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ABSTRACT

The effect of Title I reading instruction was examined in a group of students as they progressed from grade two through grade six. The number of students who fell below the twenty-third percentile on a reading achievement test (the criterion for Title I participation) was tabulated for each year to determine the program's effectiveness both in selecting students and in improving student reading ability. The results showed that Title I intervention reduced the number of students scoring below the twenty-third percentile at the time the students were tested in third grade, but these gains were not maintained after the third grade. The achievement records of individual students revealed that both those students who were remediated successfully by Title I participation in the early grades and then discharged (to continue with regular reading instruction) and those students who were achieving well in the early grades without the help of Title I began to fall behind after third grade. The Title I program "cured" less than half of the students, and many students--particularly those with low ability--needed continued assistance in order not to fall drastically behind their peers. These results conflict with results from single-year evaluations mandated for all Title I programs, suggesting that data from a single year may offer incomplete or even distorted information on whether students are learning to read. (RL)

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The Long Term Effects of the ESEA Title I
Reading Program on Reading Achievement*

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Reading Program on Reading Achievement

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Introduction

Title I of the Elementary and Secondary Education Act of 1965 (admmended in 1974) provides money to individual school districts to improve the achievement of students in the basic skill areas of reading, math and writing. This paper addresses the question of the effects of the Title I reading program on a group of students over the course of four years. In the course of answering this question it will touch upon methodological problems; it will describe the distribution of Title I effort (funds) across the various grades over the years and it will report achievement gains over the years using not Title I data, but data from the scores of the district-wide testing program. The data reported are mostly descriptive, however, a small quasi experimental comparison is also included.

In order to put the question of long term effects into sharper focus, consider as an analogy the following two cases in the field of medicine. A person who has pain and vomiting from an inflamed appendix has an appendectomy to remove the symptoms. A person who has a runny nose and sneezing from allergies receives an injection to remove the symptoms. In the first case the treatment results in a cure, the symptoms never return. In the second case, the treatment must be maintained over time; situations will arise when the person will have to return for another shot. The application of this analogy to Title I reading is clear.

Does a one or two year Title I treatment cure children of "poor readeritis" or is it necessary to continue treatment over the course of many years to allow poor readers to keep pace with the reading achievement of their peers? Or to bring the analogy to a district-wide level: does the application of successive Title I treatments result in a district having few students reading below grade level at, say, the sixth grade level? And from a methodological perspective what is the validity of evaluation models that attend to the achievement of just the students served by Title I over a time period of less than one year? Is it possible, for example, for a project to report significant gains each year and still have a class with more students reading below grade level at the sixth grade level compared to the number of students reading below grade level in the third grade?

Presented at the annual meeting of the American Educational
Research Association, Los Angeles, April, 1981.

Method

There are many ways of determining the effectiveness of a remedial program. For the years under study expected gain scores were computed for each White Plains Title I student based upon past achievement. For each grade, the observed gain was significantly higher than the expected gain for the years under study.

Other approaches to the evaluation of remedial programs were outlined by Tallmadge and Wood (1976) who proposed the Title I models: A, B and C. In each model the posttest scores of students in a single year are compared with an estimate of the scores expected if the students had not participated in Title I.

Because Title I programs serve those students who are most in need of remediation the no treatment estimates can not be precise and any method of evaluation short of randomly assigning students to a no treatment group is open to criticism.

However, a single, common, overriding problem of all the models is their confinement to data from just one year and their concentration on just the students served by Title I in a particular year. This approach totally ignores the question of whether Title I intervention is ever successful in teaching students how to read. It confuses statistical significance or simple numerical gain in NCE's with educational significance by concentrating on data within a single school year. (Do small NCE gains from succeeding years add up to making a better reader?) Also, since with the exception of second grade most students in Title I in any grade have previously been served by Title I, no treatment estimates based upon pretest scores must be questioned since for most students the pretest scores hopefully represent achievement inflated by participation in Title I the previous year.

To avoid the limitations of the single year approach in which small statistical or numerical growth is the criterion of program success the following model is proposed to measure the long term effects of a Title I program.

Given the assumption that the goal of the Title I program is to identify and remediate students who fall below, for example, the 23rd percentile, a much better measure of program success can be taken simply by looking at the number of students falling below the 23rd percentile after treatment over the course of a number of years. If a program is correctly identifying and remediating students the number of students district-wide below the 23rd percentile should be reduced. This was the criterion adopted against which to judge program success. It represents a clearly stated goal; the analyses which are described below were conducted to determine the degree to which the goal was attained.

The criterion of below the 23rd percentile was chosen by translating the percentile scores back into raw scores and examining the content of reading tests to determine what level of reading achievement the students had reached. For example, to score above the 23rd percentile in fall of sixth grade a student has to read at the fifth grade level.

Two general strategies were employed in the present evaluation. The first was to judge the effectiveness of the Title I program by tabulating the number of students in the district who fell below the national 23rd percentile. This procedure allows one to measure the effect of the program both in terms of the achievement of Title I students and in terms of the effectiveness of the selection process.

The second strategy involved following the achievement of just those students who had been served by Title I for at least one year. This strategy is identical to the approach of the Title I evaluation models with the exception that the present model looks at achievement over the course of a number of years.

Since this model of judging the long term effects of Title I requires the use of district-wide achievement scores and since Title I students score at the low end of the score distributions of standard tests it is imperative to check the validity of the scores.

Consider the frequency distribution represented in Figure 1. The chance mean (defined as the score a student would be expected to receive if she/he guessed at every item on the test) is at a grade equivalent of 1.4 which is in the third stanine. Thirty-seven percent of the Title I students scored at or below the chance mean on this district-wide test. Fifty-six percent scored below one standard deviation above the chance mean on the chance distribution.

This is the floor effect which Tallmadge and Wood (1976) warn about in discussing Model C, the regression model. In that model it produces a regression line for the treatment group with a flat slope indicating random variation on the pretest. However, test results such as these invalidate all models of judging program effect. Model C which requires district-wide testing is particularly susceptible to this problem. When using model A, in which an estimate of program effect is based upon the assumption that the percentile rankings would remain constant in the absence of special assistance, it is easier to avoid floor effects since just the Title I students have to be tested and there are less administrative problems involved in assigning students to take a reading test on their functional level.

The model proposed here is also susceptible to floor effects particularly on levels of a test in which the chance mean is close to the 23rd percentile. Table 1 presents the percentage of Title I students' scores which are below the chance mean and one standard deviation above the chance mean for each year.

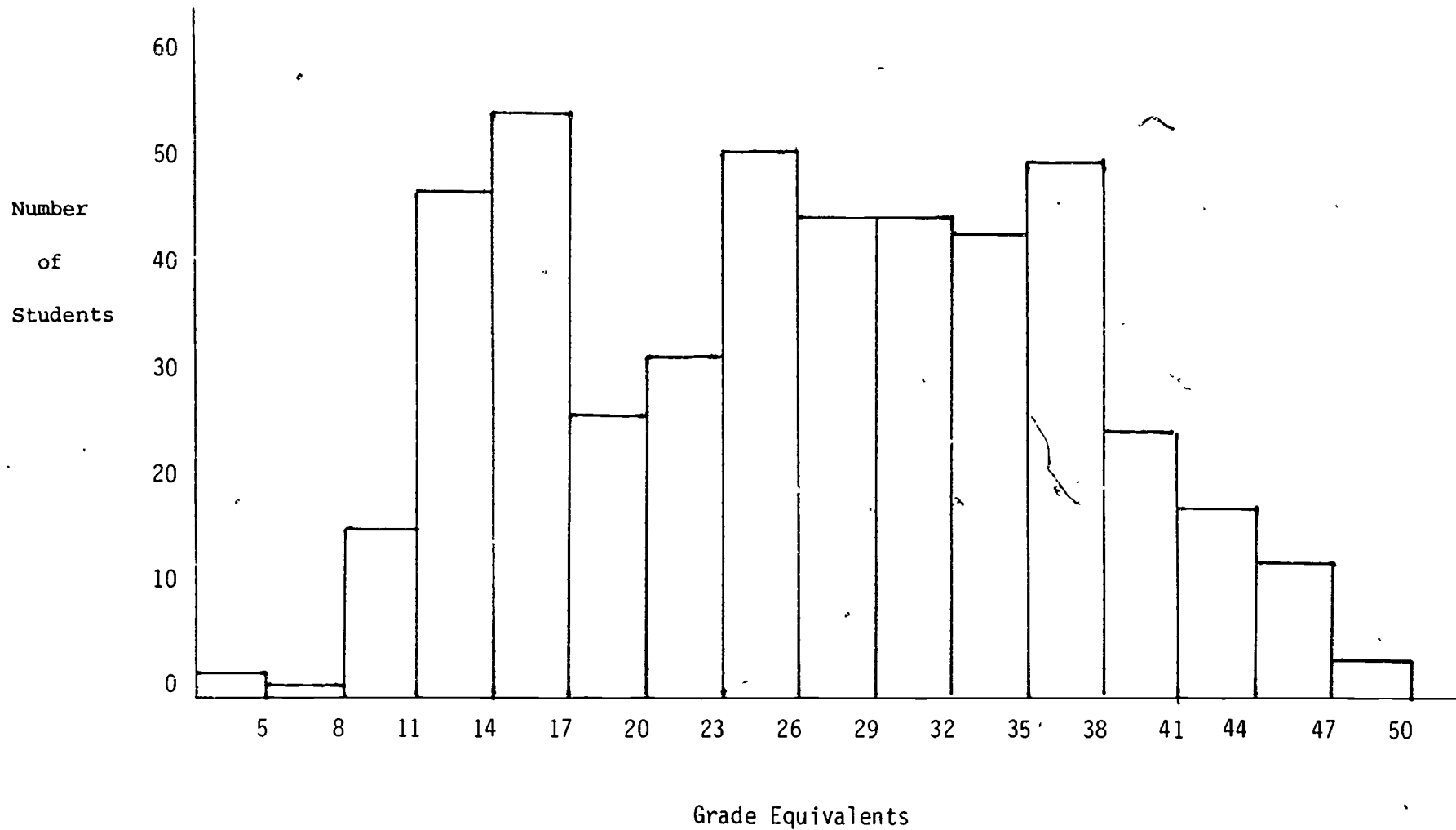
Table 1

Scores falling below the chance mean and below one standard deviation plus the chance mean expressed as a percentage of the number of students in the Title I program each year

	1974 Second Grade	1975 Third Grade	1976 Fourth Grade	1977 Fifth Grade	1978 Sixth Grade
chance mean	37%	10%	36%	23%	10%
1 S.D. plus the chance mean	56%	28%	44%	36%	24%

FIGURE 1

ITBS reading scores, fall second grade, 1974



Total N = 482

Title I N = 141

As can be seen from Table 1 there are large percentages of chance level scores at both the second and fourth grade levels.

Table 2 presents the chance mean and the chance mean plus one standard deviation with corresponding stanine placement for the levels of Form 5 of the reading subtest of the Iowa Tests of Basic Skills which was administered at each grade level during the years under study.

Table 2

Grade equivalents of the chance mean and one standard deviation plus the chance mean with corresponding stanine placements for ITBS Reading Form 5

	Chance Mean		1S.D. + the Chance Mean	
	GE	Stanine	GE	Stanine
Grade 2 Level 7	1.4	3	1.7	4
Grade 3 Level 8	1.7	2	2.0	3
Grade 4 Level 9	2.4	2	2.8	3
Grade 5 Level 10	2.9	2	3.5	3
Grade 6 Level 11	3.4	1	4.1	2

Table 2 reveals that the test used at the second grade level was much more susceptible to floor effects than the test used in the sixth grade. For example, at the second grade level a student who knew absolutely nothing and who filled in an answer for every question would be expected to score in the third stanine. In the test used for the sixth grade the chance mean falls in the first stanine.

Taking into account both the number of students scoring below chance levels and the stanine placement of the chance mean a decision was made to confine major analyses to the third and sixth grade level.

To summarize, specific strategies employed in this study are listed below:

- 1) Analysis of the reading achievement of an entire grade of students from the time when they were in the second grade (1974) through the time they began the sixth grade (1978).
- 2) Compilation of information for a descriptive narrative of program operation with particular attention to how resources were distributed across the various grade levels for the years under study and a description of time allotted to reading instruction in the regular class.

- 3) Tabulation of the number of students falling below the 23rd national percentile when the students were in the third grade and again when the students were in the sixth grade.
- 4) Examination of the reasons why students fell below the 23rd percentile at the sixth grade testing.
- 5) Analyses of the achievement at the sixth grade level of students served for at least one year by the Title I program.
- 6) Quasi experimental comparison of the scores of fifth grade students before and after being served in Title I.

Title I Program Description and Regular Class Instruction

The Title I program is designed to supplement the regular instruction in reading provided by the classroom teacher. Thus, gains (or the lack of gains) in reading achievement are the result of the efforts of both the regular teacher and the Title I teacher.

Typically, the program works on a pull out basis; the students leave their regular classroom for forty-five minutes per day and come to the Title I room where a teacher and an aide work with approximately ten students.

The process of selection of students for inclusion in the program is a complicated one since it must take into account both the needs of the individual students as well as broader system-wide concerns, such as the total amount of resources available in a given year, decisions about where and how to target resources and intergration of the services of this program with other programs also designed to improve achievement (e.g., the English as a Second Language Program).

Table 3 presents a summary of the number of students served by Title I each year by grade level expressed as a percentage of the total Title I effort for all the grades in a particular year. The row entries represent the percentage of the total number of students in Title I each year served in each grade.

Table 3

Percentage of students per grade served by Title I each year

<u>Year</u>	<u>Grade 2</u>	<u>Grade 3</u>	<u>Grade 4</u>	<u>Grade 5</u>	<u>Grade 6</u>	<u>Total</u>
74-75	31%	21%	22%	16%	10%	100%
75-76	27%	24%	20%	18%	11%	100%
76-77	29%	25%	15%	17%	14%	100%
77-78	24%	21%	18%	22%	15%	100%

The enclosed percentages along the diagonal of the table refer to the class under study. The amount of the total Title I effort directed towards this class yearly, differs widely over the years. The intervention effort was greatest for these students when they were in the second grade. For example, in this year, 31% of the students served in all five grades were second graders. The amount of effort fell off in the third grade and reached its lowest point for these students when they were in the fourth grade (only 15% of the total students served in 76-77). The level of support was increased to 22% in the fifth grade.

Another way of looking at the remedial support offered to the class under study over the years is to look at the number of students in the class served each year and expressed as a percentage of the total number of students in the grade each year. (See Table 4.)

Table 4

Number and percent of students in the class under study served each year

	Second Grade <u>1974-75</u>	Third Grade <u>1975-76</u>	Fourth Grade <u>1976-77</u>	Fifth Grade <u>1977-78</u>
Number	141	121	66	104
Percent of the class	29	24	13	21

Again the pattern is the same: the highest number of students were served in the second grade decreasing to the lowest number in the fourth with an increase in the fifth grade.

In addition, nineteen of the students under study received the benefits of a summer Title I reading program before entering second grade; and an increased number of instructional aides were provided by ESAA funds in second grade. To summarize, proportionately speaking this class under study received much remedial aid before entering the third grade and less aid in the later grades.

The input over the years of the regular classroom teacher was estimated since comprehensive data on this subject were not available. Examination of district time allocations for reading and the comments of the Title I teachers indicated that much of the regular class time in the first, second, and to some degree the third grade is devoted to reading and language arts activities which are relevant to beginning reading skills. Analysis of time allocation patterns and the evaluator's own observations led to the assumption that for the fourth grade and up, the regular

classroom teachers have less time to devote to the remedial reading activities which are needed by the Title I students.

To summarize, in terms of input from both the Title I teachers and the regular class teachers the students under study received more relevant reading instruction before the third grade and less instruction after the third grade.

Results

The results section is divided into two parts. In the first part the effect of the Title I program is judged by examining the number of students district-wide who fell below the national 23rd percentile. If the Title I program is effectively selecting and remediating low achieving students then less than 23% of the district's students should fall below the national 23rd percentile. This examination is conducted at the third grade level (1975) and at the sixth grade level (1978).

The second part looks at just those students who were in the Title I program to see if they made achievement gains.

I. District-wide achievement.- students below the 23rd percentile on the national norms.

Fall Third grade:

Table 5

Students scoring below the 23rd percentile
(fall third grade, 1975)

	<u>Expected</u>	<u>Actual</u>	<u>Difference</u>
Number	116	71	45
Percent	23%	14%	9
N= 508			

If the White Plains School District was doing as well as the other school districts in the national sample from which the test norms were derived, it would be expected that 23% of the students would fall below the national 23rd percentile. As indicated in Table 5 above, only 14% of the third grade students in 1975 fell below the national 23rd percentile point. The fact that only 14% of the students were below that point is an indication that both the Title I program and the regular class teachers were functioning effectively. This positive result at the beginning

of third grade was achieved by including 141 students in the Title I program when they were in the second grade. That is, in second grade, 29% of the total number of students in that grade were served by the Title I program which resulted in only 14% of the students scoring below the 23rd percentile at the beginning of third grade.

Fall sixth grade:

Table 6

Students scoring below the 23rd percentile (fall sixth grade, 1978)

	<u>Expected</u>	<u>Actual</u>	<u>Difference</u>
Number	113	127	-14
Percent	23%	26%	- 3
N= 492			

As Table 6 indicates at the fall 1978 testing when the students under study were in the sixth grade the results are much less positive: In the sixth grade there were 26% of the students scoring below the point of the national 23rd percentile. Achievement gains relative to national norms evident at the third grade level, were lost by the time of the sixth grade testing.

An analysis was undertaken to determine why and how the third grade achievement gains were lost. The procedure used was to start with the 127 sixth grade students falling below the 23rd percentile and determine:

- a) whether or not they were served by Title I.
- b) when they started falling behind, and
- c) whether or not they are students with low ability.

Table 7 presents a description of the students who were below the 23rd percentile at the sixth grade testing classified as to whether or not they were in the Title I program.

Table 7

Students below the national 23rd percentile in sixth grade

	<u>Never in Title I</u>	<u>In Title I Sometime</u>	<u>Total below 23rd %ile at 6th grade testing</u>
Number	40	87	127
Percent	31%	69%	100%

Sixty-nine percent of the students below the 23rd percentile were in the Title I program for at least one year during the second to the fifth grades. Thirty-one percent were not. Table 7A and 7B present a further breakdown of the students in and never in Title I to illustrate why these 127 students are scoring below the 23rd percentile. Tables 7A concerns the students below the 23rd percentile who were never in the Title I program.

Table 7A

Students below the 23rd percentile in fall of sixth grade who were never in the Title I Reading Program

	<u>Living in District two or more years before the sixth grade</u>	<u>Moved into the District during Fall of 1976 or later</u>	<u>Total</u>
Number	23	17	40
Percent	58%	42%	100%

Forty-two percent of the sixth grade students never in Title I moved into the district in the fourth or fifth grades. These students were not present during the early grades when the most resources were directed to this class. (The issue of why they were not picked up in the fourth or fifth grade will be dealt with later in this section.) Fifty-eight percent had been in the district for two or more years yet were not included in the program. Further analysis of their scores is warranted. Examination of the scores for these twenty-three students who have been living in the district yet who were not included in the Title I program revealed that in the third grade their average percentile rank was 43.2; in the sixth grade their average percentile rank was 12.0. They fell approximately thirty percentile points from the third to the sixth grade. Thus, it is clear that these students were achieving fairly well in the early grades and did not need Title I help, and then fell behind in the later grades.

Table 7B presents a description of the eighty-seven students below the 23rd percentile in the sixth grade who were in the Title I program for at least one year. For further explication, the students are divided into four groups depending upon when, during the four years under study, they were in Title I:

- Group 1 - students in Title I for three or four years
- Group 2 - students in Title I in the first two years and not again
- Group 3 - students in Title I in the last two years and not before
- Group 4 - students in Title I in one of the first two years and one the second two years

Table 7B

Students below the 23rd percentile in fall of sixth grade who were served by the Title I program for at least one year

	Group 1 In Title I for 3 or 4 Years	Group 2 In Title I in the first and/ or 2nd yrs & not afterwards	Group 3 In Title I in the 3rd or 4th yrs and not before	Group 4 In Title I one of the 1st 2 yrs & 1 of the 2nd 2 yrs	Total in Title I
Number	41	16	26	4	87
Percent	47%	18%	30%	5%	100%

The forty-one students in group one are low achieving students (average Cognitive Ability Score (CAT) of 84.9, which falls in the below average range of ability). They have made progress in the reading program, however, not enough progress to raise their scores above the 23rd percentile. The students in the program less than three years (listed in the last three columns) are in the low range of average ability (CAT average score of 93.45).

Looking at the sixteen students in group two (in the program during the first and/or second year and not again) their average percentile rank in third grade was 39.8; their average percentile rank in sixth grade was 12.3. They had made enough progress to rise above the 23rd percentile in third grade, but they began again to fall behind after leaving the Title I program.

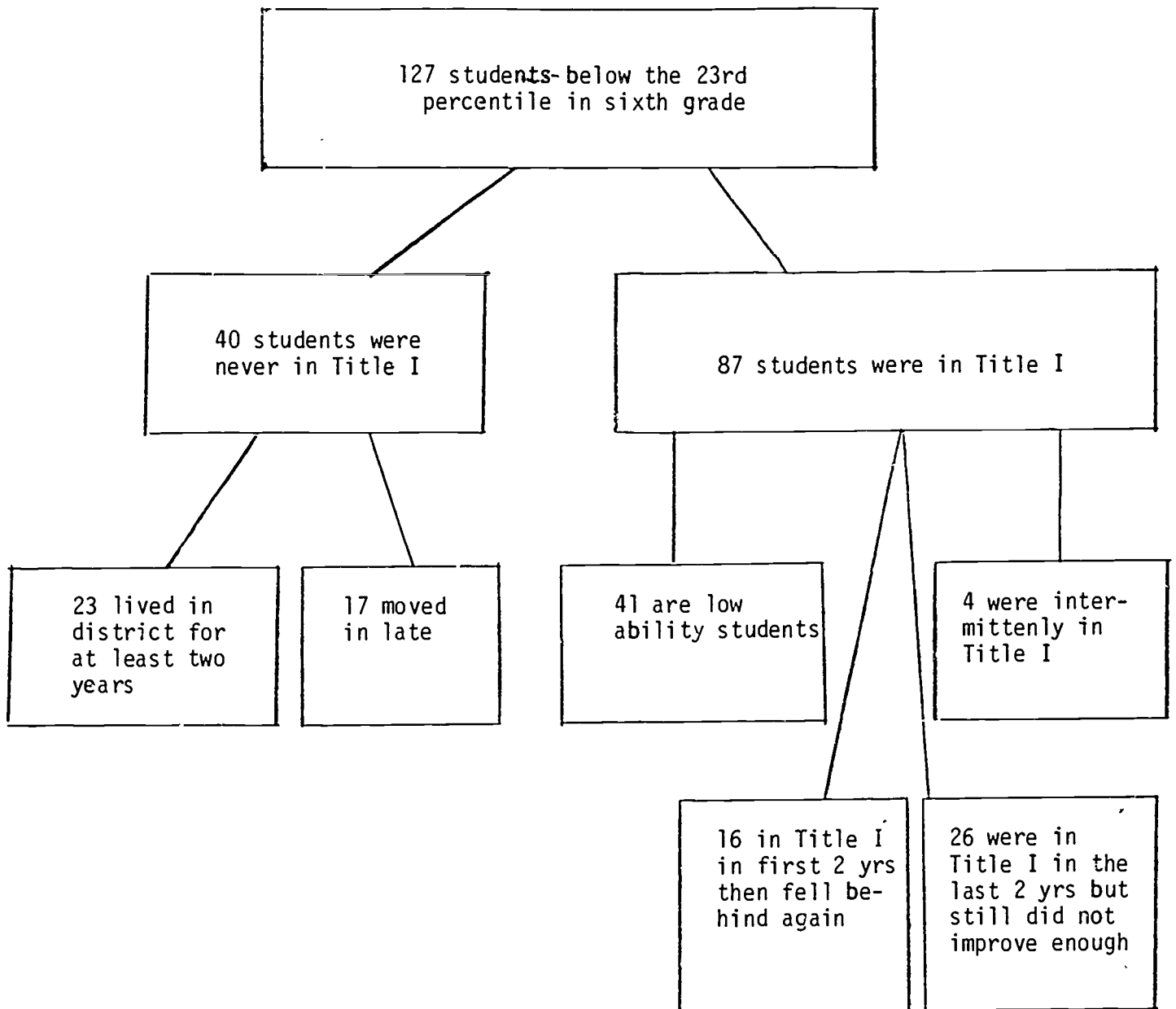
Examination of group three in Table 7B, the twenty-six students who were not in the Title I program in the second or third grade, reveals that 46% (twelve of the twenty-six students) moved into the district during or after third grade. The remaining fourteen students were in the district during the second grade and at the time of the third grade testing they had an average of percentile rank of twenty-three which is just at the cut off point. Although they received Title I remediation in the fifth grade, they still scored below the 23rd percentile. Their average percentile rank was ten in the sixth grade. (A diagram of the results presented in Table 7, 7A and 7B is provided in Figure 2 on the following page.)

A number of clear findings emerge from consideration of the students who fell below the 23rd percentile in the third and sixth grades.

1. The students in the class under study, district-wide, achieved well at the third grade level. Only 14% were below the national 23rd percentile. Compared to national norms the White Plains students were doing very well.

Figure 2

Students scoring below the 23rd percentile in fall of six grade



2. The students under study did less well at the sixth grade level - 26% were below the national 23rd percentile.
3. Students who with the help of Title I had been remediated to a point where they were achieving at a level slightly below grade level in the beginning of third grade, fell behind in the fourth and fifth grades when they were no longer served by Title I.
4. Students who, without the help of the Title I program, were achieving fairly well at the third grade level, began to fall behind in the fourth and fifth grades.
5. Students of below average ability received extensive Title I remediation and although they made progress, they did not achieve percentiles higher than 23rd when compared to national norms.
6. In terms of selection, three types of students were missed: students who were above the 23rd percentile in third grade and who fell behind later, students who were successfully remediated by Title I and who again fell behind, and students moving into the district in fourth and fifth grades.

It is apparent from this analysis that the Title I program was successful in remediating many students before the third grade. However, satisfactory achievement at the third grade level did not insure continued satisfactory progress through the sixth grade. Low achieving students can and do begin to fall behind again after the third grade. This decline in achievement parallels the amount of resources directed towards the class under study: 141 were served in Title I in the second grade, 121 in the third grade and 66 in the fourth grade. Although the number served in the fifth grade was increased, this effort along with the input of the regular class teachers was not sufficient to reduce the number of students scoring below the national 23rd percentile.

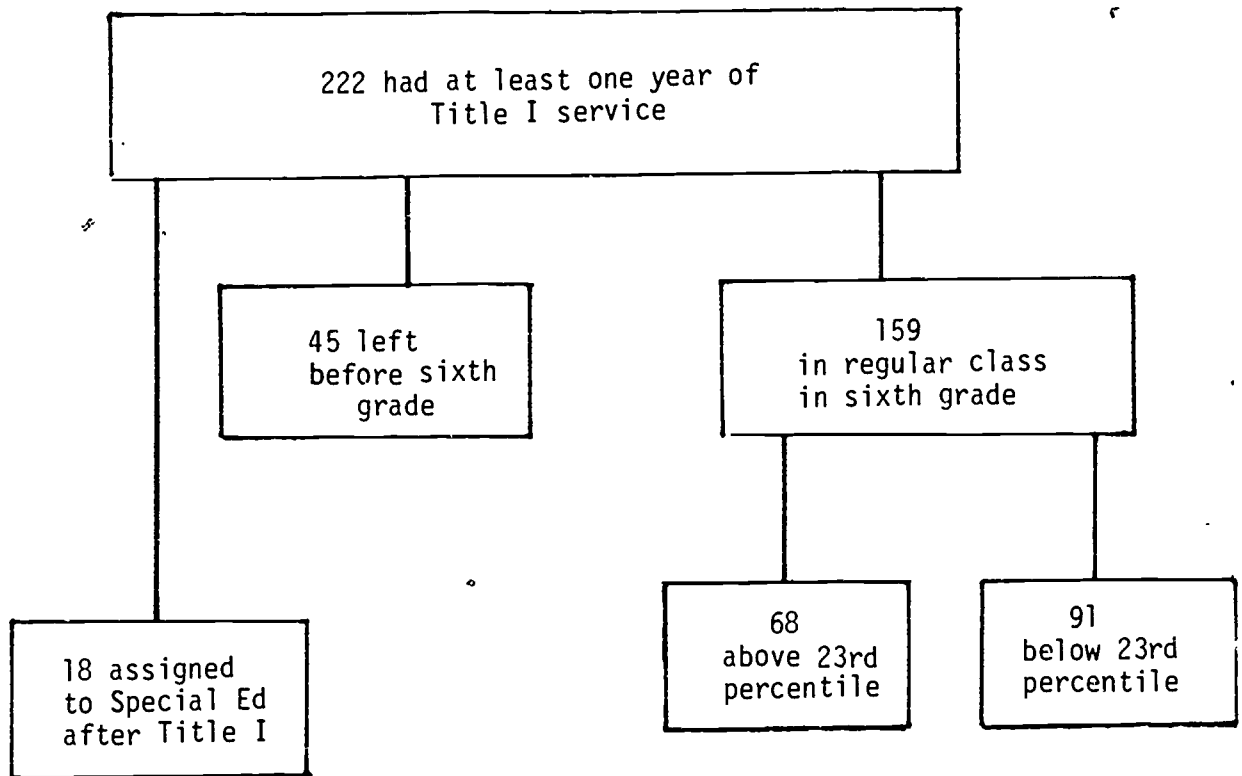
II. Achievement of Students Served by Title I

The previous section looked at the effects of the Title I program district-wide on the number of students below the national 23rd percentile. This section will examine the effectiveness of the Title I program on students who participated for at least one year.

Two hundred twenty-two students were in the program between the second and fifth grades (even though the largest number in the program in any one year was 141 students in the second grade). A report on these students' scores in fall of sixth grade is given below and illustrated in Figure 3.

Figure 3

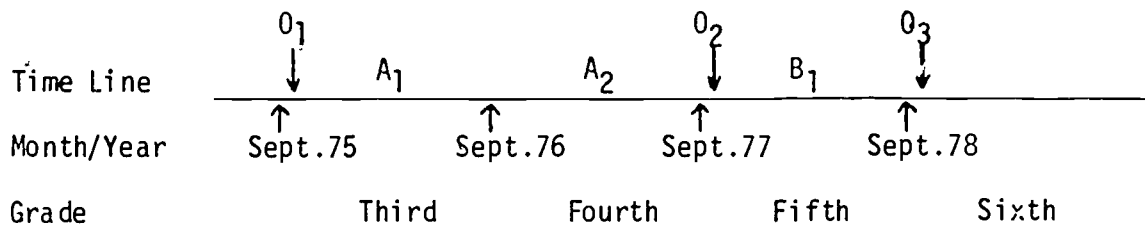
Students served for at least one year in Title I



Of the 222 students, 45 moved out of the district before sixth grade and 18 were assigned to special education classes. Of the 159 students remaining in regular classes 68 or 43% scored above the 23rd percentile. Fifty-seven percent or 91 students scored below the 23rd percentile.

The picture which emerges is clear. Of those students served by Title I for at least one year less than half (43%) are "cured" to the point where they are reading at a fifth grade level in the beginning of sixth grade. Fifty-seven percent still need further remediation in order to reach this criterion. Also, it should be noted that the 222 students served represent a large percentage of the class under study. Making allowances for students moving into the district approximately 40% of the students in the grade were served by Title I for at least one year as the students under study progressed from the second to the end of the fifth grade.

A recommendation which might result from both the district-wide and individual student data presented above is to increase the amount of Title I resources directed to the upper grades. To determine if, indeed, Title I remediation is effective in the upper grades a quasi experimental analysis of the effects of the Title I program was carried out. This analysis, in the form of a time series design, was made possible by the fact that a group of students who had never been in Title I began to fall behind academically in the third and fourth grades. These twenty-two students thus served as an experimental group. None of these students were served by the Title I program before the fifth grade and all were served during the fifth grade. The design can be diagrammed as follows:



O₁ - Observation of achievement - ITBS reading scores 10/75 in beginning third grade.

A₁ - No treatment - students did not receive Title I remediation in the fourth grade.

O₂ - Observation of achievement after two years of no Title I intervention and just before Title I intervention - ITBS reading scores 10/77 in the beginning of fifth grade.

B₁ - Treatment - students assigned to the Title I program for the fifth grade.

O₃ - Observation of achievement after one year of Title I remediation - ITBS reading scores 10/78 in the beginning of third grade.

At the first observation time (fall of third grade) eight students had not yet moved into the district and one score was unavailable. The remaining thirteen scores yield an average grade equivalent of 2.5 and an average national percentile rank of 32.3.

Since a complete set of scores are available for only the fifth and sixth grade testing, statistical analysis will be confined to observations two and three. The scores for the three observations are presented in Table 8. The first point to note is that these twenty-two students who were not assigned to the Title I program in White Plains did lose ground in their reading achievement compared to others at their grade level. Their scores at observation two indicated a average national percentile of 21. This supports the conclusion that students who do not receive Title I remediation can fall behind.

Table 8

Reading scores at third, fifth and sixth grade levels

O ₁		O ₂		O ₃		Gain O ₃ - O ₂	
(N=13)		(N=22)		(N=22)		in GE	in %ile
<u>GE</u>	<u>%ile</u>	<u>GE</u>	<u>%ile</u>	<u>GE</u>	<u>%ile</u>	<u>Units</u>	<u>Ranks</u>
2.5	32	3.7	21	4.9	26	1.2	5

As a result of the one year Title I intervention the students on average gained twelve months. This growth of twelve months represents a reversal of the declining achievement pattern of the two years before entering Title I. The percentile ranks of the scores were converted into NCE's and were examined to determine whether the gain of twelve months was large enough to produce a significant increase. The gain of twelve months over the year represents a significant increase in the fifth grade standings (t= 1.4922, significant at the .10 level).

Thus the Title I program effort directed towards these twenty students in the fifth grade did have a significant effect in improving their scores relative to national norms.

Discussion and Summary

The results indicated that the Title I program and the regular class teachers were successful in reducing the numbers of students reading below the national 23rd percentile in fall of the third grade as measured by the Iowa Tests of Basic Skills. During the time when, comparatively speaking, the most remedial effort was directed towards the class under study, the students exhibited the highest achievement gains.

The quasi experimental study of students served for the first time in the fifth grade indicated that Title I remediation is also effective in a later grade.

In terms of district-wide achievement, problems arise after the third grade. Both students who have been successfully remediated by Title I in the second and third grades and then discharged, and students who were achieving well in the early grades began to fall behind after the third grade.

Possible reasons for the decline in achievement relative to national norms might have included the amount of effort directed towards the class under study by both the Title I program and the regular classroom teachers, and the nature of the reading tasks the students are expected to master. It was judged that the amount of effort expended by both the Title I program and the regular class teacher in relevant reading instruction was much greater at the second grade level than the fifth grade level. The amount of effort expended is related to the results achieved.

Differences in the reading tests over the grades must also be considered. The paragraphs and questions from the third grade test are characterized by simple vocabulary, short sentences and familiar context. Questions test ability to read and understand the words, answer factual questions and some inference questions.

In the sixth grade test material the sentences are longer, the vocabulary harder, the context less familiar and the time limit more severe. To score well on the sixth grade level students not only have to be able to read all the words, they have to reason and make inferences about the material they have read.

The point is that after students master the beginning reading skill of being able to decode words they are then exposed to new reading tasks which require the ability to deal with difficult vocabulary, more complicated paragraph structure, unfamiliar contexts and are required to go beyond the factual information of what was read to reason and make inferences. The data reported in this study indicate that low achieving students require individualized and increased attention in order for them to master the fourth and fifth grade reading skills just as they required remedial help in mastering beginning reading skills.

In terms of the selection process, at the third grade those students who needed remedial help received it. However, at the fifth and sixth grade levels many students who would have profitted from remedial help were not included in the program. The reason why students were not included in the later grades appears to be not that there was a failure to identify the students. The reason was that the targeting of resources towards the early grades left less resources for the students in the upper grades.

To return to the questions raised in the beginning of the paper, the results indicated that the Title I program in White Plains was responsible for "curing" less than half of the students of "poor readeritis." Many students, particularly students of low ability, need extra assistance in order to not fall drastically behind their peers. Other students of low average ability can be expected to need Title I assistance sometime before the sixth grade.

Tobias (1976) has proposed and Bateman (1978) has discussed an achievement treatment interaction model in which low achieving students are programmed to receive added increments of instructional support to enable them to achieve instructional objectives. Although the long term relationships between initial achievement, ability and later achievement in the present data need further exploration the indication is that the model proposed by Tobias offers a practical blueprint for planning Title I services to students: very low achieving students will need Title I remediation each year. Other students, achieving slightly below grade level, will need less help. However, they must be closely monitored to insure they receive remedial help when they need it.

On the district-wide level, although successive single year evaluations indicated the program was successfully remediating students, the long terms analysis described above indicated that the number of students scoring below the 23rd percentile actually increased drastically as the students under study progressed from the third to the sixth grade.

Since most students are served by Title I for more than one year and since students can begin (or begin again) to have problems learning to read at any grade level it is suggested the individual single year evaluation models are not equipped to address the following important questions.

- 1) Do individual students or groups of students served by Title I ever learn to read?
- 2) Are the appropriate students are being selected?
- 3) How should the Title I resources be distributed across the various grade levels?

It is obvious that student achievement in Title I over the course of a year should be monitored, however, evaluation models based upon data from a single year at best offer an incomplete picture about the effect of Title I remediation on reading achievement and may, in fact, offer distorted information on whether students are learning to read.

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