading Test
MAT	Metropolitan Achievement Test
SAT	Stanford Achievement Test
SDRT	Stanford Diagnostic Reading Test
SRA	SRA Achievement Series - Reading
WRAT	Wide Range Achievement Test