The Distar Reading and Language Program: a study of its effectiveness as a method for the initial teaching of reading.

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THE DISTAR READING AND LANGUAGE PROGRAM

A Study of Its Effectiveness as a Method for
the Initial Teaching of Reading

A Dissertation Presented

By

Thomas A. McCabe

Submitted to the Graduate School of the
University of Massachusetts in partial
fulfillment of the requirements for the degree of
Doctor of Education

June 1974
THE DISTAR READING AND LANGUAGE PROGRAM
A STUDY OF ITS EFFECTIVENESS AS A
METHOD FOR THE INITIAL TEACHING OF READING

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June 1974
PREFACE

From 1960 - 1969, I was active in educational issues in the Fort Greene section of Brooklyn. During the New York teachers' strike in 1968, I joined those parents and those few courageous teachers who broke into locked schools and opened them up to children. In 1969 I decided to see schools from the inside, so I took my teachers' examination and began teaching in a junior high school in Williamsburg, Brooklyn. There I found how simplistic I had been to talk about "teachers". They were not a one-dimensional group. They were individuals with great differences in their politics, in their dedication to good teaching and in their respect for children.

I took a year's leave without pay to study at the University of Massachusetts, 1971 - 1972. I had a need to read and study. I used the year to try to balance my years of community activism with theory that could give strength and direction to activity. I returned to New York to work in District I, on the Lower East Side. The District became a focal point for those who believed in the rights of parents to shape the kind of education their children receive. I have found in the District enormous good will on the part of many teachers with whom I
work. I have also found how difficult it is to make a big city school system bend to the needs of children.

This dissertation has grown out of years of concern, thought and practice about a particular skill that children need to survive - the skill of being able to make sense out of the written word. The public schools' reading programs in elementary school reminds me of an effort to pick up sand at the beach with a sieve. There are just too many holes for the project to be successful. Most of the children who fall through the holes come from the Black and Puerto Rican poverty areas of the city. This dissertation is an effort to see what can be done to plug some of these holes.

I have not lost hope in the New York City school system. It is a mess, but it is a fascinating place in which to work because there are so many good people who care about children and who are willing to spend so much extra time and effort in the search to make schools more successful. The tragedy is that as this search goes on by some, a complacent majority do not seem to feel that they are responsible for damaging so many young lives. If the word "disadvantaged" has a place in education, it should not be used to describe children when they enter first grade. Rather, it should be a technical term used to describe children who leave junior high school with fourth
grade skills in reading and arithmetic. This is the disadvantage that schools are responsible for.

I want to thank the teachers and paraprofessionals in District I who worked with me in teaching and testing. I want to thank the children in the District who became the subjects of this study. They did not know that they were being "practiced upon" for another dissertation but, hopefully, their willingness to be subjected to various tests will produce some good results for them and for their sisters and brothers.

To Dr. Rhody McCoy and Dr. David Coffing I am also grateful. They are not part of my dissertation committee but both gave me many hours of their time, both inside and outside of class. Dr. Gloria Joseph has her own thoughts on the value of working within the New York City school system but was helpful to someone like myself who wants to give it a try. Dr. Ernest Washington worked with Bereiter and Engelmann at the University of Illinois. He gave many hours to help me through those periods when I thought I would never finish this study. Dr. David Flight was my first advisor at the University of Massachusetts. He worked with me through my entire program.

I am especially grateful to Dr. Ann Lieberman. She became
not only my chairman but a close friend. Her ideas and values influenced my decision to keep working on the local rather than on the university level.

The real teacher in my family is my wife, Eileen. I am grateful for all that she has taught me about school and children and life itself.
THE DISTAR READING AND LANGUAGE PROGRAM:
A Study of Its Effectiveness as a Method
for the Initial Teaching of Reading

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ABSTRACT

The Distar Reading and Language Program grew out of the research of Carl Bereiter and Siegfried Engelmann at the University of Illinois. There they developed their criticism that the traditional preschool programs do not meet the needs of children from low-income areas. Instead of a play-orientated preschool, Bereiter and Engelmann instituted a skills-orientated program that would concentrate on intensive, small-group training sessions in reading, language and arithmetic.

Distar was published in 1969 with Engelmann as its principal author. It contains three distinct programs: reading, language and arithmetic. It is teacher-directed and uses the method of
direct instruction with frequent testing, a great deal of repetition and immediate feedback. In reading, the skills are broken down into precise instructional objectives with a prepared script for each day in the program along with correction procedures when a child in the group fails to meet criteria. There are some changes in the traditional orthography which get phased out by the end of Level II of the reading program.

The author is the reading coordinator in District I on Manhattan's Lower East Side. The children in the school district are 72% Hispanic, 14% Black, 7% White and 5% Oriental. Thus, about 93% of the children are from minority groups. Most of them are poor.

The experiment went from January to June 1973. There were 24 children in the Distar pre-kindergarten group, 60 in the kindergarten and 68 in first grade making a total of 152 children. There were 24 children in the control pre-kindergarten group, 61 in the kindergarten and 72 in the first grade making a total of 157 children.

The Peabody Picture Vocabulary Test was used on a pre- and post-test basis. The Boehm Test of Basic Concepts and the Wide Range Achievement Test in reading were used on a posttest only basis.
All mean and median scores were computed. Also Pearson's coefficient of correlation was used as the measure of correlation between twenty-two independent variables and four dependent variables. A step-wise regression analysis was used to measure the variables that would be the best predictors of success on the Peabody, the Boehm and the Wide Range Achievement Test.

The results showed that the first grade children in Distar did average a 6.4 gain between the A and the B forms of the Peabody Picture Vocabulary Test while the first grade children in the control group averaged a 3.5 gain between the two tests. Also the kindergarten children in Distar had mean and median scores that put them on a first grade level when entering first grade. The kindergarten children in the control group were not on this level. However on other tests, particularly the Boehm test of language concepts, the control group scored higher than the experimental group.

The author was lead to two conclusions:

a) There is a need for an intensive training in basic concepts for all the children in the District. The author is presently preparing diagnostic material to test children on 100 basic concepts. He is also providing lesson plans to teach these concepts to children who do not know them.
b) There is a need to follow-up on the original study. The author intends to test the first grade and kindergarten children in June 1974 to see if the Distar first graders ever caught up to the control group and to see if the Distar kindergarten children retained their original edge over the children in the control group.

The appendix includes samples of the tests used in the study as well as samples of the pupil and teacher questionnaires.
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CHAPTER I

OVERVIEW OF THE PROBLEM

There are six parts in Chapter I of this study. They are:

1. Statement of the Problem
2. Purpose of the Study
3. Hypotheses
4. Significance of the Study
5. Limitations
6. Meaning of the term Distar Program
1. Statement of the Problem

The problem to which this study addresses itself is both simple and tragic. It is simple in the sense that it can be stated clearly and precisely. It is tragic in its consequences and implications. The problem is this: many children in the urban centers of the United States are either not able to read or are reading so poorly that they are functionally illiterate.

The magnitude of this problem is getting a great deal of publicity. A National Assessment of Educational Progress (NAEP) survey of reading achievement shows that 20 to 30 percent of the young people in America can not complete satisfactorily reading tasks that range from understanding words to being able to read critically. The same NAEP quotes a Louis Harris Poll of 1970 that indicates that 7 million Americans under age 16 will probably become functionally illiterate adults (National Assessment of Educational Progress 1973).

Let's take a closer look at one city school system - the biggest there is, New York City. On November 19, 1972, a New York Times headline declared, "Decline Continues in Reading Ability of Pupils in City." The Times article went on to state that on the basis of standardized test scores in reading administered April
1972 in only 163 of the city's elementary schools were at least half of the pupils reading at or above the norm or standard for their grade.

On September 26, 1973, the New York Times reported that the city was making "progress". The April 1973 scores indicated that 186 out of 635 schools (gain of 23) had half their students reading at or above grade level. The article, however, pointed out that despite the improvement, "the majority of the city's pupils were still below the norm for their grade".

These statistics confirm what every teacher in New York City knows through daily experience: that some children are failing their subjects because they cannot read the book.

These statistics confirm what the author of this dissertation knows through ten years of working with thousands of young people as director of a community center, teacher, and now as a reading coordinator; namely that many children, after spending years in New York City Public Schools, can't read.

Also, the painful fact is that there is a relationship between the economic level of students, taken as a group, and their scores on standardized reading tests. Countless bits of research data, plus the reports from city school systems, confirm the relationship: the higher the economic level of the children, the higher will be
the reading scores; the lower the economic level, the lower will be the reading scores (Sexton 1961, Leacock 1969).

The statement of the problem is easy. Anyone who is involved in or has followed the crisis in urban education knows what the problem is. The question is how to solve it. What must be done to remedy the situation? What steps must be taken so that most of the children going to school in poverty areas in our cities graduate from junior high school able to read on a level comparable to other children their age?

The solution to these problems will require the cooperative effort of many people in the field of education: researchers, deans of schools of education, administrators, teachers, union leaders, book publishers and parents.

a) Researchers. Jeanne Chall is an example of what good research can do. In the Roswell - Chall Test she has developed a simple means of diagnosing a child's reading problem. In her book, Learning to Read: The Great Debate (1967), she analyzed all of the significant research in reading that took place between 1910 - 1965. She shows that the evidence in favor of the phonic approach over the whole - word approach is overwhelming.

b) Deans of Schools of Education. Heads of Schools of Education
should work more in conjunction with local schools and school boards. Schools of Education must take a greater responsibility for the continued training of their graduates who are working in inner city elementary schools. Accountability can start with Schools of Education.

c) Administrators. George Weber (1971) has shown that strong leadership can make a difference in reading instruction in poverty areas. Weber found a relationship between reading scores of inner city children and principals who are strong enough to make reading instruction their school priority in fact as well as in theory.

d) Teachers. Rosenthal (1968) and Rist (1970) have shown the influence of teacher expectation upon student achievement. Low teacher expectations puts any child at a disadvantage.

e) Union Leaders. Teacher Unions have an even greater influence upon educational programs and the policies of school boards (Braun 1972). The UFT in New York City has become so powerful that it is hard to imagine any progress in education without the UFT's cooperation. The healthiest situation is not union versus community but the efforts of workers (teachers) and community (parents) united for the benefit of children.

f) Book Publishers. The materials or program used by a teacher exercises a great influence upon her and her teaching. Publishers are becoming aware that they can not sell their product unless they
provide training and supervision for the teachers who are using their material.

g) Parents. Ellen Lurie (1970) has written an action handbook for parents on "how to fight the system". In many New York City decentralized school districts, parents serve as a watchdog group trying to curb the excesses of an inadequate school bureaucracy and administration (Rogers 1968). Parents have a greater voice in selecting the administrators for their own schools. Hopefully, this voice will be more than a voice of criticism and will become a voice in support of sound educational practices.
2. Purpose of the Study

The purpose of this study is to research the effectiveness of the Distar Reading and Language Program as a method for the initial teaching of reading.

Chall (1967) and Harris (1966; 1968) have made studies on the comparison between various beginning reading methods. Both showed that the approach used is an important factor in the successful teaching of reading. Chall's study favored a systematic phonic method rather than a whole-word method. Harris' CRAFT project supports a skills approach rather than a language-experience approach.

Research on Distar is important because the program combines many factors that would seem to be important for the teaching of reading. Among these factors are:

1) a systematic phonic approach,
2) clearly defined instructional objectives,
3) introduction of new symbols slowly and in a carefully arranged sequence,
4) a place for language development,
5) short periods of intense training rather than long learning periods,
6) small-group instruction,
7) immediate reinforcement for the children,

8) carefully planned and structured lessons,

9) teacher - training component,

10) definite amount of time spent each day on teaching reading skills.
3. Hypothesis

A. First Grade

1. At the .05 level of significance there will be a significant correlation between the level reached by first grade children in the Distar Reading and Language Program and their scores on the Boehm Test of Basic Concepts.

2. At the .05 level of significance there will be a significant correlation between the level reached by first grade children in the Distar Reading and Language Program and their scores on the Peabody Picture Vocabulary Test, form B.

3. At the .05 level of significance there will be a significant correlation between the level reached by first grade children in the Distar Reading and Language Program and their scores on the Wide Range Achievement Test in reading.

4. First grade children who were taught in the Distar Reading and Language Program, will have higher mean and median scores on the Boehm Test of Basic Concepts than first grade children who were taught in the traditional program.

5. First grade children who were taught in the Distar Reading and Language Program, will show greater gains in their mean and median scores between the A and B Peabody Picture Vocabulary
Test than first grade children who were taught in the traditional program.

6. First grade children who were taught in the Distar Reading and Language Program, will have higher mean and median scores on the Wide Range Achievement Test in reading than first grade children who were taught in the traditional program.

7. Using a Step-wise Regression Analysis, the level in Distar reached by first grade children will be a significant variable in predicting scores on the Boehm Test of Basic Concepts.

8. Using a Step-wise Regression Analysis, the level in Distar reached by first grade children will be a significant variable in predicting scores on the Peabody Picture Vocabulary Test, form B.

9. Using a Step-wise Regression Analysis, the level in Distar reached by first grade children will be a significant variable in predicting scores on the Wide Range Achievement Test in reading.

B. Kindergarten

10. At the .05 level of significance there will be a significant correlation between the level reached by kindergarten children in the Distar Reading and Language Program and their scores on the Boehm Test of Basic Concepts.

11. At the .05 level of significance there will be a significant
correlation between the level reached by kindergarten children in the Distar Reading and Language Program and their scores of the Peabody Picture Vocabulary Test, form B.

12. At the .05 level of significance there will be a significant correlation between the level reached by kindergarten children in the Distar Reading and Language Program and their scores on the Wide Range Achievement Test in reading.

13. Kindergarten children who were taught in the Distar Reading and Language Program will have higher mean and median scores on the Boehm Test of Basic Concepts than kindergarten children who were taught in the traditional program.

14. Kindergarten children who were taught in the Distar Reading and Language Program will show greater gains in their mean and median scores between the A and the B of the Peabody Picture Vocabulary Tests than kindergarten children who were taught in the traditional program.

15. Kindergarten children who were taught in the Distar Reading and Language Program will have higher mean and median scores on the Wide Range Achievement Test in reading than kindergarten children who were taught in the traditional program.

16. Using a Step-wise Regression Analysis, the level in Distar reached by kindergarten children will be a significant variable
in predicting scores on the Boehm Test of Basic Concepts.

17. Using a Step-wise Regression Analysis, the level in Distar reached by kindergarten children will be a significant variable in predicting scores on the Peabody Picture Vocabulary Test, form B.

18. Using a Step-wise Regression Analysis, the level in Distar reached by kindergarten children will be a significant variable in predicting scores on the Wide Range Achievement Test in reading.

C. Pre-kindergarten

19. At the .05 level of significance there will be a significant correlation between the level reached by pre-kindergarten children in the Distar Reading and Language Program and their scores on the Boehm Test of Basic Concepts.

20. At the .05 level of significance there will be a significant correlation between the level reached by pre-kindergarten children in the Distar Reading and Language Program and their scores on the Peabody Picture Vocabulary Test, form B.

21. Pre-kindergarten children who were taught in the Distar Reading and Language Program will have higher mean and median scores on the Boehm Test of Basic Concepts than pre-kindergarten children who were taught in the traditional program.

22. Pre-kindergarten children who were taught in the Distar
Reading and Language Program will show greater gains in their mean and median scores between the A and the B of the Peabody Picture Vocabulary Test than pre-kindergarten children who were taught in the traditional program.

23. Using a Step-wise Regression Analysis, the level in Distar reached by pre-kindergarten children will be a significant variable in predicting their scores on the Boehm Test of Basic Concepts.

24. Using a Step-wise Regression Analysis, the level in Distar reached by pre-kindergarten children will be a significant variable in predicting their scores on the Peabody Picture Vocabulary Test, form B.
will be able to train administrators and reading supervisors to look for very specific elements in classroom instruction. This will improve the quality of reading supervision in our schools.
5. Limitations of This Study

This study suffers from the same limitations of any study of real human beings. There are many variables; they are hard to isolate and are constantly changing. For example, a child takes a reading test today and gets a certain score. That same child might have had a much different score if tested a week earlier or later.

Also, teacher variables are very hard to quantify. A list of 50 questions on a questionnaire will probably not be able to capture those elements that make one teacher successful with some children and another successful with other children.

Because of this I will not attempt to write about cause and effect relationships. Just because A is produced whenever B is present this does not mean that B is the cause of A. Other elements, perhaps not even identified might be causing A. I will limit myself to pointing out relationships among certain variables and to indicate that some variables seem to be better predictors of academic success than other variables.
6. Meaning of the Term Distar Program

For six years Siegfried Engelmann, Carl Bereiter and a group of their associates in the Institute for Research on Exceptional children at the University of Illinois worked with preschool children. They published the results of their work in *Teaching Disadvantaged Children* in the Preschool (1966 a) and "Studies in Direct Verbal Instruction", part of a larger research project funded by the United States Office of Education entitled *Acceleration of Intellectual Development in Early Childhood* (1967).

Engelmann took the results of this research and became the principle author of Distar Reading I, II, III, Distar Language I, II, III and Distar Arithmetic I, II published by SRA (Science Research Associates) in Chicago in 1969. Engelmann is presently an associate professor, Department of Special Education at the University of Oregon. Recently he has been collaborating with Professor Wesley Becker who succeeded Bereiter at the University of Illinois. Becker's area of specialization is in the field of behavioral modification. Becker and Engelmann recently wrote *Teaching: A Course in Applied Psychology* (1971).

Some people refer to Distar as the Bereiter - Engelmann program, while others refer to it as the Becker - Engelmann Program. The
4. Significance of the Study

The significance of this study lies in the fact that the study is asking a very important question, a question that is important in its own right and a question that touches upon many other educational, social and political questions.

The question behind this study is not: Is one reading program better than another. The real question is: What steps must be taken so that children living in poverty areas in this country can be taught a skill basic to academic success in school - the skill of reading.

Big city school systems admit their failure in teaching many children to read. More often than not, the children whose reading is the poorest are the children of the poor. More often than not, these same children can be identified by their race or nationality. In New York City it is the school districts with the highest percentage of Black and Puerto Rican students that score the lowest when reading skills of students are measured by standardized reading tests.

If we can find a program for the initial teaching of reading that can teach most children to read on grade level by the end of second grade, we will be in a better position than we are now. If the methods used in this program are easily transferable from one teacher to another, we can hope to do a better job of teacher training. Finally, if the specific objectives of this program are clearly defined, we
word Distar is a device taken from the initial letters of Direct Instructional System for Teaching.

In Chapter III, the theory behind the Distar Program will be explained. Here a brief sketch will be given, in four parts, of some of the aspects of the Reading and Language Programs in order that the reader who may be completely unfamiliar with Distar will have an idea of what is involved in the program.

1. An Overview

A. Distar uses the method of direct instruction. It does not rely on the discovery approach to learning. Rather, it is very teacher-directed. Children are told what the sounds of the letters are. They are told how to say certain words and sentences correctly. They are frequently tested to see if they have mastered the skill being taught.

B. The program leaves little "to chance". The teacher follows a carefully prepared script for each day in the program.

C. Distar is based on specific instructional objectives arranged in sequence from the very simple to the more complex. Each instructional objective is taught and practiced. The children must demonstrate mastery of the objective before they go to the next one.
D. Distar requires a definite management system. Children are taught in small groups by a teacher or a paraprofessional. In an average class of 30 children, there would be three groups. Each group receives an intensive period daily of one hour of instruction - 1/2 hour in reading and 1/2 hour in language.

There is also a management system for each group. This is done through a variety of hand signals that allow for group responses. The hand signal is used both to save time (cuts down on the need for individual responses to the same question) and to discourage one child from answering before the others. The latter is important because it allows the teacher to know that each child is answering on his/her own and not just repeating that which a faster child has said.

E. The Distar Program has specific behavioral modifications built into it. Each incorrect answer is immediately corrected and each right answer is reinforced through praise. Teachers learn to identify specific errors and learn specific correction procedures as part of their training program.

2. Reading

A. Distar presents a phonics approach to the initial teaching of
reading. The children begin by learning the sounds of the following eight letters: "m", "a", "s", "e" (the long sound) "f", "d", "r" and "i". They then begin to put these sounds together into words such as "am" and "me".

B. Reading readiness is an important part of the Distar Program. For 60 lessons the children work on various aspects of the readiness program. However, one major difference between Distar and other reading programs is that readiness is not taught as a unit before the children start to read. Rather, in Distar, as the children are working on readiness skills they are also learning sounds and reading words. So, at the end of lesson 60, the children not only know the phoneme - graphine relationship of the eight sounds mentioned above, but also know the sounds of "th", "c" (the hard sound), "o", "n", "t", "a" (long sound), "h" and "u". They have learned this while completing the readiness program. They have also learned to decode many words and are reading stories up to three lines.

C. There are five aspects to the Distar readiness program. All of these skills are taught, as mentioned previously, in 60 lessons. They are all contained in the book Related Skills which is part of Distar Reading I. These five readiness skills are:

1) Symbol - Action Games which are meant to teach the children
the skill of sequencing; that is, that things follow each other, both in order and in time.

2. **Spelling by Sounds** which is meant to teach the children that words are made up of individual sounds that can be slowly and clearly blended together without stopping.

3. **Say It Fast** which is meant to teach the children that these blended sounds can be joined together to make a word that they can say at normal speed.

4. **Rhyming** which is meant to teach the children that many words can be made from other words by changing the initial consonant.

5. **Sound Sliding** which is meant to teach the children that sounds can be blended together to make a word that they can read. The skill is to pronounce each sound without pausing between sounds.

D. **Distar Reading** has three levels:

**Level I** stresses decoding with understanding. It includes: the readiness program; 37 distinct sounds; some sight words; letter, word, and phrase writing; stories averaging 120 to 150 words read in two sessions. Lessons are arranged from 1 to 159.

**Level II** stresses comprehension skills and logical reasoning.
It includes: review of Level I; three new sounds ("qu", "z" and "u" -long sound); names of letters and alphabetization; recognition of capital letters; more sight words, stories containing up to 700 words read in two sessions and followed by comprehension questions. Lessons go from 160 to 340.

Level III The emphasis changes from learning to read to reading to learn. No child can enter into Level III until he or she can read the stories contained in lessons 320 - 340 of the Level II program. In Distar III there are 175 stories or lessons that concentrate on various aspects of science - physics, chemistry, history, biology, zoology, etc. Independent reading and the literal understanding of the content is stressed as well as the application of specific generalizations and rules taught in specific lessons.

E. Take Homes There is a take-home for every lesson in Distar Reading I and II. These take-homes contain just one letter "m" on lesson one of Level I and continue to form the much longer stories that the children are reading at the end of Level I and throughout Level II. These take-homes are meant to form the bridge between school and home. However, they are not homework in the traditional sense. They are done in class and are given to the children as rewards for good effort in class. They are brought home
each day so that children can show their parents how well they can read. If the parents go over the take-home with the child, it serves as an important reinforcement of the day's lesson.

3. **Distar Orthography**

The authors of Distar have made some changes in the traditional orthography. These changes were introduced to help the children during the initial stages of learning to read. The purpose of the changes in the traditional orthography eliminates, as much as possible, the confusion that many children have when the same written symbol has different sounds. The changes are gradually phased out during Level II of Distar and are not used at all during Level III.

The changes from the traditional orthography are as follows:

a) No capital letters are used.

b) There is a mark " • " between words to indicate the separation of one work from another;

c) All long vowels are given the diacritical mark: ā, ē, ī, ō, ū, and y.

d) The letter "a" is printed as "ā".

e) The following letters are written together when they combine to have only one sound: "th", "sh", "ch", "er", "oo", "wh", "qu", "ing".
f) Words that end in "ing" are written " ūng" as a key to their pronunciation.

g) The letter "d" is written with a more oval appearance "d̠", in order to distinguish it from the letter "b".

h) All silent letters are at first written very small. They eventually grow up to their normal size. So, for example, the word "read" is initially written as "rēad".

Teachers are encouraged to use the Distar orthography in the writing they do in class (experience charts, board work, etc.) while the children are reading stories written in Distar orthography.

As mentioned before, these changes in the traditional way of printing the letters of the English language are gradually eliminated during Distar II and are not used at all during Distar III.

4. **Language**

A. One of the elements that distinguishes Distar from other programs is that Distar presents formal language instruction. Language instruction is an integral part of the full program. A child receives one half hour a day of language instruction as well as one half hour a day of reading instruction. There are language take-homes for every day's lesson just as there are daily reading take-homes.
The language program is not a vocabulary program, even though a child learns many new words. The purpose of the program is to teach the "language of instruction"; that is, the basic concepts and the subtle distinction among words that the teacher will use in the classroom as well as in logical thinking.

B. Language I includes the following: identification of objects both by single word and whole-sentence responses; use of the negative - "no", "not"; opposites - "long and short", "smooth and rough", etc.; prepositions - over, under, between, next to, etc.; pronouns; multiple attributes of an object; comparatives and superlatives; use of "all" and "only"; categories; plurals; use of "why"; verb tense; use of "if...then"; use of "before" and "after"; part-whole relationships; use of the words "or", "maybe"; use of the words, "some", "one", "none".

C. Language II expands the use of the concepts taught in Level I but also starts to analyze the use of language. The emphasis is on how to use language in order to perform logical operations and to think more clearly.

Language II includes: a review of Level I; questioning skills; identify materials such as metal, glass, leather, etc.; how to describe; how to make an opposite statement; how to follow instruc-
tions; use of synonyms; how to classify objects; how to analyze statements; how to form definitions; how to discover what is absurd; use of problem solving techniques.

The above is a brief description of the elements of the Distar Reading and Language Program. It is certainly a well thought-out system. Whether a "system" or a "program" is what is needed, however, is another question. Something may be well thought-out and logical and yet be so lacking in motivation that it is useless as an educational tool. The effectiveness of Distar as an educational tool for the initial teaching of reading is one of the questions on which this paper hopes to shed some light.
CHAPTER II

BACKGROUND OF THE STUDY

There are three parts in Chapter II of the study. They are:

1. District I: Location and Its Students

2. Languages of the Students in District I

3. Reading and Reading Scores in District I
District I: Location and Its Students

This study was conducted from January to June 1973 in Community School District I. District I is located in the Lower East Side of Manhattan, New York City. It is bordered on the South and East by the East River. The Northern boundary is 14th Street. The Western boundary is Second Avenue (The Bowery) that takes many turns as it winds itself down towards the East River.
There are twenty schools in District I - 16 elementary schools and 4 junior high schools.

According to the October 1972 Civil Rights Survey there are about 17,000 children in District I schools. 12,000 are Spanish-surnamed, 2,538 are Black, 926 are Oriental and 1,247 are White. This breaks-down into the following percentages:

- Hispanic: 72.6
- Black: 14.8
- White: 7.1
- Oriental: 5.4

Thus, about 93% of the students in District I are minority students.

2. Languages of the Students in District I

In District I, over 75% of the children come from homes where Spanish or Chinese, not English, is the first language. This presents very special educational problems in a District where few of its 1,000 teachers are bi-lingual. The extent of the problem can be seen by the following statistics taken from the District's official Language Fluency Profile made on October 31, 1972.

a) The percentage of elementary school children who "speak English hesitantly at times, or whose regional or foreign accents indicate the need for remedial work in English and/or speech" is 30%.
b) The percentage of elementary school children who "speak little or no English, or whose regional or foreign accents make it impossible for them to be readily understood" is 10%.

This means that 40% (or 4,672 of the 12,181 children in District I's elementary schools) do not speak standard English.

This is in no way a comment on intelligence of the students or on their fluency in a language or a dialect other than standard English. Rather, the statistics on language proficiency indicate the seriousness of the educational problems present in a district where almost 5,000 children are not speaking standard English - the usual language of instruction used in the district.

3. Reading and Reading Scores in District I

During the Spring of each year, the children in District I, like the children in all of the thirty-two districts in New York City, take the Metropolitan Achievement Test in reading. This test is a standardized test with its own norms and grade equivalents. The purpose of this test is to rank each child and to compare each child directly with the test's norms and indirectly with each other child. The City's Board of Education also uses the results of the test to rank each of the 635 elementary schools and the 166 junior high schools in New York City against each other. Finally, this test is used to compare
each of the 32 districts.

There is a great deal of debate on the usefulness and the use of standardized achievement tests. The main points of this debate center on the following points:

a) The achievement test does not give any information that is useful to the classroom teacher. Therefore, a diagnostic test instead of an achievement test would be more useful.

b) The vocabulary used in this test seems to contain a bias that is weighed in favor of the white middle class child and thus discriminates against the poor in general and against Black and Puerto Rican children in particular.

c) The tests have become more political than educational. The results of these tests are published in the New York Times and are often used for or against school administrators in the political struggle that is part of New York City education.

This is not the place to resolve the debate over standardized tests. There is general agreement that even if these tests do not give much useful information about individual children, these tests give some indication of the success of school districts to teach their students to read standard English and to answer questions about what they have read.

The following tables from the data published by the New York City
Board of Education, Bureau of Educational Research, are given here to indicate the general level of reading exhibited by the children in District I as measured by the Metropolitan Achievement Test. These tables will show that the children in District I are not reading as well as many other children throughout the country.
<table>
<thead>
<tr>
<th>Grade Level</th>
<th>One or more years</th>
<th>Two or more years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Grade Level</td>
<td>16 Elementary Schools 4 Junior High Schools 20 Schools Combined</td>
<td></td>
</tr>
</tbody>
</table>
Comments

Table 2.1 presents data on levels of reading retardation in District I as measured by The Metropolitan Achievement Test in reading.

The data is gained in the following way. The M.A.T. is subdivided into **Word Knowledge** (Vocabulary) and **Reading**. At the lower levels (Primary I and Primary II) the **Word Knowledge** subtests cover words presented in word picture association and sentence completion formats. At higher levels (Elementary, Intermediate and Advanced) the vocabulary is expanded and includes synonyms, antonyms and classifications. The **Reading** subtest ranges, by level, from picture-sentence formats and short paragraphs to fully developed topics and items dealing with main ideas, literal meaning, inferences and meaning-in-context.

The results of the subtests are averaged to form the total reading raw score. This score is then converted to a grade equivalent.

Since the test is usually given in the seventh month of the school year, a second grade child must achieve a 2.7 grade equivalent to be considered reading "on level". A third grade child must be at 3.7 to be reading "on level", etc.

In 1972, 84.5% of all the children tested in District I were reading below grade level. This means that only 15.5% were reading on
grade level as measured by the M.A.T. This ranked District I 30th among the 32 school districts for percentage of children reading on grade level as measured by the M.A.T.

District I ranked last both for percentage of children reading one or more years below grade level and for percentage of children reading two or more years below grade level.

District I ranked far below the New York City norms which rank below the national norm of the M.A.T.

In this discussion it must be remembered that the norm used in a standardized achievement test is designed so that 50% of the pupils fall below the norm. In other words, if a school or a district has 50% of its students reading on-level, this would be considered an "average" school or district. Many questions might be asked about the rationale behind a test that is structured in such a way that every other child is going to "fail". The fact remains that District I, and the other Districts in New York City that have a large concentration of poor children, have a disproportionate amount of "failure" or students scoring below the norm.
Table 2.2

District I Median and Mean Scores Grades 2 - 9

<table>
<thead>
<tr>
<th>Grade</th>
<th>Median</th>
<th>1971</th>
<th>1972</th>
<th>1973</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2.3</td>
<td>2.1</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2.6</td>
<td>2.6</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3.2</td>
<td>3.2</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3.6</td>
<td>3.9</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>4.9</td>
<td>4.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>5.0</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>5.8</td>
<td>5.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>6.9</td>
<td>6.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Mean</th>
<th>1971</th>
<th>1972</th>
<th>1973</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2.4</td>
<td>2.4</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2.8</td>
<td>2.9</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3.4</td>
<td>3.5</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4.1</td>
<td>4.3</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>5.2</td>
<td>5.0</td>
<td>5.1</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>5.5</td>
<td>5.3</td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>6.3</td>
<td>6.2</td>
<td>6.3</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>7.4</td>
<td>6.8</td>
<td>6.9</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.2 represents the available median and mean scores, according to grade, of the children in District I from 1971 to 1973.

Both the median and mean scores are given, not in raw scores, but in grade equivalent. The norm for both the median and the mean for each grade should be the grade plus seven months. Anything below that is considered below level.

In order to describe a test score distribution, it is necessary to determine a central value representing that distribution as well as variations around that value. Median and mean are different
statistics used to summarize these characteristics.

The median represents the position on the grade equivalent scale that separates the top half of the group from the bottom half. In District I, for example, in 1973 in grade 3 the dividing point (median) is 2.7 - one full year below the norm for that grade. It tells us that half of the students in grade 3 are reading one full year below the norm for that grade as standardized in the M.A.T.

The mean, or average, is another summary statistic that describes the central tendency of a test distribution. Means are computed by dividing the total of scores obtained by the number of pupils in the distribution.

The median and the mean do not coincide exactly, as a scanning of table 2.2 indicates. While the magnitude of difference may vary, it is usually not great. Where a distribution is skewed (that is, when scores are bunched at one end and spread out at the other) the median is preferred as a representative statistic since it is less sensitive to extremes. For instance, on a difficult test, most scores will pile up at the low end of the score scale. A few pupils will score well, and these cases will spread out at the high end of the scoring range. In this situation the median will be lower than the mean since it is defined as the point that splits the group in half. As such, it will not be influenced by the magnitude of a few extreme
scores which pull up the value of the mean. All of this has been said in order to explain why in table 2.2 the median scores are consistently below the mean scores.

Here are some facts that can be gathered from Table 2.2:

1) District I is below the median and mean norm in every grade for 1971, 1972 and 1973.

2) There is a steady decline in reading achievement, as measured by the M.A.T. as we go from grade to grade. Thus the grade 2 mean in 1973 is 2.5 which is only 2 months below the norm for that grade. But the grade 9 mean for 1973 is 6.9 which is almost three years below the norm.

3) A comparison of the mean scores between 1972 and 1973 indicate a consistent improvement in reading scores.
CHAPTER III
REVIEW OF THE LITERATURE

This chapter will concentrate on the work of Carl Bereiter and Siegfried Engelmann. It will be divided into the following sections:

1. Early Research

2. Language Development

3. Educational Philosophy
1. Early Research

A. As it has been already stated in Chapter I, section 6, Carl Bereiter and Siegfried Engelmann worked for six years in the Institute for Research on Exceptional Children at the University of Illinois, Urbana, Illinois. In 1967 Bereiter edited Acceleration of Intellectual Development in Early Childhood. This was a report of eight studies of preschool children that attempted to research the question, what has to be done so that poor children can succeed in school. Of the eight studies in this report, two are of particular interest to us: 1) "An Academically - Orientated Preschool for Disadvantaged Children" by Bereiter and Engelmann and 2) "Direct Verbal Instruction Contrasted with Montessori Methods in the Teaching of Normal Four-Year-Old Children" by Bereiter. Both of these are reports of what Bereiter and Engelmann called direct verbal instruction.

Traditionally, preschool has been used as a time for pre-academic training. Most of the time is given to creative activities (drawing, model building), music, motor skill activities and language activities (story telling, question-answer periods, discussions such as "show and tell, etc.). The rest of the time is used for free play, rest periods and eating. Pre-kindergarten and kindergarten are seen as time when children are prepared for school
and are allowed to play and develop positive attitudes towards school, learning, others and self. (Evans 1971)

On the contrary Bereiter and Engelmann's preschool means:

a) teaching four-year-olds in three major academic areas - reading, language and mathematics;

b) narrowing the global aims of the traditional preschool programs to specific learning tasks;

c) teaching these specific learning tasks directly as goals in themselves and not as a means to fostering general intellectual or social growth.

In the original Bereiter and Engelmann study, "An Academically-Orientated Preschool for Disadvantaged Children", they worked with fifteen four-year-olds in a predominately Black, poverty area in the Champaign-Urbana community of Illinois. There was no control group. The children were pretested and posttested on the Illinois Test of Psycholinguistic Abilities (ITPA), the Stanford-Binet Intelligence Test and the Wide Range Achievement Test in Reading, Arithmetic and Spelling.

Classes were conducted for two hours a day, five days a week for two years. The children were divided into three groups of approximately five to a group. There were three teachers: one for reading, one for arithmetic and one for language. The children
had three twenty minute classes each day. The rest of the time (one hour) was spent in non-academic activities: toileting, snacks, singing, discussions or free play. Bereiter and Engelmann (1967) describe their program in this way:

"The instructional sessions were represented to the children as work rather than play, the child's responsibility being to speak when called upon to do so, to 'try hard' to give the correct responses, and to refrain from diversionary activities such as social play or running around the room. Adherence to these behavioral rules was rewarded by verbal praise, fortified during the first month by cookies. Children were reprimanded for deviations from the rules and, if this was not effective, were excluded from the instructional group for short periods of time. Every effort was made to keep the instructional sessions lively and enjoyable and to shift the basis of motivation to the children's own accomplishments and progress as improvement becomes demonstrable." (p. 131)

Results

Bereiter and Engelmann (1967) reported the following results from their first experiment in direct verbal instruction with four-year-olds:

1. **Language**

   The following subtests of the Illinois Test of Psycholinguistic Abilities were used to measure growth in language ability:

   a) The Auditory-Vocal Automatic subtest to test the use of grammatical inflections.

   b) The Auditory-Vocal Association subtest to test verbal
analogies.

c) The Vocal Encoding subtest to test the use of expressive language.

d) The Auditory Decoding subtest to test vocabulary.

The results showed "enough language learning to take them (the children) from a year or more below average up to an average level of performance". (p. 161) - parenthesis added.

2. **Mental Age**

   Using the Stanford-Binet, the mental age of the fifteen children "rose from about six months below average ... to about four months above average". (pp. 173-174)

3. **Arithmetic**

   Using the Arithmetic subtest of the Wide Range Achievement Test, the children's mean score at the end of two years of instruction was 2.6 (sixth month of grade 2). (p. 174)

4. **Spelling**

   Using the Spelling subtest of the Wide Range Achievement Test, the children's mean score at the end of two years of instruction was 1.7. (p. 174)

5. **Reading**

   Using the Reading subtest of the Wide Range Achievement Test, the children's mean score at the end of two years of instruc-
The results of this experiment were encouraging to Bereiter and Engelmann. They reasoned that they had taken four-year-old children who showed below average performance on the ITPA and Stanford-Binet and sent them into first grade being able to perform above average in the basic academic subjects - reading, spelling and arithmetic.

Bereiter made another study. He compared direct verbal instruction with Montessori methods. There were eighteen children in the Bereiter preschool and seventeen children in the Montessori school. All of the children were four years old but the children in the Montessori school had already been in the school for one year before the experiment began. The children were not poor; they were from upper - or middle-class families.

In this study, Bereiter (1967) asked two questions:

1) "whether the contrasting verbal and non-verbal emphasis of the two methods would be reflected in differential gains on verbal and non-verbal performance measures and

2) "whether direct, teacher controlled and paced instruction in basic academic subjects would produce different achievement results than the less direct and forceful instruction of the Montessori method". (p. 175)

The children were tested in the Illinois Test of Psycholinguistic Abilities (ITPA) on a pretest - posttest basis. The reading, spell-
ing and arithmetic subtests of the Wide Range Achievement Test were administered as a posttest only.

Results

Bereiter (1967) reported no significant differences between the groups in language. However, on the Wide Range Achievement Test the direct instruction group did significantly better than the Montessori group.

Mean Scores Reported as Grade - Equivalents (p. 186)

<table>
<thead>
<tr>
<th>Direct Verbal</th>
<th>Montessori</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>2.43</td>
</tr>
<tr>
<td>Arithmetic</td>
<td>1.46</td>
</tr>
<tr>
<td>Spelling</td>
<td>1.72</td>
</tr>
</tbody>
</table>

Thus Bereiter (1967) concluded:

"The differences in achievement in reading, arithmetic and spelling were sizable, although the Montessori children did not do badly for four-year olds, scoring at the first grade level or above on every test. By comparison however, in another study carried out simultaneously with this one and covering the same time-span, disadvantaged four-year olds given the direct instruction curriculum earned scores almost identical with those of the considerably more privileged Montessori group, while disadvantaged children given a typical nursery school program earned scores at about the .5 grade level". (p.188)

B. Merle B. Karnes, Project Director at the Institute for Research on Exceptional Children at the University of Illinois
headed a research team that investigated the effects of five preschool programs. They reported their findings in *Research and Development Program on Preschool Disadvantaged Children* (Kearns, 1969).

The five programs studied were:

1) a Traditional Program
2) an Ameliorative Program
3) a Direct Verbal Program (Bereiter and Engelmann)
4) a Montessori Program
5) a Community-Integrated Program

The following instruments were used to test the children at the end of the pre-kindergarten and at the end of the kindergarten year:

1) Intellectual functions were measured by the Stanford-Binet Individual Intelligence Scale.

2) Language development was measured by the Illinois Test of Psycholinguistic Abilities.

3) Vocabulary comprehension was measured by the Peabody Picture Vocabulary Test.

4) Reading readiness was measured by the Frostig Developmental Test of Visual Perception and the Metropolitan Readiness Test.
Here are Dr. Kearnes' conclusions made about the programs as the children were tested at the end of preschool and kindergarten:

1) **At the End of the Preschool Year**

"The children in the Ameliorative and Direct Verbal programs generally showed the greatest gains. Those who participated in the Traditional program showed more modest gains. Children in the Community-Integrated program and those who participated in the Montessori program showed the least progress." (p. 99)

2) **At the End of the Kindergarten Year**

During the second year of the study all of the children in the Traditional, Community-Integrated, Montessori and Ameliorative programs attended public school kindergarten. According to the research design, only the children in the Direct Verbal program (Bereiter-Engelmann) did not attend public school but continued in their own program.

Here are Kearnes' conclusions at the end of kindergarten:

a) "Clearly the performance of the Direct Verbal group in intellectual functioning (Binet IQ) was superior to that of the other four groups. Only the children in the Direct Verbal group made a substantial gain during the second year." (p. 15)

b) "The Direct Verbal group was the only group that showed continued and appreciable progress over the two-year period and was at or above its chronological age on the three subtests related to verbal expressive abilities". (p. 15)

c) "Only children who attended the Direct Verbal
preschool were provided low pupil-teacher ratios and intensive language programming over the two-year period, and only these children made continued growth in all aspects of the test battery. The second year IQ gain is particularly encouraging as are the remarkable two-year gains in verbal expressive abilities made by children in this group". (p.18)

However, the Direct Verbal group did not make significant gains in reading as measured by the Metropolitan Readiness Test. This is surprising since this group had received an intensive two-year reading program.

Summary

To the author it seems that the Kearnes' study is important, not because it shows the clear superiority of the Bereiter-Engelmann program, but because it shows that it is a mistake to put children, who need intensive work, into the usual public school program. The only children who made continued progress in language development and in IQ gains were those who were taught with a low pupil-teacher ratio and who remained in an academically orientated kindergarten program. Thus, the results seem to be both an indictment of typical public school kindergarten programs and an endorsement for the development of basic skills program in kindergarten for children from low income families.
2. Language Development

A. What is the best kind of preschool for low-income children?

Bereiter and Engelmann took their original research and made it the basis for their most important book, *Teaching Disadvantaged Children in the Preschool* (1966a). This was the work that gave them their reputation as severe critics of traditional preschool programs, especially as used with children from low-income families.

The *Coleman Report* (1966) established the fact that the longer children are in school the wider the gap becomes in academic achievement between White and Black students.

"For most minority groups, then, and most particularly the Negro, schools provide no opportunity at all for them to overcome this initial (first grade testing) deficiency". (p. 20 of Summary of the Coleman Report)

Kenneth Clark (1963 and 1965) would see statements like this as a confirmation of his analysis that the real problem lies in the fact that schools in low-income areas are academically inferior to schools in middle- and upper-class areas and so they are not able to overcome this "initial deficiency".
Bereiter and Engelmann have no quarrel with Kenneth Clark (in fact their educational theories are very similar). However, their main concern is how does one go about overcoming this "initial deficiency". For them, the way to go about it is not in the traditional preschool program.

They see the traditional preschool as a middle-class institution because it tends to complement what is often lacking in middle-class homes. (1966 a)

1. "Whereas the upper-middle class child often spends most of his time at home with adults and has fewer than the average number of playmates of his own age, the nursery school stresses peer-group relationships and a reduced amount of adult-child interaction.

2. "Whereas the home environment is especially rich in verbal experience, the nursery school stresses seeing and doing.

3. "Whereas the child at home is sometimes prevented from developing physical skills and courage by overly protective parents, the nursery school attempts, through greater permissiveness and more carefully designed play equipment to engage the child in more active and ventursome physical activities". (p. 17)

Bereiter and Engelmann see the traditional nursery school program as a fine experience for middle-income children because the school complements the home, but they do not see it as the kind of program that will help low-income children. For low-income children, they advocate a preschool that will teach basic skills in language, reading and arithmetic.
The concept of time is an important concept for Bereiter and Engelmann. If a child begins school already behind others, then he is, in fact, racing the clock. He must be in a program that provides not only an average rate of learning but a program that is so intense that it provides an above-average rate of learning; for if a child is already behind, then he must be in a program that allows him to progress at a faster than normal rate if he is to catch up.

If one should ask the question: Exactly what is it that puts low-income children at a disadvantage when they start school? Bereiter and Engelmann would not mention general causes like poverty, or culture or lack of concrete experiences. For Bereiter and Engelmann the cause of disadvantage is in the area of language, something that can be taught and learned.

Bereiter and Engelmann give a very specific meaning to the terms "disadvantaged" or "culturally deprived". These terms do not refer to any fundamental capacity to learn. Rather, they refer to deficiencies in those particular kinds of skills that are important for success in school. For Bereiter and Engelmann, "disadvantaged" or "culturally deprived" are synonymous with language deprivation. If some children are disadvantaged it is because they come to school behind others in the ability to understand and use
the language of instruction - standard English.

To quote Bereiter and Engelmann (1966 a) directly:

"The language deficiencies of disadvantaged children were seen to consist not of deficiencies in vocabulary and grammar as such but in failure to master certain uses of language. Language for the disadvantaged child seems to be an aspect of social behavior which is not of vital importance. The disadvantaged child masters a language that is adequate for maintaining social relationships and for meeting his social and material needs, but he does not learn how to use language for obtaining and transmitting information, for monitoring his own behavior and for carrying on verbal reasoning. In short, he fails to master the cognitive uses of language, which are the uses that are of primary importance in school." (p. 42)

Of course Bereiter and Engelmann were not the first to see the cause of academic failure to be rooted in language deficiencies. Ausubel (1964), Figurel (1964), McCarthy (1954) and Newton (1960) have all studied the question and have concluded that poor children have generally limited vocabularies. John and Goldstein (1964) say that the poor have a limited labeling vocabulary. Martin Deutsch (1964) has concluded that poor children have an immature ability to categorize and have a limited ability to form or recognize new concepts.

But there is one major difference between Bereiter and Engelmann and others who have seen the ability to use language as a key for understanding the problems of poor children in school. The difference is that Bereiter and Engelmann have developed a method to try to
overcome this language deficiency. Much of Teaching Disadvantaged Children in the Preschool is a detailed explanation of how to teach language so that it can be a vehicle for logical thinking and the expression of logical thought. The Distar Language program is a major effort to give teachers a structured step-by-step blueprint for the teaching of language. It is one thing to analyze a problem. It is another thing to prescribe the remedy.

B. Is the language of the poor deficient or different?

In an article entitled "An Academically Orientated Pre-School for Culturally Deprived Children" (a different article from the one previously discussed with a very similar name), Bereiter and Engelmann (1966b) make it very clear that they think that the language of low-income children is not only different but deficient. They write for example:

"From our earlier work in teaching concrete logical operations it became evident that culturally deprived children do not just think at an immature level: many of them do not think at all." (p. 107)

A few pages later they write:

"... the goal of language training for the culturally deprived could be seen as not that of improving the child's language but rather that of teaching him a different language which would hopefully replace the first one at least in school setting. The two languages share lexical elements and these we made use of, but apart from this, we proceeded much as if the children had no language at all." (p. 113)
Bereiter and Engelmann take the position that the speech pattern of many low-income children is so inferior that it is useless as a means for expressing logical thought. Therefore, the teacher must get to the work of teaching the children to understand and to use standard English.

There is another point of view from the one expressed by Bereiter and Engelmann. It is a point of view that sees the language of some low-income children, more specifically some Black low-income children, as not being deficient but rather different. It is the point of view of those who write in favor of Negro Non-standard English, or, as it is sometimes called, Black English.

Some linguists - such as Labov (1965, 1966, 1969, 1970), Stewart (1964, 1969), Baratz (1969), Shuey (1968, 1969) and Dillard (1972) - have studied the speech of Blacks living in Northern cities. The usual procedure has been to tape conversations or discussions and then to study the speech patterns recorded on the tape. These linguists are united in pointing that they are studying a language that is different from standard English but a language that is, in no way, inferior to standard English. Black English is a dialect; it is a deviation from standard English. However, it is most important to understand that it is not a capricious or random
deviation from standard English. Black English is a systematic and predictable dialect. The person who uses it is talking in an organized and logical manner using syntax and grammar that have their own rules that are different from the rules of standard English. Black English is not a corruption of standard English, spoken by anyone speaking a poor or substandard English; it is rather, a language, linguistically different from but not inferior to standard English.

There are important implications for education in the research of the linguists on Negro Nonstandard English. Some of these implications are:

1) Respect for the language the child brings to the classroom.

2) Recruitment of personnel that could understand and use Black English as well as standard English.

3) A realization that for a long time we have attempted to take children from minority cultures and make them fit into the pattern of schools. This attempt failed for many children.

4) A new thrust in teaching reading to Black children. This new thrust sees the continuing failure of programs for Black children that offer more of the same; that is, more phonics, more word drills, more remedial reading classes. What the proponents of Black English urge is a whole new approach.
Engelmann's language program is completely opposed to the linguists who have studied Black English. William Labov (1970) has described the Bereiter and Engelmann program as "bad observation, bad theory and bad practice" (p. 187). Bereiter and Engelmann see the language of most low-income children as being inferior and they advocate an intensive program for teaching standard English in speaking and reading. The Black English linguists see the language of Black ghetto children as being different but not inferior and they advocate a program in which children begin to read in the same dialect.

However, there is a definite area where the Bereiter and Engelmann language program meets the language program of the Black English linguists, if not in theory, at least in practice.

After saying that disadvantaged children have "no language at all", Bereiter and Engelmann go on to say (1966 b): "This leads us naturally to adopt many of the techniques of modern oral methods of foreign language teaching" (p. 113). Thus, starting from the position that the speech of many Blacks and other low-income children is inferior or foreign speech, Bereiter and Engelmann advocate small group instruction in standard English with many hours of drill work - techniques used in modern methods of teaching a foreign language.
William A. Stewart is one of the main linguists in the research on the difference between Negro Nonstandard English and standard English. He is at the opposite end of the spectrum from Bereiter and Engelmann when it comes to an appreciation of Negro dialect. He sees the nonstandard speech patterns of American Blacks as a perfectly normal dialect which is just as much a product of systematic linguistic rules as the speech pattern of middle class Whites. However, Stewart is close to Bereiter and Engelmann when he gets to the topic of how to teach standard English.

In his article "Foreign Language Teaching Methods in Quasi-Foreign Language Situations", Stewart (1964) advocates using the methods of foreign language teaching to teach standard English to children who speak a Negro dialect. In another article Stewart (1969) says:

"...the learning of standard English by speakers of Negro dialect is more like foreign-language learning than it is like first-language learning. For this reason, techniques which have been developed in foreign language teaching to deal with structural conflicts between language systems are being found to be much more appropriate for teaching standard English patterns to Negro-dialect speakers than are the pathology-orientated methods of traditional speech therapy and remedial English." (p. 168)

Stewart meets Bereiter and Engelmann in practice although certainly not in theory. Coming from very different theoretical
positions they recognize the need for intensive oral-language programs in standard English patterned after foreign-language instruction for children who come to school speaking nonstandard English. Both Bereiter and Engelmann and the Black English linguists realize that success in our society demands that people be able to speak standard English. They also recognize that the speech of many Northern, low-income, Black children is not standard English. Finally, they recommend the use of oral repetition in small groups with a person speaking standard English.

3. The Educational Philosophy of Bereiter and Engelmann

In this section a summary of the thinking of Bereiter and Engelmann on the following subjects will be presented:

- Psychological versus Nonpsychological Approach to Education

- Purpose of Schools

- Teaching and Learning

- Role of the Teacher

A. Psychological versus Nonpsychological Approach to Education

Bereiter and Engelmann are not environmentalists. An
environmentalist in education is one who says the failure in school of many children from low-income families is the result of an impoverished environment in their early years. An environmentalist is one who says that many poor children fail in school - especially in reading - because they come from homes where there are no books, or where adults do not talk much with children, or where there is little intellectual stimulation. Martin Deutsch is an environmentalist. He has devoted much of his research to describing the factors of home and community that seem to have an adverse effect on children's scores on IQ tests, language tests and reading tests.

Deutsch is a psychologist and the director of the Institute for Developmental Studies, School of Education, New York University. In an article entitled "Social Disadvantage as Related to Intellectual and Language development", Deutsch (1968) reported on his study to discover the factors that seem to hinder a child's intellectual and language development. He put these factors together in what he called a Deprivation Index. The elements in this index were (p. 100):

1) Housing condition
2) Educational aspirations of parents for their children
3) Number of children at home under 18 years of age
4) Dinner conversation

5) Total number of cultural experiences provided by
   the family for the children

6) Attendance in kindergarten

Deutsch's research has lead him to think it is the cumulative
effect of these factors, rather than any one factor, that is important in describing the term "disadvantaged."

Cynthia Deutsch also works out of the Institute for Developmental
Studies at New York University. She has done research on the
influence of environment on a child's auditory and visual perception. One of her conclusions is that a child, living in a low-income
neighborhood, is exposed to more "noise" than is a child in a
middle- or upper-class neighborhood. This noisy environment
results in an inability to hear sounds clearly and to perceive the
very fine auditory distinctions between words that sound alike
such as "pet", "pit", "pot" or "pin" and "pen". (Deutsch, C. 1964)

Bereiter and Engelmann call their own approach "A Nonpsycho-
logical Approach to Early Compensatory Education" (1968). They
say that the studies of the environmentalists are of no practical
importance to the school and to teachers. They also claim that
it matters very little why children come to school lacking certain
skills - be it in reading, language, self-control, or auditory or
visual discrimination. The important thing is for the teacher to test and see what skills a child does not have. When this is determined, the next step is to teach the child in the best way possible, the skills he does not possess. Every thing else is irrelevant. Bereiter and Engelmann do not test the quality of dinner conversation or the intensity of noise at home. They test to discover what reading and language skills a child does not have in order that he might learn what he does not know.

B. Purpose of School

Bereiter and Engelmann take a narrow view of the purpose of school. Writing in the Harvard Educational Review, Bereiter (1972) distinguishes three purposes of schools:

a) education

b) skill training

c) child-care

By education, Bereiter means that traditional view which sees schools as an important institution to transmit values to the young and to develop the whole person. Bereiter denies that schools should be involved in education in this sense. The place where values should be transmitted and where the whole person should be formed is in the home, in the community and in the churches.

Bereiter hopes that children will develop in school but he feels
that schools should not try to influence this development. First of all he questions the influence a school has on the intrinsic values of a person. Secondly, he says that schools can often use such a lofty purpose as "development of the whole child" as an excuse to justify their failure to do their real job - the development of skills.

Bereiter recognizes child-care as a legitimate purpose of schools and thinks it should be done as humanly as possible. He sees child-care in the full sense of that term; namely, consisting of providing resources, services, games, activities, love and attention to children. He sees this child-care as relatively neutral in the sense that its purpose is not to produce a certain kind of child. This remains the perogative of the parents. The purpose of child-care is to provide a warm, safe child-centered atmosphere without infringing on the rights of parents to develop their children in the way they think best.

The most important function of the school, according to Bereiter, is in the area of training in the basic skills of literacy and computation. Schools are the only institutions set up to do this work. They should be judged successful or unsuccessful depending on their effectiveness to teach children to read, write, speak fluently and work with numbers. As Bereiter says: "...schools should
narrow their teaching efforts to a simple concern with getting children to perform adequately in reading, writing and arithmetic." (p. 391)

C. Teaching and Learning

Just as Bereiter has written about schools, Engelmann has written about what should go on in schools: teaching and learning. For him, they are two sides of the same coin. He insists that no teaching has taken place until a child has learned, and the only way to evaluate teaching is to evaluate the children. If they have not learned, then the teacher has not taught, no matter how hard she might have worked.

When a child does things at one point in time that he could not do earlier, then he has learned something. When the behavior of someone else (friend, parent or teacher) is responsible for his new learning, then the process is called teaching. Engelmann's definition of teaching is (1971): "Teaching is changing what children do or say (responses) under particular environmental circumstances. Teaching makes learning happen." (p. 1)

Engelmann sees teaching in behavioral terms. The teacher presents certain stimuli to a student. The student responds and the teacher either confirms the response or works to change it. If the student gives the correct response, then the teacher confirms
it, usually by praise or by noting that the answer was correct. If the student gives a wrong response (behavior) then teaching becomes a process of changing that behavior. For example, if a teacher says to a student "How much is two plus two?" and the student responds "five", then the teacher must change that incorrect response. Then she works to get the correct response.

Engelmann has a very precise explanation of what teaching is. For him, teaching is always concerned with a specific task. This teaching of tasks takes place in a certain sequence called a program. Therefore, to get the full picture we must see first what is involved in constructing an effective program and then what is involved in the teaching of specific tasks within a program.

1. Program

In his book, Preventing Failure in the Primary Grades (1969) and in his article, "Teaching Communication Skills to Disadvantaged Children" (1967 b), Engelmann gave a description of how to construct an effective program. The description is summarized in the following four points.

a) Specific Objectives - To provide "meaningful experiences" or to "stimulate self-actualization" are too vague to be helpful. These very general concepts must be narrowed to a series of specific tasks; such as: the children will be able to distinguish the
concept "above" from the concept "under".

b) **Break down** each objective into the various components that must be taught if the children are to achieve the objective. Every component becomes a task in itself that must be taught.

c) **Try out** the tasks and put them in sequence so the children learn only one task at a time and go from the simplest to the most complex.

d) Evaluate the program in terms of whether or not the children have learned the specific tasks the program was designed to teach. To evaluate a program by standardized tests is often not pertinent because the standardized tests might not be measuring the specific objectives of the program.

2. **Teaching**

Within the general program of instruction, specific tasks must be learned. The work of presenting these tasks so that they can be learned is called teaching. Engelmann (1971) breaks down teaching into three components:

a) **Pre-Task Component**

1. Secure attention.

2. State the rules for reinforcement before presenting the task; for example, "work hard and you'll get your take-home."
3. Use hand signals to get attention.

4. Vary the duration of signals so that paying attention can become a game in itself for the children.

b) Task Component

1. Know each routine and vary the pacing.

2. Use such methods as "modeling" or "leading" in order to secure correct responses from the children. These methods or correction procedures should fade as soon as possible.

3. Use "do it" signals to get responses.

c) Post-Task Component

1. When the children respond correctly, they should be reinforced immediately.

2. An incorrect response should be corrected immediately so that the children are not confused.

3. When a child is having considerable difficulty in learning a task, be sure to give reinforcement for working hard and trying.

It must be remembered that Engelmann's description of teaching as given above presumes that small groups of children are being taught basic skills in a very intense and precise manner. It is not a description of teaching that fits every situation. Engelmann has
attempted not only to program curriculum, but also to program teaching. He has analyzed the act of teaching basic skills into its various parts and he tells teachers exactly what should be done for each part. He also gives very detailed "correction procedures" when a child's response indicates that he can not do the particular task being taught. Finally Engelmann, along with his recent co-author, Wesley C. Becker, makes wide use of behavioral modification techniques to handle discipline problems. Engelmann instructs teachers to motivate children by offering, before beginning the task, a definite reward for completing the task. He tells teachers how to praise good behavior and how to ignore bad behavior. He offers techniques so that teachers can use the misconduct of some students to praise the good conduct of others. In this way, Engelmann hopes to overcome the typical situation in which a teacher spends so much of her attention on the undesirable behavior of some students that she is actually reinforcing the very behavior she wants to eliminate.

D. Role of Teacher

1. Teacher as Technician

Engelmann sees the teacher as a technician, or an educational engineer. The teacher's job is to find very specific causes to specific problems and then to do what has to be done to correct
the problem. General explanations are not enough. If a person brings his car to the mechanic to fix a particular problem, the mechanic must be able to define the exact cause of the problem and apply a very specific remedy. So too, when a teacher finds a fifth grader who is reading on a first grade level, general education theories about the origin of the problem will not remedy the situation. The teacher must find what skills this particular child does not have and start teaching those skills in the most efficient and time-saving manner as possible.

2. Teacher Responsibility

Engelmann (1969) is very clear that "the teacher is responsible for the learning and performance of the children". (p. 39) This simple statement cuts to the heart of the controversy over who is to take the blame for a child's failure in school: the child (and his family) or the school (and the teacher). Engelmann says that the only healthy situation is for the teacher to take the blame. If she blames the children for failure, she automatically excuses herself. She did not fail, they failed. She has no need, then to examine her own teaching techniques and see what can be done to promote better learning. If, on the other hand, the teacher takes the responsibility for the children's learning, then she will be
motivated to improve her work. She must realize that if one child in her class does not learn, then she is failing to teach that one child. She can ask herself: what can I do about it? Maybe she is doing the best job possible. In this case she should not feel guilty. Only if she is willing to take the responsibility for the learning of every child in her class, will the teacher be prompted to examine what she is doing and look for alternatives and not for rationalizations or self-serving excuses. Engelmann (1969) writes:

"In summary, the stipulation that the teacher is responsible for the performance of the children is introduced, not to punish the teacher but to provide her with the outlook necessary to improve her techniques. Only if she blames herself for children's failures does she have any reason for making better use of the teaching variables over which she has control." (p. 41)

3. Limiting the Role

Engelmann (1969) sees the role of the teacher as being both very specific and very important. Her specific role is to teach basic skills. She must be able to identify specific defects in a child's learning and offer the most efficient solution. She can only deal with problems that she can handle, problems that are present in the classroom - be they learning problems or behavioral problems. Knowing a child's history or family background might make the teacher more understanding but there is little she can do about a
child's history or his home. On the other hand there is much she
can do about his reading, writing and arithmetic. As a citizen the
teacher can and should get involved in the social and political issues
of the day, especially since they do have an effect on what goes on
in the classroom. But as a teacher her job is to teach basic skills.
Besides being very specific the teacher's role is very important.
There are some problems that must be left to the home and other
outside social and political organizations. But there is one service
to children that is not provided by anyone else except the teacher:
that is the all-important job of giving specific skills of literacy
and computation - survival skills in our society. If the teacher
does not teach these skills so that all children in the class learn
them, then there is, most likely, no one else or no other insti-
tution that is going to make up for this failure. Therefore, the
teacher's job might be narrow but it is of the utmost importance.

Engelmann (1969) sums up his position on the role of the
teacher in this way:

"In summary, the teacher must be a highly trained
 technician, not a combination of educational philosopher
and social worker. She must recognize that she is respon-
sible for a unique contribution to the child's welfare -
that of teaching him essential concepts and skills. If she fails to satisfy this need, she will have failed, re-
gardless of how well-meaning she is or how many visits
to the home she makes. If she doesn't teach relevant
skills, nobody will". (p. 36)
CHAPTER IV

RESEARCH DESIGN

There will be six parts to the chapter on the design of this study. These parts are:

1. General Information

2. Description of the Children

3. Method of Data Collection

4. Description of the Teachers and Paraprofessionals Involved in the Study

5. Explanation of Each Test Used in the Study

6. Summary of the Statistical Analysis Used in the Study
1. General Information

During the 1972 - 1973 school year, the author was the reading coordinator in District I which is located on Manhattan's Lower East Side. (For a fuller description of the student population and location of District I, see chapter II of this study.) The reading coordinator conducted some pilot projects in reading instruction to obtain data on different reading programs before making a major commitment to specific programs to be used during the next three years (1973 - 1976). The main pilot study that was initiated was the Distar Reading and Language Program.

A. Experimental Groups

In November 1972, it was announced at a principal's meeting that principals were invited to visit some schools in Brooklyn that were using the Distar Program. This was the first formal announcement in the District about Distar. As a result of the visit to Brooklyn, and as a result of the comments this visit caused, three principals said they would speak to their first grade and kindergarten teachers about starting the Distar Program in their schools. Three principals reported back to the coordinator that they had teachers who were willing to be trained in the Distar Program. Thus, it turned out that six experimental classes in Distar were
established in three schools. The classes were as follows:

School No. 1 - one first grade class and one kindergarten class,
School No. 2 - one first grade class and one kindergarten class,
School No. 3 - one first grade class and one kindergarten class.

Soon after this, the two pre-kindergarten teachers in School No. 2 said that they would be willing to use at least the Distar Language Program with their four-year-old pre-kindergarten children. When the project began, there were eight Distar experimental classes: three first grades,

three kindergartens,

two pre-kindergartens.

B. Control Groups

The reading coordinator then looked for eight classes to serve as control groups for the project. He did not tell the teachers in these classes that their classes would be control groups as such. Rather, he said that the District wanted to investigate a number of reading programs and that he would like to study how reading was being taught in various classes in the District. Thus, eight other teachers volunteered to participate in the project. Even though the coordinator avoided using the term "control groups" when speaking with these teachers, they seemed to accept the idea that,
as a matter of fact, they were control groups.

These control groups were located in the following schools:

School No. 1 - one first grade and one kindergarten. Thus, both of the first grade classes and two of the four kindergarten classes in School No. 1 participated in the project.

School No. 2 - one first grade class and one kindergarten class. These classes matched the two Distar classes in the school. School No. 2 is a large school of more than 1,000 students and it has many first grade and kindergarten teachers. The reading supervisor in the school informed the reading coordinator that a first grade and a kindergarten teacher were willing to participate in the study.

School No. 3 - one first grade class. School No. 3 is a small school and it had only one kindergarten teacher. She taught a morning and an afternoon class, but the coordinator did not want to use the afternoon class for the control group because he was afraid that there might be a carry-over of the Distar method into the afternoon class.

The coordinator went to school No. 4, three blocks from School No. 3 and asked the principal if a kindergarten teacher would participate in the study. The principal called a few days later to say that a kindergarten teacher had volunteered.
School No. 5 - Since School No. 2 had only two pre-kindergarten teachers and both were involved in Distar, the coordinator had to find two other pre-kindergarten classes. The two pre-kindergarten teachers at School No. 5 (located three blocks from School No. 2) had reputations for being good pre-kindergarten teachers. The coordinator visited them and they agreed to participate in the study. Thus, the eight control groups were designated before the Christmas vacation began. These groups were:

- three first grades,
- three kindergartens,
- two pre-kindergartens.

C. Training

The teachers and paraprofessionals in the experimental groups went to one Distar Training Session at the IBM Center at 590 Madison Avenue in New York City. Three training sessions were also conducted within the District. These sessions took place in December 1972 and January 1973. The Distar Program also assigned a consultant who visited the District one morning a week between January and May 1973. On her visits, she observed each teacher's and paraprofessional's techniques in using Distar. The trainer was therefore able to make immediate corrections of anything that was not being done properly. The coordinator estimated
that the trainer visited each classroom ten times between January and May.

The teachers and paraprofessionals in the control classes neither requested nor received special training. They continued teaching in their regular program.

D. Types of Instruction Studied in this Project:

1. **Distar Reading and Language Program**

   This program was fully explained in Chapter I, section 6.

The six first grade and kindergarten teachers used both the reading and language program. The children advanced at different rates. However, since the teachers did not begin to use the program until the end of January, no child advanced past lesson 100 by June 15th. That was the date on which the project was concluded.

This is where the groups were in reading when the project ended.

**First Grade - Number of lessons completed in reading**

<table>
<thead>
<tr>
<th>Group</th>
<th>Lessons Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Groups</td>
<td>85 - 92</td>
</tr>
<tr>
<td>Middle Groups</td>
<td>75 - 80</td>
</tr>
<tr>
<td>Bottom Groups</td>
<td>70 - 75</td>
</tr>
</tbody>
</table>

**Kindergarten - Number of lessons completed in reading:**

<table>
<thead>
<tr>
<th>Group</th>
<th>Lessons Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Groups</td>
<td>70 - 80</td>
</tr>
<tr>
<td>Middle Groups</td>
<td>65 - 75</td>
</tr>
<tr>
<td>Bottom Groups</td>
<td>60 - 65</td>
</tr>
</tbody>
</table>
2. **Distar Language**

The pre-kindergarten teachers began by using the language program only. However, one of the two pre-kindergarten teachers thought that five of her four-year-olds were ready for reading. She was right. They made great progress and three of the children completed lesson 98 by June 15th. This was more than any kindergarten or first grade child completed. However, the pre-kindergarten children were not included in the final evaluation for reading since only three children were involved.

3. **Basal Reader**

All three first grade teachers in the control group used a basal reader, supplemented by their own phonics program, as their basic tool of instruction. Two of the three had three reading groups while one teacher had two groups. They spent from one to two hours a day teaching reading.

This is where the first grade control groups were in their reading programs when the project ended.

<table>
<thead>
<tr>
<th>First Grade</th>
<th>Level of Basal Reader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Groups</td>
<td>Finished the first grade reader</td>
</tr>
<tr>
<td>Middle Groups</td>
<td>Finished the Primer</td>
</tr>
<tr>
<td>Bottom Groups</td>
<td>Finished the Pre-primer and were starting the primer.</td>
</tr>
</tbody>
</table>
4. Reading Readiness

Two of the three kindergarten teachers reported that they were using reading readiness materials. One teacher said she was not even doing readiness work. However, when the coordinator visited her class she was doing some work in phonics. She considered her work in phonics to be too sporadic to say that she was using a readiness program.

5. Informal Language Instruction

The two pre-kindergarten teachers in the control groups were not engaged in any formal reading or readiness program. They were doing the traditional nursery school work and felt that they were spending most of their time in informal teaching of language.
2. Description of the Children in the Study

A. There were 309 children in this study. They were distributed as follows:

Table 4.1 Numerical Distribution of Subjects

<table>
<thead>
<tr>
<th>Grade</th>
<th>Class</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-K</td>
<td>A</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>K</td>
<td>A</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60</td>
<td>61</td>
</tr>
<tr>
<td>First</td>
<td>A</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>68</td>
<td>72</td>
</tr>
</tbody>
</table>

There were 152 children in the experimental group and 157 children in the control group.
B. On the basis of sex, the children in the study were divided in the following manner:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Group</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-K</td>
<td>Experimental</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>K</td>
<td>Experimental</td>
<td>26</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td>First</td>
<td>Experimental</td>
<td>37</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>44</td>
<td>28</td>
</tr>
</tbody>
</table>

There were 72 boys and 80 girls in the experimental group making a total of 152. There were 89 boys and 68 girls in the control group making a total of 157.
C. On the basis of race and nationality, the children were divided in the following manner:

Table 4.3 Distribution of Subjects by Race and Nationality

<table>
<thead>
<tr>
<th></th>
<th>Experimental</th>
<th></th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black</td>
<td>Chinese</td>
<td>Hispanic</td>
</tr>
<tr>
<td>Pre-K</td>
<td>1</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>K</td>
<td>8</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>First</td>
<td>10</td>
<td>0</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>3</td>
<td>110</td>
</tr>
</tbody>
</table>

Both groups were fairly evenly divided on the basis of race. In both groups, Hispanic children formed, by far, the largest single group. There were 110 children with Hispanic sur-names in the experimental group and 99 children with Hispanic sur-names in the control group, most of the children were Puerto Rican.
D. The determination of socioeconomic status was a little more difficult to establish. Most of the data came from the application that parents filled out so that their children could receive free lunch. The presumption was that total family income as indicated on these forms was accurate. However, it is easy to imagine that if parents wanted their children to receive free lunch, they could declare a family income that might be lower than the actual figure. There was no way of checking the accuracy of the information on the form.

Sometimes, forms could not be found. They had either been lost or never filled out. In these cases, the teacher was asked for her estimate based on her knowledge of the child's family. Since the information was gathered at the end of the year, the teachers felt they had an accurate estimation of family income based on parent occupation.

The figure $7,000 was chosen as the cut-off point for family income. A family was classified as "poor" for this study if the total family income was below $7,000 a year; a family was classified as "not poor" for this study if the total family income was above $7,000 a year.

The federal government used $4,200 for a family of four to determine if a family should be classified as "poor". The author felt this figure was unrealistic for families living in New York City.
He chose to follow the president of Patricia Sexton in Education and Income who used $7,000 as the dividing point to classify families as "poor" or "not poor".

With all of the above reservation in mind, the following is an estimate of distribution of children according to socioeconomic status.

Table 4.4 Distribution of Children by Socioeconomic Status

<table>
<thead>
<tr>
<th>Grade</th>
<th>Experimental</th>
<th></th>
<th>Control</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor</td>
<td>Not Poor</td>
<td>Total</td>
<td>Poor</td>
</tr>
<tr>
<td>Pre-K</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>K</td>
<td>60</td>
<td>0</td>
<td>60</td>
<td>52</td>
</tr>
<tr>
<td>First</td>
<td>65/145</td>
<td>3/7</td>
<td>68/152</td>
<td>70/141</td>
</tr>
</tbody>
</table>

The children in the public schools in the Lower East Side of Manhattan are poor. The above figures are intended to be approximations made on the basis of whatever written records were available and on the basis of teacher estimation when written records were not available. Every school in the District qualifies for Title I money. There is no evidence that the above figures, as approxima-
tions, are not accurate.

3. Method of Data Collection

The data for this dissertation was collected in the following way:

A. By January 15, 1973, the 16 classes had agreed to participate in the Experiment. There were two pre-kindergarten, three kindergarten and three first grade classes in both the experimental and the control groups.

From January 15 to January 31, 1973, the Peabody Picture Vocabulary Test, (PPVT), Form A was administered to 122 children. Ten children were picked at random from an alphabetical list in each class - except in pre-kindergarten where four children in each class were chosen.

Each test was administered individually, either by the reading coordinator or by a teacher who worked with him while he was in the school. No effort was made to control for the time of day when the test was administered. If a child was absent, a second effort was made to test the child at another time. If the child remained absent, he or she was not included in this aspect of the study. This proved to be the case with fourteen children.
The following children were tested on the Peabody Picture Vocabulary Test, Form A:

<table>
<thead>
<tr>
<th>Test</th>
<th>Grade</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>A PPVT</td>
<td>Pre-K</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>K</td>
<td>24</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>First</td>
<td>28</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>60</strong></td>
<td><strong>62</strong></td>
</tr>
</tbody>
</table>

The A Form of the PPVT was considered a pretest. The B Form of the PPVT was used as a posttest. The B Form was given from June 15 to June 26, 1973. Like the A Form, it was administered individually. Thirteen of the original 122 children had transferred out of the District between January and June, so they were no longer available for the posttest. This is a comment on the high mobility rate in the district. Either the reading coordinator or the teacher who aided him when the A Form was given, administered the B Form.

<table>
<thead>
<tr>
<th>Test</th>
<th>Grade</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>B PPVT</td>
<td>Pre-K</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>K</td>
<td>22</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>First</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>54</strong></td>
<td><strong>55</strong></td>
</tr>
</tbody>
</table>
(See Appendix B for a copy of Forms A and B of the PPVT)

B. On May 15, 1973, each teacher and paraprofessional was given a questionnaire. There was one teacher questionnaire and one paraprofessional questionnaire. These questionnaires were exactly alike. Also, there was a pupil questionnaire. The teacher was asked to fill out a pupil questionnaire for each child in her class.

There were 18 questions in the teacher questionnaire and the same 18 questions in the paraprofessional questionnaire. There were 20 questions in the pupil questionnaire. From these questions were derived the 22 independent variables used in the study.

100% of the questionnaires were returned, both because of the coordinator’s personal contact with each teacher and paraprofessional and because of his official position in the District.

C. Between June 1 and June 20, 1973, the Boehm Test of Basic Concepts was administered to the children in the experimental and control groups.

The test was administered individually to the pre-kindergarten children. Some of the children in the pre-kindergarten could take only the first half of the test (25 questions). The procedure was established that if a pre-kindergarten child could not complete the first part, then the examiner should not administer the second
part which was considerably harder than the first part.

The test was administered to the kindergarten and the first grade children in small groups. This was the procedure:

The class was divided equally into two groups.
- On the first day, each group was given the first part of the test.
- On the second day, each group was given the second part of the test.
- The children who were absent for the whole test or who were absent for either part, were then tested individually when they returned to school and could be seen by the examiner.

Thus, each class had four separate group settings for the Boehm Test and children who were absent were tested individually. The test was administered by the reading coordinator and a teacher from each school who was selected to assist him. The coordinator did all of the group testing in the sense that he read each question to the group. The teacher assisted in each group session by seeing to it that each child was following the directions. The teacher administered the test, or part of it, individually to children who were absent when the group was tested.
The following children were tested:

<table>
<thead>
<tr>
<th>Test</th>
<th>Grade</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boehm</td>
<td>Pre-K</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>K</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>First</td>
<td>68</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td></td>
<td>139</td>
<td>141</td>
</tr>
</tbody>
</table>

(See Appendix B for a sample of the Boehm Test of Basic Concepts)

D. Between June 1 and June 26, 1973, the Wide Range Achievement Test was administered to the children in the experimental and control groups. Only the reading subtest of the entire Wide Range was administered.

The pre-kindergarten children were not tested on the Wide Range Achievement Test. None of the children in the pre-kindergarten control group had received any instruction in reading or letter recognition. Only five children in the pre-kindergarten experimental group had received instruction in reading and letter recognition. It was decided, therefore, that the Wide Range Achievement Test in reading should not be administered to the pre-kindergarten children since only five children had received reading instruction.

The Wide Range Achievement Test in reading was administered to the kindergarten and first grade children. It was administered
individually, either by the reading coordinator or by a teacher in each school selected to assist him. A set procedure was established on how to administer the test and on how to react to children who gave either correct or incorrect answers.

The following children were tested:

<table>
<thead>
<tr>
<th>Test</th>
<th>Grade</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide Range</td>
<td>K</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>First</td>
<td>62</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>116</td>
<td>119</td>
</tr>
</tbody>
</table>

(See Appendix B for a sample of the reading subtest in the Wide Range Achievement Test.)

E. Summary

Thus, by June 26, 1973, all of the data was collected. No effort was made to control for the time of day that a particular test was given or whether it was administered by the reading coordinator or by an assistant.

The Peabody and Wide Range were administered individually. The Boehm was administered in small groups in kindergarten and first grade except to anyone who was absent when groups were tested. The Boehm was administered individually to pre-kindergarten children. The interview questions and the test results were recorded on IBM Fortran coding forms. It took the author and an
assistant one month to mark all the tests and to record the information on the Fortran paper. Computer cards were punched from the Fortran paper by key punch operators at Data Compass Corporation. The author made one complete check of the cards and found only one card incorrectly punched. This was corrected.

In most cases, randomization was not used. The intention was to test the entire population (309) on the Boehm Test of Basic Concepts, but 29 children were not available due to repeated absences. The pre-kindergarten children were excluded from the Wide Range Test in reading. From the kindergarten and first grade, 235 out of 261 children were tested because 26 were repeatedly absent. Randomization was used for the Peabody, Form A.

While statements may be made about the population tested, generalizations to all children or to children outside the population used in this study is not clear and will not be made.

4. Teachers and Paraprofessionals

There were 16 teachers involved in this study. Each teacher had been assigned a paraprofessional since the beginning of the term, September 1972.

It was decided not to include any paraprofessional data in the study. It was very difficult to determine direct influence of para-
professionals upon children. The teacher was responsible for the progress of each class and the paraprofessional worked under her supervision.

It was judged that teacher variables were more important than paraprofessional variables. This is not to say that paraprofessionals do not play an important role in the classroom. Rather, it was felt that it was outside the scope of this study to attempt to analyze the specific influence of paraprofessionals as distinct from the influence of the classroom teacher.

All of the 16 teachers involved in the study were women. Fifteen of the teachers were white; one was Oriental; no one was Black or Spanish. They varied in years of teaching experience from 3 years to 31 years. However, teaching experience was divided among the teachers in the experimental group and in the control group in the following manner:

a) Among the eight teachers in the experimental group, only one had been teaching over ten years and four out of eight had been teaching less than five years.

b) Among the eight teachers in the control group, seven out of eight had been teaching for more than ten years. Six out of eight had been teaching between 24 and 31 years.

Obviously, no conclusion can be drawn from such a small
sample. However, two statements can be made:

1) It is a tribute to the teacher in the experimental group who had been teaching for more than ten years that she would try a new approach to teaching children. She had been a kindergarten teacher for 23 years. No one should say, without investigation, that "the old-timers" won't try anything new.

2) However, it is striking that the younger teachers tended to participate in the experimental group while the older teachers did not. It could be either that younger teachers are more open or that they feel the need for the kind of classroom structure that Distar imposes. It also could be that the older teachers felt that Distar had nothing to offer them. They tended to rely more on their years of experience than on a new program.

5. Description of Each Test Used in the Study

There were three instruments or tests used in this study:

1) Peabody Picture Vocabulary Test, (PPVT)
2) Boehm Test of Basic Concepts
3) The Wide Range Achievement Test

1. Peabody Picture Vocabulary Test, (PPVT)

A. Description

The PPVT is, as the name indicates, a vocabulary
test. It was developed by Lloyd M. Dunn in 1958. It is sometimes used as an IQ test or a test of verbal intelligence. Raw scores can be converted to IQ scores and mental age. In this study it was used only as a measure of a child's vocabulary.

The PPVT consists of 150 plates or pages. On each page there are four pictures. The examiner names one of the pictures. The person tested has to indicate, if only by pointing to one of the pictures, which of the four is the one named by the examiner. According to the test manual, the examiner is to stop testing when the child has made six errors in any eight consecutive attempts. (Dunn, 1959)

The B form of the test is exactly like the A form, except that an alternative picture is named on each page.

B. **Advantages**

There are many advantages to the PPVT. They are:

a) The children do not have to be able to say anything. They can indicate by a gesture which picture goes with the name (vocabulary word) used by the examiner.

b) The children seem to like the test. It is very easy to turn the test into a game with the children by using such expressions as: "I bet I can fool you this time", etc.

c) Extensive, specialized preparation is not needed to administer the test.
d) It is given individually and in about ten minutes to each child.

e) It is untimed.

C. Disadvantages

a) Some of the vocabulary might be more familiar to one population rather than another. For example, on plate 49, one of the four pictures is that of a fire hydrant. The test calls for the child to be able to identify a picture of a "hydrant". Many of the children tested could not identify a "hydrant". But, when asked to show the picture of the "johnny pump", most of them knew it. This shows that some vocabulary used in the test might be more familiar to one social class or region than to another.

b) The test manual (1965) admits that "only White children and youths residing in and around Nashville (Tennessee) were included in the final standardization group." (p. 27)

D. Summary

In spite of the above disadvantages, the PPVT is regarded as a standard test of a child's vocabulary. Since children from different social classes or from different localities were not being compared, the test can be regarded as uniform for all.

Buros concluded his review of the PPVT with the comment,
"In this reviewer's opinion, the PPVT is probably the best of its kind." (p. 532)

More details on test construction and test standardization, as well as on the test's reliability and validity are available in the manual. (Dunn, 1965)

2. **Boehm Test of Basic Concepts**

   A. **Description**

   The Boehm Test of Basic Concepts (1967) "is designed to measure children's mastery of concepts considered necessary for achievement in the first years of school".

   All together there are 50 words or concepts that are tested, 25 in Booklet 1, and 25 in Booklet 2, - with Booklet 2 being more difficult. The word or concept is read aloud to a child or a group of children. They must indicate their responses by marking an X on a picture which they feel best illustrates the word or concept being tested. There are A and B forms of the test. The A form was used. It took about one-half hour to administer a booklet (25 questions) to a group of ten to fifteen kindergarten or first grade children.

   B. **Advantages**

   a) The concepts used in this test are important concepts used in the classroom. In the category of space the following con-
cepts are used: "top", "through", "away from", "next to", "inside", "middle", "farthest", "around", "over", "between", "nearest", "corner", "behind", "row".

(For a full list of all concepts used, see Appendix B)

b) The test is read to the children. They do not have to be able to read in order to participate in the test.

c) Children do not have to be very verbal themselves in order to score on the test. They merely have to mark an X on a picture as their response.

d) The test is easy to administer.

e) The test is not timed.

C. Disadvantages

a) When 50 concepts are chosen to be the substance of a test, that choice is always subject to criticism.

b) In a group test, it is difficult to control for copying.

D. Summary

Teachers were very interested in the Boehm test and in their children's scores. Many of the teachers said that the test would be useful to them if it were given at the beginning of the school year. This would let teachers know what concepts had to be stressed for certain children. In this way the test could be used as a diagnostic tool for the classroom teacher rather than as a standard-
ized test that compares children with norms.

For information about reliability and validity for the Boehm, see the manual, (Boehm, Revised - 1971).

3. The Wide Range Achievement Test

A. Description

The Wide Range Achievement Test (Wide Range) was developed by J.F. Jastak and S.R. Jastak in 1936. It is sometimes referred to as the "Jastak Test". It was revised in 1946 and 1965. The 1965 edition was used in this study. It was designed as "a convenient tool for the study of the basic school subjects of reading (word recognition and pronunciation), written spelling, and arithmetic computation" (p. 1). It has become a popular standardized test.

There are three subtests in the Wide Range: spelling, arithmetic and reading. Only the reading subtest was used in this study. The reading is divided into two levels, I and II. Only level I was used. Its norms go from pre-kindergarten to college. There are four parts in the Level I test:

1. Recognition of letters in the child's name.
2. Ability to match 10 letters.
3. Ability to know the names of 13 letters of the alphabet.
4. Ability to pronounce words.
B. Some Changes

Some changes in the Wide Range were made in order to be sure that the format of the test would not favor either the control group or the experimental group. These changes were as follows:

1) The letters used for letter-matching and for letter-recognition (parts two and three of the test) were written as lower case letters for the children in the experimental group, and as upper case letters for the children in the control group. This was done because the children in the experimental group had learned lower case letters only while the children in the control group had learned the upper case letters that were on the test.

2) The long vowels were marked on the following words for the children in the experimental group: "sēē", "ēat", "ōpen", "dēēp", "ēven", "awake", "sīze" and "trāy". This was done because the children in the experimental group were all in Level I of Distar and recognized the long vowel sound only when indicated by the diacritical marks. No other accommodation to Distar orthography was made.

(See Appendix B for examples of the Wide Range as administered to children in Distar and not in Distar.)
C. Advantages

a) The test is administered individually with all the answers made orally. Thus, all the problems and inaccuracies that are part of "paper and pencil" tests are avoided.

b) The test is untimed.

c) The test takes only a few minutes to administer to each child.

D. Disadvantages

a) Like many standardized tests, the Wide Range tends to favor a sight approach rather than a phonetic approach to reading. For example, "to" is the fourth word in the test. It is a word that children in a basal reading program learn very early. A child in a phonics program learns this word, as a sight word, much later. The same would be true of other words such as "was". Also, the Distar Program teaches the sound of the letter "b" very late in the program because of the desire to clearly distinguish "d" and "b". This puts a child at a disadvantage when reading a word like "big", the fifth word in the Wide Range.

E. Summary

The Wide Range is easy to administer, is administered individually and quickly, and is untimed. However, it may favor those
who are learning to read in a basal approach that teaches sight words early in the program. Also, the test measures only word recognition and pronunciation. It does not attempt to measure comprehension. Finally, it must be recalled that some changes in the standardized test were made to accommodate the children in Distar who were using Distar orthography.

For information about the reliability and validity of the Wide Range, see the manual, (Jastak, 1956).

6. Summary of the Statistical Analysis Used in the Study

Three kinds of statistical analysis were used in this study. They were: 1) correlation; 2) multiple regression; 3) means and medians.

1) Correlation

The purpose of determining a statistical correlation is to see if there is a relationship, between two variables and, if there is a relationship, to see how strong the relationship is. A coefficient of correlation is a number that gives an indication of the type of relationship present between the two variables under study, (Guilford, 1973). This dissertation used the most widely employed measure of statistical correlation - Pearson's product moment correlation coefficient.
It is important to note that correlations give relationships not causes. If it is shown that there is a relationship between a student's score on a Miller Analogy Test and his/her success in graduate school, this does not mean that one is the cause of the other. It could be that a high IQ is the cause of both success on the Miller Analogy Test and success in graduate school. So, to repeat, we are dealing with relationships - not cause and effect.

The following is the list of the variables used in this study:

1) Grade
2) Age
3) Sex
4) Race
5) Socioeconomic Status (SES)
6) Child's rank within the class
7) Child's placement in a reading group
8) Child's fluency in English
9) Lesson child reached in the Distar program
10) Child's rate of absence from school
11) Mobility of the child's family (change of address)
12) Number of months child was present in his/her class
during the past year

13) Child's ability to get along with others in the class

14) Degree of attention needed by the child

15) Estimate of the child's health

16) Number of adults used for the teaching of reading in the child's class

17) Number of years of teaching experience of child's teacher

18) Teacher's idea of when children should first be taught to read

19) Amount of time teacher gives each day to reading instruction

20) Amount of time teacher gives each day to formal language instruction

21) Number of children in the class

22) Number of groups teacher has for reading instruction

23) Child's raw score on the PPVT, Form A

24) Child's raw score on the PPVT, Form B

25) Child's raw score on the Wide Range Achievement Test in reading

26) Child's raw score on the Boehm Test of Basic Concepts
Tables will be presented showing the correlation between the first 22 independent variables with the last four dependent variables. The tables will also include the correlation between the last four variables with each other. Only the significant \( p < 0.05 \) and near significant \( p < 0.10 \) correlations will be shown. This will be done for both the experimental and the control classes.

2) **Multiple Regression Analysis**

The concept of regression is close to that of correlation except that regression is concerned more about prediction than about relation. In other words, we want to know what variable or what group of variables are able to account for the outcome or predict the outcome of another variable. For example, we might want to see if it is the student's score on a vocabulary test or his score on an attitude test that is a better predictor of his score on an IQ test. In other situations, we might want to see which combination of many variables is the best predictor of a student's results on a particular test.

In making such predictions, the variable from which we are making the prediction is referred to as the independent or the predictor variable. The variable that is predicted is called the dependent or the criterion variable.
In this study, the first 22 variables are the independent (predictor) variables. The last four are the dependent (criterion) variables. The only exception is that variable 23 (child's score on the PPVT, Form A) is used both as a dependent variable but also as an independent or predictor variable for variable 24 (child's score on the PPVT, Form B).

In this study, a Step-wise Regression Analysis (Biomedical program) was used.

3) Mean and Median

As already described in Chapter II, means and medians are summary statistics that describe certain central tendencies of an entire distribution of scores. The mean is an average of all the scores in the distribution while the median is the point that separates the top half of the group from the bottom half.

The means and the medians were computed for the following four variables:

1) Raw score on the PPVT, Form A
2) Raw score on the PPVT, Form B
3) Raw score on the Wide Range Achievement Test in Reading
4) Raw score on the Boehm Test of Basic Concepts

The means and medians of these four variables were compared in the following way:
a) First grade experimental group with first grade control group

b) Kindergarten experimental group with kindergarten control group

c) Pre-kindergarten experimental group with pre-kinder-garten control group
In this study 24 hypotheses were tested. Nine dealt with first grade children, nine with kindergarten children and six with pre-kindergarten children.

Ten hypotheses were proven, twelve were not proven and two showed no results because there were not enough subjects to produce any definite findings.

A. Correlations

Eight hypotheses dealt with the correlation between the level reached by the children in Distar and their scores on standardized tests. In seven of the eight hypotheses, correlation between the level in Distar and scores on standardized tests proved to be significant at the .05 level of significance. In one case the correlation was higher than .05.

Hypothesis 1

With 68 first grade children, the correlation between Distar and the Boehm Test of Basic Concepts was significant at the .001 level.

Hypothesis 2

With 25 first grade children, the correlation between Distar
and the Peabody Picture Vocabulary Test, Form B, was significant at the .001 level.

_Hypothesis 3_

With 62 first grade children, the correlation between Distar and the Wide Range Achievement Test in reading was significant at the .001 level.

_Hypothesis 10_

With 54 kindergarten children, the correlation between Distar and the Boehm Test of Basic Concepts was significant at the .009 level.

_Hypothesis 11_

With 22 kindergarten children, the correlation between Distar and the Peabody Picture Vocabulary Test, Form B, was significant at the .03 level.

_Hypothesis 12_

With 54 kindergarten children, the correlation between Distar and the Wide Range Achievement Test in reading was significant at the .001 level.

_Hypothesis 19_

With 17 pre-kindergarten children, the correlation between Distar and the Boehm Test of Basic concepts was significant at the .004
level.

Hypothesis 20

With 7 pre-kindergarten children, the correlation between Distar and the Peabody Picture Vocabulary Test was not significant at the .05 level. The level of significance was .27.

Summary of the data based on the relationship between Distar and scores on standardized tests of first grade, kindergarten and pre-kindergarten children:

In seven out of the eight relationships tested, there was a significant correlation ($p < .05$) between Distar and standardized tests. In the only case where the relationship was not significant, only 7 children were involved.

It seems that there is a significant correlation, in most cases, between progress in the Distar Program and scores on standardized language, vocabulary and reading tests.

B. Regression

Eight hypotheses stated that a child's participation in the Distar Program would be significant in predicting success on standardized tests. In two cases - both involving pre-kindergarten children - the hypotheses could not be tested because there were not enough children involved to test the hypotheses. Of the six
hypotheses tested, the Distar Program proved to be a significant predictor variable in only one case.

Hypothesis 7

With 68 first grade children, Distar accounted for less than 1% of the variance on the Boehm Test of Basic Concepts. A child's rank in class (from the bottom one-fifth to the top one-fifth) was the best predictor of success on the Boehm and accounted for 37% of the variance.

Hypothesis 8

With 25 first grade children, Distar accounted for less than 1% of the variance on the B form of the Peabody Picture Vocabulary Test. A child's score on the A form of the Peabody was the best predictor of success and accounted for 80% of the variance.

Hypothesis 9

With 62 first grade children, Distar accounted for 4% of the variance on the Wide Range Achievement Test in reading. A child's rank in class (from the bottom one-fifth to the top one-fifth) was the best predictor of success and accounted for 46% of the variance.
Hypothesis 16

With 54 kindergarten children, Distar was not a significant predictor variable on the Boehm Test of Basic Concepts. A child's fluency in English was the best predictor of success on the Boehm and accounted for 58% of the variance.

Hypothesis 17

With 22 kindergarten children, Distar accounted for only 1% of the variance on the Peabody Picture Vocabulary Test, form B. A child's score on the A form of the Peabody was the best predictor and accounted for 76% of the variance.

Hypothesis 18

With 54 kindergarten children, Distar was the best predictor of success on the Wide Range Achievement Test in reading. Distar accounted for 33% of the variance on the Wide Range.

Summary of the data testing to see if the Distar Program would be a significant variable in predicting success on standardized tests in language, vocabulary and reading:

In five out of six cases, the Distar Program was not a significant variable in predicting success on standardized tests. Other personal factors, such as a child's rank in class, fluency in English and scores on previous tests turned out to be more
significant variables. Only when predicting the success of kindergarten children in reading, did Distar prove a significant variable.

C. Comparison between experimental and control groups

Eight hypotheses dealt with a comparison between children in the Distar Program and children in non-Distar Programs. In six of the eight cases, the children in the non-Distar programs scored better than the children in the Distar Program.

Hypothesis 4

The first grade children in the Basal Program had higher mean and median scores on the Boehm Test of Basic Concepts than the first graders in the Distar Program.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Median</th>
<th>S. D.</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distar</td>
<td>32.2</td>
<td>31.3</td>
<td>9.1</td>
<td>68</td>
</tr>
<tr>
<td>Basal</td>
<td>35.4</td>
<td>37.3</td>
<td>7.7</td>
<td>71</td>
</tr>
</tbody>
</table>

Hypothesis 5

The first grade children in the Distar Program showed greater gains in their mean and median scores between the A and B forms of the Peabody Picture Vocabulary Test than the first graders in the Basal Program.
### Hypothesis 6

The first grade children in the Basal Program had higher mean and median scores on the Wide Range Achievement Test in reading than the first graders in the Distar Program.

### Hypothesis 13

The kindergarten children in the non-Distar program had
higher mean and median scores on the Boehm Test of Basic Concepts than the kindergarten children in the Distar Program.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distar</td>
<td>28.9</td>
<td>30.2</td>
<td>9.2</td>
<td>54</td>
</tr>
<tr>
<td>Non-Distar</td>
<td>30.9</td>
<td>30.5</td>
<td>9.6</td>
<td>54</td>
</tr>
</tbody>
</table>

**Hypothesis 14**

The Kindergarten children in the non-Distar Program showed greater gains in their mean and median scores between the A and B forms of the Peabody Picture Vocabulary Test than the kindergarten children in the Distar Program.

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPVT, A</td>
<td>36.8</td>
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<tr>
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<td>43.5</td>
<td>13.2</td>
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<tr>
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<td>+2.0</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPVT, A</td>
<td>36.6</td>
<td>37.0</td>
<td>16.7</td>
<td>29</td>
</tr>
<tr>
<td>PPVT, B</td>
<td>43.6</td>
<td>46.0</td>
<td>13.2</td>
<td>26</td>
</tr>
<tr>
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<td>+7.0</td>
<td>+9.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hypothesis 15

The kindergarten children in the Distar Program had higher mean and median scores on the Wide Range Achievement Test in reading than the kindergarten children in the non-Distar Program.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distar</td>
<td>22.9</td>
<td>22.2</td>
<td>5.2</td>
<td>54</td>
</tr>
<tr>
<td>Non-Distar</td>
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<td>15.3</td>
<td>7.8</td>
<td>54</td>
</tr>
</tbody>
</table>

Hypothesis 21

The pre-kindergarten children in non-Distar Programs had higher mean and median scores on the Boehm Test of Basic Concepts than the pre-kindergarten children in the Distar Program.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distar</td>
<td>20.2</td>
<td>18.9</td>
<td>8.9</td>
<td>17</td>
</tr>
<tr>
<td>Non-Distar</td>
<td>21.9</td>
<td>22.0</td>
<td>8.8</td>
<td>16</td>
</tr>
</tbody>
</table>

Hypothesis 22

The pre-kindergarten children in the non-Distar Program showed greater gains in their mean and median scores between the A and B forms of the Peabody Picture Vocabulary Test than the pre-kindergarten children in the Distar Program.
### Distar

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPVT, A</td>
<td>14.5</td>
<td>13.2</td>
<td>6.7</td>
<td>8</td>
</tr>
<tr>
<td>PPVT, B</td>
<td>25.0</td>
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<td>6.8</td>
<td>7</td>
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<tr>
<td>Difference</td>
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</table>

### Traditional

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<th>S.D.</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPVT, A</td>
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<td>29.0</td>
<td>16.5</td>
<td>7</td>
</tr>
<tr>
<td>PPVT, B</td>
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<td>59.0</td>
<td>19.5</td>
<td>4</td>
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<tr>
<td>Difference</td>
<td>+23.1</td>
<td>+30.0</td>
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<td></td>
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</tbody>
</table>

**Summary of the comparison between the Distar Program and the Non-Distar Programs.**

Eight hypotheses were tested comparing the children in the Distar Program with the children in the non-Distar Program. Three of these hypotheses were comparing children in language development; three were comparing children in vocabulary growth; two were comparing children in reading.

The test used to measure language development was the Boehm Test of Basic Concepts. In all three hypotheses - comparing
first grade children, kindergarten children and pre-kindergarten children - the non-Distar Program proved more successful than the Distar Program.

The test used to measure vocabulary growth was the Peabody Picture Vocabulary Test. It was used on a pretest - posttest basis. In one hypothesis comparing first grade children, the children in the Distar Program showed a greater growth than the children in the Basal Program. The other two hypotheses compared children in kindergarten and pre-kindergarten. In these two hypothesis, the children in the non-Distar Programs showed greater gains than the children in the Distar Program. It was interesting that the lower the grade, the greater was the growth between the pretest and the posttest. However, there were only four subjects available for the posttest in pre-kindergarten control group. Even though the gains between the pretest and the posttest were very large for this group, the fact that there were only four children tested casts some doubts on the findings.

The test used to measure reading was the Wide Range Achievement Test. Two hypotheses were tested: one comparing first grade children and one comparing kindergarten children. The mean
and median scores of the first grade children in the Basal Program were higher than the scores of the children in the Distar Program. The opposite was true for kindergarten children: the mean and median scores of the Distar kindergarten children were higher than the scores of the kindergarten children in the non-Distar Program.

D. Tables

The following are tables showing correlations that were either significant (p. < .05) or near significant (p. < .10). The tables show correlations between all 22 independent variables and scores on the Peabody Picture Vocabulary Test A and B, The Wide Range Achievement Test and the Boehm Test of Basic Concepts.

Table 5.1 gives the significant and near significant correlations in first grade of the non-Distar and Distar classes listed separately.

Table 5.2 gives the significant and near significant correlations in kindergarten of the non-Distar and Distar classes listed separately.

Table 5.3 gives the significant and near significant correlations in pre-kindergarten of the non-Distar and Distar classes listed separately.

Table 5.4 gives the significant and near significant correlations of all the non-Distar classes in one group and all the Distar classes
In another group.

In reading these tables, the following should be noted:

1) How the Peabody, Wide Range and Boehm correlate with each other.

2) How frequently fluency, rank and placement correlate significantly with the Peabody, Wide Range and Boehm.

3) How frequently Distar correlates significantly with the Peabody, Wide Range and Boehm in the Distar classes.
<table>
<thead>
<tr>
<th>PPVT, A</th>
<th>PPVT, B</th>
<th>WRAT, Boehm</th>
<th>PPVT, A</th>
<th>PPVT, B</th>
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<td>0.032</td>
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</tbody>
</table>

**Table 5.1**

- Get Along
- Present
- Mobility
- Absence
- Disaster
- Fluency
- Placement
- Rank
- S. E. S.
- Race
- Sex
- Age
- Grade

*First Grade* | *Non-Disaster*
<table>
<thead>
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<th>PPVT B</th>
<th>WRAT</th>
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<td>Distress</td>
<td>Fluency</td>
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<th>Distar</th>
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<th>Placement</th>
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Table 5.3 continued
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<th>Boem</th>
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<th>Age</th>
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</table>

**Get Alone**

**Present**

**Mobility**

**Absence**

**Disability**

**Fluency**

**Placement**

**Rank**

**Race**

**Sex**

**Age**

**Grade**

**PPVT A**

**PPVT B**

**WRAF**

**Boem**

**S.E.S.**

**Race**

**Sex**

**Age**

**Grade**

**PPVT A**

**PPVT B**

**WRAF**

**Boem**

**S.E.S.**

**Race**

**Sex**

**Age**

**Grade**

**PPVT A**

**PPVT B**

**WRAF**

**Boem**

**S.E.S.**

**Race**

**Sex**

**Age**

**Grade**

**PPVT A**

**PPVT B**

**WRAF**

**Boem**

**S.E.S.**

**Race**

**Sex**

**Age**

**Grade**

**PPVT A**

**PPVT B**

**WRAF**

**Boem**

**S.E.S.**

**Race**

**Sex**

**Age**

**Grade**
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</tbody>
</table>

**Table 5.4 continued**
 CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

The purpose of this study was to research the effectiveness of the Distar Reading and Language Program as a method for the initial teaching of reading. In a larger sense, the purpose was not merely to compare one method of teaching reading against another method. The full purpose of the study was to see what steps must be taken so that more children living in low-income areas of the city might be able to read as well as children living in middle-class areas.

There will be three parts to Chapter VI:

1. Interpretation of the Data Presented in Chapter V
2. Conclusions
3. Further Research
1. Interpretation of the Data

The following interpretations can be made from the data given in Chapter V:

A. The further children advance in a particular reading program, the better they will score on reading tests. This proved to be the case with the children in Distar and the assumption is that the same would be true of any reading program. This interpretation is almost common sense. It is reasonable that a child who has finished Level I in Distar will score higher on a reading test than a child who is only beginning Level I. The same thing can be assumed in a Basal Program. A child who has finished the Basal primer should score higher on a reading test than a child who is still working on the Basal pre-primer.

B. A child's fluency in English and a child's rank and placement in class are important predictors of success on reading and language tests. Table 5.2 shows that in both the Distar and non-Distar kindergarten classes fluency, rank and placement correlated very strongly with results on all standardized tests. The high correlation between fluency and reading scores would indicate the importance of the home as an important factor in success in school. It would also be an argument in support of a bi-lingual program or
Black English program since both approaches advocate that children begin to read in their own language. It can only be hoped that a child's rank and placement in class were based on objective data and not merely on a teacher's subjective judgement of which children will succeed and which children will not. The research of Rist, Rosenthal and Leacock has shown that a teacher's values and expectations play an important role in determining how much a child will or will not learn. Teacher expectation was not studied as an independent variable in this dissertation. It could be a subject of further research.

C. The results from the Boehm Test support the interpretation that children in low-income areas need a language development program. The first grade, kindergarten and pre-kindergarten children in the non-Distar classes all scored higher, as groups, than the children in the Distar classes. However, the most important fact seems to be that all the children taken together scored very low on the Boehm Test. For example, the median score of all 139 first graders was 35. This means that one-half of them knew less than 35 out of the 50 basic concepts tested. The median score of the 108 kindergarten children was 30, meaning that one-half of them knew less than 30 of the 50 basic concepts tested. When compared against the norms of the test, a score of 35 puts a first grader in the fifth percentile. A score of 30 puts a kindergarten child in the twenty-fifth percentile. Thus, the interpretation of the results of the Boehm Test
of Basic Concepts would be that language programs should be an important aspect of primary grade education in low-income areas.

Of course the author admits that this whole discussion is based on the validity of the Boehm Test as a valid instrument for measuring a child's language ability. It may be that a different kind of test would have been a more accurate instrument to measure the language of the Black and Puerto Rican children who were the subjects of this study.

D. The first graders in the Basal Program scored higher on the Wide Range Achievement Test in reading than did the first graders in the Distar Program. This might lead to the interpretation that the Basal Program is more effective than the Distar Program for the initial teaching of reading. However, that conclusion might be hasty in view of the following:

1) Children in the Basal Program were in their program for a full year; children in Distar began the program in January and were therefore in the program only one-half year.

2) It appears that principals chose classes at the bottom of the grade for the Distar experiment. It very often happens that children who are not learning in the traditional program are the ones selected for experimental programs. Evidence for this is based on the fact that when groups were tested in January on the Peabody Picture Vocabulary Test, the children in Distar scored considerably lower, as a group, than did the children in the Basal program.
<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Grade Children in Distar</td>
<td>42.6</td>
<td>43.5</td>
</tr>
<tr>
<td>First Grade Children in Basal</td>
<td>46.8</td>
<td>48.5</td>
</tr>
</tbody>
</table>

3) It is in the very nature of a phonics program (such as Distar) to introduce sight words late in the program. A Basal Program introduces sight words much earlier. A standardized test (such as the Wide Range) uses many sight words and this could favor first grade children who are learning in a program that introduces sight words at an early stage.

So, for the reasons given above, caution would be advised in interpreting the first grade results in reading as clear proof that a Basal Program is superior to the Distar program.

E. The Distar kindergarten children had a median score that was significantly higher than the children in the traditional program. Converted to a grade equivalent it means that one-half of the children in the Distar kindergarten classes left kindergarten reading on a first grade level (1.0) while one-half of the children in the non-Distar kindergarten classes left kindergarten reading only in the fifth month of kindergarten level.
2. Conclusions

A. This study has indicated that there are certain strengths in the Bereiter-Engelmann Program as well as certain weaknesses. The program seemed to give an advantage in reading to kindergarten children and it did produce significant gains among first graders when they were pretested and posttested on the Peabody Picture Vocabulary Test. However, in many other areas the Bereiter-Engelmann Program was not able to produce any significant results when compared to the control group.

The following appear to be the strengths of the Bereiter-Engelmann approach:

1) They have developed a systematic phonic approach to the teaching of reading.

2) They have developed a program for language development.

3) They have shown teachers exactly what should be done, day by day, for an intensive approach in the teaching of specific skills.

4) They have provided far more than the usual amount of teacher training.

5) They have provided a management system so that all children can learn the same skills even if it takes some children a longer time than others.
6) They have pointed out that the teaching of skills is an important function of schools.

7) They have made some important criticisms of the traditional nursery school program, especially as it relates to low-income children.

The following aspects seem to be the weaknesses of the Bereiter-Engelmann Program:

1) Their program provides for only one-half hour a day of reading instruction. Primary grade children need more time.

2) Their method is entirely inductive. They believe in pouring information into children and drilling them until they have learned what is being taught. This is only one aspect of good teaching. It is important that children be allowed to explore and discover, learn by themselves and learn deductively.

3) Skill training is an important aspect of school. But it is a narrow concept and does not embrace the entire purpose of school. Giving children a love of learning and providing an atmosphere where various types of learning can take place for different types of children - are also important aspects of school.

4) Bereiter and Engelmann provide a language program, but a program almost totally devoid of concrete experiences. They
drill for weeks on the concept "full" and "empty" showing pictures from books. There are more concrete ways of teaching these and other concepts in a language development program.

5) Engelmann is correct in seeing the teacher as a technician but the technical is only one aspect of the job of teaching. It is not enough to know what skills fifth grade children need. The teacher must be able to motivate them to learn these skills.

This study concludes that Bereiter and Engelmann have made a contribution to teaching by making schools aware of the skill aspect of learning. But they have made this one aspect the whole of teaching, learning and the purpose of school itself. The whole picture is broader than the view of Bereiter and Engelmann. Distar by itself is not a complete program. Distar, complemented by language experience and other aspects of teaching that emphasize exploring and discovering would be a much richer program. An emphasis on skills and aspects of an open classroom need not be competing; they are complementary parts of the whole picture.

B. Most children in low-income areas should begin to learn to read in kindergarten. This study can not conclude that Distar should be the kindergarten reading program. But the advantage shown by kindergarten children in a reading program when com-
pared to kindergarten children not in a reading program, is strong evidence that reading instruction, for most low-income children, should begin in kindergarten.

C. This study showed that a language development program in the primary grades is as necessary as a reading program. There are three possible approaches that a language program might use (or any combination of the three):

1) Bi-lingual program for children who are fluent in Spanish or Chinese;
2) A Black English program for children who come to school speaking a dialect different from standard English;
3) A language development program that would teach basic concepts of standard English.

The generally low scores of first grade and kindergarten children on the Boehm Test of Basic Concepts makes imperative the conclusion that language must be taught along with reading in a full literacy program in the primary grades. More research must be done to see if any or all of the three approaches given above can provide answers to the question of how best to teach basic skills of literacy in a poverty area.
3. Further Research

In the following ways, the author of this study intends to pursue the research he has begun:

A. In June 1974, the available Distar kindergarten and first grade children who were subjects in this study and who have continued in the Distar Program, will be tested on the Wide Range Achievement Test in reading. Also, the available non-Distar kindergarten and first grade children who were subjects in this study and who have continued in the traditional program will be tested on the Wide Range Achievement Test in reading. There will be two purposes to this study:

1) to see if the Distar kindergarten children have retained their original advantage over the non-Distar kindergarten children, or if the non-Distar kindergarten children caught up to or surpassed the Distar children;

2) to see if the Distar first graders caught up to or surpassed the first graders in the non-Distar program, or if the original advantage of the first grade children in the non-Distar program has continued.

B. The author also intends to work on the development of a
basic concept language development program in standard English.

He intends to carry out his program in the following way:

1) He will test 1,000 kindergarten and first grade children on the Boehm Test of Basic Concepts to see if the results obtained in this study will be verified on a larger scale.

2) He will develop an instrument for diagnosing about 200 basic language concepts. The method used will involve not only written but oral responses.

3) He will provide ways of teaching these concepts to children who have been diagnosed to be lacking certain concepts.

4) He will develop a posttest to see if the concepts have been learned.

Enough research has been done to show that language interference plays an important role in the reading problems of low-income children. The job ahead is for bi-lingual teachers, Black English linguists and students of language development to work cooperatively in overcoming the language barrier faced by many children living in poverty areas.
APPENDIX A - 1

DISTAR ORTHOGRAPHY

masēfr
ithcontāh
uglīwshī
kövpcheb
ingīyerj
xooīwhz
quū
## APPENDIX A - 2

### DISTAR READING I SCOPE AND SEQUENCE

<table>
<thead>
<tr>
<th>Sounds and Reading Sounds</th>
<th>Lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book A</td>
<td></td>
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<tr>
<td>Sounds</td>
<td>1 - 58</td>
</tr>
<tr>
<td>Reading Sounds</td>
<td>26 - 58</td>
</tr>
<tr>
<td>Book B</td>
<td></td>
</tr>
<tr>
<td>Sounds</td>
<td>59 - 109</td>
</tr>
<tr>
<td>Reading Sounds</td>
<td>59 - 109</td>
</tr>
<tr>
<td>Book C</td>
<td></td>
</tr>
<tr>
<td>Sounds</td>
<td>110 - 159</td>
</tr>
<tr>
<td>Reading Sounds</td>
<td>110 - 159</td>
</tr>
</tbody>
</table>

### Related Skills

- Symbol - Action Games  
  1 - 17
- Blending - Spelling by Sounds  
  17 - 60
- Blending - Say it Fast  
  1 - 40
- Rhyming  
  6 - 27
- Symbols - Say it Fast  
  30 - 39

### Take - Home Student Materials

- Blending Sheets  
  1 - 5
- Sound - Symbol Sheets  
  1 - 39
- Stories  
  40 - 159
- Writing Sheets  
  40 - 159
- Workbook  
  32 - 159
## APPENDIX A - 3

**DISTAR LANGUAGE I SCOPE AND SEQUENCE**

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<td>Comparatives - Superlatives</td>
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<td>Location</td>
<td>146 - 180</td>
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<tr>
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<tr>
<td>Only</td>
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<tr>
<td>If - Then</td>
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<td>Before - After</td>
<td>146 - 180</td>
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<td>Book C</td>
<td>Lessons</td>
</tr>
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<td>----------------------------</td>
<td>-------------</td>
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<td>Parts</td>
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</tr>
<tr>
<td>All</td>
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</tr>
<tr>
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<td>163 - 168</td>
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<td>Some, All, None</td>
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<tr>
<td><strong>Storybook</strong></td>
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<td><strong>Take - Homes</strong></td>
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## APPENDIX A - 4

### DISTAR READING II SCOPE AND SEQUENCE

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<thead>
<tr>
<th>Recycling Book</th>
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<td>Blending - Say it Fast</td>
<td>1 - 10</td>
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<td>Sounds</td>
<td>1 - 63</td>
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<tr>
<td>Reading Sounds</td>
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<tr>
<td>Take - Home Stories</td>
<td>11 - 63</td>
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<table>
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<td></td>
<td>Reading Sounds</td>
</tr>
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<td>Book E</td>
<td>Sounds</td>
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<tr>
<td></td>
<td>Reading Sounds</td>
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<td>Book F</td>
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<td>Review Tracks</td>
<td>Lessons</td>
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<td>---------</td>
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<tr>
<td>If - Then</td>
<td>1 - 21</td>
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<td>Some, All, None, One</td>
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<tr>
<td>Or</td>
<td>1 - 11</td>
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<td>Only</td>
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<td>Parts</td>
<td>1 - 36</td>
</tr>
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<td>Location</td>
<td>1 - 25</td>
</tr>
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<td>Same - Different</td>
<td>2 - 22</td>
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<td>2 - 18</td>
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<td>Verb Tense</td>
<td>5 - 17</td>
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<td>Take - Homes</td>
<td>1 - 180</td>
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## DISTAR LANGUAGE II SCOPE AND SEQUENCE (continued)

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<td>Synonyms - Opposites</td>
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<td>Function</td>
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## APPENDIX B - 1

**PEABODY PICTURE VOCABULARY TEST**

**FORM A**

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<tr>
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<th>Word</th>
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<th>Plate No.</th>
<th>Word</th>
<th>Key Resp. Errors*</th>
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<th>Word</th>
<th>Key Resp. Errors*</th>
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<td>53</td>
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<td>54</td>
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## APPENDIX B - 2

### PEABODY PICTURE VOCABULARY TEST

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APPENDIX B - 3

BOEHM TEST OF BASIC CONCEPTS

CONTEXT CATEGORIES:
S = Space (location, direction, orientation, dimensions)
Q = Quantity (and number)
T = Time
M = Miscellaneous

<table>
<thead>
<tr>
<th>BOOKLET 1</th>
<th>1. Top</th>
<th>S</th>
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<tbody>
<tr>
<td>2. Through</td>
<td>S</td>
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</tr>
<tr>
<td>3. Away from</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>4. Next to</td>
<td>S</td>
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</tr>
<tr>
<td>5. Inside</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>6. Some, not many</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>7. Middle</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>8. Few</td>
<td>Q</td>
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</tr>
<tr>
<td>9. Farthest</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>10. Around</td>
<td>S</td>
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</tr>
<tr>
<td>11. Over</td>
<td>S</td>
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</tr>
<tr>
<td>12. Widest</td>
<td>Q</td>
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</tr>
<tr>
<td>13. Most</td>
<td>Q</td>
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</tr>
<tr>
<td>14. Between</td>
<td>S</td>
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</tr>
<tr>
<td>15. Whole</td>
<td>Q</td>
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</tr>
<tr>
<td>16. Nearest</td>
<td>S</td>
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<tr>
<td>17. Second</td>
<td>Q</td>
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<tr>
<td>18. Corner</td>
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<td>19. Several</td>
<td>Q</td>
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<td>20. Behind</td>
<td>S</td>
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</tr>
<tr>
<td>21. Row</td>
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</tr>
<tr>
<td>22. Different</td>
<td>M</td>
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<tr>
<td>23. After</td>
<td>T</td>
<td></td>
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<tr>
<td>24. Almost</td>
<td>Q</td>
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<td>25. Half</td>
<td>Q</td>
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<td>BOOKLET 2</td>
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<tr>
<td>26. Center</td>
<td>S</td>
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</tr>
<tr>
<td>27. As many</td>
<td>Q</td>
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</tr>
<tr>
<td>28. Side</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>29. Beginning</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>30. Other</td>
<td>M</td>
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<tr>
<td>31. Alike</td>
<td>M</td>
<td></td>
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<tr>
<td>32. Not first or last</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>33. Never</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>34. Below</td>
<td>S</td>
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</tr>
<tr>
<td>35. Matches</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>36. Always</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>37. Medium-sized</td>
<td>Q</td>
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<tr>
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<tr>
<td>38. Right</td>
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<td>S</td>
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<tr>
<td>39. Forward</td>
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<td>S</td>
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<tr>
<td>40. Zero</td>
<td>Q</td>
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<tr>
<td>41. Above</td>
<td>S</td>
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<tr>
<td>42. Every</td>
<td>Q</td>
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</tr>
<tr>
<td>43. Separated</td>
<td>S</td>
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<tr>
<td>44. Left</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>45. Pair</td>
<td>Q</td>
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</tr>
<tr>
<td>46. Skip</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>47. Equal</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>48. In order</td>
<td>S</td>
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<tr>
<td>49. Third</td>
<td>Q</td>
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<tr>
<td>50. Least</td>
<td>Q</td>
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</table>
APPENDIX B - 5

WIDE RANGE ACHIEVEMENT TEST IN READING

(ADAPTED FOR DISTAR GROUP)

d r z h i q s é b o
a b o s é r t h p i u z q
c a t s é e r e d t o
b i g w o r k b o o k é a t
w a s h i m h o w t h e n
ó p e n l e t t e r j a r
d é é p é v e n s p e l l
a w a k e b l o c k s í z e
w e a t h e r s h o u l d l i p
f i n g e r t r á y f e l t
s t a l k c l i f f l á m e
APPENDIX B - 6

WIDE RANGE ACHIEVEMENT TEST IN READING

(USED FOR NON - DISTAR GROUP)

ARZHIQSEBO
ABOSERTHPIUZQ
cat see red to
big work book eat
was him how then
open letter jar
depth even spell
awake block size
weather should lip
finger tray felt
stalk cliff lame
APPENDIX B - 7

PUPIL QUESTIONNAIRE

(Note: Please do not answer questions 7, 12, 13, 14 and 15)

1. Child's name.........................

2. Grade............. 3. Class.............

4. Date of birth......... 5. Sex M.... F....

6. Child's Race/Nationality (check one)
   1. ___ Black                      3. ___ Puerto Rican
   2. ___ Chinese                   4. ___ White

7. Socioeconomic status of child's family (leave blank)
   1. ___ Welfare
   2. ___ Earning up to $7,000 per year
   3. ___ Earning more than $7,000 per year

8. Type of reading program child is in (check one)
   1. ___ None

2. ___ Phonics .................(specify)

3. ___ Basal Reader

4. ___ Basal Reader and Phonics

5. ___ Linguistic

6. ___ Distar Language only

7. ___ Distar Language and Reading
8. ___ Other

9. Please rank the child in one of the following categories
   1. ___ top fifth of the class
   2. ___ second fifth of the class
   3. ___ middle fifth of the class
   4. ___ fourth fifth of the class
   5. ___ bottom fifth of the class

10. Please indicate what reading group the child is in
    1. ___ highest achieving group
    2. ___ middle group
    3. ___ lowest achieving group

11. Please rank the child's fluency in English
    1. ___ speaks some words and a few phrases in English
    2. ___ speaks English but haltingly, prefers another language
    3. ___ speaks English more than any other language but with mistakes
    4. ___ speaks mostly English but with an accent
    5. ___ speaks English with no accent

12. Child's raw score as measured by the Peabody Picture Vocabulary Test ___
13. Level in the Distar Program the child has attained by June 15, 1973

14. Number of days child has been absent from class from January 1 to June 15, 1973

15. Number of times the child has changed address since the child began school

16. Please circle the month when the child entered your class

17. Please indicate your opinion of the child's ability to get along with others.
   1. ____ satisfactory
   2. ____ unsatisfactory

18. Please indicate if the child is satisfied with a reasonable amount of attention
   1. ____ yes
   2. ____ no

19. Please indicate your opinion of the child's health
   1. ____ excellent (rarely sick)
   2. ____ fair (picks up an occasional cold, virus or other childhood disease)
   3. ____ poor (frequent colds, virus, etc.)

20. Please indicate, by name the person(s) who teach the child reading
   1. .................................. 2.................................. 3.............
APPENDIX B - 8

TEACHER QUESTIONNAIRE

21. Name

22. Grade you are presently teaching

23. Class you are presently teaching

24. Number of years you have taught in the classroom (count this year as one full year)

25. Sex male........ female........

26. Race/Nationality
   1. --- Black
   2. --- Chinese
   3. --- Puerto Rican
   4. --- White

27. Level of education (check highest only)
   1. ___ High School Graduate
   2. ___ College courses completed but no degree
   3. ___ College graduate
   4. ___ Post graduate courses completed but no degree
   5. ___ Post graduate degree .................(specify)

28. Number of languages you speak fluently (please circle)

1  2  3  4  5
29. Your estimation of your class as compared to others within the grade.
   1. ___ Bright
   2. ___ Average
   3. ___ Slow

30. How would you rate the effectiveness of the methods you are presently using to teach reading?
   1. ___ very effective (most children reading)
   2. ___ moderately effective (successful with 50 - 70% of the children)
   3. ___ not effective (reaches less than 50% of the children)

31. How do you like the materials you are now using in your reading program?
   1. ___ like
   2. ___ dislike
   3. ___ undecided

32. How do you find this year's materials, if they are different from what you used last year?
   1. ___ more effective
   2. ___ less effective
   3. ___ the same
33. When do you think most children should begin to learn to read?
   1. ___ Pre-kindergarten  3. ___ First Grade
   2. ___ Kindergarten      4. ___ After First Grade

34. How much time does the average child in your class receive in formal reading instruction?
   1. ___ none                  3. ___ 1 hour to 1 1/2 hours
   2. ___ less than one hour    4. ___ 1 1/2 hours to 2 hours
   5. ___ more than 2 hours

35. How much time does the average child in your class receive formal language instruction?
   1. ___ none                  3. ___ 1 hour to 1 1/2 hours
   2. ___ less than one hour    4. ___ 1 1/2 hours to 2 hours
   5. ___ more than 2 hours

36. Number of children on register in your class

37. Number of groups you have in your class for reading instruction

38. Number of adults in the classroom actively engaged in reading instruction

REFERENCES


Distar Reading I and II: Special Supplement for Student Materials.


Engelmann, Siegfried. "Lack of Yes-No Awareness in Severely Impaired Autistic and Schizophrenic Children". (No Date).
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