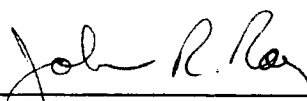
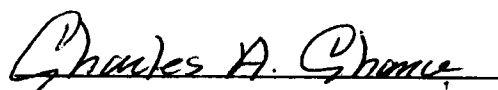
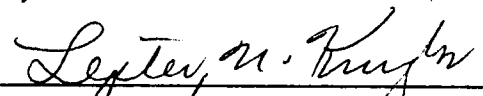
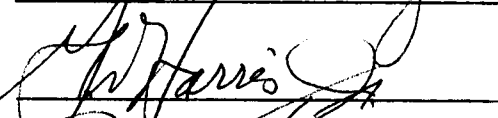
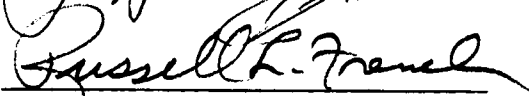


To the Graduate Council:

I am submitting herewith a dissertation written by Oscar Allen entitled "A Comparative Study of Early and Late School Entry in the Chattanooga Public Schools as It Relates to Student Performance on the 1982 Ninth Grade Proficiency Test." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Curriculum and Instruction.

  
\_\_\_\_\_  
John R. Ray, Major Professor

We have read this dissertation  
and recommend its acceptance:

  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_

Accepted for the Council:

  
\_\_\_\_\_  
The Graduate School

A COMPARATIVE STUDY OF EARLY AND LATE SCHOOL ENTRY  
IN THE CHATTANOOGA PUBLIC SCHOOLS AS IT RELATES  
TO STUDENT PERFORMANCE ON THE 1982  
NINTH GRADE PROFICIENCY TEST

A Dissertation  
Presented for the  
Doctor of Education  
Degree  
The University of Tennessee, Knoxville

Oscar Allen  
December 1983

## ACKNOWLEDGMENTS

The author wishes to express sincere appreciation to The University of Tennessee, Knoxville, Graduate Committee: Dr. John Ray, Chairman; Dr. Charles Chance; Dr. Russell French; Dr. George Harris; and Dr. Lester Knight, for their guidance and direction during the planning and preparation of this dissertation. Appreciation is expressed to Mr. James D. McCullough, Superintendent of the Chattanooga Public Schools for authorizing this study.

Gratitude is also expressed to Mrs. Norma Richie for her technical assistance in the preparation of this report. Appreciation is expressed to Dr. John Schaerer, Director of Quality Control, for his personal and professional assistance.

Thanks are given to my family for their support and encouragement.

## ABSTRACT

The purpose of this study was to determine if there was a statistically significant difference between the performance on the Tennessee Statewide Proficiency Test of ninth grade students who entered first grade in the Chattanooga Public Schools as early or late school entrants. A random sample of 120 students that were members of the 1982 Chattanooga City Schools Ninth Grade Class were identified. Data were collected by the investigator for all of the subjects from which information for the study was acquired.

Results of the 1982 Tennessee Statewide Proficiency Test which was administered in the Spring of 1982 showed that no significant differences existed between the performance of early school entrants and late school entrants on the statewide proficiency test at the probability level of .05 on the reading, language, spelling, and mathematics subtests.

Chi-square and t-test analysis revealed no significant differences existed between sample subjects that participated in the Chapter I Program and those that did not receive Chapter I services. The study shows also that no significant differences existed between sample subjects that attended the kindergarten program operated by the Chattanooga Public Schools and those that did not attend the kindergarten program.

The study further pointed out that no significant differences existed between early school entry and late school entry subjects and the number of days absent from school over an eight year period. Data

from the study revealed also that school mobility and scores obtained on the California Achievement Test (Level 16) indicated that no significant differences existed between early school and late school sample subjects.

## TABLE OF CONTENTS

| CHAPTER                                                                             | PAGE |
|-------------------------------------------------------------------------------------|------|
| I. INTRODUCTION . . . . .                                                           | 1    |
| The Problem . . . . .                                                               | 2    |
| Procedures . . . . .                                                                | 4    |
| Assumptions . . . . .                                                               | 6    |
| Hypotheses . . . . .                                                                | 6    |
| Limitation of the Study . . . . .                                                   | 8    |
| Definition of Terms . . . . .                                                       | 9    |
| Organization of the Study . . . . .                                                 | 9    |
| II. SURVEY OF LITERATURE . . . . .                                                  | 11   |
| An Overview of the Competency Testing Movement<br>in the United States . . . . .    | 11   |
| Background of Tennessee Statewide Proficiency<br>Test Movement . . . . .            | 24   |
| Chronologically Early and Late Students<br>and General School Achievement . . . . . | 42   |
| III. PROCEDURES . . . . .                                                           | 58   |
| Selection of Population and Sample . . . . .                                        | 58   |
| Preparation of Data Form and Collection . . . . .                                   | 59   |
| Statistical Procedures . . . . .                                                    | 63   |
| IV. ANALYSIS OF DATA . . . . .                                                      | 65   |
| Introduction . . . . .                                                              | 65   |
| Hypotheses . . . . .                                                                | 66   |
| V. SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS . . . . .                     | 95   |
| Summary of Study . . . . .                                                          | 95   |
| Findings . . . . .                                                                  | 96   |
| Conclusion . . . . .                                                                | 101  |
| Recommendations . . . . .                                                           | 103  |
| BIBLIOGRAPHY . . . . .                                                              | 105  |

|                                               | PAGE |
|-----------------------------------------------|------|
| APPENDIXES . . . . .                          | 112  |
| A. COLLECTION DATA FORM . . . . .             | 113  |
| B. SUMMARY TABLES OF DATA COLLECTED . . . . . | 116  |
| VITA . . . . .                                | 133  |

## LIST OF TABLES

| TABLE                                                                                                                                                                                                              | PAGE |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1. Results of Fifty Objectives Used by Tennessee State<br>Mandated Test of Basic Skills, Spring 1978 . . . . .                                                                                                     | 27   |
| 2. Results of Fifty Objectives Used by Tennessee State<br>Mandated Test of Basic Skills, Spring 1979 . . . . .                                                                                                     | 30   |
| 3. Results of Fifty Objectives Used by Tennessee State<br>Mandated Test of Basic Skills, Spring 1980 . . . . .                                                                                                     | 33   |
| 4. Results of Fifty Objectives Used by Tennessee State<br>Mandated Test of Basic Skills, Spring 1981 . . . . .                                                                                                     | 37   |
| 5. Results of Fifty Objectives Used by Tennessee State<br>Mandated Test of Basic Skills, Spring 1982 . . . . .                                                                                                     | 40   |
| 6. Results of <u>t</u> Test Performed on Mean Scores on Sample<br>Subjects Passing Four, Three, Two, One or No Sections<br>of the Tennessee Statewide Proficiency Test . . . . .                                   | 67   |
| 7. Comparison of Mean Scores of Early School and Late School<br>Subjects on the 1982 Tennessee Statewide Proficiency Test .                                                                                        | 68   |
| 8. Performance of Early School Entrants That Attended<br>Preschool Five Year Old Program and Those That Did Not<br>Attend Five Year Old Preschool Program on the<br>Tennessee Statewide Proficiency Test . . . . . | 70   |
| 9. Performance of Late School Entrants That Attended<br>Preschool Five Year Old Program and Those That Did Not<br>Attend Five Year Old Preschool Program on the<br>Tennessee Statewide Proficiency Test . . . . .  | 72   |
| 10. Comparison of the Mean Score of Subjects That Attended<br>a Five-Year-Old Program and Those That Did Not Attend<br>a Five-Year-Old Program . . . . .                                                           | 74   |
| 11. Results of <u>t</u> Test Performed on Mean Scores on Chapter I<br>Participants and Non-Chapter I Participants . . . . .                                                                                        | 76   |
| 12. Results of <u>t</u> Test Comparison on Mean Scores on Subjects<br>Absent from School 0-100 Days and Those Absent from<br>School 101 Days or More from Grade One to Grade Eight . . .                           | 80   |

## TABLE

## PAGE

|                                                                                                                                                                                                                                                              |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 13. Results of <u>t</u> Test Comparison of Mean Scores on the Tennessee Statewide Proficiency Test of Students That Scored Below the 50th Percentile and Those That Scored Above the 49th Percentile on the California Achievement Test (Level 16) . . . . . | 83  |
| 14. Early School and Late School Sample Subjects Meeting Standards and Not Meeting Standards on the 1982 Tennessee Statewide Proficiency Test . . . . .                                                                                                      | 85  |
| 15. Number of Early School Entrants Meeting Four, Three, Two, One and None of the Standards on the 1982 Tennessee Statewide Proficiency Test . . . . .                                                                                                       | 117 |
| 16. Early School and Late School Sample Subjects Meeting Standards and Not Meeting Standards on the 1982 Tennessee Statewide Proficiency Test . . . . .                                                                                                      | 118 |
| 17. Early School and Late School Subjects Meeting the Standards or Not Meeting the Standards for the Objectives of the Mathematics Subtest on the 1982 Tennessee Statewide Proficiency Test . . . . .                                                        | 119 |
| 18. Early School and Late School Subjects Meeting the Standards or Not Meeting the Standards for the Objectives of the Spelling Subtest on the 1982 Tennessee Statewide Proficiency Test . . . . .                                                           | 120 |
| 19. Early School and Late School Subjects Meeting the Standards or Not Meeting the Standards for the Objectives of the Language Subtest on the 1982 Tennessee Statewide Proficiency Test . . . . .                                                           | 121 |
| 20. Early School and Late School Subjects Meeting the Standards or Not Meeting the Standards for the Objectives of the Reading Subtest on the 1982 Tennessee Statewide Proficiency Test . . . . .                                                            | 122 |
| 21. School Attendance of Early School and Late School Sample Subjects 1972-1981 . . . . .                                                                                                                                                                    | 123 |
| 22. Performance of Late School Entrants on Each of the Subtests Relative to Days Absent from School 1973 to 1982 . . . . .                                                                                                                                   | 124 |
| 23. Performance of Early School Entrants on Each of the Subtests Relative to Days Absent from School 1973 to 1982 . . . . .                                                                                                                                  | 125 |

| TABLE                                                                                                                                                                      | PAGE |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 24. Number of Early School and Late School Entrants That Scored Above and Below the 50th Percentile on the California Achievement Test (Level 16) . . . . .                | 126  |
| 25. Performance of Male and Female Early School Entrants on the 1982 Tennessee Statewide Proficiency Test . . . . .                                                        | 127  |
| 26. Performance of Male and Female Late School Entrants on the 1982 Tennessee Statewide Proficiency Test . . . . .                                                         | 128  |
| 27. <u>t</u> Test Comparison of Males and Females on the 1982 Tennessee Statewide Proficiency Test . . . . .                                                               | 129  |
| 28. Number of Schools Attended by Early School and Late School Entrants . . . . .                                                                                          | 130  |
| 29. Number of Schools Attended by Male and Female Early School Entrants and Late School Entrants and the Number of Schools Attended from 1973-1982 . . . . .               | 131  |
| 30. <u>t</u> Test Comparison of Students Attending One to Four Schools and Those Attending Five or More Schools on the 1982 Tennessee Statewide Proficiency Test . . . . . | 132  |

## CHAPTER I

## INTRODUCTION

Since the early 1970s, there has been a tremendous drive by persons outside the field of education to require high school graduates to pass minimum competency test in basic skills. The movement exists throughout the United States and in recent years, nearly forty states have established minimum competency testing programs covering the basic skills of reading, writing, and mathematics. A review of the literature on minimum competency testing for the last six to ten years shows that there is a substantial increase in the number of articles reporting the development and progress of the movement. The articles have appeared in a wide variety of educational journals.

The Denver Public School System was among the first to administer competency tests in basic skills and has required high school graduates to pass competency tests in basic skills since 1961. Oregon, in 1973, was the first state to pass statewide minimum competency legislation and was a requirement for the graduating class of 1978. The minimum competency testing program is one of the latest movements in educational accountability in our country. This drive for minimum competency testing can be traced to numerous studies and reports concerning the performance of American high school graduates.

The 1982 Tennessee Statewide Proficiency Test was administered during the week of March 1-5, 1982. All ninth graders were given the test for the first time and all tenth and eleventh graders who did not

meet the minimum passing score on the proficiency test that was administered in March of 1981 were retested. In order to pass the proficiency test, a minimum score of 65 on the math subtest and 75 on the other subtests will be a state graduation requirement in Tennessee beginning with the class of 1983.

### The Problem

#### Statement of the Problem

The Chattanooga City School System is permitted by Tennessee school law to enroll children for first grade if they are six years of age on or before October 31. The mandatory legal entry age for regular school entry is seven years of age.

Early and late school admission policies have raised numerous issues in school districts throughout the United States. Many educators have voiced their opinions regarding the admittance age for first grade students and point out that the average child would perform better in school if the admittance age for first grade students were age seven.

Literature related to the concept of school readiness can be traced to the 1920s and 1930s. Morphett and Washburne indicated in 1930 that a mental age of six and one-half years can decrease the chance of failure and discouragement of beginning students.<sup>1</sup> An investigation by King of

---

<sup>1</sup>Mable V. Morphett and Carleton Washburne, "When Should Children Begin to Read," Elementary School Journal, Vol. 31, No. 7 (March, 1931), pp. 496-503.

a selected group of sixth graders who entered school before age six and those who entered after their sixth birthday was carried out in Oak Ridge, Tennessee. Her study concluded that younger entrants will have difficulty attaining up to grade level in academic skills and that older entrants would more likely achieve up to and beyond grade level standards.<sup>2</sup>

Results from an investigation by Davis, Trimble, and Vincent in Kentucky Schools in 1978 indicated that students entering the first grade as six year olds had significantly higher achievement scores at grades one and four than students who entered first grade at age five years old.<sup>3</sup>

Ames, Co-Director of the Gesell Institute of Human Development pointed out that developmental age is considered a far better criterion for school entrance and success than chronological age.<sup>4</sup>

\* Other research supports the conclusion that children entering kindergarten under five years of age or entering first grade under six years of age tend to have more academic, social, and emotional problems than children who enter at an older age.

Several factors may contribute to the performance of students in the Chattanooga City Schools on the 1982 Tennessee Statewide Proficiency

---

<sup>2</sup>I. B. King, "Effect of Age of Entrance into Grade 1 upon Achievement in Elementary School," Elementary School Journal, Vol. 55, No. 6 (February, 1955), 331-36.

<sup>3</sup>Glen B. Davis, Scott C. Trimble and Denny R. Vincent, "Does Age of Entry into First Grade Affect Students' Achievement in School?" Elementary School Journal, Vol. 80, No. 3 (January, 1980), pp. 134-141.

<sup>4</sup>"Developmental Age and Readiness," Tennessee Education, Vol. 9, No. 4 (April, 1981), p. 6.

Test. These factors include school attendance, quality of instruction, the extent of parental concern and participation and early and late school entry at the time of school enrollment.

The problem to be analyzed in this study is early and late school entry and its effect upon the student's performance on the 1982 Tennessee Statewide Proficiency Test.

### Statement of Purpose

The purpose of this study was to determine if there is a statistically significant difference between the performance on the Tennessee Statewide Proficiency Test of ninth grade students who entered first grade in the Chattanooga Public Schools as early school entrants (students whose birthdays fall between June 1, 1967, and October 31, 1967) and those who entered first grade in the Chattanooga Public Schools as late school entrants (students whose birthdays fall between November 1, 1966, and May 31, 1967). This study compared early and late school admittance of 1973-1974 first grade students' performance as it relates to their future performance as 1981-1982 ninth graders on the Tennessee Statewide Proficiency Test administered in the Chattanooga Public Schools in the Spring of 1982.

### Procedures

Data for the study were obtained from the selected subjects' school records. The investigator secured information for each subject relative to (1) the average days of school attendance for grades one through

eight, (2) the average number of schools attended, (3) participation or nonparticipation in public school kindergarten program, (4) participation in Title I program, (5) California Achievement Test percentile scores for reading, mathematics, spelling, and language for grade six (level 16) and 1982 scores of the Statewide Proficiency Test.

The target population for this study was identified in eleven junior high schools and consists of a random sampling of 120 students, sixty-seven of the subjects were late school entrants and fifth-three of the population was early school entrants. These subjects were first graders in September, 1973, and were members of the 1981-1982 ninth grade class who completed all of their formal schooling in the Chattanooga public schools.

The 1982 Tennessee Statewide Proficiency Test scores were used to compare the performances of early school entry and late school entry students.

Ex post facto research was conducted on two samples of students (sixty-seven late school entrants and fifty-three early school entrants) that were first graders in the Chattanooga Public Schools during the 1973-1974 school year and were members of the 1981-82 ninth grade class. Students' test scores for each sample on the Tennessee Statewide Proficiency Test were compared.

The initial preliminary investigation was conducted as exploratory data for the study and was based on an ex post facto design as defined by Kerlinger:

Ex post facto research may be defined as that research in which independent variable or variables have already occurred and in which the research starts with the observation of a dependent variable or variables. He then studies the

independent variable or variables in retrospect for their possible relations to, and effects on, the dependent variable or variables.<sup>5</sup>

Chi-square tests and t tests were used to test the null hypotheses. The 0.05 level of confidence was utilized to test the null hypotheses of this study.

### Assumptions

The purpose and conduct of this study was based on the following basic assumption:

That the performance of late school entrants would differ from that of early school entrants on the 1982 Tennessee Statewide Proficiency Test.

### Hypotheses

The following hypotheses were tested in this study:

- H<sub>0</sub> 1. The mean score on the ninth grade Tennessee Statewide Proficiency Test of students who were late school entrants will show no significant difference from that of students who were early school entrants.
- H<sub>0</sub> 2. The mean score on the ninth grade Tennessee Statewide Proficiency Test of students who attended public school kindergarten will show no significant difference from that of students who did not attend kindergarten.

---

<sup>5</sup>Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1967), p. 360.

- H<sub>0</sub> 3. The mean score on the ninth grade Tennessee Statewide Proficiency Test of students who participated in the Chapter I Program will show no significant difference from students who did not participate in the Chapter I Program.
- H<sub>0</sub> 4. The mean score on the ninth grade Tennessee Statewide Proficiency Test of students absent from school 0-100 days will show no significant difference from that of students not in attendance for 101 days or more in grades one through eight.
- H<sub>0</sub> 5. The mean score on the ninth grade Tennessee Statewide Proficiency Test of the students that scored at the fiftieth percentile or above will show no significant difference from that of students that scored below the fiftieth percentile on the Level 16 California Achievement Test.
- H<sub>0</sub> 6. The mean score on the ninth grade Tennessee Statewide Proficiency Test will show no significant difference between early school entrants and late school entrants on the mathematics section of the 1982 Tennessee Statewide Proficiency Test.
- H<sub>0</sub> 7. The mean score on the ninth grade Tennessee Statewide Proficiency Test will show no significant difference between

early school entrants and late school entrants on the subtests of spelling, reading and language.

- H<sub>0</sub> 8. The mean score on the ninth grade Tennessee Statewide Proficiency Test of males will show no significant difference from that of females on the 1982 Tennessee Statewide Proficiency Test.
- H<sub>0</sub> 9. The mean score on the ninth grade Tennessee Statewide Proficiency Test of students that attended one to four different schools will show no significant difference from students who attended five or more different schools.

#### Limitation of the Study

These limitations were observed:

1. The study was conducted only in the Chattanooga Public Schools.
2. Data were collected only for those students who entered the first grade in September 1973 and are members of the 1981-1982 ninth grade class who completed all of their formal schooling in the Chattanooga public schools.
3. The study was restricted to the 1981-1982 ninth grade students who were first graders in the Chattanooga public schools during the 1973-1974 school year and whose birthdates were between November 1, 1966, and October 31, 1967.

### Definition of Terms

Early school entry. In this study, early school entry is any student that became six years of age between June 1, 1973, and October 31, 1973.

Late school entry. In this study, late school entry is any student that became six years of age between November 1, 1972, and May 31, 1973.

Proficiency testing. The use of proficiency testing in this study refers to assessment or evaluation that is designed to make a judgment of how well students have mastered established levels of performance. This term, as used in this study, includes basic skills test, achievement test, and minimum competency test.

### Organization of the Study

The study is divided into five chapters.

Chapter I provides an introduction to the study, a statement of the problem to which it was addressed and of the purpose for which it was conducted, the methods of procedure, a statement of underlying assumption made by the researcher, a list of nine null hypotheses, specification of limitation of the study, a definition of terms, and a description of the organization of the study.

Chapter II gives an overview of the competency testing movement, the proficiency testing developments in Tennessee, and a review of other related literature.

Chapter III presents the procedures applied in the study. The population and samples are described and the method of their selection is reported. Instruments of data collection are described and the techniques of data analysis are discussed.

Chapter IV is an analysis of the data. It is organized in sections, in which the data related to each of the hypotheses are presented and discussed.

Chapter V presents a summary of findings, the conclusions reached, and recommendations.

## CHAPTER II

## SURVEY OF LITERATURE

The selection of readings for this investigation was guided by the specific purpose to which the study was addressed. The subjects were ninth graders who had attended the Chattanooga public schools from grade one through grade nine. The purpose of the study was to determine if there was a statistically significant difference between the performance on the Tennessee Statewide Proficiency Test of ninth grade students who entered first grade in the Chattanooga Public Schools as early school entrants and those who entered as late school entrants.

Since this study was concerned generally with the relationship between the performance of early school entrants and late school entrants on the Tennessee Statewide Proficiency Test, the chapter begins with a survey of the literature related to the competency test movement in the United States. The second section of the chapter looks at the proficiency test development in Tennessee and the third section of the chapter is an investigation of related literature to determine if a relationship exists between chronological age at school entry and general school achievement.

An Overview of the Competency Testing Movement  
in the United States

For years, few subjects of public concern have gained such unanimous support as education in our country. There is agreement that

education is one of the most important things that can be done for children and for the welfare of our country. In 1950, Henry S. Commager observed that no other people ever demanded so much of education as the American. "None other was ever served so well by its educators."<sup>1</sup> Yet today many citizens are disappointed with the results of our school systems. Public pressures for reduced expenditures for education, the results of the Gallup Polls of public attitudes toward the public schools, and reduced federal commitment to education indicate that the trust has dwindled, and the service is diminishing.

One major educational movement of the 1970s was minimum competency testing as a requirement for high school graduation. Recent data indicate that in over forty states the minimum competency testing movement has impacted the education process. Throughout the United States, there has been a tremendous drive by politicians, business people, and the general public to require high school students to pass minimum competency tests covering the basic skills of reading, writing, and mathematics.

Expansion of the movement has been mandated by legislators, state boards of education, state departments of education, and local school boards. Leaders of these organizations in many states are reviving policies that require that prespecified competencies be demonstrated before a student is promoted to the next grade or receives a regular high school diploma.

---

<sup>1</sup>Henry S. Commager, "Our Schools Have Kept Us Free," Life (October 16, 1950), pp. 46-47.

According to Pipho, over three-fourths of the states have begun legislation or state boards of education have mandated some form of competency testing.<sup>2</sup> The general public is concerned about large numbers of graduates from high school without minimum skills thought to be necessary to operate successfully in the adult world. These reports concerning the performance of today's high school graduates has influenced many school districts, states, and state boards of education to mandate some form of testing to ensure that high school graduates can perform some basic skills.

Clark pointed out that in a majority of high schools the diploma does not reflect specific proficiencies. In many high schools, the same diploma is awarded to all students. He further stated that too much emphasis has been placed on the high school diploma and what it supposedly represents.<sup>3</sup>

Popham pointed out that minimum competency testing is a movement of great potential significance to education in America today. Also, high quality programs of minimum competency testing are important and necessary to survival of public schooling and that high quality programs are in operation and working well in Colorado, Detroit, Oregon and many other parts of the United States.<sup>4</sup>

---

<sup>2</sup>Chris Pipho, "Minimum Competency Testing in 1978: A Look at State Standards," Phi Delta Kappan, Vol. 59, No. 9 (May, 1978), p. 585.

<sup>3</sup>Kenneth Clark, "The High School Diploma--Blessing or Curse?," NASSP Bulletin, Vol. 59, No. 393 (October, 1975), pp. 75-77.

<sup>4</sup>William James Popham, "The Case for Minimum Competency Test," Phi Delta Kappan, Vol. 63, No 2 (October, 1981), pp. 89.

Scriven described minimum competency testing as "the last best hope of education."<sup>5</sup>

Down stated that minimum competency testing provides more hope than any development in public school policy since the 1954 Supreme Court decision in *Brown vs. Topeka Board of Education* for realizing the educational aspirations of minority students and parents. He felt that minimum competency testing is an avenue of specifying dramatically that some children are not learning, of discovering the remedial help they need, of guiding curriculum revision, and of providing new benchmarks for judging how well public schools are performing.

Britell called minimum competency standards, "A new stage in American education."<sup>6</sup> She pointed out that minimum competency standards constitute a universal guarantee of a kind never before asked of public schools: a pledge that no child shall leave school as a functional illiterate.

Madaus said that minimum competency testing is more symbol than substance and warned of serious unintended negative consequences associated with the well-intentioned use of such testing program.<sup>7</sup>

---

<sup>5</sup> Ibid., p.

<sup>6</sup> A. Graham Down, "Implications of Minimum Competency Testing for Minority Students," ERIC Clearinghouse Tests, Measurement and Evaluational Testing Service, Princeton, New Jersey 08541, December, 1979, p. 3.

<sup>7</sup> George F. Madaus, "NIE Clarification Hearing: The Negative Team's Case," Phi Delta Kappan, Vol. 63, No. 2 (October, 1981), pp. 92-94.

Mechlenburger called minimum competency testing a "bad penny" similar to performance contracting.<sup>8</sup> He suggested that minimum competency testing may be remembered in ten years as another short and demeaning chapter in American education.

Vernon Jordan, past Director of The National Urban League, called the minimum competency movement "the great American education fad of the 1970s."<sup>9</sup>

Williams, Dotson, Don, and Williams called minimum competency testing another version of "The Testing Game." The game is played with (1) The Game Producers, (2) The Game Advocates, (3) The Game Dealers, and (4) The Game Players.<sup>10</sup>

The Game Producers for the minimum competency tests have been in most cases state boards of education; however, some states have delegated the construction or development of the test to local school districts. The Game Advocates for the minimum competency test are composed of the legislators, state school boards, local school boards, educators, citizens, and other organizations and supporters of the competency test movement. The Game Dealers for the minimum competency

---

<sup>8</sup> Jim Mecklenburger, "Minimum Competency Testing: The Bad Penny Again," Phi Delta Kappan, Vol. 59, No. 10 (June, 1978), pp. 697-699.

<sup>9</sup> Ronald H. Lewis, "Do Minorities Embrace the Concept of Minimum Competency?" ERIC Clearinghouse on Tests, Measurement, and Educational Testing Service, Princeton, New Jersey 08541, December, 1979, pp. 6.

<sup>10</sup> Robert Williams, William Dotson, Patricia Don, and Willie Williams, "The War Against Testing: A Current Status Report," Journal of Negro Education, Vol. XLIX, No. 3 (Summer, 1980), pp. 263-273.

test are composed of the individuals that actually run the game. These are teachers, guidance counselors, psychologists and other professional employees. The Game Players are the students that are required to play the game but do not understand the rules of the game.

The students' futures are determined by the outcome of the testing games. The reward for participating in the testing game is that of jobs, education, scholarships and many other considerations.<sup>11</sup>

According to Bloom, testing is a technical field related to education that has kept pace with new developments in statistics and psychometrics. This field has made tremendous use of computer technology and data processing procedures.

Testing has had a great influence on decision making in many areas in education. It provides data on which individuals are selected for class placements, scholarships and professional schools. Bloom further pointed out that in our innocence we have allowed testing to dominate education and, in some instances, become the only basis for decisions concerning educational curricula and programs.<sup>12</sup>

An investigation by Chall revealed that states' definitions of competency ranged from "demonstrated basic reading and math skills" to "art appreciation skills" and "demonstrated cultural values." Many states were not in agreement on measures of competency to be used. The

---

<sup>11</sup>R. L. Williams and H. Mitchell, "The Testing Game," Negro Educational Review, Vol. 28, No. 3-4 (July-October, 1977), pp. 172-182.

<sup>12</sup>Benjamin Bloom, "Innocence in Education," School Review, Vol. 80, No. 3 (May, 1972), pp. 303.

investigation found two types of tests being used to measure minimum competency in reading: (1) developmental reading tests that measure a student's ability to read increasingly more demanding levels of comprehension, and (2) "real-life" criterion-referenced reading tests, usually created by a task force composed of professionals and lay people and designed to measure those reading tasks presumed to be essential for adult participation in modern society.<sup>13</sup>

In 1972, a malpractice case against the school district of San Francisco was filed by an eighteen year old high school graduate for one million dollars because he could not read. The Peter Doe case accused various California and San Francisco Unified School District education officers and employees of negligence, misrepresentation, breach of statutory duties, and constitutional deprivation of the right to education.

Susanne Maertiney, attorney for the Peter Doe case, pointed out that:

The Peter Doe Case is simply a forerunner of an effort on the part of parents to bring to focus, through the judicial system, attention upon the fact that the schools, the educational systems of this society, have failed to provide the Peter Doe of this country the kind of education to which they're entitled.<sup>14</sup>

Although Peter Doe lost his case, some educators view minimum competency testing as a fail-safe mechanism to prevent suits in the

---

<sup>13</sup> Jeanne S. Chall, "Minimum Competency in Reading: An Informal Survey of the States," Phi Delta Kappan, Vol. 60, No. 5 (January, 1979), p. 351.

<sup>14</sup> Gary Saretsky, "The Strangely Significant Case of Peter Doe," Phi Delta Kappan, Vol. 54, No. 9 (May, 1973), p. 589.

future. This case has excited the interest of many people and led to the founding of a new legal strategy by school reform advocates.

The passage of competency tests is required in about seventeen states and many local school districts for the regular high school diploma. Several states and local districts have enacted competency test requirements, and are given the option of using the test results as requirements for graduation or to identify remedial needs of students.

Three types of competency tests organizations are in operation. One organization consists of standards that are mandated by the state and a statewide competency test is used by all school districts. Another organization is made up of state standards that are established by the state, but allows the local school districts to develop a local test. The last organization is composed of local standards with state guidelines, but standards and test are enacted by the local school district.

In 1978, the Educational Accountability Act was amended by the Florida legislation to include the passing of a functional literacy examination as a requirement to receive the regular high school diploma.<sup>15</sup> Florida was among the first of the states to require new minimum standards for high school graduation. The Florida Statewide Testing Program would require a test of basic skills to be administered in grades 3, 5, 8, and 11 to identify students' needs and the progress

---

<sup>15</sup>W. James Popham and Elaine Lindheim, "Implication of a Landmark Ruling on Florida's Minimum Competency Test," Phi Delta Kappan, Vol. 63, No. 1 (September, 1981), p. 18.

of each district in meeting the required standards. The Florida Functional Literacy Test mandated that students must meet standards in the areas of reading, writing, and arithmetic. Students would be given three chances to pass the test. In addition, provisions for an early exit examination, and funded remedial programs were included in the program.

Results from Florida's first statewide examination revealed that a greater proportion of black students did not pass one or more sections of the test than white students. As a result, *Debra P. vs. Turlington* was filed as a class action suit in a federal district court in Florida. The lawsuit challenged the constitutionality of Florida's use of a minimum competency test to withhold high school diplomas.<sup>16</sup> In 1979, Turlington pointed out that the Florida competency testing program had made positive contributions to the education of minority children and is implementing the spirit of the landmark Brown decision of 1954. The program with its tests and standards common throughout the state will achieve what racial integration could not achieve: true equal opportunity to learn to read, write, and compute.<sup>17</sup>

The U.S. Fifth Circuit Court of Appeals ruled in May 1981 that when students are required to pass a minimum competency test to receive their high school diplomas, the test must be fair--that is, the test must

---

<sup>16</sup> Ibid.

<sup>17</sup> Ralph D. Turlington, "Good News from Florida: Our Minimum Competency Program Is Working," Phi Delta Kappan, Vol. 60, No. 9 (May, 1979), p. 651.

measure what has been taught. Popham and Lindheim pointed out that educators in states requiring minimum competency tests for graduation should take notice of the implications of this ruling on Florida's minimum competency test requirements to receive a high school diploma.<sup>18</sup>

Diana Pullin, an educator and attorney affiliated with the Center for Law and Education, represented the students who successfully challenged Florida's minimum competency testing in *Debra P. vs. Turlington*. She stated, "When competency testing programs are implemented they should be fair and educationally sound. Pullin felt that minimum competency testing in Florida and other states was neither for the best interests of students nor of public education."<sup>19</sup>

The NEA and the Florida Teaching Profession-NEA sponsored a study panel that studied the consequences of the Florida Educational Accountability Act mandating competency testing. The study panel was led by Ralph Tyler, and the panel's report concluded:

Our definition of minimum competency testing included any program of assessment, evaluation, certification, or testing (not necessarily paper and pencil) that is designed to determine whether individual students have reached a minimum level of performance predetermined as satisfactory. An effect of this definition was to eliminate from the category of "competency testing" state achievement testing programs that report data on groups (all third graders in each district, for example) as opposed to data on individuals.<sup>20</sup>

---

<sup>18</sup> Popham and Lindheim, p. 18.

<sup>19</sup> Diana Pullin, "Minimum Competency Testing and the Demand for Accountability, Phi Delta Kappan, Vol. 63, No. 1 (September, 1981), p. 22.

<sup>20</sup> Ralph Tyler et al., "Impact of Minimum Competency Testing in Florida," Today's Education, Vol. 67, No. 1 (September/October, 1978), p. 33.

In 1978, the National Academy of Education's Committee on Testing and Basic Skills reported its belief "that any setting of statewide minimum competency standards for awarding the high school diploma is basically unworkable, exceeds the present measurement arts of the teaching profession, and will create more social problems than it can conceivably solve." Also, the committee pointed out that if the tests are used with care, with public understanding of the tests' limitations, and without undue emphasis, tests at lower grade levels can help with diagnosis.

Legislation in 1975 was passed in Colorado so that local boards of education could require proficiency testing for graduation. Each local school district was to follow state guidelines if they adopted minimum competency test standards:

1. Instruction must prepare students for tests;
2. Tests are to be administered two times a year with the first testing in grade nine;
3. Periodic reports are to be sent to parents of students who do not meet the requirements for passing the test;
4. Remedial and tutorial services will be provided for students during the school day until students are able to pass the examination.<sup>21</sup>

The Colorado Minimum Competency Testing Program is patterned after the Denver Public Schools Proficiency and Review Test. Since the early sixties, the Denver public schools have required the passing of a four-part proficiency test for the high school diploma. During this time, only about 1.5 percent of the Denver students have failed to receive a high school diploma because they did not pass the test.<sup>22</sup>

---

<sup>21</sup>Rodney P. Riegle and Ned B. Lovell, Minimum Competency Testing (Bloomington, Indiana: Phi Delta Kappan Educational Foundation, 1980), p. 15.

<sup>22</sup>Ibid.

The North Carolina State Testing Commission was enacted and established by the state legislature in 1977. The commission conducted an extensive study and selected the test developed by the Los Angeles schools and published by McGraw Hill. James Gallagher, Chairman of the State Competency Testing Commission at that time pointed out that about 30 percent of the test was revised to try to eliminate cultural bias. Also, additional questions on skills that teachers and community members thought should be measured were added by the Commission. In 1978, competency tests in reading and mathematics were administered to high school juniors and were to be a graduation requirement for the class of 1980. Results indicated that 51 percent of the students taking the mathematics section of the test did not meet the required standards, and that 19 percent of the students failed the reading test. The test scores showed also that a higher percentages of black students failed the test than white students.<sup>23</sup>

A lawsuit was filed in 1979 by Bobby Nathaniel Green challenging the constitutionality of the minimum competency test that North Carolina required students to pass to earn a regular high school diploma. The suit was filed in federal district in Raleigh, North Carolina, on behalf of eleventh and twelfth grade blacks, poor whites, and native Americans. Green, a black youth, charged that the test denied students their equal protection and due process rights under the U.S. Constitution. His complaint alleged that the state was using the test to cover up North

---

<sup>23</sup>"Minimum Competency Face Second Court Test," Newsnotes, Phi Delta Kappan, Vol. 60, No. 6 (February, 1979), p. 472.

Carolina's failure to provide the plaintiff and others similarly situated their right to a free public education.<sup>24</sup>

In 1972, the Oregon State Board of Education mandated competency requirements but permitted each local school district to establish ways of meeting this mandate through tests and other indicators. The requirements were established in 1972; students beginning with the 1974 freshman year were to meet the requirements in order to qualify for a high school diploma. The new standards for the high school diploma were phased in over a four year period, and the 1978 graduation class was the first required to meet the standards. This class was tested in only the basic skills of reading, listening, analyzing, speaking, writing, and computing. Riegle and Lovell pointed out that no student has been denied a diploma in Oregon because of the minimum competency test scores.<sup>25</sup>

State legislatures, state boards of education, and state education departments have led the way in most states with the demand for minimum competencies for high school graduates. These supporters of the minimum competency testing movement have voiced numerous reasons for requiring students to pass a minimum competency test in order to receive a regular high school diploma. The reasons which are repeated constantly seem to be as follows: (1) meeting the standards of the competency test will make the high school diploma become more recognized, (2) the requirements set by the state will motivate the students to work harder to

---

<sup>24</sup>Ibid.

<sup>25</sup>Riegle and Lovell, p. 14.

learn the prescribed basic competencies, and (3) because of the basic skills requirement, it is often pointed out that teachers would do a better job of teaching the basic competencies.

Some opponents of the minimum competency testing movement base their opposition on the premise that inadequate instrumentation exists for measuring competency. Others oppose the minimum competency testing movement on the assumption that other vehicles exist for determining and specifying competency. Still others oppose the concept of minimum competency testing, pointing out that the process is unfair to certain populations such as minority groups and handicapped persons.

The competency test movement has permeated all parts of the United States. Competency tests will be a requirement for the first time in several states for the class of 1983. It is predicted that a large number of seniors will not receive the regular high school diploma.

#### Background of Tennessee Statewide Proficiency Test Movement

The minimum competency testing program is one of the latest movements in educational accountability in Tennessee and over forty other states. This recent drive for minimum competency testing had its beginning when numerous studies reported that American high school graduates were performing at a low level.

During the 1970s, Tennessee, like many other states, adopted a basic skill testing program that provided for statewide diagnostic and proficiency testing in the basic skill areas of mathematics, spelling,

language, and reading. The question of mandated testing first surfaced in Tennessee in January 1975, in the form of a legislative bill calling for basic skill testing in the public schools. The bill was withdrawn after a commitment was made by the State Department of Education to consider the matter.<sup>26</sup> This statewide testing program was adopted by the State Board of Education in November of 1977, after a committee to study standards for high school graduation had worked over a year reviewing basic skills testing programs in other states, conducting numerous public meetings on basic skills testing in cities and counties across the state of Tennessee with parents, community people, and educators. During this time, basic skills testing was administered to approximately 4,250 high school seniors in twenty-seven schools as a pilot test. A basic skills test developed for the Denver, Colorado, school system was used as the pilot test.

The diagnostic and proficiency testing requirements were for all Tennessee Public Schools and private schools having state approval. The following provisions of the Tennessee basic skills testing program initially applied to public school students and to students attending state-approved private schools:

Students are to be tested for diagnostic purposes in either the fourth, fifth or sixth grade and again in the eighth grade. The diagnostic tests shall evaluate skills in mathematics, spelling, language, and reading.

A high school proficiency test is required for graduation purposes beginning with the graduating class of 1982. The

---

<sup>26</sup> Tennessee Education, Tennessee Department of Education, Vol. 7, No. 8 (October, 1979), p. 1.

high school test will be administered to eleventh graders, beginning in the Spring of 1981, with two additional opportunities for retesting, if necessary, in the twelfth grade.

Local school systems and state-approved private schools are required to comply with all regulations regarding diagnostic and proficiency testing.

In February 1978, the State Board of Education mandated that a proficiency test, similar to the test mandated for graduation purposes, be administered to eighth graders for diagnostic purposes. This test was given to all Tennessee public school eighth grade students to determine their readiness to meet the requirements of the proficiency test for high school graduation in order to receive a regular high school diploma.

The first eighth grade diagnostic test was prepared by CTM/McGraw Hill Testing Bureau. The test measured fifty educational objectives in the basic skills areas of mathematics, spelling, language, and reading. Results from the statewide test, administered during the Spring of 1978, indicated that 63 percent of the Tennessee eighth graders made an acceptable score (70 percent or above) in language, 47 percent in mathematics, 46 percent in spelling, and 42 percent in reading.<sup>27</sup> Table 1 shows the fifty objectives that were included in a part of the Spring 1978 basic skills test, the number of eighth graders meeting standards for each objective and the percentage of the total number of students administered

---

<sup>27</sup>Tennessee Department of Education, "Final Summary Report for State" (Spring, 1980).

Table 1

Results of Fifty Objectives Used by Tennessee State  
Mandated Test of Basic Skills, Spring 1978

| Objective<br>Number | Objective Description                                          | Number | Percent |
|---------------------|----------------------------------------------------------------|--------|---------|
| 01                  | Add four 3-digit with regrouping                               | 67,809 | 94      |
| 02                  | Subtract two 3-digit, horizontal, WR                           | 65,565 | 91      |
| 03                  | Multiply 3-digit by 2-digit, with regrouping                   | 63,439 | 88      |
| 04                  | Divide 4-digit multiple of 100 by multiple<br>10, NR           | 56,241 | 78      |
| 05                  | Add three mixed numbers, unlike denomi-<br>nator, without R    | 38,049 | 53      |
| 06                  | Subtract fraction from mixed number,<br>unlike denominator, WR | 31,675 | 44      |
| 07                  | Multiply mixed number by fraction                              | 32,409 | 45      |
| 08                  | Divide rational numbers                                        | 31,842 | 44      |
| 09                  | Add two or more decimal numbers,<br>thousandths, WR            | 67,477 | 94      |
| 10                  | Subtract two decimal numbers, WR                               | 51,514 | 71      |
| 11                  | Multiply decimal fraction by decimal<br>number, 100th          | 48,457 | 67      |
| 12                  | Divide decimal fraction by whole number                        | 41,605 | 57      |
| 13                  | Add measures                                                   | 36,681 | 51      |
| 14                  | Subtract measures                                              | 24,466 | 34      |
| 15                  | Multiply measures                                              | 66,940 | 93      |
| 16                  | Divide measures                                                | 57,669 | 80      |
| 17                  | Place value, decimal                                           | 31,033 | 43      |
| 18                  | Order of decimal fractions                                     | 18,449 | 25      |
| 19                  | Decimal fraction to percent                                    | 21,847 | 30      |
| 20                  | Percent of a number                                            | 27,928 | 38      |
| 21                  | Base word, no spelling change                                  | 65,406 | 91      |
| 22                  | Base word, spelling change                                     | 62,167 | 86      |
| 23                  | Spelling phonic substitution                                   | 26,968 | 37      |
| 24                  | Spelling missing letter                                        | 30,083 | 41      |
| 25                  | Spelling extra letter                                          | 13,488 | 18      |
| 26                  | Capitalization, person or place                                | 60,546 | 84      |
| 27                  | Capitalization, organization                                   | 40,785 | 56      |
| 28                  | Comma, phrases in a series                                     | 50,469 | 70      |
| 29                  | Period and question mark                                       | 56,628 | 78      |
| 30                  | Usage, irregular verbs                                         | 60,522 | 84      |
| 31                  | Usage, regular and irregular verbs<br>perfect tense            | 61,765 | 86      |
| 32                  | Usage, nouns                                                   | 29,458 | 41      |
| 33                  | Subject, noun or pronoun                                       | 38,026 | 52      |

Table 1 (continued)

| Objective<br>Number | Objective Description                | Number | Percent |
|---------------------|--------------------------------------|--------|---------|
| 34                  | Compound subject                     | 44,396 | 61      |
| 35                  | Synonym in context                   | 46,678 | 65      |
| 36                  | Antonym                              | 37,418 | 52      |
| 37                  | Heteronym                            | 51,202 | 71      |
| 38                  | Words in context                     | 36,078 | 50      |
| 39                  | Story detail/person, place, or thing | 57,802 | 80      |
| 40                  | Story detail, event or action        | 57,363 | 79      |
| 41                  | Story detail, time or setting        | 37,719 | 52      |
| 42                  | Story detail, sequence of events     | 41,288 | 57      |
| 43                  | Main idea                            | 46,690 | 65      |
| 44                  | Inference or conclusion              | 23,464 | 32      |
| 45                  | Cause and effect                     | 41,869 | 58      |
| 46                  | Predicting future action             | 24,395 | 33      |
| 47                  | Character analysis                   | 41,798 | 58      |
| 48                  | Descriptive and figurative language  | 14,497 | 20      |
| 49                  | Author point of view                 | 35,896 | 50      |
| 50                  | Fact or opinion                      | 28,384 | 39      |

Number and Percent of Students Not  
Needing Remediation--By Subtest:

|             |        |    |
|-------------|--------|----|
| Mathematics | 33,728 | 47 |
| Spelling    | 33,362 | 46 |
| Language    | 45,152 | 62 |
| Reading     | 30,262 | 42 |

Source: Tennessee Department of Education, "Final Summary Report for State" (Spring, 1980).

the test who met the requirements for each objective. The 1978 Spring Test was administered to 71,764 Tennessee eighth grade students.

The second statewide basic skills diagnostic test was given to eighth graders in April 1979. This test was developed by the Scholastic Testing Service and measured fifty of the eighty Tennessee basic skills educational objectives. These educational objectives were expanded by state department staff members and reviewed by over 1,300 teachers and other educators for ranking according to importance and from this list a new test was created for the 1979 eighth graders.<sup>28</sup> A total of 68,867 eighth graders was administered the test. Results of the second statewide test indicated that 76 percent of the students administered the test passed reading, 76 percent passed spelling, 60 percent passed language, and 59 percent passed the mathematics section of the test, except those exempted by the multidisciplinary team.

Table 2 shows the fifty objectives that made up the Spring 1979 Tennessee basic skills test, the number of eighth graders meeting standards for each objective, and the percentage of the total number of students administered the test who met the requirements for each objective. The 1979 Spring Test was administered to 68,867 eighth grade students.

The third statewide basic skills diagnostic test was given to eighth graders in the spring of 1980. This diagnostic test was the last

---

<sup>28</sup> Tennessee Department of Education, "Final Summary Report for State" (Spring, 1979).

Table 2

Results of Fifty Objectives Used by Tennessee State  
Mandated Test of Basic Skills, Spring 1979

| Objective<br>Number | Objective Description                               | Number | Percent |
|---------------------|-----------------------------------------------------|--------|---------|
| 01                  | Add four 3-digit with regrouping, WR                | 66,001 | 97      |
| 02                  | Subtract two 3-digit, horizontal, WR                | 64,310 | 93      |
| 03                  | Multiply 3-digit by 2-digit, WR                     | 62,115 | 90      |
| 04                  | Add 1 mixed, unlike denominator,<br>simplest form   | 44,657 | 64      |
| 05                  | Subtract tract from mixed unlike<br>denominator, WR | 30,503 | 56      |
| 06                  | Multiply a mixed number by a fraction               | 41,690 | 60      |
| 07                  | Divide a mixed or whole number by fraction          | 41,047 | 60      |
| 08                  | Add 2 or more decimal numbers, WR                   | 63,977 | 92      |
| 09                  | Subtract 2 decimal numbers, WR                      | 58,080 | 84      |
| 10                  | Multiply decimal fraction by decimal number         | 51,176 | 74      |
| 11                  | Divide decimal number by whole number               | 50,202 | 73      |
| 12                  | Customary units of measurement-equivalency          | 30,808 | 56      |
| 13                  | Decimal fraction to percent                         | 40,493 | 70      |
| 14                  | Percent of number                                   | 32,365 | 46      |
| 15                  | Divide 4-digit by 1 or 2-digit with<br>remainder    | 45,454 | 66      |
| 16                  | Decimal equivalency                                 | 34,639 | 50      |
| 17                  | Finding Arla                                        | 42,230 | 61      |
| 18                  | Metric equivalency                                  | 20,231 | 29      |
| 19                  | Simple word problems: solution                      | 58,019 | 84      |
| 20                  | Compare four decimal numbers                        | 23,740 | 34      |
| 21                  | Spelling/phonic substitution                        | 50,477 | 84      |
| 22                  | Spelling/extra letter                               | 46,456 | 67      |
| 23                  | Contractions                                        | 56,209 | 81      |
| 24                  | Doubling the final consonant                        | 42,213 | 61      |
| 25                  | Changing Y to I or keeping the Y                    | 53,318 | 77      |
| 26                  | Capitalization                                      | 42,728 | 91      |
| 27                  | Identifying complete sentences                      | 57,483 | 83      |
| 28                  | Subject, noun or pronoun                            | 30,428 | 55      |
| 29                  | Parts of speech                                     | 39,287 | 57      |
| 30                  | Usage, irregular verbs                              | 58,047 | 84      |
| 31                  | Subject-predicate agree; inverted order             | 30,061 | 47      |
| 32                  | Subject-predicate agree; compound subject           | 30,106 | 43      |
| 33                  | Personal pronoun                                    | 47,218 | 68      |
| 34                  | Agreement of possessive adjectives                  | 49,044 | 72      |
| 35                  | Adjectives or irregular adjectives                  | 47,629 | 69      |
| 36                  | Verbs, principal parts                              | 55,430 | 40      |

Table 2 (continued)

| Objective<br>Number | Objective Description             | Number | Percent |
|---------------------|-----------------------------------|--------|---------|
| 37                  | Verbs, troublesome pairs          | 50,504 | 73      |
| 38                  | Letter writing                    | 47,463 | 68      |
| 39                  | Synonyms in context               | 59,566 | 86      |
| 40                  | Words in context                  | 49,691 | 72      |
| 41                  | Story detail/person, place, thing | 62,342 | 90      |
| 42                  | Story detail/event or action      | 58,123 | 84      |
| 43                  | Story detail/sequence of events   | 56,561 | 82      |
| 44                  | Main idea                         | 59,149 | 85      |
| 45                  | Inference or conclusion           | 42,651 | 61      |
| 46                  | Cause and effect                  | 47,262 | 68      |
| 47                  | Predicting future action          | 61,349 | 89      |
| 48                  | Character analysis                | 50,186 | 72      |
| 49                  | Fact or opinion                   | 33,809 | 49      |
| 50                  | Fact or fiction                   | 59,301 | 86      |

Number and Percent of Students Not  
Needing Remediation--By Subtest:

|             |        |    |
|-------------|--------|----|
| Mathematics | 40,788 | 59 |
| Spelling    | 52,500 | 76 |
| Language    | 41,924 | 60 |
| Reading     | 52,940 | 76 |

Source: Tennessee Department of Education, "Final Summary Report for State" (Spring, 1978).

statewide diagnostic test for eighth graders to be paid for by the State Department of Education. The basic skills diagnostic test was administered to 65,117 eighth grade students throughout the State of Tennessee. Results from the 1980 basic skill test indicated that 55 percent of the students passed the mathematics section of the test, 79 percent passed the spelling portion of the test, 51 percent passed the language sub-test, 80 percent passed the reading sections of the test, and 42 percent passed all sections of the test.

Table 3 shows the fifty objectives that comprised the Spring 1980 Tennessee basic skills test. The table indicates the number of eighth graders meeting standards for each objective and the percentage of the total number of students administered the test who met the requirements for each objective. The 1980 Spring Test was administered to 65,117 eighth grade students.<sup>29</sup>

The first Tennessee Statewide Proficiency Tests were administered to ninth, tenth, and eleventh grade students on March 24 and 25, 1981. These tests were mandated by the State Board of Education for all ninth, tenth, and eleventh grade students and would not be a requirement for high school graduation until 1983. Students meeting the standards of the test for all sections in 1981 would not be further evaluated.

Results from the 1981 statewide proficiency tests reveal that 74.9 percent of the ninth grade students passed the mathematics section

---

<sup>29</sup>Tennessee Department of Education, Final Summary Report for State (May, 1980).

Table 3

Results of Fifty Objectives Used by Tennessee State  
Mandated Test of Basic Skills, Spring 1980

| Objective<br>Number | Objective Description                                    | Number | Percent |
|---------------------|----------------------------------------------------------|--------|---------|
| 01                  | Add four 3-digit with regrouping                         | 62,567 | 96      |
| 02                  | Subtract two 3-digit, horizontal, WR                     | 61,845 | 94      |
| 06                  | Multiply mixed number by fraction                        | 44,528 | 68      |
| 07                  | Divide a mixed number or a whole number<br>by a fraction | 42,947 | 65      |
| 10                  | Multiply decimal fraction by decimal number              | 54,353 | 83      |
| 12                  | Customary units of measurement-equivalency               | 39,268 | 60      |
| 14                  | Decimal fraction to percent                              | 35,533 | 54      |
| 15                  | Percent of a number                                      | 40,158 | 61      |
| 17                  | Simple word problems: operation                          | 44,714 | 68      |
| 18                  | Decimal equivalency                                      | 38,228 | 58      |
| 19                  | Reading graphs                                           | 60,556 | 92      |
| 20                  | Finding the perimeter                                    | 33,528 | 51      |
| 21                  | Finding area                                             | 48,577 | 74      |
| 22                  | Linear measurement-customary                             | 38,421 | 59      |
| 23                  | Linear measurement-metric                                | 38,738 | 59      |
| 24                  | Writing a numeral for a word name                        | 58,972 | 90      |
| 26                  | Metric equivalency                                       | 15,549 | 23      |
| 28                  | Compare four decimal numbers                             | 21,116 | 32      |
| 30                  | Measure of temperature                                   | 34,000 | 52      |
| 34                  | Spelling/extra letter                                    | 41,890 | 64      |
| 35                  | Contractions                                             | 57,090 | 87      |
| 36                  | Syllabication                                            | 43,263 | 66      |
| 37                  | Alphabetizing                                            | 60,148 | 92      |
| 38                  | Doubling the final consonant                             | 49,213 | 75      |
| 39                  | Changing Y to I or keeping the Y                         | 53,902 | 82      |
| 41                  | Capitalization                                           | 50,937 | 90      |
| 42                  | Comma phrases in a series                                | 50,447 | 77      |
| 46                  | Subject noun or pronoun                                  | 44,974 | 69      |
| 47                  | Parts of speech                                          | 46,845 | 71      |
| 50                  | Subject-predicate agreement indefinite<br>pronouns sub   | 23,438 | 35      |
| 52                  | Identifying complete sentences                           | 47,668 | 73      |
| 53                  | Word usage/double negatives                              | 34,060 | 52      |
| 54                  | Comma in dates and addresses                             | 55,169 | 84      |
| 55                  | Quotations                                               | 42,127 | 64      |
| 56                  | Letter writing                                           | 52,954 | 81      |
| 57                  | Personal pronoun                                         | 15,054 | 23      |
| 58                  | Agreement of possessive adjective                        | 4,265  | 9       |

Table 3 (continued)

| Objective<br>Number | Objective Description              | Number | Percent |
|---------------------|------------------------------------|--------|---------|
| 59                  | Adjectives or irregular adjectives | 17,094 | 26      |
| 60                  | Verbs principal parts              | 39,234 | 60      |
| 67                  | Story detail/event or action       | 59,374 | 91      |
| 68                  | Story detail/time or setting       | 57,477 | 88      |
| 69                  | Story detail/sequence or events    | 51,093 | 78      |
| 70                  | Main idea                          | 41,448 | 63      |
| 71                  | Inference or conclusion            | 48,980 | 75      |
| 72                  | Cause and effect                   | 57,076 | 87      |
| 73                  | Predicting future action           | 55,331 | 84      |
| 74                  | Character analysis                 | 59,319 | 91      |
| 75                  | Fact or opinion                    | 41,010 | 62      |
| 79                  | Endings-suffixes                   | 45,497 | 69      |
| 80                  | Prefixes                           | 53,132 | 81      |

Number and Percent of Students Not  
Needing Remediation--By Subtest:

|             |        |    |
|-------------|--------|----|
| Mathematics | 36,146 | 55 |
| Spelling    | 51,689 | 79 |
| Language    | 33,287 | 51 |
| Reading     | 52,181 | 80 |

Source: Tennessee Department of Education, "Final Summary Report for State" (Spring, 1981).

of the test, 88.0 percent scored above or met the standards of the spelling subtest, 81.7 percent passed the language portion of the test, 84.1 percent met the requirements of the reading subtest, and 65.7 percent passed all four sections of the 1981 statewide proficiency test.

State Education Commissioner, Robert McElrath, pointed out that the 1981 test results would be used to determine an appropriate cutoff score for the 1983 graduating class. The cutoff score would be retroactive for all ninth and tenth grade students taking the 1981 Spring statewide proficiency test. Those individuals who achieved or exceeded the cutoff score would be notified that they had met graduation requirement for a regular high school diploma providing all other requirements had been completed.<sup>30</sup>

In a meeting in March 1981, the State Board of Education voted to delay full implementation of the proficiency test requirements until 1983. "It was felt by the State Commissioner of Education that the test developed for the graduating class of 1982 would be indefensible in court due to lack of proven validity and reliability of the test itself and because of its inconsistency with the tests being given to subsequent grades." However, graduates of the class of 1982 who achieve a score of 70 percent or above during their junior or senior year will receive the regular high school diploma and special recognition for meeting the standards of the statewide proficiency test. Those students

---

<sup>30</sup>Tennessee Education, Vol. 9, No. 3 (March, 1981), p. 2.

in the 1982 class that scored below 70 percent will receive the high school diploma, providing all other requirements are met.

Also, the Board adopted a requirement for students identified and verified as handicapped and eligible for special education services. These students must meet the requirements of the test in order to receive a regular high school diploma. School districts were advised that if a special education student successfully completed the individualized educational program and, in the judgment of the Multidisciplinary Team, should not take the proficiency test, that such students would be awarded a special education diploma at the end of the twelfth grade pointing out the student's specific accomplishments.

Table 4 points out the fifty objectives that were addressed by the 1981 Tennessee Statewide Proficiency Test for ninth graders. The table gives the number of students meeting the requirements for each objective of the test and the percentage of the total number of students that met the standards for each objective. The test was administered to 64,314 ninth grade students.<sup>31</sup>

The 1982 Tennessee Statewide Proficiency Test was administered in March to students in grades nine, ten, eleven, and twelve. This proficiency test was developed by the Tennessee State Department of Education with assistance from the state proficiency testing advisory committee and experts from the University of Tennessee. All ninth graders except

---

<sup>31</sup>Tennessee Department of Education, "Final Summary Report for State" (Spring, 1981).

Table 4

Results of Fifty Objectives Used by Tennessee State  
Mandated Test of Basic Skills, Spring 1981

| Objective<br>Number | Objective Description                                       | Number | Percent |
|---------------------|-------------------------------------------------------------|--------|---------|
| 01                  | Add four 3-digit with regrouping                            | 61,941 | 98.0    |
| 05                  | Subtract fraction from mixed number,<br>unlike denominators | 45,243 | 71.6    |
| 07                  | Divide a mixed number or a whole number<br>by a fraction    | 43,929 | 69.5    |
| 08                  | Add two or more decimal numbers, WR                         | 61,348 | 97.1    |
| 09                  | Subtract two decimal numbers, WR                            | 59,711 | 94.5    |
| 11                  | Divide decimal number by whole number                       | 55,327 | 87.6    |
| 13                  | Place value, decimal                                        | 54,754 | 86.6    |
| 14                  | Decimal fraction to percent                                 | 53,233 | 84.2    |
| 15                  | Percent of a number                                         | 44,942 | 71.1    |
| 16                  | Divide 4-digit number by a 1 or 2-digit<br>number, w/rem    | 51,742 | 81.9    |
| 18                  | Decimal equivalency                                         | 40,933 | 64.8    |
| 20                  | Finding the perimeter                                       | 38,966 | 61.7    |
| 21                  | Finding area                                                | 52,145 | 82.5    |
| 23                  | Linear measurement-metric                                   | 48,758 | 77.2    |
| 24                  | Writing a numeral for a word name                           | 57,933 | 91.8    |
| 25                  | Rounding off numbers                                        | 47,202 | 74.7    |
| 26                  | Metric equivalency                                          | 25,609 | 40.5    |
| 28                  | Compare four decimal numbers                                | 42,631 | 67.5    |
| 29                  | Determining average (arithmetic mean)                       | 46,930 | 74.3    |
| 31                  | Base (root) word, with or without<br>spelling change        | 62,242 | 98.5    |
| 32                  | Spelling/phonetic substitution                              | 56,391 | 89.2    |
| 33                  | Spelling/missing letter                                     | 54,658 | 86.5    |
| 35                  | Contractions                                                | 58,150 | 92.0    |
| 36                  | Syllabication                                               | 47,966 | 75.9    |
| 38                  | Doubling the final consonant                                | 46,161 | 73.0    |
| 42                  | Comma, phrases in a series                                  | 58,678 | 92.9    |
| 43                  | Sentence punctuation                                        | 58,327 | 93.3    |
| 44                  | Usage, irregular verbs                                      | 40,440 | 64.0    |
| 45                  | Usage, nouns                                                | 39,896 | 63.1    |
| 47                  | Parts of speech                                             | 51,259 | 81.1    |
| 48                  | Subject-predicate agreement, inverted order                 | 51,763 | 81.9    |
| 51                  | Identifying simple subjects and verbs                       | 53,479 | 84.6    |
| 52                  | Identifying complete sentences                              | 52,838 | 83.6    |
| 54                  | Comma, in dates and addresses                               | 42,264 | 66.9    |
| 55                  | Quotations                                                  | 48,489 | 76.7    |

Table 4 (continued)

| Objective<br>Number | Objective Description              | Number | Percent |
|---------------------|------------------------------------|--------|---------|
| 58                  | Agreement of possessive adjective  | 36,084 | 57.1    |
| 59                  | Adjectives or irregular adjectives | 29,145 | 46.1    |
| 60                  | Verbs, principal parts             | 59,955 | 94.9    |
| 61                  | Verbs, troublesome pairs           | 57,382 | 90.8    |
| 63                  | Synonym in context                 | 57,481 | 91.0    |
| 64                  | Antonym                            | 39,296 | 62.2    |
| 65                  | Words in context                   | 57,709 | 91.3    |
| 68                  | Story detail/time or setting       | 56,547 | 89.5    |
| 69                  | Story detail/sequence of events    | 52,827 | 83.6    |
| 70                  | Main idea                          | 38,779 | 61.4    |
| 71                  | Inference or conclusion            | 57,382 | 90.8    |
| 72                  | Cause and effect                   | 49,060 | 77.6    |
| 76                  | Following directions               | 52,942 | 83.8    |
| 79                  | Endings-suffixes                   | 60,794 | 96.2    |
| 80                  | Prefixes                           | 52,917 | 83.7    |

Number and Percent of Students Not  
Needing Remediation--By Subtest:

|             |        |      |
|-------------|--------|------|
| Mathematics | 47,330 | 74.9 |
| Spelling    | 55,592 | 88.0 |
| Language    | 51,647 | 81.7 |
| Reading     | 53,183 | 84.1 |

Source: Tennessee Department of Education, "Final Summary Report for State" (Spring, 1981).

those exempted by the Multidisciplinary Team were given the 1982 revision of the Tennessee Statewide Proficiency Test for the first time. Students in grades ten and eleven, except those who did not meet the 1981 standards, were retested. Also, high school seniors who were administered the Proficiency Test Form KLA in 1981 for special recognition and did not obtain the minimum score of 70 required to receive recognition were given an opportunity to take the test once more.

In order to meet the standards of the 1982 Tennessee Statewide Proficiency Test, a minimum score of 65 on the mathematics subtest and 75 on each of the other subtests will be a state graduation requirement for Tennessee high school students to receive a regular high school diploma beginning with the class of 1983.<sup>32</sup>

The 1982 Tennessee Statewide Proficiency Test was administered to 56,654 ninth grade students. Results from the statewide test administered to ninth graders in 1982 indicated that 81.9 percent of the students passed the mathematics section, 84.7 percent passed the spelling portion of the test, 70.8 percent passed the language section, 79 percent passed the reading subtest, and 61.3 percent passed all four subtests.<sup>33</sup>

Table 5 shows the fifty objectives that made up the 1982 Statewide Proficiency Test for ninth grade students. The table gives the number

---

<sup>32</sup>Tennessee Department of Education, Tennessee Education, Vol. 9, No. 8 (September/October, 1981).

<sup>33</sup>Tennessee Department of Education, "Final Summary Report for State" (Spring, 1982).

Table 5

Results of Fifty Objectives Used by Tennessee State  
Mandated Test of Basic Skills, Spring 1982

| Objective<br>Number | Objective Description                      | Number | Percent |
|---------------------|--------------------------------------------|--------|---------|
| 01                  | Addition of whole numbers                  | 56,624 | 98.2    |
| 05                  | Subtraction of fractions                   | 42,475 | 73.7    |
| 06                  | Multiplication of fractions                | 42,639 | 74.0    |
| 08                  | Addition of decimal numbers                | 56,799 | 98.5    |
| 09                  | Subtraction of decimal numbers             | 55,778 | 96.7    |
| 11                  | Divide decimal by whole numbers            | 48,913 | 84.8    |
| 13                  | Place value of decimals                    | 52,556 | 91.2    |
| 14                  | Decimal fraction to percent                | 45,949 | 79.7    |
| 15                  | Percent of a number                        | 37,773 | 65.5    |
| 16                  | Division of whole numbers                  | 52,036 | 90.3    |
| 18                  | Decimal equivalency                        | 43,007 | 74.6    |
| 20                  | Finding the perimeter                      | 39,466 | 68.5    |
| 21                  | Finding area                               | 43,760 | 75.9    |
| 23                  | Linear measurement-metric                  | 45,043 | 78.1    |
| 24                  | Writing a numeral for a word name          | 53,291 | 92.4    |
| 25                  | Rounding off                               | 46,688 | 81.0    |
| 26                  | Metric equivalency                         | 23,619 | 41.0    |
| 28                  | Compare four decimal numbers               | 26,145 | 45.3    |
| 29                  | Determining average                        | 44,352 | 76.9    |
| 31                  | Base word                                  | 47,510 | 82.8    |
| 32                  | Phonetic substitution                      | 53,969 | 94.0    |
| 33                  | Missing letter                             | 51,504 | 89.7    |
| 35                  | Contractions                               | 54,201 | 94.4    |
| 38                  | Doubling the final consonant               | 43,300 | 75.4    |
| 39                  | Changing Y to I or keeping the Y           | 45,779 | 79.8    |
| 42                  | Comma phrases in a series                  | 53,841 | 93.5    |
| 43                  | Sentence punctuation                       | 51,896 | 90.2    |
| 44                  | Usage of irregular verbs                   | 46,116 | 80.1    |
| 45                  | Noun usage                                 | 49,782 | 86.5    |
| 47                  | Parts of speech                            | 48,182 | 83.7    |
| 48                  | Subject-predicate agreement inverted order | 32,856 | 57.1    |
| 51                  | Simple subjects and predicates             | 40,645 | 70.6    |
| 52                  | Identifying complete sentences             | 53,141 | 92.3    |
| 54                  | Comma in dates and addresses               | 45,196 | 78.5    |
| 55                  | Quotations                                 | 37,750 | 65.6    |
| 57                  | Personal pronouns                          | 19,988 | 34.7    |
| 59                  | Adjectives or irregular adjectives         | 46,976 | 81.6    |
| 60                  | Verbs principal pairs regular              | 54,675 | 95.0    |
| 61                  | Verbs troublesome pairs                    | 39,146 | 68.0    |

Table 5 (continued)

| Objective<br>Number                                                            | Objective Description           | Number | Percent |
|--------------------------------------------------------------------------------|---------------------------------|--------|---------|
| 63                                                                             | Synonym in context              | 54,386 | 94.6    |
| 64                                                                             | Antonym                         | 44,737 | 77.8    |
| 65                                                                             | Words in context                | 55,095 | 95.9    |
| 68                                                                             | Story detail/time or setting    | 47,525 | 82.7    |
| 69                                                                             | Story detail/sequence or events | 30,453 | 53.0    |
| 70                                                                             | Main idea                       | 44,126 | 76.8    |
| 71                                                                             | Inference or conclusion         | 43,841 | 76.3    |
| 72                                                                             | Cause and effect                | 48,331 | 84.1    |
| 75                                                                             | Fact or opinion                 | 40,518 | 70.5    |
| 79                                                                             | Endings-suffixes                | 55,525 | 96.6    |
| 80                                                                             | Prefixes                        | 51,725 | 90.0    |
| <u>Number and Percent of Students Not<br/>Needing Remediation--By Subtest:</u> |                                 |        |         |
|                                                                                | Mathematics                     | 47,198 | 81.9    |
|                                                                                | Spelling                        | 48,614 | 84.7    |
|                                                                                | Language                        | 40,732 | 70.6    |
|                                                                                | Reading                         | 45,412 | 79.0    |

Source: Tennessee Department of Education, "Final Summary Report for State" (Spring, 1982).

of ninth grade students meeting the requirements for each of the fifty objectives, and the percentage of the total number of students that met the standards for each objective. The test was administered to 56,654 ninth grade students.

Chronologically Early and Late Students  
and General School Achievement

Since the passing of the first compulsory school attendance law in Massachusetts in 1862, investigators have collected data and shared written articles relative to what age children should enter a program of education outside of their home. Numerous educational researchers have conducted studies to find the relationship between school achievement and chronological age at school entrance. This review presents research on the achievement of early and late school students as related to general school achievement.

Historically, school entrance for children has been based on a specified chronological age. For years, school people have speculated about the best age at which a child should enter first grade. Braga pointed out that in most school systems chronological age is the sole determinant of entrance to school. He felt that chronological age should be one factor, and by itself, chronological age is not a meaningful predictor of school success.<sup>34</sup>

---

<sup>34</sup>J. L. Braga, "Early Admission: Opinion versus Evidence," Elementary School Journal, Vol. 72, No. 1 (October, 1971), p. 37.

Baer studied the school records of underage and overage students in Kansas City, Missouri, public schools. Results from the investigation revealed that the older group, from kindergarten through grade ten, made significantly higher grades in school, performed higher on achievement tests, and received higher marks from teachers on personality traits.<sup>35</sup>

A study was conducted by Dobbs and Neville in 1967. Thirty groups of first grade and second grade students were matched according to race, sex, and socioeconomic level, classroom assignment, mental ability, reading achievement, and age. The groups were made up of a once retained first grader and a nonretained second grader. Results of the study showed the reading and mathematics achievement gain of the promoted group to be significantly greater than that of the nonpromoted group over the two-year period of study.<sup>36</sup>

A review of more than twenty studies related to age of entrance into first grade and academic success was carried out by Beattie. He concluded that age of entrance into first grade had a significant influence on achievement test scores.<sup>37</sup>

---

<sup>35</sup>Clyde J. Baer, "The School Progress and Adjustment of Under and Overage Students," Journal of Educational Psychology, Vol. 49, No. 1 (August, 1957), p. 17.

<sup>36</sup>Virginia Dobbs and Donal Neville, "The Effects of Non-Promotion on the Achievement of Groups Matched from Retained First Graders and Promoted Second Graders," Journal of Educational Research, Vol. 60, No. 10 (July-August, 1967), p. 472.

<sup>37</sup>C. Beattie, "Entrance Age to Kindergarten and First Grade: Its Effect on Cognitive and Affective Development of Students," ERIC, 1970 ED 133050.

King conducted a study of the 104 children who entered first grade between the ages of 5.8 and 5.11 and those who entered school between 6.5 and 6.8 years of age in Oak Ridge, Tennessee. Results from the study showed that at the end of grade six more younger age entrants had repeated a grade, the average daily attendance was better for the older group, and teachers' opinions concerning the adjustment favored the older school entrants.<sup>38</sup>

In Kentucky, a study was conducted by Davis, Trimble, and Vincent to find whether age of entrance affected school achievement. Approximately 19,000 school records of children in grades one, four, and eight were examined by the investigators in order to compare the achievement of early school entry and late school entry age children. The results showed that in grades one and four, the late school entry group scored significantly higher in reading, language, mathematics, and total achievement. However, by the eighth grade the late school group was significantly higher in the area of reading. The study seems to indicate that the late school children appear to begin at an academic advantage, and maintain an advantage over their younger classmates, at least in reading.<sup>39</sup>

In 1974, Austin and Postlethwaite reviewed a study completed by the International Association for the Evaluation of Educational Achievement in the areas of mathematics, reading, and science. The purpose of the

---

<sup>38</sup>King, pp. 331-336.

<sup>39</sup>Davis, Trimble and Vincent, pp. 134-141.

study was to determine if a relationship existed between age of school entry and achievement in the areas of mathematics, reading, and science at ages ten and thirteen. The results of their study revealed that countries with early school entry age had higher scores in mathematics at age thirteen, but lower scores in reading and science at age ten. Some questions have been raised about the validity of the authors' conclusions, because the achievement scores may well be the results of other variables since the study was international in scope.<sup>40</sup>

Green and Simmons found that late school entrants scored higher on achievement tests than early school entrants. However, they emphasized that late school entrants should know more at the beginning of their formal school training and this fact explained the differences in the test scores.<sup>41</sup>

Donofrio stated the children should be older when they enter school because of the findings of the Gesell Institute and other researchers. The article pointed out that the most important prevention for early school entrants is repetition of kindergarten. He indicated that it

---

<sup>40</sup> Gilbert Austin and Neville F. Postlethwaite, "Cognitive Results Based on Different Ages of Entry to School: A Comparative Study," Journal of Educational Psychology, Vol. 65, No. 6 (December, 1974), pp. 857-863.

<sup>41</sup> Donald R. Green and Sadie U. Simmons, "Chronological Age and School Entrance," Elementary School Journal, Vol. 63, No. 1 (October, 1962), pp. 41-47.

would be better if schools kept children from first grade until they are seven years of age.<sup>42</sup>

The majority of the states have established age six as the admission age for children to enter first grade.

Tennessee's compulsory attendance law was enacted in 1913.<sup>43</sup> At the present time, Tennessee's compulsory school age is "between the ages of seven and sixteen, both inclusive," which has been interpreted by the courts as requiring school attendance until a student reaches age seventeen.<sup>44</sup> However, Tennessee does permit children who are six years of age on or before October 31 to enter first grade.

Many educators believe that the average child would perform better in school if they started at age seven instead of age six.

In an article in the November-December 1981 Tennessee Teacher, Linda Adams outlined the problems of transition between kindergarten and first grade. She pointed out that one possible solution to the problem of some children's lack of readiness for first grade material is a pre-first-grade class for those students. A survey conducted by Adams revealed that 80 percent of the respondents agreed that a pre-first-

---

<sup>42</sup>A. F. Donofrio, "Grade Repetition: Therapy of Choice," Journal of Learning Disabilities, Vol. 10, No. 6 (June/July, 1977), pp. 349-351.

<sup>43</sup>Eugene L. Pearson, Tennessee Education 1780-1962 (Nashville: Tennessee State Department of Education, 1963), p. 12.

<sup>44</sup>Tennessee Code Annotated, Title 49, Vol. 9, p. 1708.

grade would be worthwhile for the kindergarten students not ready for first grade.<sup>45</sup>

According to Kinsinger, junior primary classes have been in operation in the Maryville City Schools since 1974. The program was started because kindergarten and first grade teachers felt that many children at age six are not ready to master the skills in reading, nor are many of them ready for the more structured first grade classroom.<sup>46</sup> Since the organization of the transitional kindergarten and first grade program in Maryville City Schools, similar programs have been organized in other school districts in Tennessee.

Solem reported on a junior first grade program in Sioux Falls, South Dakota, school district that has been in operation since 1970. The program is made up of youngsters that have completed a year of kindergarten and their physical, emotional, and behavior factors hamper their ability to learn. These children are considered not ready for first grade when they reach age six.

An investigation of the achievement levels of former junior-first-grade students revealed that in 1978 25 percent of these youngsters ranked in the top quartile of their first grade classes, 25 percent ranked in the lowest quartile, and 50 percent of the former students

---

<sup>45</sup>Linda Y. Adams, "The Kindergarten to First Grade Transition: Terrific or Traumatic," Tennessee Teacher, Vol. 49, No. 4 (November/December, 1981), pp. 15-27.

<sup>46</sup>Bertha R. Kinsinger, "The Junior Primary Class: A Successful Transition between Kindergarten and First Grade," Tennessee Teacher, Vol. 49, No. 8 (April, 1982), p. 8.

ranked in the second and third quartiles. In 1980, it was found that 28 percent of the former junior-first-grade participants ranked in the top quartile of their first-grade classes, 70 percent ranked in the second and third quartile, and 2 percent ranked in the lowest quartile.<sup>47</sup>

While the transitional program is an effort to provide additional preschool experiences and postpone some youngsters from entering grade one an extra year, data still indicate that the delay of students entering first grade after age six does not guarantee school success.

Hirst conducted a study in 1970 to determine in kindergarten the factors that make for academic success in later school years. At the end of the three-year study, she concluded that:

1. Age did not emerge as a significant predictor variable for academic success of first or second graders.
2. Age did not survive as a significant predictor variable for success in the readiness test at the end of kindergarten.
3. Age was not significantly related to the kindergarten teachers predictors of reading success.<sup>48</sup>

A study of children that attended kindergarten and those that did not attend kindergarten in Tennessee was conducted in 1980. The results of the study revealed a higher incidence of grade retention of students in grades five through eight who had not attended kindergarten than

---

<sup>47</sup>Maizie R. Solem, "Junior First Grade: A Year to Get Ready," Phi Delta Kappan, Vol. 63, No. 4 (December, 1981), p. 283.

<sup>48</sup>William E. Hirst, "Entrance Age--A Predictor Variable for Academic Success," Reading Teacher, Vol. 23, No. 6 (March, 1970), p. 554.

those who had attended kindergarten. Woodruff gave this reaction to the results of the study:

Our estimate is that statewide over nine thousand more retentions have occurred among the Grade 5-8 population or nonkindergarten pupils (of 1979-80) during their school careers than would be expected if their retention rate were the same as that for kindergarten pupils.<sup>49</sup>

The cost of the differential retention incidence is sizeable, estimated to be 2.5 million dollars annually in Tennessee. Any consideration of the costs and benefits of a compulsory kindergarten program must take into account the eventual and considerable offset in costs that is presently incurred in funding the greater-than-expected grade repetitions by pupils without kindergarten education.

Davis reported in a study that compared two groups of children based on sex, age, intelligence, and home conditions. One group began reading at the age of six, the second group started reading at the age of seven. Results of the study revealed that after two years the members of the late group had caught up with the early group. The results showed also that at the end of the students' seventh school year the late group was one year ahead of the early group.<sup>50</sup>

Johnson reviewed the results of a study conducted by the Illinois Association for Childhood Education concerning school entrance age. The

---

<sup>49</sup> Bobby J. Woodruff, "A Comparison of Grade Retention and Basic Skills Test Scores of Pupils Who Did and Who Did Not Attend Kindergarten," Division of Research and Development, Tennessee State Department of Education, 1980, p. 14.

<sup>50</sup> H. M. Davis, "Don't Push Your School Beginners," Parent's Magazine, Vol. 27, No. 10 (October, 1952), p. 141.

study compared academic achievement in reading, retardation, and emotional adjustment for the early group (born in September or November) and the late group (born in January, February, or March). Results of the study concluded that:

Success in reading seems to be positively associated with older entrance. That is the students who enter first grade prior to their sixth birthday do not do as well in reading achievement for the first five years of schooling as do their classmates whose sixth birthdays were in January through March of that year. This appears to be true regardless of ability level.<sup>51</sup>

For over two decades, attention has been drawn to the importance of early childhood education as a basis for future school achievement. Supporters of an early childhood education strongly urged early childhood experiences because they believed that children are ready to learn at an earlier age than educators had believed possible.

Miller and Norris studied 135 students in Murfreesboro, Tennessee. The investigators looked at three age groups: early--5.8 to 5.11 at grade one entry, normal--6.0 to 6.7 and late--6.8 to 6.11. They found that on the readiness test administered in kindergarten, the early school group scored significantly lower than the normal and late school groups. However, the difference in achievement had disappeared between the early group and the normal group by the end of grade four.<sup>52</sup>

---

<sup>51</sup>A. M. Johnston, "School Entrance Age," Childhood Education, Vol. 40, No. 7 (March, 1964), p. 384.

<sup>52</sup>D. W. Miller and R. C. Morris, "Entrance Age and School Success," Journal of School Psychology, Vol. 6, No. 1 (Fall, 1967), pp. 47-60.

Ilika compared the relationship of entrance age rate of scholastic achievement of two groups of Oregon children on sex, intelligence, and socioeconomic status.<sup>53</sup> The investigators used rate of growth as an index in comparison of achievement of early and late school entrants. He found that early entrance boys increased 0.97 months in mean reading age for each 1.00 month in chronological age, and that late school entrants boys increased 1.00 month in mean reading age for each 1.00 month in chronological age. The rate of achievement gain was about the same for both groups. This study indicates that early entrants were able to maintain the same rate of progress as the late entrants.

A survey of school superintendents in Michigan revealed that the majority of them indicated that age five was the best age for children to begin formal schooling. A small percentage of the superintendents thought that youngsters should begin younger than age five, and the remainder of them said older than age five.<sup>54</sup>

The article seems to point out that the superintendents of the Michigan public schools support the existing public schools entrance age law. Although some of them support lowering the required entrance age from age six to five, there appears to be no strong opposition for any radical changes in the law.

---

<sup>53</sup> Joseph Ilika, "Age of Entrance into the First Grade as Related to Rate of Scholastic Achievement, Paper Presented at the American Educational Research Association, Los Angeles, 1969, ERIC Document, ED028843.

<sup>54</sup> Lyndon G. Furst and Robert J. Cruise, "Michigan Superintendents Look at Compulsory Attendance Laws," Phi Delta Kappan, Vol. 61, No. 7 (March, 1980), p. 494.

Landsberger pointed out that the State of North Carolina started a program to educate five-year-olds in the public schools in 1969. Educational leaders felt that a new approach to educating young children was needed in schools. These leaders were convinced that in North Carolina, like many other states, formal classrooms, highly verbal lessons, and tightly structured schedules had been the general rule in grade one and other grades. During the 1968 school year about 12 percent of the state's first-graders had failed because of the requirement of grade-by-grade mastery of subject matter. The project has been the target of early childhood educational change in North Carolina. Landsberger pointed out that the changes have been fundamental ones.

- (1) Putting children before subject matter,
- (2) Looking first at what and how the children are learning, not how the teachers are teaching,
- (3) Creating open classrooms and fostering more interaction both within the school itself and between the school and the community, and
- (4) Achieving a greater commonality of purpose among racial groups and individuals isolated by discipline, agency, or hierarchical position.<sup>55</sup>

In 1982, legislation was introduced in Tennessee to permit children who became age six by December 31 to attend school if the child showed emotional or intellectual maturity. This legislation is still pending.

It appears that state legislation and educational leaders in some states are working toward lowering the school entrance age.

---

<sup>55</sup> Betty H. Landsberger, "Early Childhood Education in North Carolina," Vol. 53, No. 1 (November/December, 1973), p. 46.

Deutsch, Hunt, Bloom, Clark, and others have made significant contributions to literature related to early childhood education.<sup>56</sup> The concept and the development of programs like Head Start and Follow Through are outgrowths of writings of Deutsch and Hunt. These projects have indicated that early entry into formal school would have a worthwhile effect on the achievement of students later in school.

In a study by Rohwer, it was concluded that present practices of school should not be imposed on children at early ages. "Postponing such learning experiences would probably reduce the degree of alienation from schooling which many experience, while at the same time producing equal or better results in terms of extra-school achievement."<sup>57</sup>

Ames, Co-Director of Gesell Institute of Human Development, stated:

We have been researching and refining our techniques for the past sixty years. We have also watched the fads come and go, with the sad results that are now causing a national outcry.

We believe proper timing is as important to beginning school as sowing seeds is to a farmer. If the ground is too hard or too dry, the seed won't take hold and grow, even if the calendar says it's the right time to plant. The same is true of children. If they aren't ready, they won't take root in school and learn, even if they're supposed to be ready by a fixed chronological age.<sup>58</sup>

---

<sup>56</sup>G. R. Austin and T. N. Postlethwaite, Cognitive Results Based on Different Ages of Entry to School: A Comparative Study," Journal of Educational Psychology, Vol. 65, No. 6 (December, 1974), p. 857.

<sup>57</sup>William D. Rohwer, Jr., "Prime Time for Education: Early Childhood or Adolescence?," Harvard Educational Review, Vol. 41, No. 3 (August 1971), p. 316.

<sup>58</sup>"Developmental Age and Readiness," Tennessee Education, Tennessee Department of Education, Vol. 9, No. 4 (April, 1981), p. 6.

Gesell researchers estimated that one child in three is overplaced in school. These researchers pointed out that overplaced children fail to achieve because they are too immature when they start school.

Hedges concluded in 1978 that "Earlier is not necessarily better." Childhood has value for itself. Children vary in their rates of growth and development. Each child tends to have his own growth cycle. Children should not always be considered as in a race to walk first, talk first, and read first. To do this is to spell misery and unhappiness for all but the few--and even those few will have to keep looking back to make sure no one is gaining on them!<sup>59</sup>

Research on early school entrance has indicated that younger children can make satisfactory progress in social, emotional, physical, and academic areas. Cove studied the records of students that were accepted into first grade if their mental age was six years and they were thought to be mature on the basis of a mental test. His investigation revealed that these students were found to be superior, and their grades reflected good achievement.<sup>60</sup>

Research findings in child development show the importance of educational experiences children derive from early childhood programs. Piaget, through extensive study of intellectual development over several decades, has been influential. His theory is that the child progresses

---

<sup>59</sup> William D. Hedges, "At What Age Should Children Enter First Grade: A Comprehensive Review of the Research," ERIC (March, 1978), p. 8.

<sup>60</sup> H. R. Cove, "Brookline Admits Them Early," Nation's Schools, Vol. 55, No. 3 (March, 1955), p. 46.

through a series of stages in intellectual development. He, also, has suggested that the rate at which the child moves through those stages can differ.<sup>61</sup> Hunt has suggested that early years of development play a significant role in providing a generalized conceptual skill needed for later learning.<sup>62</sup>

Bloom's study of human development supports the concept that early environment enrichment programs can have an influence in accelerating intellectual development.<sup>63</sup> Evidence from the publication, Tennessee Looks at Its Schools: 1977-78, suggests that children who enter school with a relatively high level of development carry with them an advantage which, if carried throughout the school years, would credit for a fair amount of variation in achievement by the end of the twelfth grade.<sup>64</sup>

Woodruff cited a study by Larson and Darlington reporting the findings of the Consortium of Longitudinal Studies regarding the effectiveness of Head Start and similar preschool programs. The researchers reported:

- (1) Early education programs significantly reduced the number of children assigned to special education classes. This result held after controlling for the effects of children's

---

<sup>61</sup> Joan Piaget, "Development and Learning," in R. E. Ripple and V. A. Rockcastle, Editors, Praget Rediscovered (Ithica, N.Y.: Cornell University, 1964).

<sup>62</sup> John McVicker Hunt, "The Psychological Basis for Using Preschool Enrichment as an Antidote for Cultural Deprivation," Merille Palmer Quarterly (July, 1964).

<sup>63</sup> Bloom, p. 303.

<sup>64</sup> Tennessee State Testing and Evaluation Center, Tennessee Looks at Its Schools: 1977-78 (Knoxville: State Testing and Evaluation Center, 1978), pp. 1-112.

- IQ scores, sex, ethnic background. The benefit extended to all participants regardless of initial abilities or early home backgrounds.
- (2) Early childhood programs significantly reduced the number of children retained in grade. The result held true when measures of early childhood characteristics and home background variables were controlled. All children benefitted, regardless of sex, ethnic background, early IQ, and home background.
  - (3) Early education significantly increased children's scores on fourth grade mathematics tests, and evidence suggested a trend toward increased scores on fourth grade reading tests.<sup>65</sup>

The findings of the aforementioned investigations point to an advantage of early school programs as a possible mean of providing experience and opportunities that would enhance the growth and development of early school age entrants as well as late age entrants.

These findings suggest that traditional first grade classrooms should provide instructional programs that will continue the development of each individual child.

Findings of several studies related to school entrance age and school performance have indicated that students who enter school lacking emotional, mental, and physical maturity were not able to perform satisfactorily in the traditional first grade class. Other research data contend that children can achieve at an earlier age than was thought and considered possible, however, goals must be structured to assist the student in cognitive, affective, social, and psychomotor development.

---

<sup>65</sup>Woodruff, pp. 17-18.

Researchers have investigated school entrance age for over fifty years. Numerous studies have been conducted to study the performance of early school and late school entrants. From the study of the literature reviewed, it is observed that research does not always support the position that either early school age entrance or late school age entrance has the advantage in general school achievement.

The literature seems to indicate that the lawful age for school admission is not necessarily the true indicator of a child's readiness for school. Readiness comprises the entire child and considers social, emotional, and physical maturity with intellectual ability as vital for school success.

## CHAPTER III

## PROCEDURES

This study was conducted in the Chattanooga public schools and based on an ex post facto design for the comparison of early school entrants and late school entrants. The performance of these objects on the 1982 Tennessee Statewide Proficiency Test was also compared. This chapter includes a detailed account of the selection of population and sample, preparation of data form, and the collection and procedures for analyzing the data.

Selection of Population and Sample

During the 1981-1982 school year, the investigator completed a data collection form for all ninth grade classes in the Chattanooga city schools. These classes were in ten junior high schools and one high school with ninth grade students in attendance. Eight of the attendance centers for ninth graders were located in core-city Chattanooga and three of the schools for students in grade nine were located in the suburb areas of the city.

This survey indicated that approximately 45 percent of the members of the 1981-1982 ninth grade class of the Chattanooga public schools were members of the Chattanooga public schools' 1973-1974 first grade class. It is estimated that about 35 percent of the 1973-1974 first grade class have repeated one or more grades and that 19 percent of the members of the 1973-1974 first grade class in the Chattanooga city

schools have left the school system to enroll in private schools and families have relocated, and another 5 percent left for other reasons.

A random sample of 120 subjects was chosen for the study. These subjects came from each of the Chattanooga city schools with ninth graders that were members of the 1973-1974 first grade class. Two samples were identified for special consideration. Sample A consisted of fifty-two early school entrants. These were ninth grade students who were born between June 1, 1967, and October 31, 1967, and who were members of the 1973-1974 first grade class of the Chattanooga city schools. Sample B was composed of sixty-eight late school entrants. These were ninth graders that were born between November 1, 1966, and May 31, 1967, and who were members of the 1973-1974 first grade class of the Chattanooga public schools.

The subjects of Sample A were made up of twenty-four black male subjects, seven white male subjects, seventeen black female subjects, and four white female subjects. Sample B subjects consisted of twenty-four black male subjects, three white male subjects, thirty-two black female subjects, and nine white female subjects.

The focus of the study was on the comparison of early school entrants and late school entrants and their performances on the 1982 Tennessee Statewide Proficiency Test.

#### Preparation of Data Form and Collection

Data for the study were collected on the 1981-1982 ninth grade students in the Chattanooga city schools. A major part of the data for this study was taken from the permanent record folders of the students

that were ninth graders in the Chattanooga public schools during the 1981-1982 school year and who were members of the 1973-1974 first grade class. Each student's permanent record folder contained school achievement, student's date of entry, personal information including birth date, records of immunizations, address, parents' names, and names of siblings. During the student's school years, successive teachers annually entered averages of achievement grades and scores obtained on standardized achievement tests. Other data for this study were collected from the Tennessee Statewide Proficiency Test administered to ninth graders in the Chattanooga public schools in the Spring of 1982. The summary report from the Tennessee Testing and Evaluation Center was used to compare early school and late school entrants' performances on each subtest of the Tennessee Statewide Proficiency Test--mathematics, spelling, language, and reading. Separate mean scores on each subtest were determined for early school entrants and late school entrants. The standard deviation associated with each mean score was determined so that t test or chi-square test can be carried out to test each of the hypotheses.

An investigation of the subjects' permanent records was made to determine the number of early school entrants and late school entrants that participated in the public schools' preschool five year program. Data from this investigation were used to compare the performance of early school entrants and late school entrants that school records indicate relative to participation in the Chattanooga public schools' preschool five year old program as indicated on the 1982 Tennessee Statewide Proficiency Test. Students' records indicated that nine

Sample A subjects participated in a five year old program operated by the Chattanooga public schools. The records further revealed that fourteen Sample B subjects attended a preschool five year old program operated by the Chattanooga public schools.

Information from each of the sample subjects' cumulative records was collected by the investigator relative to the number of early school entrants and late school entrants that participated in the Chapter I program. This information was used to compare the performance of sample subjects A (early school entrants) and sample subjects B (late school entrants) on the Tennessee Statewide Proficiency Test. Students' records showed that twenty-nine Sample A and thirty-six Sample B subjects participated in the Chattanooga city schools Chapter I program.

The collection data form was used to collect data regarding the number of Sample A and Sample B subjects that scored above or at the fiftieth percentile on the California Achievement Test during the Spring of 1979. This data were used to compare the performance of Sample A and Sample B subjects that scored above or at the fiftieth percentile on the California Achievement Test (Level 16) on the 1982 Tennessee Statewide Proficiency Test.

Scores from the Spring 1982 Tennessee Statewide Proficiency Test were collected by the investigator from the permanent student records. Data for each sample subject were recorded on the data collection form for each subtest. This data were used to compare the performance of early school subjects and late school subjects.

Information on student absences was collected by the investigator from the cumulative records of the sample subjects. The number of days absent were recorded. The percentage of absentees for grades one through eight was computed and used to compare the school attendance of Sample A and Sample B relative to their performance on the Tennessee Statewide Proficiency Test.

The number of schools attended by the sample subjects was recorded from students' records. This information was used to compare Sample A and Sample B school mobility relative to their performance on the Tennessee Statewide Proficiency Test.

During the 1978-1979 school year, the subjects of this study were members of the sixth grade class in the Chattanooga public schools. The California Achievement Test, Level 16, was administered to all sixth grade students in the Chattanooga public schools in the Spring of 1979. This test was given by the classroom teachers following school staff meetings devoted to the details of accurate administration of the test. The results of this administration provided subtest scores for reading vocabulary, reading comprehension, spelling, language mechanics, language expression, mathematics computation, mathematics concepts and applications, and reference skills. The percentile scores for total reading, total language, total mathematics, and spelling were recorded for purposes of further analysis.

The 1982 Tennessee Statewide Proficiency Test was administered in March of 1982 to all ninth graders. This proficiency test was developed by the Tennessee State Department of Education with assistance from an

advisory committee and the University of Tennessee. The test was administered by each school district to all ninth graders except those exempted by the multidisciplinary teams. Results from the test provided scores for each subtest and student's performance for each objective.

The analysis procedures consisted of (1) tabulation of frequencies, (2) computation of percentages, (3) computation of percentage differences, and (4) an item analysis of the Tennessee Statewide objectives as they relate to the sample population.

#### Statistical Procedures

The chi square for independent samples was used to determine if the differences that existed between the mean reading, language, spelling, and math achievement levels on the Tennessee Statewide Proficiency Test of early school entrants and late school entrants were significant.

The formula used was:

$$\chi^2 = \frac{(ad - bc)^2 n}{(a + b)(c + d)(a + c)(b + d)}$$

|       |       |       |
|-------|-------|-------|
| a     | b     | a + b |
| c     | d     | c + d |
| a + c | b + d | n     |

The t test for independent samples was used to determine if the differences that existed between the mean scores for each subtest of the 1982 Tennessee Statewide Proficiency Test of early school subjects and late school subjects were significant. The formula used was:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\frac{\Sigma X_1^2 + \Sigma X_2^2}{n_1 + n_2 - 2} \cdot \frac{1}{n_1} + \frac{1}{n_2}}}$$

The probability level of .05 was selected for determining if the differences that existed were significant. The results of the statistical procedures are outlined in Chapter IV.<sup>1,2</sup>

---

<sup>1</sup>John R. Stockton and Charles T. Clark, Introduction to Business and Economic Statistics (Cincinnati, Ohio: South Western Publishing Co., 1975), p. 224.

<sup>2</sup>L. R. Gay, Educational Research (Columbus, Ohio: Charles E. Merrill Publishing Company, 1976).

## CHAPTER IV

## ANALYSIS OF DATA

Introduction

The focus of this study was to determine the performance of early school entrants on the 1982 Tennessee Statewide Proficiency Test. Data for this study were obtained from school records of students who were members of the 1981-1982 ninth grade class and who were members of the 1973-1974 first grade class. These results primarily reflect formal school experiences provided by the Chattanooga public schools.

Chi-square and t-test analysis were used to test significant differences between early school entrants and late school entrants for each of nine hypotheses (see Chapter I, page 6). A significance level of .05 was selected as a criterion for determining significant differences in this study. Data were tabulated for analysis by items and subtests. Each of the hypotheses is restated prior to the presentation of the related data analyses.

The statistical procedures employed to test the hypotheses of this study and a report of the findings together with appropriate tables and figures are included in this chapter. Data were used as they related to each hypothesis stated (see Chapter I, page 6).

The data collected were obtained from a data collection form designed by the researcher which required information from each sample

subject's school record folder. This data collection form consisted of ten items. (See Appendix A.)

### Hypotheses

Hypothesis One. The mean score on the ninth grade Tennessee Statewide Proficiency Test of students who were late school entrants will show no significant difference from that of students who were early school entrants.

Data used to test hypothesis one are presented in Table 6 for late school and early school subjects. This table gives the number of students, the mean score, standard deviation and  $t$  values for sample subjects passing four parts of the 1982 Tennessee Statewide Proficiency Test, three areas of the test, two of the subtest, one section of the test, and no parts of the test. The mean score for students passing four parts of the test was 89.35 for early school subjects and 89.09 for late school subjects with a standard deviation of 4.72 for early school subjects and 5.49 for late school subjects. The mean difference between the two groups has a  $t$  value of .036 which is not significant at the  $p > .05$  level. Sample subjects' mean scores for subjects passing three areas of the proficiency test are shown in Table 6. The mean score for early school entrants was 79.00 with a standard deviation of 3.39. For late school entrants, the mean score was 78.33 with a standard deviation of 5.66. The mean difference between the early and late school entrants has a  $t$  value of .055 which is not significant at the  $p > .05$  level for

Table 6

Results of t Test Performed on Mean Scores on Sample Subjects  
Passing Four, Three, Two, One or No Sections of the  
Tennessee Statewide Proficiency Test

| Subjects<br>Passing | Early School<br>Subjects |           |           | Late School<br>Subjects |           |           | <u>t</u> | <u>df</u> | Signifi-<br>cance |
|---------------------|--------------------------|-----------|-----------|-------------------------|-----------|-----------|----------|-----------|-------------------|
|                     | <u>N</u>                 | <u>MS</u> | <u>SD</u> | <u>N</u>                | <u>MS</u> | <u>SD</u> |          |           |                   |
| Four Sections       | 26                       | 89.35     | 4.72      | 34                      | 89.09     | 5.49      | .036     | 58        | .05               |
| Three Sections      | 8                        | 79.00     | 3.39      | 12                      | 78.33     | 5.66      | .055     | 18        | .05               |
| Two Sections        | 8                        | 72.13     | 3.14      | 12                      | 71.17     | 2.89      | .211     | 18        | .05               |
| One Section         | 8                        | 64.00     | 4.64      | 6                       | 62.17     | 8.11      | .079     | 12        | .05               |
| No Sections         | 2                        | 53.00     | 7.10      | 4                       | 42.25     | 7.59      | .850     | 4         | .05               |

late school and early school entrants passing three of the subtests on the 1982 Tennessee Statewide Proficiency Test.

Two sections of the proficiency test were passed by eight students with a mean score of 72.13 for early school subjects with a standard deviation of 3.14. Late school subject (12) mean score was 71.17 with a standard deviation of 2.89. Results of a t test performed on mean scores of sample subjects passing two subtests of the 1982 Tennessee Statewide Proficiency Test indicate a t value of .211 which is not significant at the .05 level. Table 6 shows also that eight early school subjects had a mean score of 64.00 with a standard deviation of 4.64. Six late school subjects had a mean score of 62.17 with a standard deviation of 8.11. The mean different between early and late school subjects passing one section of the proficiency test has a t

value of .079 which is not significant at the .05 level. The table indicates that the mean score for early school students not passing any sections of the test was 53.00 with a standard deviation of 7.10. For late school subjects not passing any sections of the test, the mean score was 42.25 with a standard deviation of 7.59. The mean difference between the two groups has a  $t$  value of .850 which is not significant at the .05 level.

Table 7 shows a mean score of 78.88 with a standard deviation of 14.20 for early school subjects. It reveals that the mean score for late school subjects was 79.77 with a standard deviation of 12.28. The mean difference between early and late school subjects has a  $t$  value of .0278 which is not significant at the .05 level. On the basis of this data, Hypothesis One is not rejected.

Table 7

Comparison of Mean Scores of Early School and Late School  
Subjects on the 1982 Tennessee Statewide  
Proficiency Test

| Subject | <u>N</u> | <u>MS</u> | <u>SD</u> | <u>t</u> | <u>df</u> | Significance |
|---------|----------|-----------|-----------|----------|-----------|--------------|
| Late    | 68       | 79.79     | 12.28     | .0218    | 118       | .05          |
| Early   | 52       | 78.88     | 14.20     |          |           |              |

Hypothesis Two. The mean score on the ninth grade Tennessee Statewide Proficiency Test of students who attended public school

kindergarten will show no significant difference from that of students who did not attend kindergarten.

During the 1973-1974 school year, two kindergarten programs were in operation in the Chattanooga city schools. However, at that time, the school system operated a headstart program for five-year-olds that met the requirements for the program. This study shows that twenty-three (19.17 percent) of the total sample subjects attended a program for five-year-olds operated by the Chattanooga city schools.

Table 8 provides the number of early school subjects that attended a program for five-year-olds and those that did not attend the preschool program. It shows the number that passed and the number that failed the Tennessee Statewide Proficiency Test and the percentage of the subjects that met the standards and the percentage that did not meet the standards for the proficiency test.

This table reveals six (66.67 percent) of the early school subjects that attended a program for five-year-olds operated by the Chattanooga public schools and that thirty-one (72.09 percent) of the early school subjects that did not attend the preschool program met the requirements on the reading subtest of the 1982 Tennessee Statewide Proficiency Test. On the language section of the proficiency test, the table reveals that five (55.56 percent) of the early school subjects that attended the Chattanooga public schools' program for five-year-olds and twenty-six (60.47 percent) of the early school subjects that did not attend the preschool program passed this section of the proficiency test.

Table 8

Performance of Early School Entrants That Attended Preschool Five Year Old Program  
and Those That Did Not Attend Five Year Old Preschool Program  
on the 1982 Statewide Proficiency Test

| 1982<br>Tennessee<br>Statewide<br>Proficiency<br>Test | Attended Preschool 5 Year Old<br>Old Program N = 9 |       |       |      |       |       | Did Not Attend 5 Year Old Preschool<br>Program N = 43 |       |       |      |       |       |   |       |
|-------------------------------------------------------|----------------------------------------------------|-------|-------|------|-------|-------|-------------------------------------------------------|-------|-------|------|-------|-------|---|-------|
|                                                       | Pass                                               |       |       | Fail |       |       | Pass                                                  |       |       | Fail |       |       |   |       |
|                                                       | N                                                  | %     | MS    | N    | %     | MS    | N                                                     | %     | MS    | N    | %     | MS    |   |       |
|                                                       |                                                    |       |       |      |       |       |                                                       |       |       |      |       |       |   |       |
| Reading                                               | 6                                                  | 66.67 | 87.00 | 3    | 33.33 | 65.67 | 31                                                    | 72.09 | 85.42 | 12   | 27.91 | 61.67 | 1 | .1068 |
| Language                                              | 5                                                  | 55.56 | 87.20 | 4    | 44.44 | 65.26 | 26                                                    | 60.47 | 86.31 | 17   | 39.53 | 60.88 | 1 | .0745 |
| Spelling                                              | 8                                                  | 88.89 | 89.63 | 1    | 11.11 | 58.00 | 34                                                    | 79.07 | 90.79 | 9    | 20.93 | 56.56 | 1 | .4620 |
| Mathematics                                           | 7                                                  | 77.78 | 82.14 | 2    | 22.22 | 63.00 | 34                                                    | 79.07 | 85.74 | 9    | 20.93 | 55.78 | 1 | .0074 |

The table shows that eight (88.89 percent) of the early school subjects that attended a program for five-year-olds conducted by the Chattanooga public schools and that thirty-four (79.07 percent) of the early school subjects that did not attend a preschool program passed the spelling subtest of the Tennessee Statewide Proficiency Test. Table 8 indicates that seven (77.78 percent) of the early school subjects with preschool experiences provided by the Chattanooga city schools and that thirty-four (79.07 percent) of the early school subjects that did not attend a preschool program operated by the Chattanooga public schools met the requirement of 65 or above on the mathematics subtest of the proficiency test.

The results of chi square values for each of the subtests indicate no significant differences between the early school subjects that attended a preschool program operated by the Chattanooga city schools and those sample subjects that did not attend a preschool program conducted by the city school system.

Table 9 points out the number of late school subjects that attended a program for five-year-olds and those that did not attend a preschool program. It gives the number that passed and the number that failed on the Tennessee Statewide Proficiency Test and the percentage of late school subjects that met the standards and the percentage that did not meet the standards for the proficiency test.

The table indicates that ten (71.43 percent) of the late school subjects that attended a program for five-year-olds operated by the Chattanooga public schools and that thirty-nine (72.22 percent) of the



late school subjects that did not attend the preschool program met the requirements on the reading portion of the 1982 Tennessee Statewide Proficiency Test. On the language section of the proficiency test, the table shows that eight (57.14 percent) of the late school subjects were involved in the preschool program for five-year-olds and that thirty-four (62.96 percent) of the late school subjects that were not participants of the preschool program passed this area of the proficiency test. This table also reveals that ten (71.43 percent) of the late school subjects that attended a program for five-year-olds and that forty-eight (88.89 percent) of the late school subjects that did not attend the preschool program met the requirements on the spelling subtest of the 1982 Tennessee Statewide Proficiency Test. On the mathematics subtest, the table reveals that ten (71.43 percent) of the late school subjects that attended a program for five-year-olds and that forty-two (77.78 percent) of the late school subjects that did not attend the preschool program met the required standards on this portion of the proficiency test.

The results of chi square values for each of the subtests indicate no significant differences between the late school subjects that attended a preschool program operated by the Chattanooga public schools and those sample subjects that did not attend a preschool program conducted by the public school system.

Table 10 shows that twenty-three (19.17 percent) of the subjects of this study attended a program for five-year-olds operated by the Chattanooga public schools and that ninety-seven (80.83 percent) of them did not attend a preschool program. It indicates that the mean score on the

Table 10

Comparison of the Mean Score of Subjects That Attended  
a Five-Year-Old Program and Those That Did Not Attend  
a Five-Year-Old Program

|             | Attended<br>Five-Year-<br>Old<br>Program |           | Did Not<br>Attend<br>Five-Year-<br>Old<br>Program |           | <u>SD</u> | <u>t</u> | <u>df</u> | Signifi-<br>cant |
|-------------|------------------------------------------|-----------|---------------------------------------------------|-----------|-----------|----------|-----------|------------------|
|             | <u>N</u>                                 | <u>MS</u> | <u>N</u>                                          | <u>MS</u> |           |          |           |                  |
| Reading     | 23                                       | 76.74     | 97                                                | 78.95     | 14.18     | .0475    | 118       | .05              |
| Spelling    | 23                                       | 80.87     | 97                                                | 84.95     | 16.67     | .0633    | 118       | .05              |
| Language    | 23                                       | 69.43     | 97                                                | 75.63     | 19.46     | .1047    | 118       | .05              |
| Mathematics | 23                                       | 74.83     | 97                                                | 78.82     | 17.77     | .0544    | 118       | .05              |

reading subtest of the Tennessee Statewide Proficiency Test for students that attended kindergarten was 76.74 and 78.95 for subjects that did not attend kindergarten. The mean difference for the two groups has a t value of .0475 which is not significant at the .05 level.

The table indicates that the mean score on the spelling subtest for sample subjects that attended kindergarten was 80.87 and 84.95 for students that did not attend kindergarten or a program for five-year-olds operated by the Chattanooga public schools. The mean difference for the subjects that attended and those that did not attend has a t value of .0633 which is not significant at the .05 level.

This table reveals that the mean score on the language portion of the Tennessee Statewide Proficiency Test for students that attended a program for five-year-olds operated by the Chattanooga public schools

was 69.43 and the mean score for those that did not attend was 75.63. The mean difference for students that attended kindergarten and those that did not has a  $t$  value of .1047 which is not significant at the .05 level.

The mathematics sections of the proficiency test shows that the mean score of students that attended kindergarten was 74.83 and 78.82 for students that did not attend kindergarten. The difference between the two groups has a  $t$  value of .0544 which is not significant at the .05 level.

Results of a  $t$  test performed on mean scores of subjects on each subtest of the 1982 Tennessee Statewide Proficiency Test show no significant difference between students that attended kindergarten and those that did not attend kindergarten. Therefore, Hypothesis Two is not rejected.

Hypothesis Three. The mean score on the ninth grade Tennessee Statewide Proficiency Test of students who participated in the Chapter I Program will show no significant difference from students who did not participate in the Chapter I Program.

Data used to test Hypothesis Three are presented in Table 11 for Chapter I participants and non-Chapter I participants. The table gives the number of those that participated in the Chapter I Program and those that did not participate in the Chapter I Program. It shows the mean scores, standard deviation, the  $t$  values associated with the differences, and statistical significance of the difference for each of the four subtests of the 1982 Tennessee Statewide Proficiency Test.

Table 11

Results of t Test Performed on Mean Scores on Chapter I  
Participants and Non-Chapter I Participants

| Subtest     | Chapter I<br>Participants |           | Non-<br>Chapter I<br>Participants |           |           | <u>t</u> | <u>df</u> | Signifi-<br>cant |
|-------------|---------------------------|-----------|-----------------------------------|-----------|-----------|----------|-----------|------------------|
|             | <u>N</u>                  | <u>MS</u> | <u>N</u>                          | <u>MS</u> | <u>SD</u> |          |           |                  |
| Reading     | 65                        | 72.15     | 55                                | 86.07     | 12.65     | .4748    | 118       | .05              |
| Spelling    | 65                        | 81.00     | 55                                | 89.25     | 15.81     | .0063    | 118       | .05              |
| Language    | 65                        | 67.94     | 55                                | 83.76     | 12.59     | .0290    | 118       | .05              |
| Mathematics | 65                        | 73.54     | 55                                | 83.38     | 7.98      | .8428    | 118       | .05              |

The findings indicate that the mean scores of the non-Chapter I participants were slightly above the mean scores of the subjects that were Chapter I participants. Table 11 shows that sixty-five (54.17 percent) of the subjects participated in the Chapter I Program and that fifty-five (45.83 percent) did not participate in the Chapter I Program. Results of a t test performed on mean scores for the reading subtest of the Tennessee Statewide Proficiency Test for Chapter I participants and non-Chapter I participants indicated no significant differences between the two groups. The mean difference has a t value of .4748 which is not significant at the .05 level.

t-test comparison of the language subtest of the proficiency test for Chapter I and non-Chapter I participants revealed no significant differences between the two groups. Table 11 shows a t-test value of .0290 at the .05 level which shows no significant differences between the Chapter I and non-Chapter I groups.

On the mathematics sections of the proficiency test, the table shows that 73.54 was the mean score for the Chapter I subjects and 83.38 was the mean score for the non-Chapter I subjects. Results of a t test performed on mean scores indicated no significant differences between the two groups. A t-test value of .8428 at the .05 level is not significant.

The mean score of the spelling part of the proficiency test is shown in Table 11. It indicates that the mean score for subjects that participated in the Chapter I Program was 81.00 and that 89.25 was the mean score for those that did not participate in the Chapter I Program. A t-test comparison revealed no significant differences between the two groups. The mean differences has a t value of .0063 which is not significant at the .05 level.

In the analysis of the data shown in Table 11, t tests were computed exploring the relationship between subjects that were Chapter I participants and non-Chapter I participants. Results of a t test performed on mean scores of sample subjects on the four subtests showed no significant difference between the two groups. Hypothesis Three is not rejected.

Hypothesis Four. The mean score on the ninth grade Tennessee Statewide Proficiency Test of students absent from school 0-100 days will show no significant difference from that of students not in attendance for 101 days or more in grade ones through eight.

Information on the number of days attended was available on all early school and late school subjects. Data were examined in relation

to the number of days the sample population was absent from school from 1973 to 1981. Table 21 (Appendix B) shows the number and percentage of early and late school sample subjects absent from school 0-50 days, 51-100 days, 101-200 days, and 201 days and above from 1973 to 1981. The table indicates that ten (19.23 percent) of the early school subjects and twenty (38.24 percent) of the late school subjects were absent from school from 0-50 days from 1973 to 1981. The data shows that twenty-one (40.38 percent) of the early school subjects and twenty (29.41 percent) of the late school subjects were not in attendance between 51-100 days during the period from 1973 to 1981. This table also reveals that fourteen (26.92 percent) of the early school sample population and fourteen (20.59 percent) of the late school sample population were out of school between 101 to 200 days from 1973 to 1981. Table 21 points out that seven (13.46 percent) of the early school subjects and eight (11.76 percent) of the late school subjects were absent from school 201 or more days from 1973 to 1981.

Table 22 (Appendix B) points out the performance of the late school sample population on each of the subtests of the 1982 Tennessee Statewide Proficiency Test relative to the number of days absent from school from 1973 to 1981. This table gives the number of sample subjects meeting the standards for each subtest and the number not meeting the standards. It also gives the mean scores for those subjects passing the tests and for those subjects not passing the tests.

Table 23 (Appendix B) provides information regarding the performance of the early school sample subjects on the mathematics,

spelling, language, and reading subtests of the Tennessee Statewide Proficiency Test. The table gives the number of early school sample subjects meeting the required standards and those subjects not meeting the standards relative to the number of days absent from 1973 to 1981.

While one could conclude that the school attendance for early school subjects and late school subjects was about the same, the difference was not significant. It should be noted, however, that the difference in attendance between the two populations, while not significant, was the attendance range and the average percentage for each group. The early school subjects' attendance ranged from 67 percent to 99 percent with an average percentage of attendance of 92.07 percent, and the late school subjects' attendance ranged from 77 percent to 98 percent with an average percentage of attendance of 93.60 percent from 1973 to 1981.

Data used to test Hypothesis Four are shown in Table 12 for students that were absent from school 0-100 days and those that were absent from school 101 days or more from grade one through grade eight. This table indicates the number of students absent from each group, the mean score, standard deviation, and t-test value for subjects absent from school 0-100 days, and those not in attendance 101 days or more over an eight year period. Hypothesis Four is not rejected.

Table 12

Results of t Test Comparison on Mean Scores on Subjects Absent  
from School 0-100 Days and Those Absent from School  
101 Days or More from Grade One to Grade Eight

| Subtest     | Absent<br>from School<br>0-100 Days |           | Absent from<br>School 101<br>Days or More |           |           | <u>t</u> | <u>df</u> | Signifi-<br>cant |
|-------------|-------------------------------------|-----------|-------------------------------------------|-----------|-----------|----------|-----------|------------------|
|             | <u>N</u>                            | <u>MS</u> | <u>N</u>                                  | <u>MS</u> | <u>SD</u> |          |           |                  |
| Reading     | 77                                  | 82.16     | 43                                        | 74.51     | 11.34     | .313     | 118       | .05              |
| Spelling    | 77                                  | 86.90     | 43                                        | 80.42     | 15.94     | .134     | 118       | .05              |
| Language    | 77                                  | 77.63     | 43                                        | 70.67     | 16.21     | .140     | 118       | .05              |
| Mathematics | 77                                  | 79.19     | 43                                        | 76.63     | 16.70     | .048     | 118       | .05              |

Hypothesis five. The mean score on the ninth grade Tennessee Statewide Proficiency Test of the students that scored at the fiftieth percentile or above will show no significant difference from that of students that scored below the fiftieth percentile on the Level 16 California Achievement Test.

Table 24 (Appendix B) points out that fifteen early school subjects (28.85 percent) and twenty-one late school subjects (30.88 percent) scored at the fiftieth percentile on the California Achievement Test and met the required standard of 75 or above on the reading subtest of the 1982 Tennessee Statewide Proficiency Test. This table shows that thirty-seven (71.15 percent) of the early school subjects and forty-seven (69.12 percent) of the late school subjects that scored below the fiftieth percentile met the required standard on the reading subtest of the 1982 Tennessee Statewide Proficiency Test. The results of chi

square analysis of the reading subtest ( $\chi^2 = .0582$ , df = 1, >.05) indicates no significant differences between early school subjects and late school subjects and their performance on the 1982 Tennessee Statewide Proficiency Test.

On the language section of the proficiency test, the table indicates that twenty-three (44.23 percent) of the early school subjects and twenty-seven (39.71 percent) of the late school subjects that scored at the fiftieth percentile or above on the California Achievement Test passed the language subtest of the 1982 Tennessee Statewide Proficiency Test. The table shows that twenty-nine (55.77 percent) of the early school subjects and forty-one (60.29 percent) of the late school subjects that scored below the fiftieth percentile on the California Achievement met the requirements on the 1982 Tennessee Statewide Proficiency Test. The results of chi square analysis ( $\chi^2 = .2482$ , df = 1, >.05) shows no significant differences on the language section between early school subjects and late school subjects.

Table 24 (Appendix B) shows also that twenty-three (44.23 percent) of the early school subjects and thirty-three (39.73 percent) of the late school subjects that scored at the fiftieth percentile or above on the spelling subtest of the California Achievement Test met the required score of 75 or above on the spelling subtest on the 1982 Tennessee Statewide Proficiency Test. It further points out that twenty-nine (55.77 percent) of the early school subjects and thirty-five (51.47 percent) of the late school subjects that made a percentile score of 49 or below on the spelling subtest of the California Achievement Test met the standards on the spelling subtest of the 1982 Tennessee Statewide

Proficiency Test. The results of chi square analysis of the spelling subtest ( $\chi^2 = .2188$ ,  $df = 1$ ,  $>.05$ ) indicates no significant differences on the spelling subtest between early school subjects and late school subjects and their performance on the 1982 Tennessee Statewide Proficiency Test.

Table 24 (Appendix B) reveals that twenty-one (40.38 percent) of the early school subjects and thirty-six (52.94 percent) of the late school subjects that made a percentile score of 50 or above on the mathematics subtest of the California Achievement Test made a score of 65 or above on the mathematics subtest of the 1982 Tennessee Statewide Proficiency Test. The table further shows that thirty-one (59.62 percent) of the early school subjects and thirty-two (42.06 percent) of the late school subjects that scored below the fiftieth percentile on the mathematics section of the California Achievement Test made a score of 65 or above on the mathematics subtest of the 1982 Tennessee Statewide Proficiency Test. The results of chi square analysis ( $\chi^2 = 2.4822$ ,  $df = 1$ ,  $>.05$ ) indicate no significant differences between early school subjects and late school subjects and their performance on the mathematics subtest of the Tennessee Statewide Proficiency Test.

Table 13 gives the number of students that scored below the fiftieth percentile and those that scored above the forty-ninth percentile on the California Achievement Test for total reading, spelling, language, and mathematics subtests. It shows also the mean scores and t-test results performed on the 1982 Tennessee Statewide Proficiency Test for each of the four subtests.

Table 13

Results of t Test Comparison of Mean Scores on the Tennessee Statewide Proficiency Test of Students That Scored Below the 50th Percentile and Those That Scored Above the 49th Percentile on the California Achievement Test (Level 16)

| Subtest     | Below<br>50th<br>Percentile |           | Below<br>49th<br>Percentile |           | <u>SD</u> | <u>t</u> | <u>df</u> | Signifi-<br>cant |
|-------------|-----------------------------|-----------|-----------------------------|-----------|-----------|----------|-----------|------------------|
|             | <u>N</u>                    | <u>MS</u> | <u>N</u>                    | <u>MS</u> |           |          |           |                  |
| Reading     | 83                          | 73.78     | 37                          | 89.24     | 12.39     | .509     | 118       | .05              |
| Spelling    | 64                          | 78.53     | 56                          | 91.55     | 14.87     | .322     | 118       | .05              |
| Language    | 70                          | 65.67     | 50                          | 85.08     | 20.94     | .002     | 118       | .05              |
| Mathematics | 64                          | 70.70     | 56                          | 86.46     | 25.43     | .133     | 118       | .05              |

This table indicates no significant differences between mean scores on any of the subtests of the Tennessee Statewide Proficiency Test of subjects that scored below the fiftieth percentile and those that scored above the forty-ninth percentile on the California Achievement Test. Data used to test Hypothesis Five are presented in the table for the two groups. Results of a t-test comparison of the mean scores for each subtest (reading, spelling, language, and mathematics) reveal no significant differences between students scoring above the forty-ninth percentile and those scoring below the fiftieth percentile on the California Achievement Test. On the basis of the data in Table 13 Hypothesis Five is not rejected.

Hypothesis Six. The mean score on the ninth grade Tennessee Statewide Proficiency Test will show no significant difference between early school entrants and late school entrants on the mathematics section of the 1982 Tennessee Statewide Proficiency Test.

Table 14 shows that forty-two (80.77 percent) early school subjects and fifty-two (76.47 percent) late school subjects met the standard of 65 or above on the mathematics subtest of the 1982 Tennessee Statewide Proficiency Test.

Table 14 reveals that the early school subjects passing the test had a mean score of 84.69 and the late school subjects meeting the standards had a mean score of 84.96 on the mathematics section of the proficiency test. A chi square value of .3208 indicates no significant differences between early school subjects and late school subjects and their performance on the 1982 Tennessee Statewide Proficiency Test. On the basis of this data, Hypothesis Six is not rejected.

Hypothesis Seven. The mean score on the ninth grade Tennessee Statewide Proficiency Test will show no significant difference between early school entrants and late school entrants on the subtests of spelling, reading, and language.

Spelling, reading, and language are three subtests of the 1982 Tennessee Statewide Proficiency Test. The spelling section of the test was made up of six objectives with four questions for each objective, the reading section consisted of eleven objectives with four questions for each of the objectives, and the language section had fourteen



objectives with four questions for each objective. A score of 75 or above was needed in order to meet the required standards on the 1982 Tennessee Statewide Proficiency Test.

Table 14 of this study points out that thirty-seven (71.15 percent) of the early school subjects and forty-nine (72.06 percent) of the late school subjects passed the reading subtest of the 1982 Tennessee Statewide Proficiency Test. This table indicates that thirty-one (59.62 percent) of the early school entrants and forty-two (61.76) of the late school entrants passed the language sections of the proficiency test. It shows also that forty-two (80.77 percent) of the early school subjects and fifty-nine (86.76 percent) of the late school subjects scored 75 or above on the proficiency test.

Data from this study show that the performance of early school subjects and late school subjects on the subtests of spelling, reading, and language is not significantly higher for late school subjects than for early school subjects. Hypothesis Seven is not rejected.

Hypothesis Eight. The mean score on the ninth grade Tennessee Statewide Proficiency Test of males will show no significant difference from that of females on the 1982 Tennessee Statewide Proficiency Test.

Table 25 (Appendix B) gives the number of male and female early school subjects and the percentage of the early school subjects passing each of the four subtests--reading, language, spelling, and mathematics. This table shows also the number of male and female late school subjects and the percent of the late school subjects making a score of 75 or above on the reading, language, and spelling subtests, and a score of 65 or above on the mathematics subtest.

The table indicates that twenty-four (77.42 percent) of the early school male subjects and thirteen (61.90 percent) of the early school female subjects met the standards for the reading subtest. It shows that twenty (64.51 percent) of the early school male subjects and eleven (52.38 percent) of the early school female subjects made 75 or above on the language section of the test.

On the spelling portion of the proficiency test, Table 26 (Appendix B) reveals that twenty-five (80.65 percent) of the early school male subjects and seventeen (80.95 percent) of the early school female subjects passed the spelling section of the test. The table indicates that twenty-six (83.87 percent) of the early school male subjects and fifteen (71.43 percent) of the early school female subjects made a score of 65 or above on the mathematics subtest.

Table 26 further shows that eighteen (66.87 percent) of the late school male subjects and thirty (73.17 percent) of the late school female subjects passed the reading section of the proficiency test. It indicates also that fifteen (55.56 percent) of the late school male subjects and twenty-seven (65.85 percent) of the late school female subjects met the standards on the reading section of the proficiency test.

The table shows that twenty-three (85.19 percent) of the late school male subjects and thirty-six (87.80 percent) of the late school female subjects passed the spelling subtest. Scores on the mathematics section of the proficiency test indicate that twenty-three (85.19 percent) of the late school male subjects and twenty-nine (70.73 percent) of the late school female subjects met the required standards on the spelling section of the proficiency test.

Table 25 (Appendix B) gives the subtests the number of late school male and female subjects that passed or failed each of the subtests. This table further provides mean scores, percentages, degree of freedom, and chi square values for male and female subjects. The results of chi square values for male and female subjects on the reading sections of the proficiency test ( $\chi^2 = 1.4682$ , df = 1, >.05) show no significant differences between male and female subjects. The table indicates also that chi square value analysis ( $\chi^2 = .7658$ , df = 1, >.05) reveals no significant differences between male and female subjects on the language section of the proficiency test. The results of chi square analysis ( $\chi^2 = .0008$ ) for the spelling subtest for males and females show no significant differences between male and female subjects. On the mathematics subtest, the results of chi square analysis ( $\chi^2 = 1.1620$ ) indicate no significant differences between male and female subjects that met the requirements and those that did not meet the requirements.

Data used to test Hypothesis Eight are presented in Table 27 (Appendix B) for male and female subjects. The table shows the mean scores, standard deviation, the t value associated with the differences and statistical significance of the difference for each of the four subtests of the 1982 Tennessee Statewide Proficiency Test. Results of a t test performed on mean scores indicated no significant differences between the two groups on each of the subtests. Hypothesis Eight is not rejected.

Hypothesis Nine. The mean score on the ninth grade Tennessee Statewide Proficiency Test of students that attended one to four different schools will show no significant difference from students who attended five or more different schools.

Table 28 (Appendix B) reveals the number and percentage of early school and late school subjects and the number of schools attended by each group from 1973 to 1982. The table indicates that the majority of the early school subjects (thirty-seven, or 71.15 percent) and the late school subjects (forty-two, or 61.76 percent) attended three different schools from 1973 to 1982. It shows that each of the sample subject groups attended eight different schools. Table 29 (Appendix B) provides the number and percentage of male and female early school and late school subjects and the number of schools attended by males and females. This table shows that twenty (62.50 percent) early school males and eighteen (64.28 percent) late school males attended three to four different schools. Table 29 further indicates that seventeen (85.00 percent) early school females and twenty-four (60.00 percent) late school females attended three to four different schools from 1973 to 1982. The table shows also that three (9.37 percent) early school male subjects and four (14.29 percent) late school male subjects attended one to two different schools. Two (10.00 percent) early school female subjects and two (10.00 percent) late school female subjects attended one or two different schools.

Five to six schools were attended by seven (21.88 percent) early school male subjects and two (7.14 percent) late school male subjects. One (5.00 percent) early school female subject and thirteen (32.50

percent) late school female subjects attended five or six different schools from 1973 to 1982. Seven to eight different schools were attended by two (6.25 percent) early school males , four (14.29 percent) late school males, and one (2.50 percent) late school female . Results of a t test comparison of mean scores on the Tennessee Statewide Proficiency Test of students attending one to four schools and those attending five or more schools are shown in Table 30 (Appendix B). The table shows that ninety of the students attended one to four different schools from grades one through nine and that thirty of the students attended five or more different schools from grades one through nine. It shows also the mean scores and t test results performed on the 1982 Tennessee Statewide Proficiency Test for each of the four subtests.

Results of a t test comparison of mean scores for each subtest (reading, language, spelling, and mathematics) reveal no significant differences between students attending one to four different schools and those attending five or more different schools. On the basis of this data, Hypothesis Nine is not rejected.

The data of this study indicate that there is no significant difference between early school entrants and late school entrants in meeting the standards on the 1982 Tennessee Statewide Proficiency Test. Table 15 (Appendix B) shows the number and percentage of early school subjects and late school subjects passing all sections of the test, those passing three parts of the test, subjects meeting the standards for one area of the test, and students failing all sections of the test. This table further points out that twenty-six (50.00 percent) of

the early school subjects passed all four sections of the test and thirty-four (50.00 percent) of the late school subjects passed all four areas of the test. The table shows also that eight (15.38 percent) of the early school subjects and twelve (17.64 percent) of the late school subjects met the standards for three sections of the test. Two sections of the test were passed by eight (15.38 percent) early school entrants and twelve (17.64 percent) late school entrants . This table indicates that eight (15.38 percent) of the early school entrants and six (8.82 percent) of the late school entrants met the required score of 75 or above for reading, language, and spelling and the required score of 65 or above for mathematics on the 1982 Tennessee Statewide Proficiency Test.

Table 15 reveals that two (3.85 percent) of the early school subjects and four (5.82 percent) of the late school subjects did not meet the standards for any of the subtests.

Table 16 (Appendix B) shows the number of early school and late school subjects meeting the standards and those individuals not meeting the standards for each of the subtests--reading, language, spelling, and mathematics. A review and interpretation of the data collected for each subtest is as follows:

### Mathematics

The mathematics sections of the 1982 Tennessee Statewide Proficiency Test consisted of nineteen objectives with each of the objectives having four questions. A score of 65 or above was required in order to pass the mathematics section of the test. The nineteen objectives are

listed in Table 17 (Appendix B). This table gives the performance of the early school subjects and late school subjects on the mathematics part of the 1982 Tennessee Statewide Proficiency Test. Table 17 reveals that 80.77 percent of the early school subjects with a mean score of 84.69 and that 76.47 percent of the late school subjects with a mean score of 84.76 passed the mathematics section of the 1982 Tennessee Statewide Proficiency Test. A chi square value of .3208 shows no significant differences between early school entrants and late school entrants on the 1982 Tennessee Statewide Proficiency Test.

### Spelling

The spelling subtest of the 1982 Tennessee Statewide Proficiency Test was made up of six objectives with each of the objectives having four questions. Table 18 (Appendix B) gives the objectives and a comparison of the performance of the early school subjects and the late school subjects. These data provide the number of early and late school entrants meeting the standards and those not meeting the standards for each of the objectives for the spelling subtest. Table 16 (Appendix B) shows that 80.77 percent of the early school entrants passed the spelling section of the proficiency test with a mean score of 90.57 and that 19.23 percent of the early subjects did not meet the required standards. The table further shows that 86.76 percent of the late school entrants scored 75 or above with a mean score of 90.44 on the spelling part of the proficiency test and that 13.24 percent of the late school subjects

did not pass the test and had a mean score of 51.89 on the test. A chi square value of .7948 for the spelling subtest shows no significant differences for early school subjects or late school subjects on the 1982 Tennessee Statewide Proficiency Test.

### Language

The language subtest of the 1982 Tennessee Proficiency Test was made up of fourteen objectives with each objective having four questions. A score of 75 or above was required in order to meet the standards for this subtest. The fourteen objectives are listed in Table 19 (Appendix B). This table points out the performance of the early and late school subjects on the language subtest. Table 16 (Appendix B) indicates that 59.62 percent of the early school with a mean score of 86.47 and 61.76 percent of the late school subjects with a mean score of 85.31 met the requirements of the proficiency test.

The table also shows that 40.38 percent of the early school subjects with a mean score of 61.71 and that 38.24 of the late school subjects with a mean score of 56.31 did not meet the requirement of 75 or above on the 1982 Tennessee Statewide Proficiency Test. Chi square values for the language subtest indicate no significant differences for early school subjects or late school subjects on the proficiency test.

### Reading

The reading subtest of the 1982 Tennessee Statewide Proficiency Test was made up of eleven objectives with each objective consisting of four questions. A score of 75 or above was required in order to meet

the standards on the reading subtest. The objectives are listed in Table 20 (Appendix B). This table provides data relative to the performance of early school subjects and late school subjects on the reading subtest. Table 16 (Appendix B) shows that 71.15 percent of the early school subjects with a mean score of 86.66 and 79.06 percent of the late school subjects with a mean score of 85.65 met the requirement of 75 or above on the reading area of the proficiency test. It further reveals that 28.85 percent of the early school subjects with a mean score of 62.46 and 27.94 percent of the late school subjects with a mean score of 59.00 did not score 75 or above on the proficiency test. A chi square value of .0119 reveals no significant differences for early school subjects or late school subjects in meeting the standards on the proficiency test.

## CHAPTER V

## SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary of Study

The proficiency movement in Tennessee is led by parents, ministers, businessmen, and politicians. These individuals are demanding accountability from schools. Citizens of Tennessee, like persons from other states, are demanding minimum competency testing programs as one requirement for the regular high school diploma.

Governor Lamar Alexander has launched a movement in Tennessee for more accountability from local schools. On January 28, 1983, the governor unveiled his Better Schools Program for Tennessee. The governor stated: "The Better Schools Program is the most important proposal I will make in my eight years as governor."

In his address to the Tennessee Press Association, it was emphasized that too many people in the State of Tennessee were without skills to compete for new jobs in the 1980s and in the 1990s. The governor also indicated that schools are the key to developing necessary skills so that citizens of Tennessee will be prepared to compete for new jobs in this "information age."

This research study was designed to gather information about students from school records using a data collection form to determine if there was a statistically significant difference between the performance on the Tennessee Statewide Proficiency Test of early school entrants and late school entrants.

In the Spring of 1982, ninth grade classes were located in twelve Chattanooga schools with an enrollment of 1,907 students. Of these students, 851 had been members of the 1973-1974 Chattanooga public schools' first grade class, and were members of the 1981-1982 ninth grade class. A random sample of 120 students that were first graders during the 1973-1974 school year and that were members of the 1981-1982 ninth grade class were selected for the study.

Data for the study were collected by the investigator on each of the students comprising the random sample. The collection data form addressed eleven statements (see Appendix A). Information was available for all 120 subjects.

### Findings

An analysis of data obtained from 120 data collection forms produced the following findings:

1. It was hypothesized that the mean score on the ninth grade Tennessee Statewide Proficiency Test of students who were late school entrants will show significant difference from that of students who were early school entrants. In the analysis of the data by early school and late school subjects, t-test values were computed exploring the difference between the two groups. It was found that on each section of the proficiency test, there was no significant difference between the mean scores of early school and late school subjects. The data indicated that mean scores of early school subjects on each of the subtests were about the same as those of late school subjects. This hypothesis was not rejected.

2. It was hypothesized that the mean score on the ninth grade Tennessee Statewide Proficiency Test of students who attended public school kindergarten will show no significant difference from that of students who did not attend kindergarten. It was found that twenty-three (19.17 percent) of the subjects attended a preschool program for five-year-olds operated by the Chattanooga public schools. The data further revealed that nine (7.5 percent) were early school age entrants, and fourteen (11.67 percent) were late school age entrants. In 1973, Tennessee established a public kindergarten program by state law, however, kindergarten attendance was not mandatory. At the present time, all school systems have kindergarten classes. Prior to 1973, there were two pilot classes operating in the Chattanooga public schools. This seems to explain the small number of subjects that attended public school kindergarten classes before the 1973-1974 school year. This hypothesis was not rejected.

3. It was hypothesized that the mean score on the ninth grade Tennessee Statewide Proficiency Test of students who participated in the Chapter I Program will show significant difference from students who did not participate in the Chapter I Program. There were sixty-five (54.17 percent) of the subjects that were Chapter I participants; fifty-five (45.83 percent) did not participate in the Chapter I Program. In the analysis of the data, the mean scores on each of the subtests were slightly higher for non-Chapter I participants than for those subjects that had participated in the Chapter I Program. A t test comparison of each section of the proficiency test indicated no significant difference between the two groups.

4. It was hypothesized that the mean score on the ninth grade Tennessee Statewide Proficiency Test of students absent from school 0-100 days will show significant difference from that of students not in attendance 101 or more days in grades one through eight. It was found that seventy-seven (64.16 percent) of the subjects were absent from school 0-101 days and that forty-three (35.83 percent) of them were not in attendance 101 or more days over an eight year period. The study reveals that the mean scores for each subtest were higher for students absent from school 0-100 days than for those absent from school 101 or more days. A t test comparison of each subtest indicated no significant difference between the two groups' performance on the proficiency test. This hypothesis was not rejected.

5. It was hypothesized that the mean score on the ninth grade Tennessee Statewide Proficiency Test of students that scored at the fiftieth percentile or above will show significant difference from that of students that scored below the fiftieth percentile on the California Achievement Test (Level 16). It was found that the mean scores for each of the subtests for students above the forty-ninth percentile on the California Achievement Test were higher than the mean scores on each section of the proficiency test for students that scored below the fiftieth percentile on the California Achievement Test. A t test comparison revealed no significant difference between students that scored above the forty-ninth percentile and those that scored below the fiftieth percentile on the California Achievement Test and their performance on the Tennessee Statewide Proficiency Test.

6. It was hypothesized that the mean score on the ninth grade Tennessee Statewide Proficiency Test will show no significant difference between early school entrants and late school entrants on the mathematics section of the 1982 Tennessee Statewide Proficiency Test. It was found that the mean score of the early school group meeting the requirement of 65 or above on the proficiency test was 84.69 and that 80.77 percent of the early school students met the required standard. The study revealed that the mean score for the late school group was 84.96 and that 76.49 percent of that group passed the mathematics section of the 1982 proficiency test. A chi square value of .3208 indicates no significant difference between early school entrants and late school entrants and their performance on the proficiency test. This hypothesis was not rejected.

7. It was hypothesized that the mean score on the ninth grade Tennessee Statewide Proficiency Test will show no significant difference between early school entrants and late school entrants on subtests of spelling, reading, and language. An analysis of the subtest scores of the 1982 Tennessee Statewide Proficiency Test of early and late school entrants revealed there are no significant differences between the two groups and their performance on the spelling, reading, and language areas of the test. Chi square values of .7948 for spelling, .0119 for reading, and .0010 for language indicated there are no significant differences between late school and early school entrants and their performance on the proficiency test. This hypothesis was not rejected.

8. It was hypothesized that the mean score on the ninth grade Tennessee Statewide Proficiency Test of males will show no significant difference from that of females. It was found that sixty-two (52.00 percent) of the subjects were late school entrants and that fifty-eight (48.00 percent) were early school entrants. The study revealed that the mean scores for each subtest for male and female subjects were about the same. Chi square analysis and t test comparison of each subtest of the proficiency test showed no significant difference between the two groups' performances on the proficiency test. This hypothesis was not rejected.

9. It was hypothesized that the mean score on the ninth grade Tennessee Statewide Proficiency Test of students that attended one to four different schools will show no significant difference from students who attended five or more different schools. It was found that ninety (75.00) percent of the students attended one to four different schools from grades one through nine and that thirty (25.00 percent) attended five or more different schools from grades one through nine. In the analysis of the data it was found that on each section of the proficiency test there were no significant differences between the mean scores of students that attended one to four different schools and those that attended five or more different schools from grades one through nine. The study showed that the mean scores for each subtest for the two groups were about the same. A t test comparison revealed no significant difference between students that attended one to four different schools and those that attended five or more different schools and their

performance on the proficiency test. In January 1974, the elementary schools of the City of Chattanooga were reorganized into primary units serving grades one through three and intermediate units serving grades four through six. A system of pairing and clustering was used in the reorganization. It seems that the organization of the districts' elementary schools requires at least three different schools from grades one through nine. This hypothesis was not rejected.

### Conclusion

The following conclusions can be drawn from the findings of this study. Each of the following conclusions is based on the use of the Tennessee Statewide Proficiency Test and is limited to one urban school district in the State of Tennessee.

1. School entrance age appears not to be a determiner of success or failure for students on the 1982 Tennessee Statewide Proficiency Test. This study indicates that members of the early school group and those of the late school group had similar performance on the proficiency test. The results of the data seem to support research cited by Hirst and Landsberger on pages 48 and 52 of this study. Supporters of late school age entrance may have to modify their beliefs regarding the performance of early school age entrance and school success as it relates to the 1982 Tennessee Statewide Proficiency Test.

2. Participation in the Chapter I Program seems not to be a determiner of successful performance or failure on the Tennessee Statewide Proficiency Test. The study seems to point out that participation

in a Chapter I Program for early school and late school age entrance is not an absolute prerequisite for success on the proficiency test. This seems to support data by Ornstein and Levine regarding permanent meaningful gains for Chapter I participants. Recent data indicate that compensatory educational programs similar to Chapter I can be successful in helping students make large gains, but frequently individuals making gains are dropped from the Chapter I Program in order to make space for lower achieving students. School records reveal that many youngsters enter secondary schools performing at a low level regardless of whether they have been in Chapter I or other compensatory programs.<sup>1</sup>

Longitudinal studies of Head Start, Follow Through, Chapter I, and other compensatory programs reveal also that early gains made by participants in these programs eventually level off after a few years of schooling and are equivalent to gains made by students that did not participate in Head Start, Follow Through, Chapter I, and other compensatory programs.

3. School attendance appears not to be an influential factor for students' successes or failures on the Tennessee Statewide Proficiency Test. The average school attendance of subjects of this study was 90 percent or above over an eight year period. While one could conclude that school attendance for early school age children and late school age children was about the same and not significant, it should be noted that

---

<sup>1</sup>Allan C. Ornstein and Daniel U. Levine, "Compensatory Education: Can It Be Successful? What Are the Issues?," NASSP, Vol. 65, No. 445 (May 1981), pp. 1-15.

school attendance seems not to be a determiner for success or failure on the Tennessee Statewide Proficiency Test.

4. The number of schools attended seems not to be a determiner of success or failure on the Tennessee Statewide Proficiency Test. This study indicates that the majority of the subjects attended three different schools. However, a number of students attended up to eight different schools from grades one through nine.

5. Scores at the fiftieth percentile or above on the California Achievement Test (Level 16) appear to be a determiner of success for early school and late school age entrance on the Tennessee Statewide Proficiency Test. The study seems to suggest that students that scored at the fiftieth percentile or above on the California Achievement Test will more likely meet the standards on each subtest of the Tennessee Statewide Proficiency Test. It further indicates prediction could be made at grade six regarding the persons that are most likely to meet the standards on the proficiency test.

#### Recommendations

As a result of this study, it is recommended that further research be conducted to explore areas as follows:

1. Additional research should be conducted relative to the relationship between the Tennessee Statewide Proficiency Test and such factors as school attendance, Chapter I participants, number of schools attended, public kindergarten experience, and sixth grade achievement test scores.

2. Further studies should be conducted on the level of expectation for success on the Tennessee Statewide Proficiency Test. Additionally, these studies should examine factors such as the ones noted above.

3. Studies are needed to determine if minimum competency testing is a valuable technique for improving the quality of instruction. Some supporters of the competency testing movement indicate that high-quality programs of minimum competency testing are integral to the survival of public schooling. Such programs are in operation in Detroit and other school districts.

4. Studies are needed to determine what effects minimum competency testing has on the student, teacher, public perceptions of schooling, and school curriculum. The competency testing program will have different effects on students, teachers, and the general public. Minimum competency testing will not meet the demands of the total public nor will the movement upset all teachers and students. What effects it has on each group could be determined by follow-up research studies.

4. Research is needed to determine if school systems can assure the curricular and instructional validity of the competency tests. Curricular validity is a measure of how well test items represent the objective of the curriculum. Instructional validity is concerned with whether the stated objectives are put into topics and taught in the classroom.

Data indicate that competency tests should measure what the school has taught. Lawsuits have been filed in Florida, North Carolina and other states regarding curricular and instructional validity.

## BIBLIOGRAPHY

## BIBLIOGRAPHY

- Abramowitz, Elizabeth A. "Educational Policy Considerations of Competency-Based Testing." The Journal of Negro Education. Volume 59. Number 3. Summer, 1980.
- Abrams, Linda Y. "The Kindergarten to First Grade Transition: Terrific or Traumatic." Tennessee Teacher. Volume 49. Number 4. November and December, 1981.
- Ahr, Edward A. "Early School Admission: One District's Experience." Elementary School Journal. Volume 67. Number 5. 1967.
- Alschuler, Alfred and Flinchum, Betty. "Raising Minimum Competencies." Phi Delta Kappan. Volume 60. Number 9. May, 1979.
- Austin, G. R., and Postlethwaite, T. N. "Cognitive Results Based on Different Ages of Entry to School: A Comparative Study." Journal of Educational Psychology. Volume 65. Number 6. December, 1974.
- Baer, Clyde J. "The School Progress and Adjustment of Underage and Overage Students." Journal of Educational Psychology. Volume 49. Number 1. August, 1958.
- Bloom, Benjamin. Human Characteristics and School Learning. New York: McGraw-Hill Book Company. 1976.
- Bloom, Benjamin. Stability and Change in Human Character. New York: John Wiley and Sons, Inc.
- Braga, J. L. "Early Admission: Opinion versus Evidence." The Elementary School Journal. Volume 72. Number 1. October, 1971.
- Brandt, Ron. "Conflicting Views on Competency Testing in Florida." Educational Leadership. Volume 36. Number 2. November, 1978.
- Brickell. "Seven Key Notes on Minimum Competency Testing." Phi Delta Kappan. Volume 59. Number 9. May, 1978.
- Brodinsky, Ben. "Back to the Basics: The Movement and Its Meaning." Phi Delta Kappan. Volume 58. Number 7. March, 1977.
- Brodinsky, Ben. "Something Happened: Education in the Seventies." Phi Delta Kappan. Volume 61. Number 4. December, 1979.
- Chall, Jeanne S. "Minimum Competency in Reading: An Informal Survey of the States." Phi Delta Kappan. Volume 60. Number 5. January, 1979.

- Clark, Kenneth. "The High School Diploma--Blessing or Curse?" NASSP Bulletin. Volume 59. Number 393. October, 1975.
- Cone, H. R. "Brookline Admits Them Early." Nation's Schools. Volume 55. Number 3. March, 1955.
- Covington, Jimmie. "Minimum Competency Testing of Students: A National Issue." Tennessee Teacher. Volume 46. Number 8. April, 1979.
- Davis, Glen B., Trimble, Scott C., and Vincent, Denny R. "Does Ages of Entrance Affect School Achievement?" The Elementary School Journal. Volume 80. Number 3. January, 1980.
- Davis, H. M. "Don't Push Your School Beginners." Parent's Magazine. Volume 27. Number 10. October, 1952.
- Dobbs, Virginia and Neville. "The Effects of Non-Promotion on the Achievement of Groups Matched from Retained First Graders and Promoted Second Graders." The Journal of Education Research. Volume 60. Number 10. July-August, 1967.
- Donofrio, Anthony F. "Grade Repetition: Therapy of Choice." Journal of Learning Disabilities. Volume 10. Number 6. June/July, 1977.
- Gredlen, Gilbert. "A Look at Some Important Factors in Assessing Readiness for School." Journal of Learning Disabilities. Volume 11. Number 5. May, 1978.
- Fletcher, Marcella. "How to Beat the Competency Test and Still Teach." Tennessee Teacher. Volume 48. Number 5. January, 1981.
- Floyd, Otis. "Proficiency Testing Carrying the Basics Forward." Tennessee Teacher. Volume 46. Number 4. November-December, 1978.
- Foshay, Arthur. "What's Basic about the Curriculum." Language Arts. Volume 54. Number 6. September, 1977.
- Furst, Lyndom G., and Cruise, Robert J. "Michigan Superintendents Look at Compulsory Attendance Laws." Phi Delta Kappan: Volume 61. Number 7. March, 1980.
- Gay, L. R. Educational Evaluation and Measurement: Competencies for Analysis and Application. Columbus, Ohio. C. E. Merrill Co. 1980.
- Glasser, W. J. The Effect of School Failure on the Life of a Child. Washington, D.C. National Education Association. 1971.
- Green, Donald R. and Simmons, Sadie U. "Chronological Age and School Entrance." Elementary School Journal. Volume 63. Number 1. October, 1962.

- Halliwell, Joseph W., and Belle, W. Stein. "A Comparison of Early and Late School Starters in Reading Related and Non-Reading Related Areas in Fourth and Fifth Graders." Elementary English. Volume 41. Number 10. October, 1964.
- Halliwell, Joseph. "Reviewing the Reviews on Entrance Age and School Success." The Journal of Educational Research. Volume 59. Number 9. May-June, 1966.
- Hansard, Roger. "Project Voice: A Study of Proficiency Testing." Catalyst for Change. Volume 12. Number 1. Fall, 1982.
- Hart, Gary K. "The California Pupil Proficiency Law as Viewed by Its Author." Phi Delta Kappan. Volume 59. Number 9. May, 1978.
- Hedges, William D. "At What Age Should Children Enter First Grade: A Comprehensive Review of the Research." ERIC. March, 1978.
- Hirst, William E. "Entrance Age--A Predictor Variable for Academic Success." The Reading Teacher. Volume 23. Number 6. March, 1970.
- Huff, Marylyn. "A Board Member Looks at Requiring Competencies for Graduation." Educational Leadership. Volume 35. Number 2. November, 1977.
- Hunt, John McVicker. "The Psychological Basis for Using Preschool Enrichment as an Antidote for Culture Deprivation." Merrill Palmer Quarterly. Volume 10. Number 3. July, 1964.
- Ilika, Joseph. "Age of Entrance into the First Grade as Related to Rate of Scholastic Achievement." Paper Presented at the American Educational Research Association, Los Angeles, 1969. ERIC Document EDO28843.
- Johnston, A. M. "School Entrance Age." Childhood Education. Volume 40. Number 7. March, 1964.
- Kerlinger, Fred N. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston. 1967.
- King, I. B. "Effect of Age of Entrance into Grade 1 upon Achievement in Elementary School." Elementary School Journal. Volume 55. Number 6. February, 1955.
- King, E. W., and Kerber, A. The Sociology of Early Childhood Education. New York, New York: American Book Company. 1968.
- Kinsinger, Bertha. "The Junior Primary Class: A Successful Transition between Kindergarten and First Grade." Tennessee Teacher. Volume 49. Number 8. April, 1982.

- Lads, Harold. "Grades Standardizing the Unstandardized Standard." Phi Delta Kappan. Volume LVI. Number 3. November, 1974.
- Landsberger, Betty H. "Early Childhood Education in North Carolina." Volume 53. Number 1. November-December, 1973.
- Lavin, David E. The Prediction of Academic Performance: A Theoretical Analysis and Review of Research. New York: Russell Sage Foundation. 1965.
- Legislative Research Commission. School Entrance Age. Research Publication. Number 54. Frankfort: Commonwealth of Kentucky. 1958.
- Madaus, George F. "NIE Clarification Hearing: The Negative Team's Case." Phi Delta Kappan. Volume 63. Number 2. October, 1981.
- McCarthy, Martha. "The Application of Competency Testing Mandates to Handicapped Children." Harvard Educational Review. Volume 53. Number 2. May, 1983.
- McClellan, Louvella. "Kindergarten-First Grade Continuity." Tennessee Teacher. Volume 49. Number 8. April, 1982.
- McClung, Merle Steve. "Are Competency Testing Programs Fair? Legal?" Phi Delta Kappan. Volume 59. Number 9. May, 1978.
- Mecklenburger, Jim. "Minimum Competency Testing: The Bad Penny Again." Phi Delta Kappan. Volume 59. Number 10. June, 1978.
- "Minimum Competency Face Second Court Test." Newsnotes. Phi Delta Kappan. Volume 60. Number 6. February, 1979.
- Morphett, Mabel N., and Washburne, Carleton. "When Should Children Begin to Read." Elementary School Journal. Volume 31. No. 7. March, 1931.
- Moore, Raymond S., and Moore, Dennis R. "How Early Should They Go to School?" Childhood Education. Volume 50. Number 1.
- Nance, "Bus" W. R. "How Fares Competency Development, in Oregon?" Educational Leadership. Volume 35. Number 2. November, 1977.
- Neill, Shirley Boes. "A Summary of Issues in the Minimum Competency Movement." Phi Delta Kappan. Volume 60. Number 6. February, 1979.
- Olson, Willard. "Experiences for Growing." NEA Journal. Volume 36. Number 7. October, 1947.

- Ornstein, Allan C., and Lenine, David U. "Compensatory Education: Can It Be Successful? What Are the Issues?" National Association of Secondary School Principals. Volume 65. Number 445. May, 1981.
- Ornstein, Allan, and Talmage, Harriet. "The Promise and Politics of Accountability." NASSP Bulletin. Volume 58. Number 380. March, 1980.
- Piaget, Jean. "Development and Learning." In Ripple, R. E., and Rockcastle, V. A., Editors. Piaget Rediscovered. Ithica, New York: Cornell University. 1964.
- Pearson, Eugene L. Tennessee Education 1780-1962. Nashville: Tennessee State Department of Education. 1963.
- Pipho, Chris. "Minimum Competency Testing in 1978: A Look at State Standards." Phi Delta Kappan. Volume 59. Number 9. May, 1978.
- Piphi, Chris. "The NAEP Conference on Minimum Competency Testing." Phi Delta Kappan. Volume 61. Number 2. October, 1979.
- Pipho, Chris. "Minimal Competency Testing: A Look at State Standards." Educational Leadership. Volume 34. Number 7. April, 1977.
- Pipho, Chris. "Stateline: Early In/Early Out Plans Proposed in Three States." Phi Delta Kappan. Volume 54. Number 8. April, 1983.
- Popham, W. James. "The Case for Minimum Competency Testing." Phi Delta Kappan. Volume 63. Number 2. October 1981.
- Popham, W. James, and Rankin, Stuart C. "Minimum Competency Tests Spur Instructional Improvement." Phi Delta Kappan. Volume 62. Number 9. May, 1981.
- Porter, John W. "The Accountability Story in Michigan." Phi Delta Kappan. Volume 54. Number 2. October, 1972.
- Riegle, Rodney P. and Lovell, Ned B. Minimum Competency Testing. Bloomington, Indiana: Phi Delta Kappan Educational Foundation, 1980.
- Rohwer, William D. "Prime Time for Education: Early Childhood or Adolescence?" Harvard Educational Review. Volume 41. Number 3. August, 1971.
- Sandberg, John H. "K-12 Competency-Based Education Comes to Pennsylvania." Phi Delta Kappan. Volume 61. Number 2. October, 1979.
- Saretsky, Gary. "The Strangely Significant Case of Peter Doe." Phi Delta Kappan. Volume 54. Number 9. May, 1973.

Strike, Kenneth. "What Is a 'Competent' High School Graduate?" Educational Leadership. Volume 35. Number 2. November, 1977.

Tennessee Code Annotated. Title 49. Volume 9.

Tennessee State Testing and Evaluation Center. Tennessee Looks at Its Schools: 1977-78. Knoxville: State Testing and Evaluation. 1978.

Tennessee Department of Education. "Final Summary." 1978, 1979, 1980, 1981, 1982.

Tennessee Education. "Developmental Age and Readiness." Tennessee Department of Education. Volume 9. Number 4. April, 1981.

Tennessee Education. Tennessee Department of Education. Volume 7. Number 8. October, 1979.

Thurston, Paul, and House, Ernest R. "The NIE Adversary Hearing on Minimum Competency Testing." Phi Delta Kappan. Volume 63. Number 2. October, 1981.

Turlington, Ralph D. "Florida's Testing Program: A Firm Foundation for Improvement." Phi Delta Kappan. Volume 63. Number 3. November, 1981.

Turlington, Ralph D. "Good News from Florida: Our Minimum Competency Program Is Working." Volume 60. Number 9. May, 1979.

Til, William Van, Brownson, William E., Hamm, Russell L. "Back to Basics--With a Difference." Educational Leadership. Volume 33. Number 1. October, 1975.

Williams, Robert L., and Horace Mitchell. "The Testing Game." Negro Educational Review. Volume XXVIII. Number 3 and 4. July-October, 1977.

Wise, Arthur. "Minimum Competency Testing: Another Case of Hyper-Rationalization." Phi Delta Kappan. Volume 59. Number 9. May, 1978.

Weikart, David. The Ypsilanti Perry Preschool Years and Longitudinal Results Through Fourth Grade. Ypsilanti, MI: High/Scope Educational Research Foundation. 1979.

Woodruff, Bobby J. "A Comparison of Grade Retention and of Basic Skills Test Scores of Pupils Who Did and Who Did Not Attend Kindergarten." Mid-South Educational Research Association Annual Meeting. New Orleans. November, 1980.

## APPENDIXES

APPENDIX A

COLLECTION DATA FORM

## COLLECTION DATA FORM

1. ID Number: \_\_\_\_\_
2. Sex: ☐ Male ☐ Female
3. The student is a:
- ☐ Early School Entry - Was six years of age between June, 1973, and October 31, 1973.
- ☐ Late School Entry - Was six years of age between November 1, 1972, and May 31, 1973.
4. Is the student:
- ☐ Caucasian ☐ Mexican/American Chicano
- ☐ Black ☐ Puerto Rican American
- ☐ American Indian ☐ Others
- ☐ Oriental
5. Does the student's record indicate participation in:
- ☐ Headstart ☐ Private Kindergarten
- ☐ Public Kindergarten
6. Does the student's record indicate participation in:
- ☐ Title I--Reading Program ☐ Follow Through Program
- ☐ ESEA Reading Program
7. Please enter student's Percentile Score from the California Achievement Test for Grade:

| Subjects    | 6th |
|-------------|-----|
| Reading     |     |
| Language    |     |
| Spelling    |     |
| Mathematics |     |

8. Please enter student's 1982 spring statewide Proficiency Test Scores:

| Subjects    | Score |
|-------------|-------|
| Reading     |       |
| Language    |       |
| Spelling    |       |
| Mathematics |       |

9. Please enter number of days absent:

|              |              |
|--------------|--------------|
| ____ 1973-74 | ____ 1978-79 |
| ____ 1974-75 | ____ 1979-80 |
| ____ 1975-76 | ____ 1980-81 |
| ____ 1976-77 | ____ 1981-82 |
| ____ 1977-78 |              |

10. Please enter schools attended:      Grades      Dates Attended

|          |       |       |
|----------|-------|-------|
| 1. _____ | _____ | _____ |
| 2. _____ | _____ | _____ |
| 3. _____ | _____ | _____ |
| 4. _____ | _____ | _____ |
| 5. _____ | _____ | _____ |
| 6. _____ | _____ | _____ |

## APPENDIX B

### SUMMARY TABLES OF DATA COLLECTED

Table 15  
Number of Early School Entrants Meeting Four, Three, Two, One and None  
of the Standards on the 1982 Tennessee Statewide Proficiency Test

| Subject Passing                   | N = 52                |         | N = 68               |         |
|-----------------------------------|-----------------------|---------|----------------------|---------|
|                                   | Early School Entrants |         | Late School Entrants |         |
|                                   | Number                | Percent | Number               | Percent |
| All sections of the test          | 26                    | 50.00   | 34                   | 50.00   |
| <u>Three</u> sections of the test | 8                     | 15.38   | 12                   | 17.64   |
| <u>Two</u> sections of the test   | 8                     | 15.38   | 12                   | 17.64   |
| <u>One</u> section of the test    | 8                     | 15.38   | 6                    | 8.82    |
| <u>No</u> section of the test     | 2                     | 3.85    | 4                    | 5.82    |

Table 16

Early School and Late School Sample Subjects Meeting Standards and Not Meeting Standards on the 1982 Tennessee Statewide Proficiency Test

| 1982<br>Tennessee<br>Statewide<br>Proficiency<br>Test | Early School Entrants<br>N = 52 |       |       |      |       |       | Late School Entrants<br>N = 68 |       |       |      |       |       |   |       |
|-------------------------------------------------------|---------------------------------|-------|-------|------|-------|-------|--------------------------------|-------|-------|------|-------|-------|---|-------|
|                                                       | Pass                            |       |       | Fail |       |       | Pass                           |       |       | Fail |       |       |   |       |
|                                                       | N                               | %     | MS    | N    | %     | MS    | N                              | %     | MS    | N    | %     | MS    |   |       |
|                                                       |                                 |       |       |      |       |       |                                |       |       |      |       |       |   |       |
| Reading                                               | 37                              | 71.15 | 86.66 | 15   | 28.85 | 62.46 | 49                             | 79.06 | 85.65 | 19   | 17.94 | 59.00 | 1 | .0119 |
| Language                                              | 31                              | 59.62 | 86.47 | 21   | 40.38 | 61.71 | 42                             | 61.76 | 85.31 | 26   | 38.24 | 56.31 | 1 | .0010 |
| Spelling                                              | 42                              | 80.77 | 90.57 | 10   | 19.23 | 56.70 | 59                             | 86.76 | 90.44 | 09   | 13.24 | 51.89 | 1 | .7948 |
| Mathematics                                           | 42                              | 80.77 | 84.69 | 10   | 19.23 | 56.10 | 52                             | 76.47 | 84.96 | 16   | 23.53 | 51.94 | 1 | .3208 |

Table 17

Early School and Late School Subjects Meeting the Standards or Not Meeting the Standards  
for the Objectives of the Mathematics Subtest on the  
1982 Tennessee Statewide Proficiency Test

| Objective<br>Number | Objective Description           | Early School Entrants<br>N = 52 |       |      |       | Late School Entrants<br>N = 68 |        |      |       | $\chi^2$<br>Values |
|---------------------|---------------------------------|---------------------------------|-------|------|-------|--------------------------------|--------|------|-------|--------------------|
|                     |                                 | Pass                            | %     | Fail | %     | Pass                           | %      | Fail | %     |                    |
| 01                  | Addition of whole numbers       | 51                              | 98.08 | 1    | 1.92  | 68                             | 100.00 | 0    | 0     | 1.3187             |
| 05                  | Subtraction of fractions        | 46                              | 88.46 | 6    | 11.54 | 45                             | 66.18  | 23   | 33.82 | 7.9851             |
| 07                  | Multiplication of fractions     | 44                              | 84.62 | 8    | 15.38 | 52                             | 76.47  | 16   | 23.53 | 1.2217             |
| 08                  | Addition of decimal numbers     | 51                              | 98.08 | 1    | 1.92  | 67                             | 98.53  | 1    | 1.47  | .0368              |
| 09                  | Subtraction of decimal numbers  | 51                              | 98.07 | 1    | 1.92  | 64                             | 94.12  | 4    | 5.88  | 1.1568             |
| 11                  | Divide decimal by whole numbers | 46                              | 88.46 | 6    | 11.54 | 58                             | 85.29  | 18   | 14.71 | .2558              |
| 13                  | Place value of decimals         | 49                              | 94.23 | 3    | 5.77  | 59                             | 86.76  | 9    | 13.24 | .9522              |
| 14                  | Decimal fraction to percent     | 38                              | 73.08 | 14   | 26.92 | 53                             | 77.94  | 15   | 22.06 | .3804              |
| 15                  | Percent of a number             | 33                              | 63.46 | 19   | 36.54 | 42                             | 61.76  | 26   | 38.24 | .0362              |
| 16                  | Division of whole numbers       | 45                              | 86.54 | 7    | 13.46 | 58                             | 85.29  | 10   | 14.71 | .0375              |
| 18                  | Decimal equivalency             | 34                              | 65.38 | 18   | 34.62 | 45                             | 66.18  | 23   | 33.82 | .0082              |
| 20                  | Finding perimeter               | 31                              | 59.62 | 21   | 40.38 | 40                             | 58.82  | 28   | 41.18 | .0076              |
| 21                  | Finding area                    | 42                              | 80.77 | 10   | 19.23 | 53                             | 77.94  | 15   | 22.06 | .1429              |
| 23                  | Linear measurement metric       | 43                              | 82.69 | 9    | 17.31 | 49                             | 72.06  | 19   | 27.94 | 1.8625             |
| 24                  | Writing numeral for word name   | 50                              | 96.15 | 2    | 3.85  | 62                             | 91.18  | 6    | 8.82  | 1.1732             |
| 25                  | Rounding off                    | 38                              | 73.08 | 14   | 26.92 | 51                             | 75.00  | 17   | 25.00 | .0569              |
| 26                  | Metric equivalency              | 32                              | 61.54 | 20   | 36.46 | 31                             | 45.59  | 37   | 54.41 | 3.0062             |
| 28                  | Compare decimal numbers         | 24                              | 46.15 | 28   | 53.85 | 35                             | 51.47  | 33   | 48.53 | .5941              |
| 29                  | Determining average             | 38                              | 73.08 | 14   | 26.92 | 45                             | 66.18  | 23   | 33.82 | .6579              |

Table 18

Early School and Late School Subjects Meeting the Standards or Not Meeting the Standards  
for the Objectives of the Spelling Subtest on the  
1982 Tennessee Statewide Proficiency Test

| Objective<br>Number | Objective Description        | Early School Entrants<br>N = 52 |       |      | Late School Entrants<br>N = 68 |       |      | $\chi^2$<br>Values |
|---------------------|------------------------------|---------------------------------|-------|------|--------------------------------|-------|------|--------------------|
|                     |                              | Pass                            | %     | Fail | Pass                           | %     | Fail | df                 |
| 31                  | Base word                    | 45                              | 86.54 | 7    | 57                             | 83.82 | 11   | 1                  |
| 32                  | Phonetic substitution        | 49                              | 94.23 | 3    | 66                             | 97.06 | 2    | 1                  |
| 33                  | Missing letter               | 44                              | 84.62 | 8    | 62                             | 91.18 | 6    | 1                  |
| 35                  | Contractions                 | 49                              | 94.23 | 3    | 63                             | 92.65 | 5    | 1                  |
| 36                  | Doubling final consonant     | 37                              | 71.15 | 15   | 47                             | 69.12 | 21   | 1                  |
| 38                  | Changing Y to I or Keeping Y | 39                              | 75.00 | 13   | 55                             | 80.88 | 13   | 1                  |

Table 19

Early School and Late School Subjects Meeting the Standards or Not Meeting the Standards  
for the Objectives of the Language Subtest on the  
1982 Tennessee Statewide Proficiency Test

| Objective<br>Number | Objective Description                 | Early School Entrants<br>N = 52 |       |      |       | Late School Entrants<br>N = 68 |       |      |       | $\chi^2$<br>Values |
|---------------------|---------------------------------------|---------------------------------|-------|------|-------|--------------------------------|-------|------|-------|--------------------|
|                     |                                       | Pass                            | %     | Fail | %     | Pass                           | %     | Fail | %     |                    |
| 42                  | Commas in phrases in series           | 48                              | 92.31 | 4    | 7.69  | 61                             | 89.71 | 7    | 10.29 | 1 .2396            |
| 43                  | Sentence punctuation                  | 47                              | 90.38 | 5    | 9.62  | 53                             | 77.94 | 15   | 22.06 | 1 .0329            |
| 44                  | Usage of irregular verbs              | 39                              | 75.00 | 13   | 25.00 | 46                             | 67.65 | 22   | 32.35 | 1 .7711            |
| 45                  | Noun usage                            | 37                              | 71.15 | 15   | 28.85 | 49                             | 72.06 | 19   | 27.94 | 1 .0119            |
| 47                  | Parts of speech                       | 37                              | 71.15 | 15   | 28.85 | 55                             | 80.88 | 13   | 19.12 | 1 1.5590           |
| 48                  | Subject-predicate agreement           |                                 |       |      |       |                                |       |      |       |                    |
|                     | inverted order                        | 27                              | 51.92 | 25   | 48.08 | 33                             | 48.53 | 35   | 51.47 | 1 .1357            |
| 51                  | Simple subjects and predicates        | 32                              | 61.54 | 20   | 38.46 | 46                             | 67.65 | 22   | 32.35 | 1 .4833            |
| 52                  | Identifying complete sentences        | 51                              | 98.08 | 1    | 1.92  | 65                             | 95.59 | 3    | 4.41  | 1 .5664            |
| 54                  | Comma in dates and addresses          | 39                              | 75.00 | 13   | 25.00 | 45                             | 66.18 | 23   | 33.82 | 1 1.0924           |
| 55                  | Quotations                            | 35                              | 67.31 | 17   | 32.69 | 43                             | 63.24 | 25   | 36.76 | 1 .6546            |
| 58                  | Personal pronouns                     | 28                              | 53.85 | 24   | 46.15 | 15                             | 22.06 | 53   | 77.94 | 1 .0000            |
| 59                  | Adjectives or irregular<br>adjectives | 42                              | 80.77 | 10   | 19.23 | 50                             | 73.53 | 18   | 24.73 | 1 .8634            |
| 60                  | Verbs principal parts regular         | 48                              | 92.31 | 4    | 7.69  | 62                             | 91.18 | 6    | 8.82  | 1 .0494            |
| 61                  | Verbs troublesome pairs               | 36                              | 69.23 | 16   | 30.77 | 45                             | 66.18 | 23   | 33.82 | 1 .1253            |

Table 20

Early School and Late School Subjects Meeting the Standards or Not Meeting the Standards  
for the Objectives of the Reading Subtest on the  
1982 Tennessee Statewide Proficiency Test

| Objective<br>Number | Objective Description   | Early School Entrants<br>N = 52 |       |      |       | Late School Entrants<br>N = 68 |       |      |       | df | $\chi^2$<br>Values |
|---------------------|-------------------------|---------------------------------|-------|------|-------|--------------------------------|-------|------|-------|----|--------------------|
|                     |                         | Pass                            | %     | Fail | %     | Pass                           | %     | Fail | %     |    |                    |
| 63                  | Synonym in context      | 47                              | 90.38 | 5    | 9.62  | 60                             | 88.24 | 8    | 11.76 | 1  | .1409              |
| 64                  | Antonym                 | 40                              | 76.92 | 12   | 20.07 | 50                             | 73.53 | 18   | 26.47 | 1  | .1810              |
| 65                  | Words in context        | 51                              | 98.08 | 1    | 1.92  | 58                             | 85.29 | 10   | 14.71 | 1  | 5.9631             |
| 68                  | Story detail            | 41                              | 78.85 | 11   | 21.15 | 58                             | 85.29 | 10   | 14.71 | 1  | .8486              |
| 69                  | Sequence of events      | 22                              | 42.31 | 30   | 57.69 | 24                             | 35.29 | 44   | 64.71 | 1  | .6132              |
| 70                  | Main idea               | 40                              | 76.92 | 12   | 23.08 | 43                             | 63.24 | 25   | 36.76 | 1  | 2.5994             |
| 71                  | Inference or conclusion | 39                              | 75.00 | 13   | 25.00 | 45                             | 66.18 | 23   | 33.82 | 1  | 1.0924             |
| 72                  | Cause and effect        | 41                              | 78.85 | 11   | 21.15 | 61                             | 89.71 | 7    | 10.29 | 1  | 2.7256             |
| 76                  | Fact or opinion         | 37                              | 71.15 | 15   | 28.85 | 39                             | 57.35 | 29   | 42.65 | 1  | 2.4168             |
| 79                  | Suffixes                | 47                              | 90.38 | 5    | 9.62  | 64                             | 94.12 | 4    | 5.88  | 1  | .5919              |
| 80                  | Prefixes                | 42                              | 80.77 | 10   | 19.23 | 60                             | 88.24 | 8    | 11.76 | 1  | 1.2883             |

Table 21

School Attendance of Early School and Late School Sample Subjects  
1972-1981

| Days Absent | Early School Entrants<br>N = 52 |         | Late School Entrants<br>N = 68 |         |
|-------------|---------------------------------|---------|--------------------------------|---------|
|             | N                               | Percent | N                              | Percent |
| 0-50        | 10                              | 19.23   | 26                             | 38.24   |
| 51-100      | 21                              | 40.38   | 20                             | 29.41   |
| 101-200     | 14                              | 26.92   | 14                             | 20.59   |
| 201-Above   | 07                              | 13.46   | 8                              | 11.76   |

Table 22  
Performance of Late School Entrants on Each of the Subtests Relative  
to Days Absent from School 1973 to 1982  
(N = 68)

| Days<br>Absent | Mathematics |       |      |       | Spelling |       |      |       | Language |       |      |       | Reading |       |      |       |
|----------------|-------------|-------|------|-------|----------|-------|------|-------|----------|-------|------|-------|---------|-------|------|-------|
|                | Pass        | MS    | Fail | MS    | Pass     | MS    | Fail | MS    | Pass     | MS    | Fail | MS    | Pass    | MS    | Fail | MS    |
| 0-50           | 19          | 85.89 | 7    | 46.86 | 22       | 91.36 | 4    | 57.27 | 14       | 84.29 | 12   | 59.50 | 19      | 83.21 | 7    | 60.85 |
| 51-100         | 16          | 88.00 | 4    | 58.00 | 19       | 89.42 | 1    | 71.00 | 14       | 86.57 | 6    | 62.33 | 16      | 87.62 | 4    | 64.75 |
| 101-200        | 11          | 87.73 | 3    | 59.33 | 12       | 91.08 | 2    | 46.00 | 8        | 95.25 | 6    | 46.50 | 9       | 87.67 | 5    | 59.00 |
| 201-Above      | 6           | 82.33 | 2    | 52.00 | 6        | 90.33 | 2    | 37.50 | 6        | 83.67 | 2    | 45.00 | 5       | 81.80 | 3    | 50.00 |



Table 24  
Number of Early School and Late School Entrants That Scored Above and Below the 50th Percentile  
on the California Achievement Test (Level 16)

| Subtest     | Above 50th Percentile          |       |                               |       | Below 50th Percentile          |       |                               |       | df | $\chi^2$ Values |
|-------------|--------------------------------|-------|-------------------------------|-------|--------------------------------|-------|-------------------------------|-------|----|-----------------|
|             | Early School Entrant<br>N = 52 |       | Late School Entrant<br>N = 68 |       | Early School Entrant<br>N = 52 |       | Late School Entrant<br>N = 68 |       |    |                 |
|             | <u>N</u>                       | %     | <u>N</u>                      | %     | <u>N</u>                       | %     | <u>N</u>                      | %     |    |                 |
| Reading     | 15                             | 28.85 | 21                            | 30.88 | 37                             | 71.15 | 47                            | 69.12 | 1  | .0582           |
| Language    | 23                             | 44.23 | 27                            | 39.71 | 29                             | 55.77 | 41                            | 60.29 | 1  | .2482           |
| Spelling    | 23                             | 44.23 | 33                            | 48.53 | 29                             | 55.77 | 35                            | 51.47 | 1  | .2188           |
| Mathematics | 21                             | 40.38 | 36                            | 52.94 | 31                             | 59.62 | 32                            | 47.06 | 1  | 2.4822          |

Table 25

Performance of Male and Female Early School Entrants  
on the 1982 Tennessee Statewide Proficiency Test

| 1982<br>Tennessee<br>Statewide<br>Proficiency<br>Test | Male<br>N = 31 |       |       |      |       |       | Female<br>N = 21 |       |       |      |       |       | df | $\chi^2$ Value |
|-------------------------------------------------------|----------------|-------|-------|------|-------|-------|------------------|-------|-------|------|-------|-------|----|----------------|
|                                                       | Pass           |       |       | Fail |       |       | Pass             |       |       | Fail |       |       |    |                |
|                                                       | N              | %     | MS    | N    | %     | MS    | N                | %     | MS    | N    | %     | MS    |    |                |
|                                                       |                |       |       |      |       |       |                  |       |       |      |       |       |    |                |
| Reading                                               | 24             | 77.42 | 85.00 | 7    | 22.58 | 62.00 | 13               | 61.90 | 87.08 | 8    | 38.10 | 62.88 | 1  | 1.4682         |
| Language                                              | 20             | 64.51 | 84.90 | 11   | 35.48 | 61.00 | 11               | 52.38 | 89.27 | 10   | 47.62 | 62.50 | 1  | .7658          |
| Spelling                                              | 25             | 80.65 | 90.44 | 6    | 19.35 | 58.50 | 17               | 80.95 | 90.76 | 4    | 19.05 | 54.00 | 1  | .0008          |
| Mathematics                                           | 26             | 83.87 | 84.96 | 5    | 16.13 | 60.80 | 15               | 71.43 | 85.33 | 6    | 28.57 | 54.17 | 1  | 1.1620         |

Table 26

Performance of Male and Female Late School Entrants  
on the 1982 Tennessee Statewide Proficiency Test

| 1982<br>Tennessee<br>Statewide<br>Proficiency<br>Test | Male<br>N = 27 |       |       |    | Female<br>N = 41 |       |      |       | df    | $\chi^2$ Value |       |       |   |        |
|-------------------------------------------------------|----------------|-------|-------|----|------------------|-------|------|-------|-------|----------------|-------|-------|---|--------|
|                                                       | Pass           |       | Fail  |    | Pass             |       | Fail |       |       |                |       |       |   |        |
|                                                       | N              | %     | N     | %  | N                | %     | N    | %     |       |                |       |       |   |        |
|                                                       | MS             |       | MS    |    | MS               |       | MS   |       |       |                |       |       |   |        |
| Reading                                               | 18             | 66.67 | 85.94 | 9  | 33.33            | 62.22 | 30   | 73.17 | 85.27 | 11             | 26.83 | 56.73 | 1 | .3317  |
| Language                                              | 15             | 55.56 | 91.40 | 12 | 44.44            | 59.75 | 27   | 65.85 | 84.96 | 14             | 34.15 | 53.36 | 1 | .7311  |
| Spelling                                              | 23             | 85.19 | 88.39 | 4  | 14.81            | 54.25 | 36   | 87.80 | 91.75 | 5              | 12.20 | 50.00 | 1 | .0973  |
| Mathematics                                           | 23             | 85.19 | 85.22 | 4  | 14.81            | 50.50 | 29   | 70.73 | 84.76 | 12             | 29.27 | 52.42 | 1 | 1.8901 |

Table 27  
t Test Comparison of Males and Females on the 1982 Tennessee Statewide Proficiency Test

|             | Males    |           | Females  |           | <u>t</u> | <u>df</u> | Significance |
|-------------|----------|-----------|----------|-----------|----------|-----------|--------------|
|             | <u>N</u> | <u>MS</u> | <u>N</u> | <u>MS</u> |          |           |              |
| Reading     | 58       | 79.00     | 62       | 77.69     | .011     | 118       | .05          |
| Language    | 58       | 75.43     | 62       | 74.97     | .009     | 118       | .05          |
| Spelling    | 58       | 83.83     | 62       | 85.68     | .039     | 118       | .05          |
| Mathematics | 58       | 80.60     | 62       | 75.68     | .096     | 118       | .05          |

Table 28  
Number of Schools Attended by Early School and Late School Entrants

| Number of<br>Schools Attended | Early School Entrants<br>N = 52 |         | Late School Entrants<br>N = 68 |         |
|-------------------------------|---------------------------------|---------|--------------------------------|---------|
|                               | Number                          | Percent | Number                         | Percent |
| One-Two                       | 5                               | 9.62    | 6                              | 8.82    |
| Three-Four                    | 37                              | 71.15   | 42                             | 61.76   |
| Five-Six                      | 8                               | 15.38   | 15                             | 22.06   |
| Seven-Eight                   | 2                               | 3.85    | 5                              | 7.35    |

Table 29  
Number of Schools Attended by Male and Female Early School Entrants and Late School Entrants  
and the Number of Schools Attended from 1973-1982

| Number of<br>Schools Attended | Early School Entrants |       |                  |       | Late School Entrants |       |                  |       |
|-------------------------------|-----------------------|-------|------------------|-------|----------------------|-------|------------------|-------|
|                               | Male<br>N = 32        |       | Female<br>N = 20 |       | Male<br>N = 28       |       | Female<br>N = 40 |       |
|                               |                       |       |                  |       |                      |       |                  |       |
|                               | N                     | %     | N                | %     | N                    | %     | N                | %     |
| One-Two                       | 3                     | 9.37  | 2                | 10.00 | 4                    | 14.29 | 2                | 5.00  |
| Three-Four                    | 20                    | 62.50 | 17               | 85.00 | 18                   | 64.28 | 24               | 60.00 |
| Five-Six                      | 7                     | 21.88 | 1                | 5.00  | 2                    | 7.14  | 13               | 32.50 |
| Seven-Eight                   | 2                     | 6.25  | 0                | 0     | 4                    | 14.29 | 1                | 2.50  |

Table 30  
t Test Comparison of Students Attending One to Four Schools  
 and Those Attending Five or More Schools on the  
 1982 Tennessee Statewide Proficiency Test

|             | Students<br>Attending<br>One to Four<br>Schools |           | Students<br>Attending<br>Five or More<br>Schools |           | <u>t</u> | <u>df</u> | Significance |
|-------------|-------------------------------------------------|-----------|--------------------------------------------------|-----------|----------|-----------|--------------|
|             | <u>N</u>                                        | <u>MS</u> | <u>N</u>                                         | <u>MS</u> |          |           |              |
| Reading     | 90                                              | 78.43     | 30                                               | 78.87     | .011     | 118       | .05          |
| Language    | 90                                              | 74.62     | 30                                               | 76.90     | .039     | 118       | .05          |
| Spelling    | 90                                              | 83.79     | 30                                               | 87.77     | .095     | 118       | .05          |
| Mathematics | 90                                              | 79.18     | 30                                               | 75.00     | .072     | 118       | .05          |

## VITA

Oscar Allen is Principal of The Mary Ann Garber Elementary School. He began his professional career in the Chattanooga public schools in 1957. Since that time, he has served in the Chattanooga system as an intermediate teacher, resource teacher, administrative director of headstart, director of educable mentally retarded workstudy program, director of follow-through program, director of Out of School Neighborhood Youth Corps, and elementary school principal.

His early education was received in Chattanooga, Tennessee. He received a Bachelor of Science degree in social studies with a minor in education and a Master's degree in education from Tennessee State University. He received the Doctor of Education degree from The University of Tennessee, Knoxville, in 1983, with a major in curriculum and instruction and collaterals in educational administration and supervision and reading.

He is a member of the Mount Paran Baptist Church. He is a member of The National Education Association and its local and state affiliates. He is also a member of Omega Psi Phi Fraternity.

He is married to Elizabeth R. Allen. They are the parents of five children: Michael, Vikki, Valeria, Cheryl, and Jennifer.