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The Effectiveness of a Structured Tutoring Program Used with Migrant Students

Cortland L. Hillman
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THE EFFECTIVENESS OF A STRUCTURED TUTORING PROGRAM USED WITH MIGRANT STUDENTS

by

Cortland L. Hillman

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Education
Department of Educational Leadership

Western Michigan University
Kalamazoo, Michigan
April 1990
Among the circumstances that plague migrant students are mobility, poverty, low expectations, educational fragmentation, and cultural alienation. A typical migrant student might attend as many as three or more schools per year. More than 50% of all migrant students drop out of school, a figure nearly twice the national average for all other U.S. students. Ninety percent or more of all migrant students follow their parents into a lifetime of employment as field workers. The cost to the migrant student of not being academically successful is a life of limited opportunity.

In this study a structured tutoring program in reading was incorporated into a summer migrant school program. Data from this study were compared with normative data provided by a standardized test (WRMT) (Woodcock, 1973). All data were collected from a single migrant school program.

Data from the following two age groups were used: (1) 7 years 6 months to 7 years 11 months, and (2) 8 years to 8 years 5 months.
Tutored students showed greater reading achievement growth than did nontutored students. The age group 7 years 6 months to 7 years 11 months showed an increase of 292%. The 8 years to 8 years five months age group increased by 860%.

Structured tutoring is a relatively easy teaching method to establish, implement, and administer. Structured tutoring is designed as a one-on-one teaching method and can be taught by trained professionals, paraprofessionals, teachers or students. Although this study was limited to a single location, and some weaknesses were present in the study design, the findings are similar to other studies on the effectiveness of structured tutoring. Based on the findings of this study, educators should consider structured tutoring as a reading remediation method for general usage.
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The effectiveness of a structured tutoring program used with migrant students

Hillman, Cortland LaVerne, Ed.D.
Western Michigan University, 1990
DEDICATION

This dissertation is dedicated to my parents, Juanita M. and the late Frederick L. Hillman. Both constantly emphasized the importance of education. Their faith in me has inspired me to achieve this educational objective. Thank you both for your lifetime of friendship, discipline, love, and caring.
ACKNOWLEDGEMENTS

The completion of this project is a tribute to the perseverance, assistance, and encouragement of the following people:

Dr. Edgar A. Kelley, whose patience and expertise was invaluable in the writing of this dissertation;

Dr. Charles C. Warfield, Dr. Donald L. Carr, and Dr. Patrick M. Jenlink, who served on my doctoral committee;

The Honorable Gerald D. Snodgrass, Ed.D., who served as my mentor, cheerleader, and friend;

Burt Castle, chief grammarian and friend;

My children, Cory and Kam, both of whom I love very much; and

My wife and best friend, Jan, whose loyalty, support, patience, encouragement, and love made this all worthwhile.

Cortland L. Hillman
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CHAPTER I

INTRODUCTION

General Statement of the Problem

Migrant students have a history of mobility, poverty, low expectations, educational fragmentation, and cultural alienation. A migrant student may attend as many as three or more schools per year. The English language is often a second language for the migrant student.

Harrington (1988) stated that there were over 530,000 migrant students in the United States in 1987. The general student population of the United States in 1987 completed 12.5 years of school; the migrant student by comparison completed 7.7 years of school. More than 50% of all migrant students drop out of school; that figure approaches twice the national average for all other U.S. students. As many as 90% of all migrant children ultimately follow their parents into employment as field workers.

Migrant workers usually belong to a crew which is recruited and supervised by a crew boss. Employers contract a crew, through a crew boss, on a piece-work basis. Since he belongs to a crew the individual migrant worker is considered an independent contractor. Because they
employ independent contractors the employing landowners can avoid paying social security, unemployment, and workers' compensation contributions for the migrant employee.

Long hours, low pay, or no pay at all (due to indebtedness to the crew boss) are generally the lot of the migrant workers. Migrants frequently work 12-hour days and end up in debt to a crew boss who enforces discipline with violence. The crew boss makes deductions from the migrant's pay for such things as: acting as his employment agent, room, board, drink, and transportation. Abused, overlooked, and with little or no political power, the migrant is caught in a cruel system that has resisted change (Chaze, 1982).

Chaze (1982) further stated that tuberculosis, seldom seen in the general population, persists among migrants living in dirty, crowded conditions. Alcoholism and malnutrition are also frequently seen problems among migrant workers. Poor working conditions, exposure to pesticides, and bad living conditions lead to an average life expectancy of 49 years for the migrant worker.

Migrant children, who are not enrolled in school, often spend entire days, from early morning to late into the evening, working alongside their parents in the fields. Children too young to work spend their time waiting, frequently unsupervised and poorly fed. Often
the waiting children tend babies and other children smaller than themselves.

Squalid living conditions are a fact of life for migrant families. No indoor plumbing, no heat, and no running water are the norm. Crowding several migrant families into the same dwelling is also a regular practice. Migrant students find completing homework assignments and regular school attendance hard practices to follow under these tough living conditions (Harrington, 1988).

Frequently school for the migrant child becomes a place where social exclusion occurs, differences are recognized, and distinctions are drawn between themselves and the "average" student. No educational institution is without an internal elitism, intentional or not, which leads to the exclusion of a substantial percentage of students. This elitism generally influences the children from the socioeconomically underprivileged sections of the host society and almost always impacts upon migrant children. The social relationship between migrant children and other students are often strained, and migrant children frequently feel isolated. This rejection, socially, culturally, and educationally, contributes to the migrant student dropout rate, to their return to the same jobs as their parents, or to their being consigned to the ranks of the unemployed (Vignaux, 1985).
Rosenau (1982) stated that migrant students are generally severely disadvantaged by conventional educational standards. The migrant student's major disadvantage comes from his or her frequent moves. As a result of their nomadic life style the migrant child is inconsistently served by the educational system. Most educational services go to children who experience relatively continuous school experiences within a single school district. Truly migrant children are often hard to find and bring to school due to their short duration stays in any given school district.

Establishing an effective system of identifying and remediating migrant students' academic needs is essential to assisting them in becoming academically successful. A program of identification of needs and proper remediation may afford migrant students a chance to break the migrant cycle and blend into the societal, cultural, and labor mainstream. This study was conducted to examine a method of instruction referred to as structured tutoring (Harri- son, 1967) in a remediated reading program with a migrant student population. The tutorial program was financed by the local host school district.

Research Objectives

The purpose of this study was (a) to review the literature regarding tutoring, determine whether similar
studies have been conducted, and review the conclusions; (b) to establish the structured tutoring program; and (c) to determine the effects of the tutoring program upon a migrant student population.

Hypothesis

The reading achievement growth levels of migrant students who were tutored in reading will be greater than that of students who were not tutored in reading, as measured with a standardized reading achievement test.

Operational Definitions

**Dyad:** A pairing of one tutor and one tutee which remains constant throughout the length of the structured tutoring treatment (Halls, 1976).

**Master tutor:** An individual who supervises the training and subsequent teaching activities of the tutors; the tutor in charge of all other tutors. The master tutor is a certified teacher who has also been trained in the METRA structured tutoring system (Harrison, 1967).

**METRA:** A commercially prepared structured tutoring program in reading. The METRA structured tutoring program puts together in one package methodology, materials, improvement of self-image, time-on-task, and quantifiable reading improvement (Harrison, 1976).

**Migrant student:** A student whose parents move from
area to area to work in the agriculture industry. Migrant students are commonly enrolled in three or more schools per year making their education fragmented and unstable. All of the migrant students involved in this study were Hispanic (MacPherson, Ortega, & Ramirez, 1987).

**Normative data:** Data provided by a standardized test to afford a comparison of the performance of the tested student(s) to that of a "norm group" across a specific content coverage. Content coverage tends to be broad and general, and the norm group is representative of students of a given grade level or age within a large geographical area, such as the nation (Issac & Michael, 1971).

**Remediation:** Instruction provided to remedy a learning deficiency in reading (Davies, 1981).

**Standardized test:** A test usually commercially prepared by measurement experts, that provides methods of obtaining samples of behavior under uniform procedures (the same set of questions is always administered with the same set of directions and timing constraints) (Mehrens & Lehmann, 1973).

**Structured tutoring:** A system of instruction in which the constituent parts are prescribed in a specified order from which deviations in prescribed method are not allowed (Harrison, 1967).

**Tutor:** One who is in charge of the training of another (tutee); a private teacher. The tutor has been
trained in the METRA structured tutoring system (Harrison, 1976).

**Tutee:** A migrant student who is trained by a private teacher (tutor) (Harrison, 1976).

**Wide Range Achievement Test (WRAT):** The WRAT is a standardized achievement test used to determine a student's achievement level in reading. The WRAT is individually administered, takes 20 to 30 minutes or less, and consists of recognizing and naming letters and pronouncing single words. WRAT scores are easily converted into grade norms (Bijou, Jastak, & Jastak, 1978).

**Woodcock Reading Mastery Test (WRMT):** The WRMT is a standardized achievement test used to determine a student's precise measurement of reading achievement. The WRMT is individually administered and requires 20 to 30 minutes or less. The WRMT contains five subtests: (1) letter identification, (2) word identification, (3) word attack, (4) word comprehension, and (5) passage comprehension. The WRMT yields a cumulative reading grade level score. The WRMT provides reading grade level normative data for comparative purposes (Woodcock, 1973).

**Research Design**

**Subjects**

The subjects for this study were migrant children enrolled in a summer migrant school. All enrolled
students came from eight migrant camps located within an 18-mile radius of the summer school site; bus transportation was provided.

The purpose of this study was to determine the effectiveness of a structured tutoring program in reading on reading deficient migrant students. All enrolled migrant students, grades 1 through 5, were administered the WRAT (Bijou et al., 1978) in reading. Selection of students to be tutored was determined by WRAT test scores. The migrant students who scored 3 months to 4 years below grade level, a deficiency level score designated by the summer school, determined those students selected for tutoring. Students selected for tutoring (tutees) were additionally pretested with the WRMT (Woodcock, 1973) to determine specific reading proficiency levels. Those students not selected for tutoring were enrolled in a traditional classroom program. The tutees also participated in traditional classrooms when they were not being tutored.

Each tutee was assigned to 1 of 4 tutors. The tutor-tutee dyad remained together throughout the 20 tutoring sessions. Each tutoring session was 20 minutes in duration. All tutoring occurred over a 5-week period, 4 times per week per child.
Comparison

This study was a pretest-posttest control-group design:

Pretest-posttest control-group design:

<table>
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<th>Posttest</th>
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<td>0 (Reading age level) x (tutoring)</td>
<td>0 (reading age level)</td>
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Normative data | Normative data

1. Migrant tutees were assigned to the treatment group based upon the administration of a standardized pretest screening (WRAT) (Bijou et al., 1978). Selected students were further pretested with the WRMT to determine their specific reading level. The students' pretreatment reading age levels were compared with normative data provided by the WRMT (Woodcock, 1973).

2. Migrant students assigned to the treatment group were administered 20 tutoring treatments of 20 minutes each over a period of 5 weeks, four times per week per child.

3. A posttest, WRMT, was conducted to determine the tutees' posttreatment reading levels. Posttreatment reading levels were compared with the test-provided normative data provided by the WRMT.

4. To ensure anonymity the tutees' names, ages, and sex were not included in the study.
Experimental Group

This study involved migrant students enrolled in a summer migrant program. The summer school provided a nursery, preschool, kindergarten, and grades 1 through 5. All students enrolled in the first through fifth grade levels (140) were tested to determine their reading levels. Students were assigned to the tutoring treatment based upon test results. The summer school administration established the deficiency levels necessary to qualify for the tutoring treatment. WRMT (Woodcock, 1973) provided normative data were used, pre- and posttreatment, as control groups comparison data.

Summary

According to an article by Resnick and Resnick (1977) more than ever a person needs to be a competent reader. We are living in a technological-information age that impacts on education, science, business, industry, and most other professions. In order for people to fully participate in society, they have to be literate. Because of the nature of technological information, higher and higher levels of literacy will be required in the future. Historical research has found a steady increase in the standard of literacy required to cope with our changing society. Experts believe that the level of literacy that has been satisfactory in the past will be marginal by the
year 2000.

In Chapter I the general statement of the problem, research objectives, hypothesis, operational definitions, and the research design were presented. Literature relevant to the effectiveness of tutoring will be reviewed in Chapter II. The methods used in the study are in Chapter III. Chapter IV contains the findings of the study, and a discussion and summary of the study are in Chapter V.
CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The purpose of this study was (a) to review the literature regarding tutoring, determine whether similar studies have been conducted, and review the conclusions; (b) to establish the structured tutoring program; and (c) to determine the effects of the tutoring program upon a migrant student population. In this chapter, the first purpose is addressed through a review of five areas:

1. Dissertations from the subject fields.
2. International studies relating to tutoring.
3. Papers relating to tutoring presented at academic conferences.
4. Research evaluation and progress reports.
5. Supervisor and procedures manuals and guidebooks.

Dissertations From the Subject Field

A tutoring program in 1973 was reported by Keen (1973). A pilot program set up to test the feasibility of a student out-of-school tutoring service for fourth and fifth graders as a means of providing remedial instruction for potential dropouts was discussed. For testing

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purposes, a small-scale five-session program was set up, using as tutors 9th through 12th-grade volunteer students, from a local private school, participating on an after-school-hours basis. The program involved 10 tutors and 20 "high-risk" students. All tutors were given pre-program training. The tutoring service concentrated on the basic skills in English, reading, spelling, and mathematics for five consecutive Thursday evenings for one and one-half hours each. A tutoring design team developed the plans and format, and identified objectives, tasks, and evaluation strategies. The project was evaluated on both the process and the product, and resulted from responses of tutors and students and their parents to formal surveys. The findings of the pilot program indicated that student volunteer out-of-school tutoring for high-risk students is feasible in terms of time, effort, and results; and that well-achieving high school students, if given proper direction, can be effective tutors for fourth and fifth-grade students.

Halls (1976) reported on the effects a structured tutorial program had on the reading levels of low achieving readers in the sixth grade. This study was designed to determine the effect of the Grant Harrison Lay Tutor Program on low-achieving, sixth-grade students who became tutors and on low-achieving second graders who were tutored. Experimental groups and control groups of sixth
graders were formed from a list provided by the principal. Students were pre- and posttested for reading ability and for level of confidence in academic ability. Findings indicated that the sixth-grade tutors improved in reading ability and level of confidence compared with the control group and that second graders involved in the tutorial program improved their reading more than those not involved in the program.

The purpose of Achenbach's 1981 investigation was to examine the effects of locus of control (internal versus external) and type of remedial reading instruction (tutorial versus non-directive) on (a) reading improvement, (b) attitudes toward reading, and (c) attitudes toward style of reading instruction (Achenbach, 1981).

In a study by Achenbach (1981) students enrolled in six different seventh and eigth-grade English classes in one of the Department of Defense Dependent Schools (DODDS) in West Germany took the Nelson Reading Test, Woodcock Reading Mastery Test, Intellectual Achievement Responsibility Questionnaire (IARQ), and DODDS Attitudes Toward Reading Survey (cited in Achenbach, 1981, p. 35). Three classes were randomly assigned the METRA (Harrison, 1976) tutorial reading program and three classes a non-directive reading program designed by the investigator. Twenty students reading below grade level from each program were matched on the basis of sex, race, grade level, reading
ability, and locus of control. Each class then participated in its respective semester-long reading program. Students were posttested with the Nelson Reading Test, Woodcock Reading Mastery Test, DODDS Attitudes Toward Reading Survey, Remmer's Attitude Toward Any Practice and Achenbach's Appraisal of the Program (Achenbach, 1981, p. 74). Data were analyzed through analysis of variance.

The findings included:

1. No significant interactions between type of student and program were found for reading improvement or attitudes toward (a) reading, or (b) instructional program.

2. All groups showed significant reading gains on both the Nelson (p < .01) and Woodcock (p < .01).

3. Tutored groups improved significantly more than non-directive groups on the Woodcock (p < .01).

4. Internals had higher pretest scores than externals on the Nelson (p < .05).

5. Internals had more favorable attitudes toward reading on the DODDS survey than externals on the pretest (p < .01).

6. Students enrolled in the non-directive program viewed it more favorably on the Achenbach Appraisal (p < .05) than did students in the tutorial program.

The author concluded the following:

1. The nature of instructional programs from which
internals and externals would benefit most was not established.

2. Significant interaction effects could have been submerged in the overall success of the two programs or lost to the effects of content differences between the programs.

3. Based on Woodcock scores, the METRA tutorial program is widely effective.

4. As evidenced by Nelson and DODDS survey scores, internals—who are hypothesized to possess superior academic skills—appear to do better than externals on paper-and-pencil evaluations.

5. Reading gains did not match the favor with which students viewed the non-directive program; thus, what students liked best did not necessarily help them most.

Achenbach (1981) recommended:

1. This investigation should be replicated with one major modification: the two instructional programs should consist of the same content.

2. The METRA tutorial program should be more widely adopted in middle schools.

3. Educators should recognize that middle school students showing a preference for an internal locus of control are likely to perform better on paper-and-pencil evaluations than are students showing a preference for an external locus of control.
4. Educators should recognize that those reading programs in which students show the greatest favor are not necessarily helping them reap the greatest achievement gains.

International Documents Relating to Tutoring

An article in the *Journal of Reading* (Howard, 1977), describes an Australian tutoring project. Older students received scholastic credit for tutoring younger students. The subject areas tutored were English grammar and language.

A guidebook titled *People, Words and Change*. *Literacy Volunteer Handbook* (Bernstein, 1980) was produced as a result of a Canadian project. This literacy program guidebook contains specific information for use by volunteer tutors involved in an adult literacy project in Ottawa, Canada, as well as general information on reading instruction techniques, literacy skills, literacy curricula, and resource materials. The origins, objectives, structure, and operations of the Ottawa program entitled *People, Words, and Change* are outlined. A section on volunteer preparation includes a fact sheet and thoughts on adult learning and literacy. Lesson plans, instructional materials, activities, informal reading skill inventories, and basic teaching principles are discussed in a unit on the first lesson. Sight vocabulary, word
patterns, phonics, structural analysis, context clues, and language experience are listed in a unit on reading instruction techniques. Topics examined in a unit on literacy skills include recreational reading, study skills, oral reading, handwriting, spelling, grammar, numerical skills, and functional reading. Curriculum selection and organization are described. A discussion of commercial and non-commercial materials was provided (Bernstein, 1980).

Birch and Latcham (1981) presented the findings of a British study. The problems of resource allocation and management within open learning systems in British colleges are discussed. Particular focus was placed on the deployment of academic staff. The components of open learning systems are outlined, i.e., providing materials for students' private study, grading and commenting on students' work, and providing tutorial and counseling support.

A discussion of the problems involved in determining the resources used in open learning systems, such as flexistudy, is followed by sections focusing on procedures for determining the number of teachers required by a college, the responsibilities of teaching staff, and methods of estimating teaching hours for flexistudy through analogies with regular programs. These estimates require a determination of the notional weekly hours, the
target class size, the case load for a tutor, and the number of weeks the tutor is assigned to teach in order to develop the class contact equivalent for flexistudy programs. The next section highlights methods of determining the student-staff ratio in open learning programs and ways of ascertaining if students are "active." Finally, the importance of developing a calculus for measuring teaching hours expended in open learning systems through negotiating notional weekly hours, target class size, and class contact equivalents is emphasized (Birch & Latcham, 1981).

Papers Presented at Academic Conferences

In 1972, a study was initiated to determine the effects of using teacher aides and student tutors in remediating reading deficient second and third graders in the Boise, Idaho, schools. The two schools in the pilot program were located in areas having a high incidence of low-income families. Tutor managers (paraprofessionals) supervised and managed the tutoring program in each school. They trained fifth and sixth graders in the techniques of tutoring basic reading skills, tutored children, gave pretests and posttests, kept records, prepared the student logs, and kept student profile sheets on each child tutored. The structured tutoring involved the diagnosis of the child's reading skills, individual
work with the child using prescribed teaching methods, and a criterion posttest measuring the knowledge of the child at the end of the tutoring. The tutored group outperformed the control group in acquiring basic reading skills, and of the 54 students who were tutored, only one failed to make a significant improvement in reading skills during the relatively short period of 6 weeks that the tutoring program was in operation (Plumb & Wilkinson, 1974).

The American Association of School Administrators were apprised of a summer program called Learning City Summer Migrant Program (Presson & Baker, 1980) at their 1980 meeting. Learning City was the theme of a summer education project that provides a unique teaching atmosphere for migrant children. For two summers, 130 students participated in this program that sustained and enforced reading and math skills, as well as helped develop self-concept. Each "industry" in Learning City was a branch of study: reading and creative writing, mathematics, science, music, art, and physical education. Teaching of reading correlated with each area. To encourage study and to develop a serious attitude toward learning, each industry paid the worker (student) skill notes on a piece-work basis. These notes in turn could be deposited in the Migrant Savings and No Loan Bank or spent immediately on candy, books, and toys at the Mall Gift Shop. Learning
City had its own radio station, newspaper, cinema, and book exchange. Students reading 10 books could choose three books to keep as their own. The mayoress was the coordinator of City activities; the sheriff's job changed from day to day as it was awarded to different eligible citizens. Test scores of 42 program participants were compared with those of 42 students of similar backgrounds who did not have the summer experience. Learning City citizens had an average gain of 5.2 months compared to 3.1 months in reading and a math gain of 7.0 months compared to 3.7 months for the non-participants. Thirteen students (31%) achieved gains of one year or more in reading, math, or both compared to only four (11%) of the non-participants (Presson & Baker, 1980).

Tutoring as a remedial teaching device is not confined to elementary and high schools. Brier (1984) described a remediation program for underprepared college students. The presence of academically underprepared students at Vassar College, Poughkeepsie, New York, from 1865 to 1890 and at Cornell University, Ithaca, New York, from 1868 to 1890 was a source of controversy in both institutions. Vassar took on the burden of providing for comprehensive preparatory education for academically-deficient students within the context of the college. Cornell, although publicly stressing that it was not a preparatory institution, did provide some opportunities
for remedying academic inadequacies. Rather than creating a separate class of students and distinct preparatory course as Vassar did, Cornell offered subsections of college courses as well as tutoring. In addition, Cornell referred its underprepared students elsewhere for preparatory work. Complaints and protests regarding students' deficiencies in the basic skill areas are prevalent in the records of both colleges. The controversial presence of underprepared students led to a 19th century high school college connection: the colleges worked to elevate the quality of secondary school curricula. However, the colleges viewed the presence of underprepared students as reflecting negatively on their public images, and underprepared students presented instructional as well as administrative problems.

A paper titled "The Use of a Structured Tutorial Reading Program in Teaching Nonreading Second Graders in Title I Schools to Read" was reviewed (Harrison, Nelson, & Tregaskis, 1972). All (172) second-grade nonreaders in Title I schools received structured tutoring from intermediate age youngsters 15 minutes per day, 4 days per week, for 5 months in a program to remediate reading skills. Control subjects were randomly selected, without regard for reading ability, from the total Grade 2 population of three non-Title I schools. Tutors spent another equivalent period of time learning how to teach names of
letters, sounds of letters and digraphs, sound blending, decoding of new words and sight words, and in learning to listen to the child read orally from primers and workbooks. Following instruction, 20 tutees scored 100% on the criterion test, 73 scored 90% or above, and 102 scored 80% or above. For the total sample, 72% scored 80% or above on the criterion test, 20% scored between 60% and 80%, and 8% scored between 0% and 60%. Parents of both tutors and tutees stated they were enthusiastic about the children's improved reading skills and increased interest in reading. Teachers of tutors were initially and subsequently enthusiastic and cooperative in granting released class time; despite some initial skepticism, virtually all teachers of tutees acknowledged the improved skills of the former nonreaders.

Research Evaluation and Progress Reports

Tutorial programs can be conducted within the student's home. Painter (1969) reported on one home tutorial program. An attempt was made to ameliorate the educational deficits of infants using structured tutorial programs of language and concept training in the home. The study was part of a larger project whose purpose was to determine the age at which intervention will produce maximum acceleration of cognitive development. Subjects were 20 disadvantaged 8- and 24-month-old children.
randomly assigned to experimental and control groups. Female tutors worked with each experimental subject in his home 1 hour a day, 5 days a week, over 1 year. In the first 3 or 4 weeks of training rapport was established and the child's development was studied. Language training stimulated infants to imitate actions and sounds, identify and name objects, verbalize needs, use picture books, develop elaborative language, and use internal dialogue. Concept training stimulated infants to understand concepts of body image, space, number, time, and classification. On initial testing both groups of infants were average in intelligence and motoric development, but below their chronological age in language and concept development, and in interpretation of symbolic representation. Posttests showed that the experimental group had consistently higher scores on IQ, language, and conceptual development tests. There were no significant differences in sensory-motor development.

Kindergarten reading was the focus of a project reported on by Niedermeyer and Ellis (1970). The Southwest Regional Laboratory for Educational Research and Development, Inglewood, California, developed an exportable tutorial program whereby school personnel can train older students or adult nonprofessionals to tutor kindergarten children in reading. The initial program was tried out in a middle-income suburban district near Los Angeles.
Nine kindergarten teachers trained 75 fifth and sixth-grade tutors. The tutorial program was used in four of eight nearby schools. In these schools, remedial instruction for low-performing students following each unit of the reading program was administered by trained tutors and the teacher; in the other four schools the same remedial instruction was conducted by the teacher only. Pupil performance for both groups was compared, a tutor observation scale was developed to observe behavioral differences between trained and untrained tutors, and responses to a tutor questionnaire were collected. The formative evaluation procedures used to develop the program, data related to the effectiveness of the initial program, and the revised tutorial program are presented. Aspects of the development procedures which have general applicability for the preparation of tutorial programs for similar curriculums were also detailed.

Whether or not tutors benefited from the tutoring process was the subject of a 1971 report by Dillner. The major purpose of this study was to ascertain the growth in reading skills, self-concepts, attitudes toward school, and social relationships of a selected group of senior high school remedial readers who had served as tutors in reading for junior high school remedial readers. The study lasted almost one school year. The tutors were volunteers from a low ability English class, and 13
randomly selected students of comparable ability served as a control group. Standardized reading and self-concept tests were given both groups at the beginning and end of the study. Tutors attended a one-hour seminar the day before each weekly tutoring session to prepare their lessons and short seminar immediately following each session to evaluate the tutoring and make plans for improvement. Though the tutors gained significantly in many areas, the only significant difference in reading skills between the groups was in poetry comprehension, and the only difference in self-concept was in autonomy. There was no significant difference in the relationship between reading and self-concept or between reading and attitude toward school. Looking at each group separately, a significant relationship between growth in reading and growth in attitude toward school existed for the tutors (Dillner, 1971).

The Youth Tutoring Youth program was directed toward attitude and ability change of underachieving high school and elementary school pupils. The program was also developed to effect a change in basic language study skills of these students by using the Youth Tutoring Youth (YTY) model which was being implemented extensively throughout the United States. Basic to the YTY model is the employment (for financial remuneration) of underachieving high school pupils in the capacity of tutors to underachieving
elementary school pupils. In early reports, cited in Kopp, 1972, of the National Commission of Resources for Youth, Incorporated (the national coordinating agency for YTY) it was indicated that both the tutor and the tutee gained valuable reading skills as a result of experience with the YTY program, noting that some tutors have gained as much as three years in reading skills over a period of one semester. More importantly, however, the feeling of having helped another student seemed to be most beneficial. Owing in large part to a short project interval, few positive data changes were noted among the participants. For this reason, in addition to other more intuitive reasons, it was suggested that this project be lengthened, with the preservice training beginning perhaps as early as the spring quarter of the regular school year (Kopp, 1972).

Crawley and Evans (1974) reported on a later youth tutoring youth program at E. R. Carter Elementary School, Atlanta, Georgia. Carter's pupil population was totally black while the faculty itself was well integrated. The economic level was generally low. The purpose of the English-reading program was to provide remedial reading instruction for children who were identified as "slow learners" by standardized tests and by teacher observation and judgment. Findings from the Comprehensive Instructional Program tests and other tests were used as criteria
for grouping the children for the type of instruction prescribed for each child (Crawley & Evans, 1974). The youth tutoring youth program involved 10 tutors and 20 tutees. The tutors were students from a nearby high school. The tutees were students who were enrolled as slow learners and who were enrolled in Title I English-reading classes at Carter. The Tutor-Buddy or Experience Approach in Reading was a Title I program established for Title I pupils to tutor trainable mentally retarded children. The Child Development Center had approximately 40 children (Crawley & Evans, 1974).

A tutoring project was run outside the continental United States in Hilo, Hawaii, in 1973-74 by Hawaii University (1974). An operational description of the 1973-74 Buddy-Tutor Project at Hilo Intermediate School in Hilo, Hawaii, and an evaluative assessment of its outcome with statistical treatment of the data are provided. This project was an exploratory behavioral intervention program for educationally deprived students and focuses its efforts on the improvement of academic and school oriented behaviors. The tutor component of the project consisted of the delivery of academic remedial services through the use of the peer tutoring strategy adopted from the Operation Tutor Project. The buddy component consisted of the mediation and advocacy efforts of the project buddies to support and maintain student academic progress. The
efforts involved buddy contacts with parents and teachers to create supportive conditions for learning, and the use of positive, nonacademic activities to motivate student learning. The project was successful in reaching its goals and attaining its objectives, and effective in helping the pupils to acquire social and academic behaviors which are essential for success in schools and the community. Academic improvement was shown most clearly in reading and mathematics skills, the tutored subjects. Improvement in attitudes toward the environment was also indicated. Program directors recommended that the project be continued with at least 30 weeks of consistent and well organized implementations (Hawaii University, 1974).

The Boise City, Idaho, Independent School District (1975) reported on a structured tutoring program titled The Boise Structured Tutoring Program. This program served 750 first through third-grade students from 14 elementary schools. The program was designed to teach letter names, consonant and vowel sounds, sight words, and decoding skills to students who have deficiencies in basic reading skills. The basic elements of the model included the following: pre-established instructional objectives, predetermined sequence for introducing the objectives, means of assessing mastery of the objectives, materials geared to instructional objectives, prescriptions for individual students based on pretest performance and
prepared by trained tutors, procedures for systematically checking individual student mastery of instructional prescriptions, record-keeping procedures for tracking assignment and completion of prescriptions, and procedures for ensuring that objectives previously mastered are systematically reviewed. The program used peer tutors who are fifth and sixth-grade students at the same school as the program students. The tutors were tested and trained and then participated in role-playing situations to practice their skills before they begin tutoring. Tutors assisted only one student during the school year.

The End-of-Year Report Switzerland County School Corporation: Learning Tutors Offer Instructional Assistance (Wolpert & Schroeder, 1975) program description and evaluation described effects on both tutors and tutees. The major goal of the Learning Tutors Offer Instructional Assistance project was to effect positive academic, social, and attitudinal changes in the participants. The participants included high school tutors and elementary school tutees who met and worked together on a daily basis. The activities for the tutorial sessions were decided upon cooperatively by the tutor and the tutee's teacher. The sessions took place at "tutor stations" which were located in the hallways of the elementary school, in quiet corners of some classrooms, or in unused rooms. To implement the program a preschool training
program was conducted to permit the involved staff to develop the tutoring program. Tutoring kits were completed that contained instructional materials and progress charts. Tutors were then trained by the elementary teachers. The tutors were evaluated on the basis of interviews with their parents, their teachers, the tutee's teacher, and the tutors themselves. The experience may have helped to maintain the tutor's academic growth and did enhance their desirable personal qualities. Evaluation of the tutees was conducted by interviews with their parents, their teachers, their peers, and the tutees themselves. The tutees made very satisfactory progress with regard to their personal development and academic performance (Wolpert & Schroeder, 1975).

Curtailing student dropout rates and increasing student job placement were the objectives of a project in Nogales, Arizona, in 1975. The title of the report was Nogales Public Schools Exemplary Program. Final Report 1974-75 (Nogales High School District 10, Arizona, 1975). The purpose of the Nogales dropout prevention program was to include business, government, labor, and community groups in a collaborative program to provide intermediate and secondary schools with access to the resources of private and public employers. The primary objectives of the project were to achieve a 50% reduction of the dropout rate and to achieve a 75% successful placement of students.
in the target population. Two main activities comprised the project: (1) The student phase component which included work experience, career information, and career and placement services; and (2) the teacher-counselor component which helped guidance and counseling personnel become more familiar with the world of work. Most of the objectives were met. However, it was the opinion of the staff that project and district counseling services had to be unified to better meet the needs of the students. The tutorial assistance program and data collected during the project in the form of tables and graphs were presented (Nogales High School District 10, Arizona, 1975).

A New York state program was reported in 1975 by Thompson, Fill Swings—Feed Minds: Report of the Fiscal 1975 Program for the Education of Children of Migrant Farm Workers in New York State. The goal of the New York state migrant education effort was to provide each eligible child supplemental education programs that will best meet his assessed needs. Designed to provide migrant children with worthwhile educational experiences while they are in the period of migration, the programs were linked to the work of other state agencies which provide services to migrant children. During fiscal year 1975, programs carried out by local educational agencies, boards of cooperative educational services, State University of New York units, and private agencies were funded. Although
efforts to improve skills in reading, mathematics, and bilingual education were stressed, the programs undertaken aimed to improve health and nutrition, provide recreational activities, and bolster positive self-concepts. The programs undertaken included: a census project, Learn and Earn, Tutorial Outreach Program, summer school programs, Preschool Migrant Child Development Program, and Information Dissemination Project. Data on the children as they traveled from one state to another were obtained by use of the Migrant Student Record Transfer System. Attention was also given to inservice education in order that teachers and others concerned with improving the migrant child's education could have the opportunity to learn from those who are leaders in the field of migrant education.

High Intensity Tutoring (RMC Research Corporation, 1976) was a cross-age tutoring project for sixth, seventh, and eighth graders. The project featured drill in basic reading and math facts and the use of programmed workbooks. Teachers distributed candy and other rewards on the basis of points earned by students acting as either tutors or tutees. Tutor-tutee pairs were assigned so that the tutor was approximately two years ahead of the tutee in reading and math skills. Tutees often advanced to become tutors. Teachers and aides unobtrusively monitored tutoring, kept detailed records of the percent of errors
each tutee made, and assigned materials tutees could complete with 90% to 94% accuracy. The program's approach and requirements in terms of instruction, management, communication, personnel, materials, equipment, facilities, and costs were described. Criteria to consider in adopting the program and a timetable for getting started was also outlined (RMC Research Corporation, 1976).

Two studies were about migratory children's education. The first was Comparison of Language Experience Approach to Reading With a Conventional Reading Approach in Eight Summer Migrant Schools (Carline & Hoffman, 1976). Conducted in schools, separated into control and experimental groups by geography, size, and number of bilingual teachers, the study examined whether the: (a) language experience approach yielded higher scores on a reading attitude test, a standardized reading test in English and one translated into Spanish; (b) reading gains and school attendance were related to the teacher or aide's race and language ability; (c) child's age and school attendance were related to his reading scores; and (d) teacher's attitude toward the approach she used or her confidence in teaching reading, as measured by an attitude questionnaire prior to the program's beginning, was related to her post-attitude scores or to the child's gains. The relationship between the English reading ability of the children with their Spanish reading ability was also examined. Complete
data were obtained from 111 children and 25 teachers. Half of the Comprehensive Test of Basic Skills' reading sections, a 16-item reading attitude test, and a 5-item teacher questionnaire were used. Some of the findings were: attendance was greater when Chicano teachers and aides were in the classrooms; students whose teachers used the language experience approach more often showed an increase of 2.9 raw score points more on English reading standardized test scores; and younger children gained more than 2.77 raw score points in reading Spanish than did older children (teachers of younger children used the language experience approach quite often).

The second migratory children study, *Title I Migrant Evaluation Report, 1981-82*, (Kentucky State Department of Education, 1982) was conducted in Kentucky. In 1981-82 there were 58 districts in Kentucky which provided programs and services for 6,364 migratory children. Of that total, currently migratory (interstate) accounted for 13%, currently migratory (intrastate) accounted for 19%, and formerly migratory accounted for 68%. Approximately 81% of the students were in grades pre-kindergarten through eight, while only approximately 19% were high school students. The majority (97%) of the migrant students were Caucasian, with less than 3% belonging to other ethnic groups. Sixty-four instructional programs were offered by 56 districts during the regular school year and 27
Instructional programs were conducted by 24 districts as summer school programs. Instructional programs included math, reading, language arts, written and oral communications, tutorial, and kindergarten. Parent involvement increased during the 1981-82 school year for most of the migrant school districts. Standardized tests were the most widely used means of measuring student achievement. In the regular school program, there seemed to be slightly more progress made in mathematics and language arts than in reading. The migrant students in the first grade showed more progress than students in other grades.

A progress report by Niedermeyer and Ellis (1969) discussed outcome from a California remedial reading employing tutoring program. Fifth and sixth-grade students were trained by kindergarten teachers to tutor kindergarten pupils in reading by using highly structured practice exercises, selected by teachers for each pupil as part of the Southwest Regional Laboratory's First-Year Communication Skills Program. To measure the effectiveness of tutoring on the progress of pupils needing remedial reading instruction, postremediation performances of pupils receiving teacher-plus-tutor remedial instruction and of pupils receiving only teacher remedial instruction were compared in eight schools. Pupils who were tutored scored significantly higher on the postremediation tests, and pupils who were reading close to the acceptable
level on initial tests were helped more by teacher-plus-tutor instruction than by a teacher alone (possibly because a teacher without a tutor must concentrate on the most deficient pupils). In addition, tutored pupils outperformed untutored pupils on a mid-term test on 14 out of 15 items. Modifications were made in the tutoring program on the basis of finding that some pupils were not receiving all of the practice exercises and that tutors needed more training in certain skills.

Kahn (1975) described a New York City project wherein disadvantaged youngsters were tutored. This was a description of Homework Helpers, a program funded under the Elementary Secondary Education Act, Title I, in nine nonpublic schools with disadvantaged youngsters. The two purposes of the program were to improve the competency of the students in reading and mathematics skills, and increase student motivation and interest by developing positive attitudes toward self and school. Two hundred sixty students in grades 2 through 8 were recommended by Title I specialists in consultation with principals, teachers, parents and pupils to receive additional help in reading and mathematics. The project was conducted after school hours, 2 hours daily, 4 days per week. High school tutors were instructed to encourage pupil self-confidence and to provide a warm climate in which the students could perform freely. A student questionnaire consisting of 12
items explored attitudes toward school, self, tutors, reading, and mathematics. The questionnaire was given to the students twice as a pre- and post-evaluation. The students demonstrated considerable improvements in attitude toward self and school by the end of the program. The students' reading and mathematics skills improved and were reflected in higher grade levels in those subjects.

**Supervisor and Procedures Manuals and Guidebooks**

Two tutoring manuals were reviewed. The first was titled *Supervisor's Manual: Youth Tutoring Youth* (1968). Youth tutoring youth is an after school (or summer) tutorial program in which 14 and 15-year-old In-School Neighborhood Youth Corps enrollees earn money by helping younger children enjoy reading, writing and other skills of expression. The program involves community members as supervisors, aides, tutors and tutees. This manual is divided into two parts. The first part is concerned with the goals, organization, recruiting, data collection, funding, materials, training and testing, aspects of the program. These aspects are briefly described and form a basis for part two, which is comprised of resource chapters. Subjects covered are materials for tutoring, recruitment, role playing, workshops, remediation, testing, and commercial materials. Specific suggestions and materials are given for each of the above.
The second manual was the Procedures Manual of the Adult Right-to-Read Project of the Vermont Adult Basic Education Program 1975-1978; Addison and Rural Crittenden Counties, Vermont (New Haven School District, 1978). The procedures described in this manual were developed in an adult Right-to-Read project that provided individualized home instruction in reading, writing, and related basic life skills to adults in rural settings. The eight sections of the manual deal with the following topics: intention of the manual and descriptions of the project and its staff; home tutoring (including recruitment of students, initial contact with students, diagnosis, student motivation, and common problems); locating, training, and supporting volunteers (including matching tutors with students, checking out student tutor problems, and finding rôles for volunteers); publicity; record keeping; staff development; and materials including developing materials, assembling commercial and free materials, and some sources for acquiring materials. Numerous materials are included in the appendices, including job descriptions for project staff members, descriptions of project procedures, discussions of project assumptions and intentions, tutor questionnaires, and criteria for determining how to help students.

A teachers guidebook relating to a reading remediation program which included monolingual and bilingual
Spanish speaking students was reviewed. The guidebook for a program entitled *Zoom Into Preschool Story Hour* was written by Glaser and Stanton (1982). A low-cost reading program at De Anza Junior High School, Ontario, California, designed to motivate reluctant junior high school readers and to develop an early interest in books in preschool children is described. A background history of the Preschool Story Hour is given and sources of books are suggested. Junior high students who may be reluctant readers, remedial readers, gifted readers, low-achieving students, super-achievers, monolingual Spanish speakers, or bilingual readers read to preschool children to become more effective readers and to learn how to interact with preschool children. Eight guidelines for readers and three finger plays are included. The role of librarians and parents in the program and the benefits to both student readers and preschoolers are described. A step-by-step guide to implementing such a program is provided, followed by a sample program announcement, parent questionnaire (in both Spanish and English), and a bibliography of 17 paperback booklets, for use with parents in parent education sessions.

**Summary of the State of Tutoring**

Based upon a review of the literature, tutoring in the United States, and internationally, is a teaching
process of general usage. Most often tutoring is used as a prescriptive remedial tool. There was little evidence of any previously done studies which specifically concentrated on the results of a structured tutoring program as it applied to a migrant population.

Five areas of literature were reviewed including: (1) dissertations from the subject field, (2) international studies relating to tutoring, (3) papers relating to tutoring presented at academic conferences, (4) research evaluation and progress reports, and (5) supervisor and procedures manuals and guidebooks. A total of 27 studies were reviewed. Subject populations included preschoolers, elementary students, junior high students, high school dropouts, college students, and migrant students. The effects of tutoring upon the tutors and upon parental involvement were studied. Migrant students were the subject of four studies reviewed. No study, however, specifically studied the effects of a structured tutoring system on a migrant summer school population as this study did.
CHAPTER III

DESIGN AND METHOD ANALYSIS

Introduction

This study was designed to (a) review existing literature regarding tutoring, determine whether any similar studies have been conducted and review the conclusions; (b) establish the structured tutoring program; and (c) determine the effects of the tutoring upon a migrant student population.

The hypothesis to be tested is that the reading achievement growth levels of migrant students who were tutored in reading will be greater than that of students who participated in the same program and were not tutored. However, as discussed in the limitations section of this study, normative data will be substituted for the control group data because of the limited time (7 weeks) allocated to the summer migrant program. A second variable that contributed to the substitution of normative data in lieu of summer migrant student control group data was a lack of summer personnel to conduct posttesting of the entire summer student population.

The Gap Reduction Design (GRD) (Gamel et al., 1987) statistic used to analyze the data generated by this study
was selected to specifically treat the forced substitution of normative data for tested control group data. The use of normative data was the only viable way to provide a statistically reliable comparison considering the limitations presented by the time and personnel constraints which could not be controlled.

The statement of the problem, research objectives, hypothesis, operational definitions, and the research design were presented in Chapter I. Existing literature relevant to the effectiveness of tutoring was reviewed in Chapter II. In this chapter the design and research procedures are described including: (a) limitations, (b) subjects, (c) instrumentation and data collection, (d) method, and (e) data analysis.

Limitations

The data in this study were collected in a single summer. The data were limited to one study, at one migrant summer school site, and involving one migrant student population. The length of tutoring time was limited to five weeks due to the brevity of the summer school program (7 weeks). Due to the migratory nature of the population studied and the brevity of the summer school program a longitudinal study could not be done. Whether the Hawthorne Effect (Issac & Michael, 1971) influenced the findings could not be determined.
All of the migrant students enrolled in the migrant summer school were of Hispanic descent. All of the migrant students involved in the tutoring program were bilingual, speaking both Spanish and English. Whether English was their primary or secondary home spoken language could not be determined. Whether or not the migrant students being bilingual affected the outcome of their participation in the structured tutoring program was not able to be determined.

Subjects

Both agriculture and automotive industry provide the economic foundation for the area in which the study was performed. Primarily Hispanic migrant families, primarily from Texas, move into the area to work as field laborers performing cultivational tasks during June, July, and August. A few individual migrants find employment within the industrial sector and some remain and become permanent residents; others may leave industrial work and resume the migratory way of life at season's end. Once the agricultural work is completed most migrant families move on to the next geographic area where similar employment awaits them.

According to MacPherson et al. (1987), many migrant parents fear modern technology. They see a hopeless future of employment for their children in a constantly
changing world that is becoming more and more technological. Parents' fears stem from having been displaced by the use of highly mechanized farm technology as well as technological advances in industry in general. One responsibility of educators is to meet the specific educational needs of the migrant children as they attempt to make their transition from the agricultural to the technological society. These students need to be prepared for and exposed to alternatives to migratory labor. Educational and skill development must take place. To neglect their educational needs will result in a waste of human potential.

The migrant children in this study were enrolled in a summer migrant school. The students came from eight migrant camps located within an 18-mile radius of the school site. The children were provided bus transportation to and from the school.

There were 168 students enrolled in grades K through 5. All students (140) in grades 1 through 5 took the Wide Range Achievement Test (Bijou et al., 1978). Children were assigned to the tutoring treatment based upon their WRAT test scores; the qualifying scores for tutoring were established by the migrant school administration. Children who scored three months to four years below their reading grade level on the WRAT were tutored.

A total of 43 students were assigned to the
structured tutoring program. Those children who were not tutored were enrolled in traditional classrooms. The 43 children who were tutored were also enrolled in a traditional classroom when they were not being tutored. The program was designed to provide 20 tutoring treatments of 20 minutes each over a 5-week period. Due to absenteeism not all students assigned to the tutoring program completed all 20 treatments. Absenteeism averaged 25% school-wide over the length of the summer school program (Appendix A).

Master Tutor

The master tutor supervises the tutors and guides and directs the tutoring program. The established qualifications for the master tutor were: (a) a master's degree in education, (b) elementary certification, (c) K-12 teaching experience, (d) bilingual in English and Spanish, (e) knowledge and experience in bilingual education, and (f) experience in supervision. METRA (Harrison, 1976) training was provided for the master tutor so a thorough knowledge of the structured tutoring system and master tutor duties could be gained. Master tutor training was an intensive 2-day training workshop conducted by a METRA training representative.

The master tutor was responsible for the following: (a) selecting the tutors; (b) participating in tutor
training; (c) supervising the testing and subsequent placement of tutees with a tutor; (d) monitoring the tutoring process; (e) providing feedback to tutors so adjustments in tutoring procedures could be made, where necessary; (f) releasing and replacing a tutor who wasn't using METRA tutoring methods; (g) keeping accurate records of student progress; and (h) overseeing the posttesting of tutees.

The Tutors

Selection and training of the tutors is a critical step in the structured tutoring process. According to Bloom (1976), a nearly error-free system of instruction might be found in a sensitive tutor and one student. In an ideal communication process between tutor and student, there would be a minimum of error in either the teaching or the learning.

The selection of tutors was overseen by the master tutor in conjunction with the summer school administrator. The criteria used in selecting tutors were: (a) a grade point average of 3.00 or above on a 4-point scale, (b) evidence of intended enrollment or current enrollment in a college or university, (c) evidence of enrollment in an academic program, (d) evidence of participation in extracurricular activities, (e) a good academic attendance record, (f) a demonstrated evidence of being a
self-directed and self-motivated student, (g) an ability to follow directions, (h) evidence of being empathic, and (i) a willingness to work with migrant children.

Once the tutors were selected they were provided an intensive 2-day METRA (Harrison, 1976) orientation and training workshop (Appendix B). The workshop was conducted by a METRA company training representative and by the master tutor. The workshop included documentary film, audio and visual training tapes, role playing, demonstrations, and question and answer periods.

Instrumentation and Data Collection

METRA

METRA (Harrison, 1976) is a commercially prepared structured tutoring program. The process of structured tutoring puts together methodology, materials, improvement of self image, time-on-task, and quantifiable reading improvement into one package; METRA met these requirements. This structured tutoring program was designed to insure that a student did receive sequential individualized help with reading deficiencies. The METRA structured tutoring program was the treatment used to remediate the reading deficient migrant student in this study.

Personnel required to implement the METRA program included a master tutor and four tutors. The master tutor and four tutors were trained by a METRA employed
specialist to specifications set forth by METRA. The master tutor supervised the tutoring program including tutor selection, tutor training, tutee selection (pretesting), tutor-tutee dyad pairing, tutoring instruction, and preparation of the results (posttesting).

The four tutors in this study were selected by the master tutor and the school administrator. The four tutors were trained according to METRA specifications before the tutoring program began. The tutors administered the pre- and posttests under the master tutor's supervision. Tutors were to meet their students (tutees) one-on-one for twenty, 20-minute tutoring sessions over a 5-week period; absenteeism on the part of the tutees prevented all the assigned dyads from completing all tutoring sessions (Appendix A).

The METRA structured tutoring principles include teaching in small steps, mastering each step, and positive praising and recognition with the successful completion of each step. Letter recognition and sounds, blending, decoding, sight words, and reading are among the reading fundamentals taught. A complete description of the process is found in the Method section of this chapter with the heading Tutoring.

The Wide Range Achievement Test (WRAT)

The WRAT (Bijou et al., 1978) is a standardized
achievement test used to determine the student's achievement level in reading. The WRAT measures the student's ability to recognize and name letters and to pronounce single words. The WRAT requires 20 to 30 minutes to administer and was administered individually, by the tutors under the supervision of the master tutor, to all migrant students enrolled in the first through fifth grades. Using WRAT conversion tables, the reading scores were converted into grade norms (Appendix C). Students who scored three months to four years below their grade level were assigned to further testing and tutoring as detailed in this study. A total of 43 students were tutored out of 140 students tested. The summer school administrator established the parameters for those who qualified for tutoring based upon each student's test results.

The Woodcock Reading Mastery Test (WRMT)

The WRMT (Woodcock, 1973) is a standardized reading test which provides a precise measurement of reading achievement. The WRMT requires 20 to 30 minutes to administer and was administered individually by the tutors under the supervision of the master tutor. The WRMT provided the normative data which were used to represent the control group in this study. The WRMT was administered as both the pretest and the posttest. Only the 43
migrant students assigned for tutoring were administered the WRMT.

The WRMT contains five subtests: (1) letter identification, (2) word identification, (3) word attack, (4) word comprehension, and (5) passage comprehension. The WRMT yields a cumulative reading grade level score.

Method

Tutoring

A total of 43 migrant students (tutees) were assigned to the METRA (Harrison, 1976) structured tutoring program. Each tutee was assigned to a tutor by the master tutor. The tutors were assigned a number, 1 through 4, based on the alphabetic sequencing of the first initial of their last name. Each tutee was assigned a number, 1 through 43, based on the alphabetic sequencing of the first initial of their last name. All tutee numbers were placed in a container, mixed, and a blind draw was conducted by the master tutor. After each tutee number was drawn it was sequentially assigned to the next available tutor. Each tutor-tutee dyad remained constant throughout the 20 tutoring sessions. Tutoring occurred over a 5-week period.

The tutor-tutee dyads met in the same room, which had been designated as the tutoring room by the school administration, throughout the 20 tutoring sessions. The room
was arranged with four tables and eight chairs (two per table); each dyad occupied the same table each tutoring session. The room was well lighted and ventilated.

The METRA structured tutoring system is divided into small instructional steps known as instructional prescriptions. The prescriptions consist of the following subject areas: (a) letter names, (b) letter sounds, (c) blending, (d) comprehension, (e) spelling, (f) writing, (g) phonetic rules and irregular sounds, (h) syllabication, (i) decoding, (j) sight words, and (k) reading.

All tutees began the tutoring treatment with the first instructional prescription. Each tutee was allowed to progress at his or her own ability pace. After a tutee successfully completed an instructional prescription, the tutor administered a mastery check test. If the tutee demonstrated mastery, the test date was entered on the tutee's instructional prescription profile sheet and the tutee progressed to the next instructional prescription. If the tutee did not demonstrate mastery, a new instructional prescription was not assigned and the tutor continued to work with the tutee on the same instructional prescription. The tutee moved from one instructional prescription to the next only after demonstrating mastery of the previous prescription. The instructional prescriptions were presented sequentially. Each time a tutee was assigned a new instructional prescription the date was
recorded on the tutee's profile sheet (Appendix D).

The master tutor monitored the tutor-tutee dyads on a regular basis. The monitoring was done to insure that the tutors followed the prescribed tutoring techniques. To be effective the tutors had to follow the prescribed tutoring techniques. If the tutors did not follow the prescribed tutoring techniques, they were to be replaced. None of the tutors involved in this study were replaced.

The tutees were assigned to regular classrooms as well as to the structured tutoring program. Tutees were released from their classroom to attend tutoring treatment on a regularly scheduled basis. Regular classroom teachers cooperated with the master tutor and tutors.

One week after the tutee had mastered an instructional prescription the tutor conducted a mastery review check (see Appendix E for form). If the student successfully passed the mastery review check, the date was entered on the tutee's log sheet (Appendix F). If the student did not pass the mastery review check, the dyad returned to and reviewed the failed instructional prescription.

Student praise and recognition were an important part of the METRA tutoring program. Tutors were instructed, and expected, to provide verbal praise and encouragement regularly. Tutors also created large wall charts listing each tutee's name down the left side and the name of each
instructional prescription from left to right across the top. After a tutee successfully completed an instructional prescription, by passing the mastery check test, he was allowed to place a sticker on the chart in a box after his name and under the appropriate instructional prescription name. The chart with the stickers provided visual recognition.

Data Analysis

Gap Reduction Design

Data collected through the Woodcock Reading Mastery Test (WRMT) (Woodcock, 1973) pretests and posttests were analyzed using the Gap Reduction Design (GRD) (Gamel et al., 1987). The GRD uses the Relative Growth Index (RGI) (Appendix G) as its metric. This study is about whether the METRA (Harrison, 1976) structured tutoring group is keeping up with, falling behind, or surpassing the comparison group as seen in the WRMT normative data. The gap measured is the gap between the mean achievement level of the METRA group and the mean achievement level of the comparison group. The hypothesis of this study is that the gap between the METRA and the comparison groups will be reduced from pre- to posttestings of the WRMT. The GRD is functional over the same breadth of grade or age levels as is provided normative data by the standardized achievement test.
Summary

Reviewed in this chapter were the study design and methodology including the subjects, instrumentation and data collection, method, data analysis, and limitations. In Chapter IV are the findings. Discussion and summary are in Chapter V.
CHAPTER IV

FINDINGS

Introduction

The findings of the data analysis are contained in this chapter. The purpose of this study was (a) to review the literature regarding tutoring, determine whether similar studies have been conducted, and review the conclusions; (b) to establish the structured tutoring program; and (c) to determine the effects of the tutoring treatment upon a migrant student population.

Hypothesis

The hypothesis tested in this study was that the reading achievement growth levels of migrant students who were tutored in reading would be greater than those of students who were not tutored in reading, as measured with a standardized reading achievement test. Because of the limited time (5 weeks) allocated to the structured tutoring program and to the lack of summer school personnel to conduct achievement testing, normative data were used in lieu of a migrant student control group from the study population.
Experimental Group

This study involved migrant children who were enrolled in a migrant summer school program. The migrant children resided in eight migrant camps which were located within an 18-mile radius of the summer school site. The children were provided bus transportation as part of the school program. Breakfast, lunch, and an afternoon snack were given to the migrant students each school day at the migrant school site.

The school provided a nursery and a preschool and provided the migrant students with traditional classroom settings grades K through 5. All enrolled migrant students (140), grades 1 through 5, took the Wide Range Achievement Test (WRAT) (Bijou et al., 1978). Students were assigned to the structured tutoring treatment based upon their WRAT test scores. Students who scored 3 months to 4 years below their reading grade level on the WRAT were tutored. The tutoring qualifications were established by the summer school administration. The WRAT was selected because it was an easy to administer and interpret screening device. The WRAT was also selected because it is a standardized diagnostic test in reading (word recognition and pronunciation).

Based upon WRAT results 43 migrant students were assigned to the structured tutoring program. Migrant children who were not tutored were enrolled in the
traditional classrooms. The 43 children who comprised the experimental group and who were tutored were also enrolled in the traditional classroom when they were not being tutored.

Each tutored student (tutee) was assigned to a tutor. The tutor-tutee dyads remained constant throughout the treatment period. The tutoring program was designed to provide 20 tutoring treatments of 20 minutes each over a 5-week period.

Prior to beginning the tutoring treatments each tutee took a second achievement test, the Woodcock Reading Mastery Test (WRMT) (Woodcock, 1973). The WRMT is a standardized achievement test which provides a precise measurement of reading achievement. The WRMT has five subtests: (1) letter identification, (2) word identification, (3) word attack, (4) word comprehension, and (5) passage comprehension. As well as individual subtest scores, the WRMT also yields a cumulative reading grade level and age score. Normative data provided by the WRMT were used to represent the control group in the study.

Control Group

An ideal pretest-posttest control group study involves a control group selected from the same population as was the experimental group. Due to the brevity of the summer school term (7 weeks), the lack of summer school
personnel to implement the pretesting, tutoring, and posttesting, and the nomadic nature of the studied population, a longitudinal study could not be successfully implemented. Pre- and posttesting of a control group from the same population was not possible. Norms for the WRMT were used in lieu of a control group from the studied population.

Data Collection and Analysis

Each enrolled migrant student in grades 1 through 5 was administered the WRAT (Bijou et al., 1978) as an initial screening test. Students who tested 3 months to 4 years below their reading grade level on the WRAT were assigned to the tutoring program. Students who were assigned to the tutoring program were further tested (pre and post) with the WRMT.

The WRMT contains five subtests: (1) letter identification, (2) word identification, (3) word attack, (4) word comprehension, and (5) passage comprehension. The scores from the five subtests were collectively calculated into a total reading score (Woodcock, 1973). Based upon tables provided by the WRMT the individual scores were converted into reading age scores (years and months). The migrant students' reading age scores, pre- and posttest, were compared to normative data reading age scores provided by the WRMT.
Gap Reduction Design

Data collected through the WRMT, pretests and posttests, were analyzed using the Gap Reduction Design (GRD) (Gamel et al., 1987). The GRD has the Relative Growth Index (RGI) as its metric. Whether the tutored migrant students were keeping up with, surpassing, or falling behind the comparison group (WRMT normative data) was the focus of this study. The GRD is functional over the same breadth of grade or age levels as is provided normative data by the standardized achievement test.

The Gap Reduction Design was selected as the statistic in this study for four reasons: (1) the GRD was designed to be utilized in bilingual education settings where it is impossible to obtain valid treatment-related and nontreatment-related components; (2) the GRD's ease of presentation and interpretation; (3) the GRD's validity with small group numbers; and (4) the RGI, the metric of GRD is independent of the heterogeneity of the comparison group (normative data) (Gamel et al., 1987).

The Relative Growth Index (RGI), the metric of the GRD, expresses in percentage terms the amount by which the experimental group's progress exceeded or was less than the comparison group (normative data) (Appendix G). An RGI of +50% indicates that the progress of the experimental group was 50% greater than that of the comparison group. An RGI of -10% means that the progress of the
experimental group was 10% less than the comparison group. RGIs are independent of the heterogeneity of the comparison group. Therefore, RGIs can be meaningfully compared between projects that use different types of comparison groups (experimental group versus normative data). RGIs, by design, were unaffected by the fact that this study's experimental group (migrant students) was less diverse than the tested comparison group (normative data).

The GRD is conceptually simple involving four quantities: (1) the experimental group's pretest mean achievement level; (2) the experimental group's posttest mean achievement level; (3) the comparison group's pretest mean achievement level; and (4) the comparison group's posttest mean achievement level. The gap between groups at pretest time (#3 minus #1) and at posttest time (#4 minus #2) is measured. The amount of gap reduction then is the posttest gap minus the pretest gap (Appendix H).

To meaningfully implement the GRD in this study, two age groups were concentrated on: (1) 7 years 6 months to 7 years 11 months, and (2) 8 years to 8 years five months. These two age groupings were studied because the greatest number of migrant students tested into them and because they completed all 20 tutoring treatments. There were 14 migrant students in the first group and 4 migrant students in the second group.
Findings of the Study

METRA (Harrison, 1976) was the commercially prepared structured tutoring program used in this study. The actual steps in the calculation of the Relative Growth Index (RGI) of the Gap Reduction Design (GRD) (Gamel et al., 1987) for this study were:

1. The raw pretest and posttest WRMT scores were converted to age level scores, as provided by a WRMT conversion chart, for the experimental group.

2. The mean pretest and posttest scores for the experimental groups were calculated (Table 1).

3. The mean pretest and posttest scores for the comparison group (WRMT normative data) were calculated (Table 1').

4. The pretest and posttest standard deviations of the experimental group and the comparison group were calculated at each age level (Table 1).

5-12. The remaining steps are shown for age groups 7 years 6 months to 7 years 11 months (Appendix I) and for age group 8 years to 8 years 5 months (Appendix J).

The findings of the calculations for age group 7 years 6 months to 7 years 11 months showed an increase for the experimental group of 292% as compared to the control group. The findings of the calculation for age group 8 years to 8 years 5 months showed an increase for the experimental group of 860% as compared to the control.
Table 1
Summary Statistics Used to Calculate
the Relative Growth Indices (RGIs)
by Age Norm Groups

<table>
<thead>
<tr>
<th>Age Norm</th>
<th>Group</th>
<th>Name</th>
<th>N</th>
<th>Pretest Mean</th>
<th>Pretest S.D.</th>
<th>Posttest Mean</th>
<th>Posttest S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 yr. 6 mo. to 7 yr. 11 mo.</td>
<td>METRA</td>
<td>14</td>
<td>74.00</td>
<td>13.00</td>
<td>78.00</td>
<td>13.41</td>
<td></td>
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<tr>
<td></td>
<td>Comparison</td>
<td>306</td>
<td>87.00</td>
<td>32.52</td>
<td>87.50</td>
<td>33.23</td>
<td></td>
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<tr>
<td>8 yr. 0 mo. to 8 yr. 5 mo.</td>
<td>METRA</td>
<td>4</td>
<td>77.00</td>
<td>15.03</td>
<td>85.50</td>
<td>16.74</td>
<td></td>
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<tr>
<td></td>
<td>Comparison</td>
<td>318</td>
<td>82.80</td>
<td>13.31</td>
<td>86.00</td>
<td>17.87</td>
<td></td>
</tr>
</tbody>
</table>

S.D. = Standard Deviation  
N = Number
group. For both age groups the hypothesis that the reading achievement growth levels of migrant students who were tutored in reading will be greater than that of students who were not tutored in reading was retained. Both tutored age groups showed significant growth as compared to the nontutored groups.

Summary

The findings of the study have been presented in Chapter IV. Tutored students showed significantly greater growth than did nontutored students. The study concludes with Chapter V in which will be found a summary of the study, conclusions, recommendations, and suggestions for further research.
CHAPTER V

DISCUSSION AND SUMMARY

Introduction

The purpose of this study was (a) to review existing literature regarding tutoring, determine whether any similar studies were conducted, and review the conclusions; (b) to establish the structured tutoring program; and (c) to determine the effects of the tutoring upon a migrant student population.

The hypothesis to be tested was that the reading achievement growth levels of migrant students who were tutored in reading would be greater than that of students who participated in the same program but were not tutored. Due to the limited time allocated to the summer school migrant program (7 weeks) and to the lack of summer school personnel to conduct post-treatment testing on the experimental and control groups, normative data were substituted for the control group. The normative data were provided by the Woodcock Reading Mastery Test (Woodcock, 1973) which was the test utilized pre- and post-treatment.

The Gap Reduction Design (Gamel et al., 1987) was used to analyze the data from this study. The GRD was selected because it was designed to be functional over the
same breadth of grade or age levels as was provided normative data by the WRMT. The gap measured was the gap between the mean achievement level of the tutored group and the mean achievement level of the comparison group as provided by the normative data.

Summary

The subjects of this study were migrant children enrolled in a summer migrant school program. The summer school provided a nursery, kindergarten, and first through fifth grade classrooms. All children were bussed to and from school and all resided in eight migrant camps located within an 18-mile radius of the school site. The migrant summer school term lasted 7 weeks.

The migrant students had accompanied their families into the area. In all instances one or both of the children's parents were employed as temporary workers in the agricultural industry. All the children enrolled in the summer school were of Hispanic descent. All the migrant students involved in the tutoring program were bilingual, speaking both English and Spanish. Whether English or Spanish was their primary home spoken language could not be determined.

All students enrolled in grades 1 through 5 (140) took the Wide Range Achievement Test (Bijou et al., 1978) to determine their reading levels. Based upon WRAT test
results students were assigned to the tutoring program. The reading deficiency levels necessary to qualify for the tutoring treatment were established by the summer school administration. Migrant children who scored three months to four years below their reading grade level on the WRAT were tutored. Based upon the individual WRAT test scores a total of 43 students were assigned to the tutoring treatment program. The tutored children (tutees) also participated in traditional classrooms along with those children not being tutored. The 43 tutees were further pre- and posttested with the Woodcock Reading Mastery Test (Woodcock, 1973). The WRMT was selected because it provided precise measurement of reading achievement, could be administered quickly and easily by the summer school personnel, and provided reading grade level normative data for comparative purposes.

The WRMT pre- and posttest scores were converted into reading age scores (years and months). Score conversion tables were provided by the WRMT. The WRMT also provided normative data reading age scores for comparison purposes.

Because of the brevity of the entire summer school program (7 weeks), the even shorter tutoring treatment period (5 weeks), and the lack of summer school personnel assigned to the tutoring program (four tutors and one master tutor), pre- and posttesting of both the treatment and the control group was not possible. Therefore,
normative data provided by the WRMT were used for the control group data.

METRA (Harrison, 1976) was the commercially prepared structured tutoring program used in this study. The METRA program was designed to provide sequential, individualized, prescriptive, remedial reading treatment. The process of structured tutoring puts together methodology, materials, improvement of self-image, time-on-task, and quantifiable reading improvement into one package. The four summer school tutors and the master tutor employed to conduct the tutoring treatment were provided a 2-day training seminar by a METRA employed specialist to insure proper implementation of the METRA structured tutoring program.

Absenteeism was a problem in this study. School-wide absenteeism averaged 25% over the 7-week summer school program (Appendix A). Only two age groups, 7 years 6 months to 7 years 11 months, and 8 years to 8 years 5 months, attended school with a regularity which allowed them to complete the full 20 tutoring treatment sessions. These two age groups also contained the greatest number of students (14 in the younger group and 4 in the older group) and, therefore, were selected as the group to be studied.

The Gap Reduction Design (GRD) (Gamel et al., 1987) was the statistic used to test the hypothesis. The
Relative Growth Index (RGI), the metric of the GRD, shows in percentage terms whether the experimental group is falling behind, keeping up with, or surpassing the control group (normative data) (Appendix G). Because the RGI is independent of the heterogeneity of the control group, a meaningful comparison between the experimental group and the control group (normative data) could be established.

Conclusions

The hypothesis that the reading achievement growth levels of migrant students who were tutored in reading would be greater than that of nontutored students was retained. The experimental group did show significant reading growth as compared to the control group.

The experiment's findings demonstrated that individualized, prescriptive, reading remediation can facilitate substantial reading growth. Tutors who were trained to be empathetic and supportive did help the migrant students realize increased reading growth. Each tutee was treated individually. The process of individual attention, understanding, and support was designed to provide each tutee a sense of self-worth and enhanced learning ability.

This study is limited to one study, one site, one summer migrant school; normative data were used in lieu of a control group. The number of migrant students who completed the tutoring treatments were limited due to
absenteeism. However, all the migrant students in the two
groups who provided scores used to test the hypothesis,
did complete all 20 treatments.

The finding, that there was collective growth demon­
strated, might be explained by the individual attention
provided each tutee. The tutors were trained to work one­
on-one with their pupils in an understanding and empathic
way. Each tutee was allowed to begin the tutoring treat­
ment at his or her own tested ability level and to then
progress at his or her own speed. By comparison, in a
traditional classroom setting, if a student falls behind
the group the teacher may not have time to cater to that
one student's deficiency at the expense of time taken from
the entire group. Tutoring is designed to be a one-on-one
teaching instrument. In this study, that one teacher and
one student dyad was beneficial to the students reading
progress.

Experimental age group 7 years 6 month to 7 years 11
months had an increase of 292% as compared to the control
group. Experimental age group 8 years to 8 years 5 months
had an increase of 860% as compared to the control group.
Both tutored age groups showed greater growth than did the
nontutored groups.
Recommendations

Structured tutoring is designed to be a one-on-one teaching method. Structured tutoring puts together methodology, materials, improvement of self image, time-on-task, and quantifiable reading improvement into one package. Structured tutoring can be taught by professional teachers, students, or para-professionals who have been trained and who follow the tutoring program's steps specifically. As a result of this study, it is recommended that educators consider structured tutoring as a reading remediation method of general usage.

Structured tutoring can easily be implemented within a traditional educational setting. The basic requirements to establish a structured tutoring program are: (a) a trained tutor, (b) a tutee, (c) a trained supervisor, and (d) a structured tutoring program. Any achieving student can be readily trained and supervised by a classroom teacher, reading specialist, or para-professional to work with a non-achieving student. Thus, the professional teacher can devote his or her time to the majority of the class members while the non-achieving student is provided remediation to help him or her catch up academically to his or her peers.

This study, 5 weeks, was limited by the short summer school term in which it was contained (7 weeks). A future study might replicate this study but over a longer time
period. This suggested replication could be designed to determine whether sustained tutoring treatment continues to add to the students' growth, whether growth plateaus, or whether growth ultimately falls off. A longer study could also provide time for additional knowledge retention checks to determine whether reading skills learned, as a result of tutoring, are retained and, if so, for how long.

A future study might also use a control group from the same population as the experimental group. The statistic used in this study, the Gap Reduction Design, was selected because it was designed to be used with a small number of subjects and with bilingual educational settings where it was not possible to obtain valid treatment-related and nontreatment-related components and because it was independent of the heterogeneity of the comparison group. Nevertheless, a study made up strictly of components selected from the same population could be designed to compare several variables from that divided population and thus provide data which could be more directly correlated to the migrant student.

In addition to low reading skills, the migrant students in this study had some unique problems that may have contributed to their predicament including: frequent mobility, educational fractionalization, and the onus of belonging to a low socioeconomic group. A future study of structured tutoring might concentrate on a population that

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was less mobile, more educationally stable, and from a more normal socioeconomic population, which could determine whether similar findings occur or whether the conclusions are unique to the migrant population studied.
Appendix A

Attendance Record
## Daily Attendance

### 1988 7 Week Program

<table>
<thead>
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<th></th>
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</tbody>
</table>

### ADA:

- **DAY CARE**
- **PRE-SCH I**
- **PRE-SCH II**
- **KINDG**

### First Second Third Fourth Fifth

**Program ADA** (with Day Care) **(without Day Care)**
Appendix B
BR Training Workshop
BR TRAINING WORKSHOP

General Objectives:
1. Understand concept of instruction employed in Metra reading programs
2. Know who Beginning Reading 1 is for and what it can accomplish
3. Master testing and recording procedures
4. Master teaching techniques and use of the sequence

Major Workshop Divisions:
1. Discuss Metra concept and show documentary film
2. Discuss which students will benefit, show data from other projects
3. Demonstrate testing procedures and discuss how to use test; also discuss and demonstrate record keeping procedures
4. Discuss and demonstrate general techniques and the importance of using them
5. Study techniques for teaching sounds and sight words
6. Study techniques for teaching blending and monitoring decoding exercises
7. Study procedures for monitoring oral reading
8. Review all procedures

Detailed Agenda for Workshop
First Day
Morning Session

8:30 Warm up, introductions — getting acquainted
9:00 The Metra concept — use documentary film or the first section of Implementation Helps. This should be a discussion.
9:45 Who will the manual serve? Discuss which manual is to be used with which students. (Use “Which Book Do I Use?” from Implementation Helps.)
10:00 Discuss expected benefits to the supervisors or reading teachers. Use data from other projects (Fact Sheet) and “Features and Benefits” section of Implementation Helps.
10:30 Read the assignments and answer the questions listed in Steps 1, 2, and 3 of the Metra Training Supplement for Beginning Reading 1. Participants should write their answers out in the printed training supplement.
11:30 Listen to the first segment of the training tape.
11:40 Have participants practice sounds.
11:50 Have participants administer one of the diagnostic tests to a partner. *Be sure to program the person playing the student to miss some. The person giving the test should mark the answers as indicated in the reading assignments.

Break for lunch after testing practice is completed.
**Afternoon Session**

1:30 Ask participants to complete Steps 6, 7, and 8 in the Training Supplement and answer the questions.
2:00 Discuss the answers to selected questions or questions raised by the participants.
2:30 Listen to the second segment of the training tape.
2:45 Demonstrate the same techniques using one of the participants as a student.
3:00 Have each participant teach a partner the sight words listed in Step 10 of the Training Supplement. (Be sure person playing role of student begins by missing the words.)
3:10 Have participants switch roles.
3:20 Listen to the third segment of the training tape.
3:30 Have participants practice teaching sight words from the page in Lesson 41 of the *Beginning Reading 1* manual.
3:45 Have participants complete the activities in Step 13 and practice teaching the sounds listed in Step 15. You may play the fourth segment of the training tape or demonstrate this procedure as needed.

**Second Day**

**Morning Session**

8:30 Review teaching procedures learned in first day. Have participants role play teaching Lesson 1, Step 1.
9:00 Ask participants to complete Steps 16 and 17 in the Training Supplement and discuss pertinent questions.
9:45 Listen to the fifth segment of the training tape.
10:00 Demonstrate teaching blending with one of the participants role playing a student.
10:15 Have participants role play the first eleven steps in Lesson 1 of the *Beginning Reading 1* manual as suggested in Step 19 of the Training Supplement.
10:45 Have participants switch roles and cover the first eleven steps in *Beginning Reading 1* again.
11:30 Have participants complete Step 20 in the Training Supplement and discuss the answers with the group.

**Afternoon Session**

1:00 Listen to the sixth segment of the training tape.
1:15 Have the tutors cover both decoding exercises in Lesson 1 of *Beginning Reading 1* (Steps 13 and 16).
1:45 Have tutors complete Step 23 of the Training Supplement and discuss answers with the group.
2:15 Listen to the seventh segment of the training tape.
2:30 Practice the procedures for monitoring oral reading by role playing through a page of the storybook in Lesson 5.
3:00 Have participants complete Step 26 in the Training Supplement.
3:30 Ask tutors to role play completely through Lesson 2 in *Beginning Reading 1*. Then switch roles and role play through Lesson 3.
4:00 Questions and summary.

*Note: The effect of the training will diminish with the passing of every day in which the tutor has not yet begun to tutor.*
Appendix C

Filled in Test Data Sheet
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<thead>
<tr>
<th>Grade</th>
<th>Pre</th>
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<th>Form</th>
<th>Given By</th>
<th>Date</th>
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<th>NETRA LEVEL</th>
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Appendix D

METRA Profile Sheet
# RECORDS

## Learning Profile Record

**Student** ________________________________  **Age** ______  **Grade** ______  

**School** ________________________________________________________  

**Tutor** ___________________________________________________________  

### Part 1: Tutor Log

<table>
<thead>
<tr>
<th>Unit</th>
<th>Date</th>
<th>Time Spent</th>
<th>Lessons Covered</th>
<th>Comments</th>
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Appendix E
Mastery Review Check Sheet
### MASTERY REVIEW CHECK SHEET

**PART 3: PRODUCING SOUNDS**

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<thead>
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<th>Instructional Prescription</th>
<th>3</th>
<th>9</th>
<th>15</th>
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<td>Stimuli</td>
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<td></td>
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</tr>
<tr>
<td>Test Date</td>
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<td>Prescription Date</td>
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<tr>
<td>Post Test Date</td>
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If the student is not able to produce a sound (e.g., u), it is included in a subsequent instructional prescription involving letter sounds.

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Appendix F

Tutees Log Sheet
# Tutoring Log

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>Tutor</td>
<td>Date Began</td>
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**WRAT PRE/POST** / **Woodcock PRE** / **POST**

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<th>Session</th>
<th>Minutes</th>
<th>Assignment</th>
<th>Comments</th>
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Appendix G

Relative Growth Index
- RCI less than 100% signifies falling behind comparison group

- RCI equal to 100% signifies keeping up with comparison group

- RCI greater than 100% signifies catching up to comparison group
Appendix H

Illustration of Gap Reduction
ILLUSTRATION OF GAP REDUCTION

[Diagram showing pretest and posttest performance levels with comparison and treatment groups.]

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Appendix I

Ages 7 Years 6 Months to 7 Years 11 Months
### 7 years-6 months to 7 years-11 months

<table>
<thead>
<tr>
<th>METRA Group</th>
<th>Comparison Group</th>
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<tbody>
<tr>
<td>Pretest Mean</td>
<td>71.00</td>
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<tr>
<td>Pretest Std. Dev.</td>
<td>13.31</td>
</tr>
<tr>
<td>Posttest Mean</td>
<td>85.50</td>
</tr>
<tr>
<td>Posttest Std. Dev.</td>
<td>16.74</td>
</tr>
</tbody>
</table>

**STEP 5:** 
\[
(82.8 - 71.0) \div 13.31 = 5.8 \div 13.31 = .435
gap reduction.
\]

**STEP 6:** 
\[
(86.0 - 85.5) \div 16.74 = 0.5 \div 16.74 = .029
gap reduction.
\]

**STEP 7:** 
\[
.435 - .029 = .406
gap reduction.
\]

**STEP 8:** 
\[
86.00 - 82.80 = 3.20 = the \ comparison \ group's \ unstandardized \ growth \ estimate.
\]

**STEP 9:** 
\[
\sqrt{\left(\frac{13.31}{2}\right)^2 + \left(\frac{16.74}{2}\right)^2} = \sqrt{\frac{177.15 + 280.22}{2}}
\]

\[
\sqrt{228.37 + 15.12} = the \ comparison \ group's \ pooled \ standard \ deviation.
\]

**STEP 10:** 
\[
3.20 \div 15.12 = .211 = the \ comparison \ group's \ standard \ growth \ estimate
\]

**STEP 11:** 
\[
.211 + .406 = .617 = the \ project \ group's \ standardized \ growth \ estimate.
\]

**STEP 12:** 
\[
(1.617 \div .211) \times 100 = 241.2 = the \ Relative \ Growth \ Index (RGI).
\]
Appendix J

Ages 8 Years to 8 Years 5 Months
8 years to 8 years-5 months

<table>
<thead>
<tr>
<th></th>
<th>NETRA Group</th>
<th>Comparison Group</th>
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<tr>
<td>Pretest Mean</td>
<td>74.00</td>
<td>87.00</td>
</tr>
<tr>
<td>Pretest Std. Dev.</td>
<td>N.A.</td>
<td>32.52</td>
</tr>
<tr>
<td>Posttest Mean</td>
<td>78.00</td>
<td>87.50</td>
</tr>
<tr>
<td>Posttest Std. Dev.</td>
<td>N.A.</td>
<td>33.23</td>
</tr>
</tbody>
</table>

STEP 5: \((78.00 - 74.00) \div 32.52 = 13.00 \div 32.52 = 0.399\) the pretest gap.

STEP 6: \((87.50 - 78.00) \div 33.23 = 9.50 \div 33.23 = 0.285\) the posttest gap.

STEP 7: \(0.399 - 0.285 = 0.114\) the gap reduction.

STEP 8: \(87.50 - 87.00 = 0.5\) the comparison group's unstandardized growth estimate.

STEP 9:

\[
\sqrt{\frac{(32.52)^2 + (33.23)^2}{2}} = \sqrt{\frac{1057.53}{2}} = \sqrt{528.765} = 23.00
\]

\(\sqrt{1.080.89} = 32.87\) the comparison group's pooled standard deviation.

STEP 10: \(0.5 \div 32.87 = 0.015\) the comparison group's standard growth estimate.

STEP 11: \(0.015 + 0.114 = 0.129\) the project group's standardized growth estimate.

STEP 12: \((0.129 \div 0.015) \times 100 = 860\) the Relative Growth Index (RGI).


Halls, W. A. (1976). A study of the effects a structured tutorial program has on the reading levels of low achieving readers in the sixth grade (Doctoral dissertation, Michigan State University). (ERIC Document Reproduction Service No. ED 126 483)


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