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THE EFFECT OF A FINE ARTS PROGRAM ON THE INTELLIGENCE,
ACHIEVEMENT, CREATIVITY AND PERSONALITY TEST SCORES OF
YOUNG GIFTED AND TALENTED STUDENTS

East Tennessee State University

Ed.D. 1982

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THE EFFECT OF A FINE ARTS PROGRAM ON THE INTELLIGENCE,
ACHIEVEMENT, CREATIVITY AND PERSONALITY TEST
SCORES OF YOUNG GIFTED AND TALENTED STUDENTS

A Dissertation
Presented to
the Faculty of the Department of Supervision and Administration
East Tennessee State University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Geneva H. Dillard
August, 1982

APPROVAL

This is to certify that the Graduate Committee of

GENEVA H. DILLARD

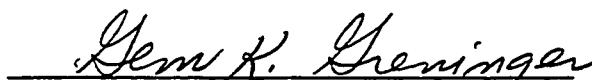
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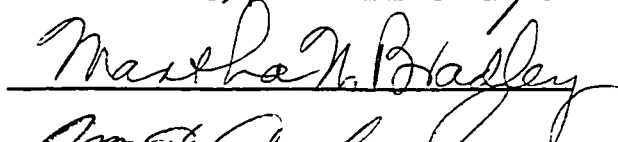
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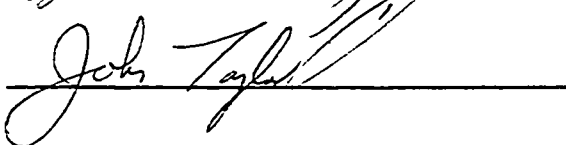

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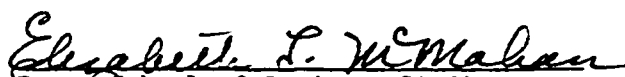








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Abstract

THE EFFECT OF A FINE ARTS PROGRAM ON THE INTELLIGENCE
ACHIEVEMENT, CREATIVITY AND PERSONALITY TEST
SCORES OF YOUNG GIFTED AND TALENTED STUDENTS

by

Geneva H. Dillard

The problem of this study was to determine if young gifted and talented students who participate in a special program of the fine arts score significantly higher on tests of intelligence, language arts achievement, creativity, and personality than young gifted and talented students who do not participate in the program.

For the study 102 students from kindergarten, first, second and third grades were selected. At the end of the study, ninety-seven students were posttested. Five students had moved from the school district. The students were selected for the program on the basis of teacher recommendations and on the basis of scores acquired on tests of intelligence, achievement, and creativity. Students selected for the program were additionally administered a personality pretest. Following participation in the fine arts program they were administered posttests in the four areas.

The following questions were considered: (1) Does participation in a fine arts program significantly enhance the test scores of young gifted and talented students in the areas of intelligence, language arts achievement, creativity, and personality? (2) Does participation in a fine arts program and in an additional home component of the program significantly enhance the test scores of young gifted and talented students in the areas of intelligence, language arts achievement, creativity, and personality? (3) Does the basis of selection for a special program for gifted and talented students significantly influence the test scores in the area by which the student was selected?

The study revealed that gifted and talented students at certain grade levels who participated in a fine arts program for a minimum of one hour per week scored significantly higher on tests of intelligence and on tests of creativity than young gifted and talented students who did not participate in the program. The study also revealed that students selected for the program on the basis of creativity showed significant increases in test scores of intelligence when compared

with students selected on the basis of intelligence or language arts achievement.

ACKNOWLEDGMENTS

Many acknowledgments are due for assistance in the completion of this study. I would like to express appreciation to some of the people who made the achievement of this educational goal possible.

Very special thanks go to Dr. Charles Burkett. His expertise, professional guidance, and continuous support were invaluable throughout the study. Appreciation is also expressed to Dr. Martha Bradley, Dr. William Caskey, Dr. Gem Kate Greninger, Dr. John Taylor, and Dr. Phil Wishon for their interest and constructive advice.

Grateful appreciation is extended also to Ms. Evelyn Murray of the Bristol Virginia School System who provided the incentive for the initial steps of the study.

Appreciation is also expressed to Ms. Becky Muller and Ms. Madaline Jenkins for their assistance with the typing.

Finally, a heartfelt thanks is expressed to the members of my family, to my parents, Mr. and Mrs. Kelly Hammond; to my children, LaVerne, Keith, and Mark; and especially to my husband, Archie, for encouragement and for the sacrifices they made during the time I completed the study. Without their cooperation the study could not have been completed.

Institutional Review Board

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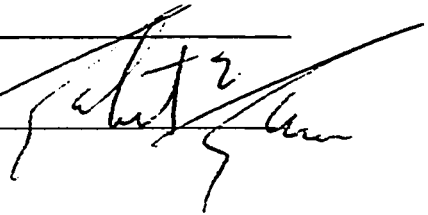
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Principal Investigator Geneva H. Dillard

Department Supervision and Administration

Date Submitted April 30, 1981

Institutional Review Board Approval, Chairman

A handwritten signature in black ink, appearing to be "J. H. [unclear]", written over a horizontal line. The signature is slanted and somewhat stylized.

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Chapter 1

INTRODUCTION

Philosophers and scientists, from Plato and Aristotle to the present, have recognized that a nation's resources of superior talented youth are among the most precious resources it can have.¹ Public schools, however, have often neglected the task of identifying and providing services to their talented and gifted and are, therefore, guilty of mismanaging this valuable resource. Until recently, with some exceptions, the intellectual elite were neglected while the energies and monies for education were used to provide programs for those students whose exceptionalities, either physical or academic, were more obvious.²

Recognition of the needs of the gifted and talented is not gaining the attention of educators. The attention, thus, prompts these questions: "How are the students to be identified?" and "What kinds of programs are most effective?" Rita M. Dickinson, in Caring for the Gifted, stated that the ability to reason with abstract ideas and to draw correct conclusions were vital ingredients of intellect, but she emphasized that giftedness encompassed many more factors and included

¹Lewis H. Terman and Melita H. Oden, "The Terman Study of Intellectually Gifted Children," The Intellectually Gifted: An Overview, eds. Wayne Dennis and Margaret W. Dennis (New York: Grune and Stratton, 1976), pp. 51-52.

²Wayne Dennis and Margaret W. Dennis, eds. The Intellectually Gifted: An Overview (New York: Grune and Stratton, 1976), p. ix.

such talents as persuasiveness, unusual idea production, curiosity, and such innate endowments as visual acuity and depth perception. She proposed that tests of intelligence be used to sample certain of these behaviors, and she recommended that these tests be used as one of the means for identifying the gifted. She urged, however, that the IQ scores not be the sole criterion for identifying gifted and talented students.³

Lester N. Knight agreed that superior mental ability was an important component of giftedness, and he suggested that academic achievement is usually a manifestation of the ability. He cautioned, however, that these two factors alone remain insufficient for identifying gifted students. He suggested that creativity and special talents be included in the assessment of traits.⁴

The importance of creativity as a component of giftedness was, likewise, emphasized by Paul A. Witty. He suggested, based on the findings of his research, that the criteria for identifying gifted and talented students include verbal ability, mathematics and science skill, writing, art, music, drama competence, and leadership qualities.⁵

As has been previously stated, gifted students have been neglected by the public schools. This statement is particularly true at the

³Rita M. Dickinson, Caring for the Gifted (North Quincy, Massachusetts: The Christopher Publishing House, 1970), pp. 13-14.

⁴Lester N. Knight, Language Arts for the Exceptional: The Gifted and the Linguistically Different (Itasca, Illinois: F. E. Peacock Publishers, 1974), pp. 10-11.

⁵Paul A. Witty, ed., Reading for the Gifted and Creative Student (Newark, Delaware: International Reading Association, 1971), pp. 2-3.

primary level. The limited number of programs that have been established for the gifted have existed in greater number at the secondary level.

Although some educators believe that programs for the gifted are most effective when they are begun with younger children, much research is needed in this area. This study was prompted by that need.

The Problem

Statement of the Problem

The problem of the study was to determine if gifted students, who participate in a special program centered around the fine arts, perform higher on tests of intelligence, achievement, creativity, and personality than gifted students who do not participate in such a program.

Significance of the Study

The need for special enrichment classes for gifted children was recognized early in the century. Henry Herbert Goddard, of Ohio State University, credited the Denison School in Cleveland, Ohio, as the first school in the nation to initiate a program of enrichment for gifted children. This was in contrast to former programs for gifted children which were based on flexible promotion and rapid advancement through the grades.⁶ Other writers concerned with education of the gifted during the early years of the century, including Lula M. Stedman,

⁶Henry Herbert Goddard, School Training of Gifted Children (New York: World Book, 1928), pp. 1-6.

agreed that an enriched curriculum was more desirable than grade acceleration for gifted children.⁷

Early identification of gifted children is said to be a necessity for development of the full potential of these students and for their personal adjustment. Marian Scheifele suggested that a supplement to the regular curriculum is most beneficial especially at the primary and elementary levels.⁸

Recognizing the failure of many schools in the state of Virginia to meet the special needs and provide special programs for gifted and talented children, the Virginia State Board of Education, in 1972 mandated, through its Standards of Quality, that each locality be required to identify and provide special services to gifted students. In 1979 the General Assembly of Virginia authorized payment of additional funds to the school systems for each student enrolled in a gifted and talented program approved by the Department of Education.

In keeping with the Virginia plan, a program for gifted students in kindergarten through grade three was formulated for the Bristol, Virginia school system. This study is designed to determine the effectiveness of that program.

Limitations

The following were limitations of the study:

⁷Lulu M. Stedman, Education of Gifted Children (New York: World Book, 1924), p. vii.

⁸Marian Scheifele, The Gifted Child in the Regular Classroom (New York: Columbia University, Bureau of Publications, Teachers College, 1953), p. 1.

1. The study was limited to students in kindergarten through third grade in the Bristol, Virginia school system.
2. Only students who were recommended by the classroom teacher were included in the initial screening.
3. The testing period was October, 1980 to May, 1981.
4. The amount of time for the treatment was limited to approximately one hour per week from October through April.
5. The number of students selected for the study was 102. At the close of the study, five students had moved from the school districts. The remaining ninety-seven students participated in the posttesting.
6. No attempt was made to control for the effect of motivation of the group because of the special treatment they received or for the effect of pupil performance according to teacher expectancy.

Assumptions

The following assumptions were made in conducting the study:

1. The initial teacher recommendations included all gifted students.
2. The training sessions for the examiners were sufficient for accuracy in the scoring of the tests.
3. The study was not contaminated by the use of similar activities in the regular classroom as those used by the arts instructors with the students in the program.
4. The study was not contaminated by the extent to which parents not in the special home-school component used similar activities with

their siblings as those parents whose siblings were in the special components.

5. The test instruments were valid and reliable for gifted and talented students.

Definitions of Terms

Definitions specified are those selected for use in the study.

Achievement

Knowledge attained on skills developed in school subjects designated by test scores. Theoretically, achievement differs from intelligence but overlaps with it to a great degree.⁹

Creativity

The human attribute of constructive originality. "Beyond a fairly low minimum level, creativity does not appear to correlate with intelligence."¹⁰

Gifted and Talented Student

Those who are identified by professionals and other qualified individuals as having outstanding abilities and who are capable of high performance. These are children and youth whose abilities, talents, and potential require differentiated educational programs and/or services beyond those normally provided by the

⁹Carter V. Good, ed., Dictionary of Education (3d ed.; New York: McGraw-Hill, 1973), p. 7.

¹⁰Good, p. 152.

regular school program in order to realize their contribution to self and society.¹¹

For the purpose of this study, a gifted student is one who performs in the top 10 percent of the class in the area of intelligence, achievement, or creativity; but not necessarily in all three of the areas.

Intelligence

A degree of mental functioning represented by performance on tests of perception, knowledge, and understanding.¹²

Low and Average Socio-economic Backgrounds

Backgrounds or environments which provide skills, values, outlooks and behavior patterns different from those reflected by upper middle class standards.¹³

Music as an Art

Vocal and instrumental expression through the organization of tones conceived in terms of aesthetic value.¹⁴

¹¹Irving S. Sats, Martin Birnbaum, Jane Early LoCicero, Developing a Written Plan for the Education of the Gifted and Talented Students (Ventura, California: Office of the Ventura County Superintendent of Schools, 1974), p. 62.

¹²Good, p. 309.

¹³Good, pp. 96, 268.

¹⁴Good, pp. 378-379.

Performing Arts

Activities which involve using the body for creative expression such as in drama, music, and dance.¹⁵

Personality Inventory

Self rating questionnaires that deal not only with overt behavior but also with how the subject feels about self, about others, and about the environment, resulting from introspection.¹⁶

Program of the Arts

A pattern of instruction in which activities center around music, drama, dance, literature, and visual arts.¹⁷

Visual Arts

Creative expression through activities such as painting, drawing, sculpturing, or crafting.¹⁸

Young Students

Students in kindergarten through grade three.

Hypotheses

Eleven hypotheses were tested during this study to determine the differences between the test scores of groups of gifted and talented children who participated in programs of the fine arts and those who

¹⁵Clarence L. Barnhart, ed. The World Book Encyclopedia Dictionary, Vol. 2 (Chicago: Field Enterprises Educational Corporation, 1963), p. 1443.

¹⁶Good, p. 316.

¹⁷Good, pp. 40, 442.

¹⁸Good, p. 42.

did not participate. Though the hypotheses were tested in the null form, the following are presented in the research form:

1. Young gifted students in special programs will score significantly higher on tests of intelligence than young gifted students who are not in special programs.

2. Young gifted students in special programs will score significantly higher on tests of language arts achievement than young gifted students who are not in special programs.

3. Young gifted students in special programs will score significantly higher on tests of creativity than young gifted students who are not in special programs.

4. Young gifted students in special programs will show significant improvement on test scores of personality in the areas of personal adjustments and social adjustments than young gifted students who are not in special programs.

5. Young gifted students in special programs who additionally engage in enrichment activities at home, will score significantly higher on tests of intelligence than young gifted students who participate in the special program, but do not engage in the additional activities at home.

6. Young gifted students in special programs who additionally engage in enrichment activities at home, will score significantly higher on tests of language arts achievement than young gifted students who participate in the special program, but do not engage in the additional activities at home.

7. Young gifted students in special programs who additionally engage in enrichment activities at home, will score significantly higher on tests of creativity than young gifted students who participate in the special program, but do not engage in additional activities at home.

8. Young gifted students in special programs who additionally engage in enrichment activities at home, will show significant improvement on test scores of personality in the areas of personal adjustment and social adjustment than young gifted students who participate in the special program, but do not engage in additional activities at home.

9. Young gifted students selected for a special program on the basis of intelligence quotient scores will show significantly higher increases on tests of intelligence, following participation in the program than young gifted students selected for the program on the basis of achievement or creativity.

10. Young gifted students selected for a special program on the basis of achievement scores will show significantly higher increases on tests of language arts achievement, following participation in the program than young gifted students selected for the program on the basis of intelligence or creativity.

11. Young gifted students selected for a special program on the basis of creativity scores will show significantly higher increases on tests of creativity, following participation in the program than young gifted students selected for the program on the basis of intelligence or achievement.

Procedure for the Study

The following procedure was used for the study:

1. A review of the literature was conducted with the help of the Bibliographic Retrieval Services, Incorporated. The review revealed numerous studies of gifted/talented students at the upper elementary and secondary levels, but very few studies of gifted/talented students in the primary grades.

2. Classroom teachers in the five elementary schools were given checklists for identifying gifted/talented students. Using the criteria provided in the checklists, they recommended students for the special program.

3. Forms were sent to the parents of the recommended students requesting permission to test the students.

4. All students recommended for the program were administered tests of intelligence, of language arts achievement, and of creativity.

5. Students who scored high on either of the three tests, but not necessarily on all the tests were selected for the special program. First the students from each grade level who scored highest on the intelligence tests were placed in the program. Secondly, the student from each grade level who scored highest on the language arts achievement tests were placed in the program. Thirdly, students from each grade level who scored highest on the creativity tests were selected. The remaining students were regarded as ineligible for the program.

6. Forms were sent to the parents of all eligible students requesting permission for the students to participate in the special program.

7. Students from the intelligence pool, from the language arts achievement pool, and from the creativity pool were placed in experimental group 1, experimental group 2, or the control group by stratified random selection. Thirty-four students were placed in each of the groups.

8. Each student selected for the program was administered a personality and attitude test. The instrument served as a pretest.

9. Each student in experimental group 1 and experimental group 2 participated in fine arts activities in drama, music, and visual arts for a minimum of one hour per week. Additionally, each student in experimental group 2 participated in a home-school component of the program. Students in the control group did not participate in special activities. They participated only in the pre- and posttesting.

10. Posttests of intelligence, of language arts achievement, of creativity, and of personality and attitudes were administered following the treatment period of approximately seven months.

11. The relationships of the test scores were compared by using the analysis of covariance.

12. The results of the study were reported, conclusions were formulated, and recommendations were made.

Organization of the Study

The study was organized into five chapters. Chapter 1 consisted of the introduction, the statement of the problem, the significance

of the study, the limitations, the assumptions, the definitions of terms, the hypotheses, and the organization of the study.

Relevant literature is reviewed in Chapter 2.

The methods and procedures used in the study are described in Chapter 3.

Chapter 4 is an analysis of the findings.

The summary, conclusions, and recommendations are submitted in Chapter 5.

Chapter 2

REVIEW OF RELATED LITERATURE

Introduction

A review of literature related to studies of gifted and talented students was reported in this chapter. The review revealed a need for improved guidelines for identifying gifted and talented students, a need for determining effective programs, the need for early identification, and the need for parental involvement in the education of gifted and talented students.

Identification of Students

Criteria for Identification

A national survey made in 1970 under the direction of Former Commissioner of Education, Sidney P. Marland, indicated 57.5 percent of the school superintendents at that time reported having no gifted students in their systems. Bernard and Betty Miller reported the findings of the 1970 survey along with the findings of more recent surveys. They reported a study in 1972 which indicated that less than 5 percent of the gifted students in the United States received any type of special education. Their report indicated a growth in the number of programs for the gifted with a survey in 1978 indicating approximately 22 percent of the gifted students received services. The Millers concluded that although improvements were being made in

identifying and providing services for the gifted, far too many students remained unidentified and unserved.¹

Educators generally agree that many gifted students are not receiving the special services they require in order to maximize their education. According to an estimate by Rita M. Dickinson at least 50 percent of the gifted go unrecognized.² The compiler of a fact sheet from the United States Department of Education, Office for the Gifted and Talented in July 1980 stated that only 35 percent of all gifted and talented students in the United States receive any degree of special education.³ Paula R. Boothby declared the gifted students to be too frequently the most neglected students in the school population.⁴ The assumption was also supported by such writers as Donald F. Sellin and Jack W. Birch,⁵ by Donald J. Treffinger and Clifford D. Curl.⁶

¹Bernard Miller and Betty Miller, "Recognizing the Gifted: Is Differentiation Undemocratic?" The College Board Review, LXV (Spring, 1980), 2-7.

²Rita M. Dickinson, Caring for the Gifted (North Quincy, Massachusetts: Christopher Publishing House, 1970), p. 16.

³United States Department of Education, Office for the Gifted and Talented. Fact Sheet. Washington, D. C., July, 1980.

⁴Paula R. Boothby, "Creative and Critical Reading for the Gifted," The Reading Teacher, XXVIII (March, 1980), 674-676.

⁵Donald F. Sellin and Jack W. Birch, Educating Gifted and Talented Learners (Rockville, Maryland: Aspen, 1980), p. 3.

⁶Donald J. Treffinger and Clifford D. Curl, Self-Directed Study Guide on the Education of the Gifted and the Talented (Ventura County, California: Office of the Ventura County Superintendent of Schools, 1976), p. 89.

While the need for improved services for the gifted was affirmed in the writing of Joseph P. Rice,⁷ Joanne Rand Whitmore,⁸ and Merle B. Karns and others,⁹ the criteria for identifying the students for the special services was less substantiative. According to Lester M. Knight the concept of giftedness has been broadened considerably since the early days. He said the definition of giftedness previously was based on high intelligence as measured by standardized intelligence tests. He contended that in addition to intelligence, the criteria for identifying gifted students should include achievement, creativity, and special talents.¹⁰

As reported by such writers as J. J. Gallaher¹¹ and Julian C. Stanley¹² there seemed to be agreement among educators that giftedness

⁷Joseph P. Rice, The Gifted: Developing Total Talent (Springfield, Illinois: Charles C. Thomas Publishers, 1970), pp. 63-67.

⁸Joanne Rand Whitmore, Giftedness, Conflict and Underachievement (Boston: Allyn and Bacon, 1980), pp. 3-4.

⁹Merle B. Karns and others, "The Efficacy of Two Organizational Plans for Underachieving Intellectually Gifted Children," In Change and Innovation in Elementary and Secondary Organization, eds. Maurie Hillson and Ronald T. Hyman (New York: Holt, Rinehart and Winston, 1971), pp. 166-167.

¹⁰Lester M. Knight, Language Arts for the Exceptional, the Gifted, and the Linguistically Different (Itasca, Illinois: F. E. Peacock Publishers, 1974), pp. 10-11.

¹¹J. J. Gallaher, Teaching the Gifted Child (Boston: Allyn and Bacon, 1975), p. 18.

¹²Julian C. Stanley, "Identifying and Nurturing the Intellectually Gifted." In Educating the Gifted: Acceleration and Enrichment, eds. William C. George, Sanford J. Cohn, and Julian C. Stanley (Baltimore: Johns Hopkins University Press, 1979), p. 172.

is characterized by traits other than intelligence. Dickinson expressed the general consensus with this statement:

Giftedness can take many forms. Any plan to choose only children with IQ's above a certain level is inadequate. Those students should not be neglected, certainly, but neither should those with talents in painting, music, sports, influencing others, compromising disputes—to name a few.¹³

Joseph S. Renzulli admonished educators "to avoid the IQ cut-off score game" and to place more emphasis on the ways students react to experiences and the ways they respond to questions. He maintained that giftedness is "a set of behaviors that emerge when certain traits interact with one another in relation to a particular topic, area of interest or specific talent." He contended that gifted behavior is the result of the interaction of three clusters of traits. He identified the traits as above average ability, task commitment, and creativity.¹⁴

The use of intelligence test scores as the primary criterion for identifying gifted students was also criticized by Thomas V. Busse and Richard S. Mansfield. They maintained that test scores, even a combination of test scores, should be supplemented by other factors. They repeated Renzulli's charge that a single cut-off IQ score which they specified was usually a score of 130, be eliminated.¹⁵

¹³Dickinson, p. 47.

¹⁴Joseph S. Renzulli, "Will the Gifted Child Movement Be Alive and Well in 1990?" The Gifted Child Quarterly, XXIV (Winter, 1980), 3-9.

¹⁵Thomas V. Busse and Richard S. Mansfield, "Renzulli is Right," The Gifted Child Quarterly, XXIV (Summer, 1980), 132.

Wendy Conklin Roedell and others upheld the use of standardized testing as one criterion for identifying gifted students, but they also advised that "any test battery, no matter how comprehensive, was inadequate for sampling a student's behavior." They cautioned especially against the use of standardized testing as the single method for identifying very young students. They recommended alternative means such as teacher checklists and questionnaires. They ascribed to a three-step sequential method of identifying gifted students. They advocated, first, nominations by teachers or parents; secondly, group testing; and thirdly, individual testing. They submitted the following comment, "No identification system, no matter how expensive and time consuming will ever provide the perfect tool for selecting the best applicants for a program."¹⁶

In the studies of methods for identifying gifted students checklists of characteristics were common, but varied. Checklists of characteristics were discussed by such writers as R. A. Martinson,¹⁷ A. Harry Passow,¹⁸ and G. Donald Miller.¹⁹ Miller found a widespread array of characteristics including restlessness, discipline problems and low grades. His concern for identifying the top 3 to 5 percent

¹⁶Wendy Conklin Roedell and others, Gifted Young Children (New York: Columbia University Teachers College Press, 1980), pp. 53-64.

¹⁷R. A. Martinson, The Identification of the Gifted and Talented (Ventura, California: Office of the Ventura County Superintendent of Schools, 1974), p. 32.

¹⁸A. Harry Passow, "The Nature of Giftedness and Talent," Gifted Child Quarterly, XXV (Winter, 1981), 5-9.

¹⁹G. Donald Miller, "Who is Gifted?" Independent School, XXXIX (May, 1980), 12-16.

of the students, whom he said experts had estimated as the gifted population, led him to urge that all students be carefully scrutinized. He theorized that gifted students were found among students who were achieving highly and among those achieving poorly. He said some gifted students were introverts and some were extroverts, some were impatient, and some were tolerant, some were assertive and some were passive. He said many were self-centered and selfish, hypersensitive to criticism, and often alienated from peers. He said also that most were quick to perceive, interested in precision, enjoyed pursuing new ideas, and were proficient in reasoning ability. Miller concluded that any list of characteristics could be misleading and contended that each student be carefully observed under varying circumstances.²⁰

Definitions of giftedness varied but intelligence was frequently recorded as the major component. C. K. Rekdal concluded, however, from his studies that intelligence may not be as important in identifying the gifted as the ability to think creatively. He reported findings that indicated creative thinking to become the more prominent basis for identifying gifted students in the future. He alleged creative acts to be the uppermost level of achievement. His report supported the inclusion of multi-traits in selecting gifted students. The traits he included were creativity, achievement, intelligence, and certain personality and motivational characteristics.²¹

²⁰Miller, p. 15.

²¹C. K. Rekdal, "Genius, Creativity, and Eminence," The Gifted Child Quarterly, XXIII (Winter, 1979), 837-853.

Ron Rubenzer suggested that if the scores on intelligence tests were to be prominent factors in the selection of gifted students individual, rather than group, tests should be used. He referred to researchers who demonstrated the effectiveness of individual intelligence test in identifying superior ability in problem solving, academic achievement, and vocational success. He cautioned, however, that tests, group or individual, "do not adequately cover such areas as creative potential, leadership ability, aesthetic production, or psychomotor skills." He followed by suggesting that the criteria for identifying gifted students include intellectual ability, academic aptitude, creative or productive thinking, leadership ability, skill in visual or performing arts, and psychomotor ability.²²

Although there seemed to be a lack of agreement as to the components of the criteria for identifying gifted and talented students, educators and researchers seemed to agree that the criteria should be multifarious. The components ranged from the use of intelligence tests and academic performance to multiple types of outstanding and suppressed behaviors.

Teacher Role in Identification of Students

The literature indicated the need for combinative criteria for identifying gifted students. It also indicated that many educators question teacher proficiency in recognizing the criteria. Robert F. DeHaan and Robert J. Havighurst pointed out that almost every

²²Ron Rubenzer, "Identification and Evaluation Procedures for Gifted and Talented Programs," The Gifted Child Quarterly, XXIII (Summer, 1979), 304-313.

program for the gifted relied on the observations and judgments of classroom teachers at some stage of the screening process. To reduce subjectivity, they suggested rules for the observations and special training and practice in the process of observing. They noted that often following the systematic screening process, teachers were surprised to learn that some children whom they had supposed were average, were really gifted. Many capable, but underachieving students, were overlooked during a screening process unless a systematic approach was used.²³

William Charles Anderson found that teachers generally identified students through the use of achievement and intelligence test scores. His study indicated that students selected by other criteria made significant contributions when given opportunities to develop their talents. His study also indicated that teachers and psychologists consistently performed higher on recognizing gifted students following specific inservice training.²⁴

Most researchers agreed that if teachers were to participate in the screening process, they needed specific training for the task. Guy Montrose Whipple concluded that by present methods of selection, teachers mistakenly pass over gifted students. From his study he

²³Robert F. DeHaan and Robert J. Havighurst, Educating Gifted Children (Chicago: University of Chicago Press, 1957), pp. 39-41.

²⁴William Charles Anderson, "A Survey of Programs for the Gifted and Talented in Texas Public Schools," Dissertation Abstracts International, XXXVII (November-December, 1977), 2434-A.

determined that as many as 15 percent of the students were overlooked by teachers.²⁵

Nell Stevenson Sanders determined through her studies that teachers identify gifted students by standardized achievement and aptitude test scores, by academic performance in the classroom and by motivation toward classroom activities with little regard to creativity, leadership, psychomotor ability, or fine arts talents. She recommended that school districts design screening procedures by which outstanding talents and abilities could be measured.²⁶

The findings of Janine Ethel Rutowski also supported the theory that teachers recommend students for gifted programs by performance on tests and by academic achievement. She recommended that teachers be taught to observe students for skills in leadership and unusual creative abilities.²⁷

John Randolph Rader concluded that although teachers generally used intelligence and achievement for identifying gifted students, they consistently became more proficient in screening students following inservice training on recognizing the multi-components of giftedness.²⁸

²⁵Guy Montrose Whipple, Classes for Gifted Children (Bloomington, Illinois: Public School Publishing Company, 1919), p. 21.

²⁶Nell Stevenson Sanders, "Teacher Nomination of Gifted Pupils: An Analysis of the Procedure," Dissertation Abstracts International, XXXVIII (November-December, 1977), 2546-A.

²⁷Janine Ethel Rutkowski, "The Components of Giftedness: Superior Intelligence, Creativity, and Leadership in Relation to Academic Achievement," Dissertation Abstracts International, XXXVIII (November-December, 1977), 2673-A.

²⁸John Randolph Rader, "An Evaluation of a Simulation on the Identification of the Gifted and Talented," Dissertation Abstracts International, XXXVII (January-February, 1977), 5002-A.

Inadequacy in identifying gifted students and the need for inservice was also acknowledged by classroom teachers. Ann Cox attested to the fact that gifted and talented students were frequently overlooked by classroom teachers. Before specific training, she said she had believed she had no truly gifted students in her classroom. Following workshops on the traits and needs of gifted students, she was able to identify gifted students she had previously overlooked. She concluded that contrary to her earlier opinions gifted students did not always learn to read prematurely, did not always possess outstanding vocabularies and memories, and were not always exceptionally talented in both the academics and the fine arts.²⁹

Dorothy F. Syphers noted that if a screening process were carefully organized approximately half of the students recommended for standardized testing would qualify for special programs. She found that the knowledge of certain learning patterns commonly displayed by gifted children helped teachers to identify them. She recommended checklists, questionnaires, and completion forms as means of helping teachers focus on specific behaviors.³⁰

Since teachers are frequently asked to make the initial nominations of gifted students, Alice W. Chen suggested that teachers follow specific guidelines. She suggested, first, teachers be asked to recall names of students who learn easily, who are original,

²⁹Ann Cox, "The Gifted Student: A Neglected Presence?" Teacher (November-December, 1979), pp. 75-76.

³⁰Dorothy F. Syphers, Gifted and Talented Children: Practical Programming for Teachers and Principals (Arlington, Virginia: The Council for Exceptional Children, 1972), pp. 8-10.

imaginative, creative, widely informed, persistent, resourceful, and self-directed, who possess common sense, who are inquisitive, skeptical, and informed in unusual areas, and who demonstrate unusual talents. She suggested adding additional names as test scores are examined. Following teacher nominations, she suggested the students be tested and selected on the basis of recommendations by a committee.³¹

Roedell and others also expressed concern for teacher adequacy in recognizing gifted and talented students. They referred to the Terman study of the early 1900's and questioned the nominations made by the teachers. They speculated that some of the characteristics between the groups may have been attributed to socioeconomic factors as well as giftedness. They pointed to the fact that frequently bright students are overlooked by teachers because of maladjusted personalities.³²

Rice upheld the use of teacher observations as a part of the screening process, but he, like most researchers and educators, agreed that other procedures should be included in the final selection. He recommended the use of peer and parent observations, the use of test batteries, and the use of academic data.³³

³¹Alice W. Chen, "Is Ginny Gifted?" Momentum, IX (December, 1978), 8-11.

³²Roedell and others, Gifted Young Children, p. 8.

³³Rice, The Gifted: Developing Total Talent, p. 75.

Necessity for Early Identification

Dickinson proposed that the earlier gifted students were recognized and provided a differentiated education, the better their chances for success and personal happiness.³⁴

Jack A. Chambers and Frank Barron maintained that the characteristics common to creative and high level performance developed at an early age. They suggested gifted students be identified as early as possible even prior to kindergarten if at all feasible.³⁵

The years between birth and age eight were appraised by Sellin and Birch to be the most valuable years in a child's education. They maintained that if gifted students were not provided for during the early years of school, they sustained losses that could not be regained.³⁶

DeHaan and Havighurst iterated the importance of early identification of gifted students. They urged the screening of children as early as possible in order that there be more time and opportunities for developing the talents and gifts.³⁷

According to Robert E. Valett, most school districts provide early screening for identifying gifted students and students with

³⁴Rita M. Dickinson, Caring for the Gifted (North Quincy, Massachusetts: Christopher Publishing House, 1980), p. 16.

³⁵Jack A. Chambers and Frank Barron, "The Culturally Different Gifted Student: Identifying the Ablest," Journal of Creative Behavior, XII (First Quarter, 1978), 72-74.

³⁶Donald F. Sellin and Jack W. Birch, Educating Gifted and Talented Learners (Rockville, Maryland: Aspen Publication, 1980), p. 36.

³⁷DeHaan and Havighurst, Educating Gifted Children, p. 42.

learning disabilities. He admonished the schools, however, for failure to follow up the screening with appropriate provisions. He urged the development of critical thinking skills in the early elementary school program. Considerable time and effort, he said, were required for children to develop mental processes to the level of abstract-symbolic thinking necessary for creative and critical problem solving.³⁸

Programs for the Gifted

Interest in programs for the gifted has increased in recent years. Roedell and others made reference to the interest that had been shown in the 1920's, but which had declined during the war years. They condemned the failure of the past generation to provide for the gifted student and warned that such a practice was costly to society as well as to the students.³⁹

The history of interest in programs for the gifted and the types of programs for the gifted from the turn of the century was described by Whitmore. In the early 1900's and continuing for a period of about twenty years, early entrance to school and acceleration through the grades were the most common methods of providing for the gifted. Special classes, segregating the students with higher IQ's became a prominent practice around 1916 and continued for about fifty years. Most of the special classes during that period were provided at the secondary level with a subsistent number of acceleration programs

³⁸Robert E. Vallet, Developing Cognitive Abilities: Teaching Children to Think (St. Louis: C. V. Mosby, 1978), pp. 7-8.

³⁹Roedell and others, pp. 5-6.

continuing at the lower grades. In the 1960's special programs for the gifted at all grade levels were reexamined in the state of California. Multiple options were offered including enrichment in the regular classroom, advanced placement, cluster groups, Saturday classes, special-interest groups, and community sponsored activities. Many of the programs were adopted by other states. Presently, the most common practice for providing for the gifted in California is through enrichment programs which are attended by gifted students for one to three hours per week with additional supplements in the regular classroom.⁴⁰

The types of programs that are most effective for meeting the needs of the gifted provided the basis for much discussion at the 1977 symposium of the American Educational Research Association. Much of the discussion at the symposium was related to the controversy of acceleration versus enrichment. The two terms were defined by Stanley. He defined enrichment as the provision of activities beyond the usual ones for the subject or grade or age. He defined acceleration as the process of moving students into a higher grade, or into a higher level of a subject, than the chronological age of the student warranted.⁴¹

The merits of acceleration were pointed out by Stephen P. Daurio. He argued that despite the fact that desegregation by age was not

⁴⁰Joanne Rand Whitmore, Giftedness, Conflict and Underachievement (Boston: Allyn and Bacon, 1980), pp. 21-23.

⁴¹Julian C. Stanley, "Identifying and Nurturing the Intellectually Gifted." In Educating the Gifted: Acceleration and Enrichment, eds. William C. George, Sanford J. Cohn, and Julian C. Stanley (Baltimore: Johns Hopkins University Press, 1979), pp. 172-174.

customary in American schools, his findings indicated acceleration to be a feasible means of meeting the needs of the gifted.⁴² Dean A. Worcester referred to the possible benefits of enrichment programs, but he expressed disapproval with most of the programs and declared them to be disguises for busywork. He said he rarely encountered actual enrichment in special programs scheduled outside the regular classroom. He advocated the use of enrichment activities only when they provided meaningful relationships for the students and were taught by creative teachers.⁴³

Acceleration was found by Nancy E. Jackson to be effective for enhancing learning as well as for general adjustment. She advocated acceleration as a cost effective means of meeting the needs of the gifted.⁴⁴

Stanley recommended two types of acceleration, the moving of students to higher grades and the moving of students to higher subject levels within the grades. He identified four types of enrichment: busywork, irrelevant academic enrichment, relevant academic enrichment, and cultural enrichment. He suggested cultural enrichment, the

⁴²Stephen P. Daurio, "Educational Enrichment versus Acceleration: A Review of the Literature." In Educating the Gifted: Acceleration and Enrichment, eds. William C. George, Sanford J. Cohn, and Julian C. Stanley (Baltimore: Johns Hopkins University Press, 1979), pp. 13, 53.

⁴³Dean W. Worcester, "Enrichment," In Educating the Gifted: Acceleration and Enrichment, eds. William C. George, Sanford J. Cohn, and Julian C. Stanley (Baltimore: Johns Hopkins University Press, 1979), pp. 99-100.

⁴⁴Nancy E. Jackson and others, "Placement According to Readiness." In Educating the Gifted: Acceleration and Enrichment, eds. William C. George, Sanford J. Cohn, and Julian C. Stanley (Baltimore: Johns Hopkins University Press, 1979), p. 192.

offering of music, art, drama, and creative writing, as an effective means of fulfilling the unmet needs of many gifted students. He suggested, however, that subject acceleration was the preferred method of enhancing the education of the gifted.⁴⁵

DeHaan and Havighurst argued on the side of enrichment as the more effective program for the gifted. They listed regular classroom enrichment, enrichment in special groups, and enrichment by acceleration as possibilities. Of the three, they recommended enrichment in the classroom as the most easily managed and the least controversial. They proposed enrichment as a means of providing opportunities for gifted students to explore a subject with more depth and breadth. They cautioned that enrichment should not be an addition of more activities, but should be the addition of greater intensity to the activities.⁴⁶

The enrichment versus acceleration issue was also discussed by Frank O. Copley. He discussed some of the advantages and disadvantages of each method. His list of advantages of enrichment included: more time to study intensively with more depth and breadth, more opportunities for original and creative work, better social adjustments, reduction of undue pressure, and more time for exploring the environment by reading, observing, investigating, and experimenting. His list of disadvantages of enrichment included, inappropriate use of enrichment activities as playing times as opposed to learning times, no time saved in completing the formal education, and the lack of

⁴⁵Stanley, p. 174.

⁴⁶DeHaan and Havighurst, Educating Gifted Children, pp. 96-102.

sequence in the teaching of skills. His list of advantages of acceleration included: the reduction of lazy study habits, the infrequent loss of interest, and the saving of time. He listed the disadvantages as: the lack of time for thought and experimentation and difficulty in social adjustment.⁴⁷

On the side of acceleration, Jack W. Birch investigated the progress and adjustment of forty-three gifted children who entered school earlier than the recommended entry age. He concluded from his study that early admission was preferable to the skipping of grades. Early admission, he concluded, allowed more time to develop skills and to participate in learning activities. It also provided for more stable adjustment by allowing children to remain with the same students.⁴⁸

William P. Lineberry recommended enriching the curriculum for most gifted students. He cited the Cardinal Principals of Secondary Education issued by the National Education Association in 1918. The report suggested the school curriculum should be multipurpose with special enrichment for the talented. After examining both sides of the issue, Lineberry advised a program of enrichment for most gifted

⁴⁷Frank O. Copley, The American High School and the Talented Student (Ann Arbor, Michigan: University of Michigan Press, 1962), pp. 16-24.

⁴⁸Jack W. Birch, "Early School Admission for Mentally Advanced Children." In Psychology and Education of the Gifted, eds. Walter B. Barbe and Joseph S. Renzulli (New York: Halsted Press, 1975), p. 303.

and talented students, but an acceleration program for the highly gifted ones.⁴⁹

Although Worcester advocated acceleration as the preferred method of meeting the needs of the gifted, he discussed an example of an effective enrichment program. The program was organized in such a way that the students spent a part of their day with heterogeneous groups and the remainder of the time with students of compatible abilities. He reported that the students profited by the arrangement by remaining in direct contact with students of varying abilities as well as with students with congruent abilities. He also stated that enrichment, contrary to his own preference, was the choice of most administrators, teachers, and parents. It seemed that parents and educators preferred children to spend a predetermined number of years in school. Worcester summed up the merits of enrichment and acceleration with these statements:

Apparently any scheme which tries to do something for them (gifted and talented students) yields value. Studies of enrichment show those who have experienced it to be successful beyond the average in almost every measurable respect. Studies of acceleration also show successful results in every way.⁵⁰

Virgil S. Ward advocated the use of multi-means for providing for the gifted. He had this to say about programs for the gifted, "Ability grouping, acceleration, and independent study, whether used singly or in combination are not adequate for educating the gifted." He urged

⁴⁹William P. Lineberry, ed. New Trends in the Schools (New York: H. W. Wilson, 1967), pp. 46, 51.

⁵⁰Worcester, pp. 98-104.

an extensive revision of the present program with fundamental changes from the customary types of programs.⁵¹

Parent Participation in the Program for the Gifted
and Talented Students

Parents have long been recognized as the child's most important teachers. According to Joan Beck, the parent has the unique opportunity for substantially increasing a child's intelligence and for increasing the joy of learning. She alleged that informed parents can do much toward helping their children realize their true intellectual potential. She cautioned that failure to provide early stimulation may reduce the child's chances for development of innate potential.⁵²

Rice reflected on the importance of parental involvement in the gifted student's education. He advised the entire family to participate in the educational planning of the student. He recommended that the home provide cultural enrichment and that the parents serve as models of excellence by availing themselves of specialized training.⁵³

Giftedness is influenced by genetic factors in the environment, and by the student's reaction to the environment. Chen advised parents

⁵¹Virgil S. Ward, "Program Organization and Implementation. In Psychology and Education of the Gifted, eds. Walter B. Barbe and Joseph S. Renzulli (New York: Halsted Press, 1975), p. 295.

⁵²Joan Beck, How to Raise a Brighter Child: The Case for Early Learning (New York: Trident Press, 1967), pp. 2, 14.

⁵³Rice, The Gifted: Developing Total Talent, p. 75.

to provide an environment conducive to enrichment and one in which characteristics of giftedness were not repressed.⁵⁴

Syphers encouraged parents to take the initiative in providing special guidance for gifted students and to help them with special interests.⁵⁵

As in the education of all students, the need for informing parents was advocated by Vallet. He contended that parents should be aware of student objectives and informed as to how they might help their children accomplish the objectives. He cited a study that indicated that better than average learning environments resulted in significant increases in cognitive development. Environmental characteristics which promoted intellectual growth included: the amount and quality of parent interaction, parental attitudes and practice, parental economic security and the cultural values of the parents.⁵⁶

Summary of the Literature

Most educators and researchers indicated a need for identifying gifted students through the use of multi-criteria. Although the components of giftedness varied, most writers agreed that intelligence and achievement test scores were related to giftedness. Other factors

⁵⁴Chen, "Is Ginny Gifted?" p. 9.

⁵⁵Syphers, Gifted and Talented Children: Practical Programming for Teachers and Principals, p. 21.

⁵⁶Vallet, Developing Cognitive Abilities: Teaching Children to Think, p. 233.

such as interactions with peers, behavioral patterns, and learning styles were said to be worthy of consideration. Giftedness, most writers agreed, manifested itself at an early age and in order for the gifted student to receive maximum benefit from formal education, it was necessary that provision be made early in the school career. Parent involvement was listed by a number of writers as a necessity for helping the student achieve to the highest potential.

Chapter 3

PROCEDURES FOR DATA COLLECTION

Introduction

This chapter contains the procedure for selection of students, the procedure for assigning the students to the research groups, the treatments used, and the test instruments utilized.

Procedure for Selection of Students

The subjects for this study were students enrolled in kindergarten through grade three in the elementary schools of a small system in Southwest Virginia. The students were from average and from below average socioeconomic backgrounds. They were initially identified as gifted/talented through a screening process by classroom teachers. The screening was followed by standardized testing.

Each classroom teacher was asked to submit the names of those students who appeared to be in the top 10 percent of the class according to guidelines provided. The guidelines were based on research findings for the identification of gifted and talented students (See Appendix A). Teachers were also asked to refer to the past records of the students. In an effort to reduce the possibility of overlooking candidates for the program, each teacher was not only required to recommend the top 10 percent of the class, but was encouraged to make additional recommendations if other students gave evidence of eligibility for the program.

Requests for parental permission for student participation followed the teacher recommendations (See Appendix B). All students recommended by the teachers were administered tests for intelligence, for achievement, and for creativity (See Appendix C). Students who scored high on either of the tests, and not necessarily on all the tests, were placed in the program. From the test scores, eighteen kindergarten students, twenty-seven first grade students, twenty-seven second grade students, and thirty third grade students were selected for the study. Based on research recommendations, selection was made, first, on the basis of intelligence; secondly, on the basis of achievement scores; and thirdly, on the basis of creativity scores. Students from each of the categories were selected from each grade level. The students from each grade who scored highest on the intelligence test were placed in the high intelligence pool. From the remaining students in each grade level, those students who scored highest on the achievement tests were placed in the high achievement pool. From the remaining students in each grade level, those who scored highest on the creativity test were placed in the high creativity pool. After the third pool was selected, all remaining students were considered to be ineligible for the program.

The method employed for selection of students was used to assure inclusion of students from each of the three areas of identification.

Procedure for Assigning Students to Research Groups

Students selected for the study were assigned to research groups by stratified random assignment by grade level and by selection basis;

that is on the basis of intelligence quotient, on the basis of achievement, or on the basis of creativity. The students in each of three selection pools were coded by number. The numbers were drawn to determine placement of the students into experimental group 1, experimental group 2, or the control group. Students assigned to experimental group 1 participated in a special program of the fine arts. Students assigned to experimental group 2 participated in the special program of the fine arts, and additionally, participated in a home-school component of the program. Students assigned to the control group did not participate in the treatment except to be tested.

Assignment to experimental groups or control groups was initiated by the drawing of a number from the high intelligence pool of kindergarten students. The first number drawn was assigned to experimental group 1. The second number was assigned to experimental group 2. The third number drawn was assigned to the control group. The fourth number drawn became the second member of experimental group 1. The drawings continued until all numbers in the high intelligence pool of kindergarten students were assigned. Following the assignment of the students from this pool, kindergarten students from the high achievement pool were assigned by the same procedure. Students from the final kindergarten pool, those who had been selected on the basis of high creativity, were then assigned.

After all kindergarten students were assigned to groups, students from each of the first grade pools were assigned. Using the same procedure, assignments were made to experimental group 1, experimental group 2, or the control group.

Assignment of the three pools of second grade students was made by the same method as was used for placement of kindergarten and first grade students. Finally, the same procedure was used for assigning the three pools of third grade students.

The assignment method used was chosen to assure inclusion of students from each of the three pools in the two experimental groups and the control group.

Testing of the Students

Tests Used for Selecting Students

Each student recommended by the classroom teacher as a candidate for the program was administered three tests: (1) Henman-Nelson Test of Mental Ability for evaluation of intelligence, (2) Metropolitan Readiness Test to kindergarten students for evaluation of achievement potential and the Metropolitan Achievement Test to first, second, and third grade students for evaluation of achievement, and (3) Torrance Test of Thinking Creatively with Pictures for evaluation of creativity. These tests were administered in the Fall of 1980 for the purpose of selecting students for the study. They were used also for comparisons with posttests in the Spring of 1981.

Other Tests Administered in the Fall

Each student selected for the study was administered the California Test of Personality for evaluation of attitude and self-concept. This was in addition to the three tests administered for the purpose of

selecting the students. The purpose for administering the personality test was for comparison of pretests and posttests.

Posttests

In the spring, each student in the study was administered a battery of four tests. Equivalent forms of the same test were used in the fall. (1) Henman-Nelson Test of Mental Ability was administered to determine an intelligence score. (2) Metropolitan Readiness Test was administered to kindergarten students to evaluate achievement potential; Metropolitan Achievement Test was administered to first, second, and third grade students to evaluate achievement. (3) Torrance Test of Thinking Creatively with Pictures was administered to evaluate creativity. (4) California Test of Personality was administered to evaluate attitude and self-concept. The purpose of the posttests was for making comparisons with the pretest scores in order to determine student progress during the experiment.

Instruments

The Henman-Nelson Tests of Mental Ability - Primary Form for Grades K-2

The Henman-Nelson Test of Mental Ability for primary grades was administered to all students recommended for the program in grades K-2. The test was designed for group administration. It was designed to be administered and scored by classroom teachers. It consisted of three subtests: Listening, Picture Vocabulary, and Size and Number. The total amount of time required for the testing was approximately forty-five minutes with three sittings suggested as the preferred

scheduling. The test consisted of eighty-six items which were read by the examiner. Each child was given ample time to respond. Time was not a factor for responding to the questions.

The Listening subtest was designed to evaluate general knowledge and competence in understanding abstract relationships. The Picture Vocabulary subtest was designed to evaluate the ability to understand words and to comprehend verbal meanings. The Size and Number subtest was designed to appraise proficiency of spatial and numerical concepts and skill of reasoning with numerical concepts.

The test was hand-scored with annotated reproductions of the pages serving as the answer key. Step-by-step directions for converting the scores made the recording a simple procedure easily manageable by competent classroom teachers.

Form 1 was used as the pretest and Form 2 was used as the posttest. The Henman-Nelson Test of Mental Ability for primary grades were standardized in 1972-1973 using approximately 10,000 children in thirty states for the sampling.

The Henman-Nelson Test of Mental
Ability - Levels 3-6

The Henman-Nelson Test of Mental Ability for grade levels three through six was administered to all students in grade three who were recommended for the program. It was a group test which was designed for administration and scoring by classroom teachers. It was timed with an allowance of thirty minutes for answering the ninety items. The students were required to read the items and respond by placing X's in the appropriate answer spaces. Scoring of the test was a simple

procedure consisting of counting the correctly marked answers using a carbon self-checking device.

The test was given in one sitting and was designed to evaluate ability to use verbal and numerical symbols and to solve abstract problems. Form 1 was used as the pretest and Form 2 was used as the posttest.

The first edition of the test was developed in 1967. It was revised and restandardized in 1973.

Metropolitan Readiness Tests

All kindergarten students recommended for the program were given the Metropolitan Readiness Test. The subtests included Auditory Memory, Rhyming, Letter Recognition, Visual Matching, School Language and Listening, and Quantitative Language. Form P was used as the pretest and Form Q was used as the posttest.

Metropolitan Achievement Tests - Primer

All first grade students recommended for the program were administered the language arts subtests of the primer level Metropolitan Achievement Test. The subtests included Listening for Sounds and Reading. The subtests were divided into five sittings with approximately ten to twenty minutes required for each sitting. Portions of the test were read by the examiner and portions were read by the student. The test was designed to evaluate recognition of sound-symbol relationships, identification of letters, recognition of words and comprehension of sentences.

Form F was given as the pretest and Form H was given as the posttest. The tests were administered and scored by selected classroom teachers.

Metropolitan Achievement Tests were standardized by testing in October and in April of the 1969-1970 school year with samples representative of the national population in terms of geographic region, size of city, socioeconomic status, and public versus non-public schools.

Metropolitan Achievement Tests -
Primary I

All students in grade two who were recommended for the program were given the language arts subtests of Primary I Metropolitan Achievement Test. The subtests included: Word Knowledge, Word Analysis, and Reading. Portions of the test were read by the examiner and portions were read by the students. The test was designed to evaluate vocabulary, decoding abilities and comprehension skills.

Form F of the test was given as a pretest and Form G was given as the posttest. The tests were administered and scored by selected classroom teachers.

Metropolitan Achievement Tests -
Primary II

Third grade students who were recommended for the program were administered the language arts subtests of Primary II Metropolitan Achievement Tests. The subtests included: Word Knowledge, Word Analysis, Reading Sentences, Reading Stories, and Spelling. Approximately seventy-five minutes of total testing time were required

for the language arts sections of the test. Three sittings were recommended. Portions of the test were read by the examiner and portions were read by the students. The test was designed to evaluate vocabulary, decoding skills, comprehension skills, and spelling.

Form F was given as the pretest and Form G was given as the posttest. The tests were administered and scored by selected classroom teachers.

Torrance Tests of Creative Thinking -
Thinking Creatively with Pictures

All students recommended for the special program were administered the Torrance Test of Thinking Creatively with Pictures. The tests were designed to evaluate creativity. They were recommended for use in kindergarten through graduate school. They consisted of three sections which were given in timed periods of ten minutes each. They were designed for simple administration with instructions read verbatim from the examiner's manual.

The tests were designed for reliable scoring by individuals who "carefully study and accept the guide as the standard for judging"¹ the drawings. The developer of the test cited an experiment which indicated a mean Pearson product moment coefficient of .90 when reliability was tested between the results scored by experienced scorers and those scored by classroom teachers.²

¹Paul E. Torrance, Directions Manual and Scoring Guide for Torrance Tests of Creative Thinking (Lexington, Massachusetts: Personnel Press, 1966), p. 10.

²Torrance, p. 10.

Four areas of creativity were evaluated by the tests. The first score was determined by originality of the drawings. Higher scores were assigned to the drawings of objects that were uncommon and unique. The second score was determined by elaboration. Points were accumulated for each detail supplied to the basic drawings. The third score was credited for fluency and was determined by the number of drawings completed in the time period. The final score was for flexibility and was determined by the number of different categories the drawings represented.

Form A and B were given respectively as pre- and posttests to small groups of kindergarten, first grade, second grade, and third grade students. Although the directions for the various groups were unchanged, there were no grouping together of students from the different grade levels. The tests were administered by classroom teachers and were scored by the same teachers after they participated in short training sessions. The sessions provided instructions for scoring the various sections of the tests and emphasized the importance of avoiding the subjectivity in judging the drawings.

The normative data for the Torrance Test of Thinking Creatively with Pictures were collected by testing multi-racial and multi-ethnic groups and were intended to be representative of the mid-range of most school populations.

California Test of Personality -
Primary

The California Test of Personality for primary grades was administered to each of the 102 students who were selected for the

study. At the kindergarten and first grade levels it was administered as an individualized test with the examiner reading the questions and recording the student responses. At the second and third grade levels it was administered as a group test with the examiner reading the questions and the students marking the responses. Form AA was used as the pretest and Form BB was used as the posttest. Selected classroom teachers administered and scored the tests.

The test consisted of two subtests: Personal Adjustment and Social Adjustment. Each of the subtests was divided into six sections of eight items each. The Personal Adjustment subtest consisted of the following components: (1) The Self-Reliance section evaluated emotional stability and responsibility for behavior. (2) The Sense of Personal Worth section evaluated personal worth as regarded by self and others. (3) The Sense of Personal Freedom section appraised the individual's feeling about freedom to choose friends and make decisions. (4) The Feeling of Belonging section evaluated the individual's feelings about the love of family and friends and about relationships with people in general. (5) The Withdrawing Tendencies section appraised sensitivity and self concern. (6) The Nervous Symptoms section evaluated physical expressions of emotional conflicts as exhibited by inability to sleep, chronic fatigue, and loss of appetite. The Social Adjustment subtest was divided into the following components and evaluations: (1) The Social Standards section evaluated the understanding of the rights of others. (2) The Social Skills section appraised diplomacy in dealing with friends and strangers. (3) The Anti-Social Tendencies section examined the individual's feelings in

regard to quarreling, disobedience, and destruction of property.

(4) The Family Relations section appraised feelings of security and self-respect in regard to family members. (5) The School Relations section evaluated adjustments to school and relationships with peers and with teachers. (6) The Community Relations section appraised respect for laws and pride in the community.

The format for the California Test of Personality was a YES-NO response following each question. To score the test the appropriate answers were marked and counted. Percentile ranks were given for the subtests and for the total test. The authors gave the following explanation for dependability of the test.

The problem of slanting answers has little significance at the lower grades. Although it is believed by some individuals that the types of questions asked on the test are not answered truthfully by the young children, it is an invalid opinion. Young children do not attempt to distort responses because their problems are so closely a part of their own compilation that they do not hesitate to talk about them.³

Form AA was used as the pretest and Form BB was used as the post-test.

The norms for the Primary Level of the California Personality Test were based on a study of 4,500 students in kindergarten to grade three in South Carolina, Ohio, Colorado, and California.

³Louis P. Thorpe, Willis W. Clark, and Ernest W. Tiegs, Manual for California Test of Personality (Monterey, California: McGraw-Hill, 1953), p. 9.

The Treatment

Each student in experimental group 1 participated in fine arts activities for a minimum of one hour per week. These activities included music, drama, and visual arts. The activities were instructed by resource persons from the community, by a visual arts teacher, and by the music teachers from the participating schools. One classroom teacher in each of the schools was responsible for coordinating the activities.

Each student in experimental group 2 participated in the fine arts activities with the students in experimental group 1; they also participated in special activities directed by the parent in cooperation with the teacher. Each month a packet of materials and activity suggestions was sent to the parents of these students. The parents were asked to use the activities with the students and to document their participation by signing an enclosed form (See Appendix D).

Students in the control group did not participate in the activities. The treatment period lasted for a period of approximately seven months. The activities began one week after the students were placed in their assigned groups and continued until they were posttested in the spring.

In-service for Teachers Coordinating the Fine Arts Activities

In the summer preceding the special program, a one-week workshop was attended by all participating teachers. The objectives of the workshop were to acquaint the teachers with the special needs of

gifted and talented children, to explore activities to use with the students, and to make materials to use in the special program.

Description of the Students

Students were primarily from average and low socioeconomic backgrounds. They were enrolled in kindergarten, grade one, grade two, and grade three in the Bristol, Virginia school system.

The students were screened for the program by the classroom teachers and selected for the study according to scores obtained on tests of intelligence, achievement, or creativity.

Statistical Analysis

An analysis of covariance was used as the statistical measure for determining significant differences. The two experimental groups were combined and compared with the control group to determine pattern deviations from chance expectations. The two experimental groups were also compared after participation in the program. Thirdly, the groups were compared according to the basis of selection for the program (See Appendix E). The null hypotheses were tested for comparison of differences in the groups. The level of significance for rejection of the null hypotheses was at the .05 level of confidence.

Chapter 4

ANALYSIS OF THE FINDINGS OF THE STUDY

Introduction

The study was designed to determine the effects of a fine arts program for young gifted/talented students. Comparisons were made (1) between gifted/talented students who participated in fine arts activities and those who did not, (2) between gifted/talented students who participated in the fine arts activities and those who additionally worked with their parents on home-school packets, and (3) between gifted/talented students on the basis of selection for the special program.

Presentation of Data

For the study 102 students were selected. Five students moved from the district; ninety-seven students completed the study. Eighteen of the students selected were enrolled in kindergarten; twenty-seven were enrolled in grade one; twenty-seven were enrolled in grade two; and thirty were enrolled in grade three. The students were placed in experimental group 1, in experimental group 2, or in the control group by a stratified random selection procedure. Placement of the students in the various groups is shown in Table 1.

Eleven hypotheses were tested. Each hypothesis was tested in the null. An analysis of covariance was utilized to determine the differences between the groups of students.

Table 1
Grouping of Students

Grade Level	Exp. Group 1	Exp. Group 2	Control-Group
K	6	6	6
1	9	9	9
2	9	9	9
3	10	10	10

Note: n = 102

Comparisons Of Test Scores of Students in the
Experimental Groups With Those in the Control Group

The first four hypotheses were formulated and tested to determine differences between the test scores of students in the two experimental groups with those in the control group. Test scores in the areas of intelligence, language arts achievement, creativity, and personality were compared. Thirty-four students participated in each of the experimental groups and in the control group. At the time of the posttesting, two students from experimental group 1 and three students from experimental group 2 had moved from the school district. A total of ninety-seven students participated in the posttesting.

H_0 : There will be no significant difference between the means of the scores of tests of intelligence of young gifted/talented students who participate in a special program of the fine arts and the scores of young gifted/talented students who do not participate in the program.

To test the first hypothesis the scores of the students in experimental group 1 and experimental group 2 were combined as a total group by grade level and their scores were compared with the test scores of the students in the control group. Comparisons were made of the scores

of the students at the individual grade levels. The analysis of covariance was utilized to determine the difference with the pretest scores on intelligence tests serving as the covariates. Table 2 was prepared to show the results of the analysis of covariance of the intelligence test scores.

Table 2

Analysis of Covariance of Experimental Groups With
The Control Group on Intelligence Test Scores

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	18	42.910	0.824	0.378
1	27	84.832	5.247	0.031 *
2	25	17.854	0.844	0.368
3	27	168.542	6.958	0.014 *

* $p \leq .05$

The results of the analysis indicated an F-ratio of 0.824 with a level of significance of 0.378 for students in kindergarten, an F-ratio of 5.247 with a significance of 0.031 for first grade students, an F-ratio of 0.844 with a significance level of 0.368 for second grade students, and an F-ratio of 6.958 with a significance level of 0.014 for third grade students. The difference between the scores of the students in grade one and in grade three were significant at the .05 level on confidence. The scores of the students in grades kindergarten and second were not significantly different. The null hypothesis that there would be no significant difference between the intelligence test scores was rejected at the first and third grade levels. The null hypothesis was not rejected at the kindergarten and second grade levels.

$2H_0$: There will be no significant difference between the means of the language arts achievement test scores of young gifted/talented students who participate in a special program of the fine arts and those young gifted/talented students who do not participate in the program.

An analysis of covariance was used to test the second hypothesis. To analyze the scores of the students on language arts achievement tests, the two experimental groups were combined as one group and compared with the control group. Comparisons were made of the test scores of the students at the individual grade levels. Table 3 shows the results of the analysis of covariance of the language arts test scores.

Table 3

Analysis of Covariance of Experimental Groups With Control Group
on Language Arts Achievement Test Scores

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	18	40.909	2.089	0.169
1	27	26.498	0.308	0.584
2	25	38.709	2.031	0.168
3	27	79.204	0.704	0.409

Results of the analysis of covariance indicated an F-ratio of 2.089 with a difference at the 0.169 level of significance for kindergarten students, an F-ratio of 0.308 with a significance level of 0.584 for first grade students, an F-ratio of 2.031 with a significance level of 0.168 for second grade, and an F-ratio of 0.704 with a significance level of 0.409 for third grade. The differences were not significant at the .05 level of confidence. The null hypothesis that there would be no significant differences between the language arts achievement test scores was not rejected.

$3H_0$: There will be no significant difference between the means of the creativity test scores of young gifted/talented students who participate in a special program of the fine arts and those gifted/talented students who do not participate in the program.

The third hypothesis was tested by utilizing the analysis of covariance with the pretest scores on creativity tests serving as the covariates. The test scores of the two experimental groups were combined as a total group and compared with the scores of the students in the control group. Comparisons were made of the test scores at the individual grade levels and at the combined grade levels. Table 4 was prepared to show the results of the analysis of covariance of the creativity test scores.

Table 4

Analysis of Covariance of Experimental Groups With Control Group
on Creativity Test Scores

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	18	405.466	5.671	0.031 *
1	27	88.326	1.374	0.253
2	25	71.237	1.740	0.201
3	27	301.964	6.520	0.017 *
Total K-3	97	741.012	13.643	<0.001 *

* $p \leq .05$

The results of the analysis of covariance indicated an F-ratio of 5.671 with a significant difference at the 0.031 level for kindergarten students, an F-ratio of 1.740 with a significance level of 0.201 for second grade students, and an F-ratio of 6.520 with a significant

difference of 0.017 for third grade students. An F-ratio of 13.643 with a level of significant difference of <0.001 was indicated for the combined grade levels. The results indicated a significant difference at the .05 level of confidence between the test scores of students in kindergarten, grade three, and for the combined grade levels. There was not a significant difference between the scores of the students in grades one and two. The null hypothesis that there would be no significant difference between the creativity test scores of the students who participated in the special program and those who did was rejected for the kindergarten, grade three, and for the combined grade levels. The null hypothesis was not rejected at the first and second grade levels.

$4H_0$: There will be no significant difference between the means of the scores on tests of personality and attitudes of young gifted/talented students who participate in a special program of the fine arts and those young gifted/talented students who do not participate in the program.

The final hypothesis tested to compare the experimental groups with the control group was based on personality test scores. As in Hypotheses 1, 2, and 3, the experimental groups were recoded as one total group, then compared with the control group. Comparisons were made of the scores of the students at the individual grade levels and for the combined grade levels. The pretest scores on tests of personality and attitude served as the covariates. Table 5 was prepared to show the results of the analysis of covariance of the personality test scores.

Table 5

Analysis of Covariance of Experimental Groups With the Control
Group on Personality Test Scores

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	18	4.742	0.091	0.767
1	27	122.233	1.846	0.187
2	25	0.526	0.008	0.927
3	27	100.482	1.014	0.324
Total K-3	97	0.776	0.010	0.921

The results of the analysis of covariance indicated an F-ratio of 0.091 with a difference at the 0.767 level of significance for kindergarten students, an F-ratio of 1.846 with a difference at the 0.187 for first grade students, and an F-ratio of 0.008 with a difference at the 0.927 level for second grade students, and an F-ratio of 1.014 with a difference at the 0.921 level of significance. The difference was not significant at the .05 level of confidence on tests of personality. The null hypothesis that there would be no significant difference between the personality test scores of the students who participated in the special program and those who did not was not rejected.

Comparisons of Test Scores of Students in Experimental
Group 1 With Those in Experimental Group 2

Hypotheses five through eight were formulated and tested to determine the difference between the test scores of students who participated in a special program of the fine arts and those who additionally participated in a home component of the program. Comparisons were made of test scores in the areas of intelligence, language arts achievement, creativity, and personality. Thirty-four students participated in

each of the two experimental groups.

H_0 : There will be no significant difference between the means of the scores on tests on intelligence of young/gifted talented students who participate in a special program of the fine arts and young gifted/ talented students who additionally participate in an at-home component of the program directed by the parent in cooperation with the program teacher.

Hypothesis 5 was tested by utilizing the analysis of covariance to compare the test scores between the students in experimental group 1 and experimental group 2. Comparisons were made of the test scores at the individual grade levels. The scores on tests of intelligence formed the basis for the comparison with the pretest scores serving as the covariates for the analysis. Table 6 was prepared to show the results of the analysis of covariance of the intelligence test scores of students in experimental group 1 with students in experimental group 2.

Test 6

Analysis of Covariance of Intelligence Test Scores of Students in Experimental Group 1 With Students in Experimental Group 2

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	12	44.226	0.914	0.364
1	18	8.756	0.689	0.419
2	16	0.990	0.068	0.798
3	17	5.136	0.227	0.641

The results of the analysis of covariance indicated an F-ratio of 0.914 with a 0.364 level of significance of kindergarten students.

For first grade students the F-ratio was 0.689 with a significance level of 0.419. For second grade students the F-ratio was 0.068 with a significance level of 0.798. For third grade students, the F-ratio was 0.227 with a significance level of 0.641. The difference between the two sets of test scores was not significantly different at the .05 level of confidence. The null hypothesis that there would be no significant difference between the intelligence test scores of the students who participated in the special program and those who additionally participated in a home-school component was not rejected.

H_0 : There will be no significant difference between the means of the language arts achievement test scores of young gifted/talented students who participate in a special program of the fine arts and young gifted/talented students who participate in the program and who additionally participate in a home component program.

Hypothesis 6 was tested by comparing the language achievement test scores of the students participating in experimental group 1 with the students participating in experimental group 2. Comparisons were made of the test scores of the students at individual grade levels. The pretest scores for the two groups served as the covariates for the analysis. Table 7 shows the results of the analysis of covariance of the language arts achievement test scores of students in experimental group 1 with students in experimental group 2.

The results of the analysis of covariance indicated an F-ratio of 1.469 with a difference at the 0.252 level of significance for kindergarten students, an F-ratio of 0.952 with a significance level

Table 7
 Analysis of Covariance of Language Arts Achievement Test Scores of
 Students in Experimental Group 1 With Students in Experimental
 Group 2

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	12	19.830	1.496	0.252
1	18	0.274	0.004	0.952
2	16	22.881	1.996	0.181
3	17	96.981	0.563	0.465

of 0.952 for first grade students, an F-ratio of 1.996 with a significance level of 0.181 for second grade students, and an F-ratio of 0.563 with a significance level of 0.465 for third grade students. The difference between the test scores of the two groups of students was not significant at the .05 level of confidence. The null hypothesis that there would be no significant difference between the language arts achievement test scores of the students who participated in the special program and those who additionally participated in a home-school component was not rejected.

H_0 : There will be no significant difference between the means of the scores on tests of creativity of young gifted/talented students who participate in a program of the fine arts and young gifted/talented students who additionally participate in a home component of the program.

To test Hypothesis 7, the analysis of covariance was utilized to compare the scores on tests of creativity made by students in experimental group 1 with the scores made by the students in experimental group 2. Comparisons were made of the test scores of the students at

the individual grade levels and for combined grade levels. Scores on the creativity pretests served as the covariates. Table 8 shows the results of the analysis of covariance of creativity test scores of students in experimental group 1 with students in experimental group 2.

Table 8

Analysis of Covariance of Creativity Test Scores of Students in Experimental Group 1 With Students in Experimental Group 2

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	12	59.896	1.217	0.298
1	18	84.953	1.353	0.263
2	16	19.209	0.346	0.567
3	17	10.121	0.203	0.660
Total K-3	63	0.372	0.006	0.937

The results of the analysis of covariance indicated an F-ratio of 1.217 with a difference at the 0.298 level of significance for kindergarten students, an F-ratio of 1.353 with a significance at the 0.263 level for first grade students, an F-ratio of 0.346 with a significance at the 0.567 level of second grade students, and an F-ratio of 0.203 with a significance at the 0.660 level for third grade students. The analysis of the combined grade levels indicated an F-ratio of 0.006 with the difference at the 0.937 level of significance. There were no significant differences at the .05 level of confidence between the test scores of the two experimental groups at the individual grade levels or for the combined grade levels. The null hypothesis that there would be no significant difference between the creativity test scores of the students who participated in the

special program and those who additionally participated in a home-school component was not rejected.

H_0 : There will be no significant difference between the means of the scores on tests of personality and attitude of young gifted/ talented students who participate in a special program of the fine arts and young gifted/talented students who additionally participate in a home component to the program.

Hypothesis 8, the final hypothesis pertaining to comparisons of the two experimental groups, was tested by using the analysis of covariance to determine the difference in the personality test scores of the students in experimental group 1 with the scores of the students in experimental group 2. Comparisons were made of the test scores of the students at each of the four grade levels and of the scores at the combined grade levels. The pretest scores on personality tests served as the covariates for the analysis. Table 9 was prepared to show the results of the analysis of covariance of the personality test scores of students in experimental group 1 with students in experimental group 2.

Table 9

Analysis of Covariance of Personality Test Scores of Students in Experimental Group 1 With Students in Experimental Group 2

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	12	31.716	0.567	0.471
1	18	0.000	0.000	1.000
2	16	3.184	0.064	0.804
3	17	6.665	0.082	0.779
Total K-3	63	11.033	0.139	0.710

The results of the analysis indicated an F-ratio of 0.567 with a 0.471 level of significance for kindergarten students, an F-ratio of 0.000 with a significance level of 1.000 for first grade students, an F-ratio of 0.064 with a significance level of 0.804 for second grade students, and an F-ratio of 0.082 with a significance level of 0.779 for third grade students. The results of the analysis for the combined grade levels indicated an F-ratio of 0.139 with a significance level of 0.710. There were no significant differences at the .05 level of confidence between the personality test scores of the students in experimental group 1 and those in experimental group 2. The null hypothesis that there would be no significant difference between the personality test scores of the students who participated in the special program and those who additionally participated in a home-school component of the program was not rejected.

Comparisons of Test Scores of Students On the Basis of Selection for the Program

Hypotheses 9 through 11 were tested to determine if the scores of the students were significantly different according to the basis of their selection for the program. Selections were made according to scores received on tests of intelligence, language arts achievement, and creativity. Students who scored high in any, and not necessarily all, of the three areas were accepted in the program. To test for the differences, the analysis of covariance was utilized to compare the intelligence test scores on the basis of student selection, to compare the language arts achievement test scores on the basis of student selection, and finally, to compare the creativity test scores on the basis of student selection.

H_0 : Young gifted/talented students selected for a special program on the basis of scores on intelligence tests will show no significant difference on tests of intelligence when compared with gifted/talented students selected on the basis of language arts achievement test scores or creativity test scores.

Hypothesis 9 was tested by using the analysis of covariance to compare the intelligence test scores of the students who were selected for the program on the basis of intelligence with those who were selected on the basis of language arts achievement and secondly, to compare the intelligence test scores of the students who were selected on the basis of intelligence with those who were selected on the basis of creativity. Tables 10 and 11 were prepared to show the results of the analysis of covariance on the intelligence test scores.

Table 10

Analysis of Covariance of Intelligence Test Scores of Students Selected For a Special Program on the Basis of Intelligence Test Scores With Students Selected on the Basis of Language Arts Achievement Test Scores

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	12	65.728	1.010	0.341
1	18	14.499	0.731	0.406
2	16	37.975	1.408	0.257
3	18	58.687	2.041	0.174

Table 11

Analysis of Covariance of Intelligence Test Scores of Students Selected
For a Special Program on the Basis of Intelligence Test Scores With
Students Selected on the Basis of Creativity Test Scores

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	12	26.146	1.147	0.312
1	18	8.908	0.599	0.451
2	18	11.240	1.215	0.288
3	18	122.656	4.949	0.042 *

* $p \leq .05$

The results of the analysis of the scores of the students selected on the basis of intelligence with the students selected on the basis of language arts achievement indicated an F-ratio of 1.010 with a significance level of 0.341 for kindergarten students, an F-ratio of 0.731 with a significance level of 0.406 for first grade students, an F-ratio of 1.408 with a significance level of 0.257 for second grade students, and an F-ratio of 2.041 with the significance at the 0.174 level for third grade students. The results of the analysis of the scores of the students selected on the basis of intelligence with the students selected on the basis of creativity indicated an F-ratio of 1.147 with a significance level of 0.312 for kindergarten students, an F-ratio of 0.599 with a significance level of 0.451 for students in first grade, an F-ratio of 1.215 with a significance level of 2.888 for students in the second grade, an F-ratio of 4.949 with a significance level of 0.042 for students in third grade. The differences between the scores of the students on the basis of selection were not significantly different at the .05 level of confidence except for third grade students selected on the basis of creativity. The null

hypothesis that there would be no significant difference between the intelligence test scores of students on the basis of selection was not rejected on the basis of achievement. It was not rejected on the basis of creativity in kindergarten, first, and second grades. It was rejected on the basis of creativity for third grade students.

$10H_0$: Young gifted/talented students selected for a special program on the basis of scores on language arts achievement tests will show no significant difference on tests of language arts achievement when compared with young gifted/talented students selected on the basis of intelligence test scores or creativity test scores.

Hypothesis 10 was tested by using the analysis of covariance. The language arts achievement test scores of students selected for the program on the basis of achievement were compared with the language arts achievement test scores of students selected for the program on the basis of intelligence, and secondly, the scores were compared for students selected on the basis of achievement with students selected on the basis of creativity. Tables 12 and 13 show the results of the analysis of covariance of the language arts achievement test scores.

Table 12

Analysis of Covariance of Achievement Test Scores of Students Selected For a Special Program on the Basis of Achievement Test Scores With Students Selected on the Basis of Intelligence Test Scores

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	12	17.810	1.196	0.303
1	18	29.425	0.330	0.574
2	16	1.582	0.166	0.690
3	18	115.882	0.744	0.401

Table 13

Analysis of Covariance of Achievement Test Scores of Students Selected
For a Special Program on the Basis of Achievement Test Scores With
Students Selected on the Basis of Creativity Test Scores

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	12	4.069	0.157	0.701
1	18	5.165	0.046	0.833
2	16	3.071	0.115	0.740
3	18	361.258	2.329	0.147

The results of the analysis of covariance of the achievement test scores of students selected on the basis of achievement with the scores of the students selected on the basis of intelligence indicated an F-ratio of 1.196 with a significance at the 0.303 level for kindergarten students, an F-ratio of 0.330 with the significance level of 0.574 for first grade students, an F-ratio of 0.166 with a significance level of 0.690 for second grade students, and an F-ratio of 0.744 with the level of significance of 0.401 for third grade students. The results of the analysis of the scores of those selected on the basis of achievement with those selected on the basis of creativity indicated an F-ratio of 0.157 with a significance level of 0.701 for kindergarten students, an F-ratio of 0.046 with a significance level of 9.833 for first grade students, an F-ratio of 0.115 with a significance level of 0.740 for second grade students, and an F-ratio of 2.329 with a significance level of 0.147 for third grade students. The scores were not significantly different at the .05 level of confidence. The null hypothesis that there would be no significant difference between the language arts achievement test scores on the basis of student

selection for the special program was not rejected.

11H₀ : Young gifted/talented students selected for a special program on the basis of scores on tests of creativity will show no significant difference on test scores of creativity when compared with gifted/talented students selected on the basis of tests of intelligence or language arts achievement.

Hypothesis 11, the final hypothesis pertaining to student selection, was tested by utilizing the analysis of covariance. The scores on tests of creativity were compared for students selected for the program on the basis of creativity with the test scores of students selected on the basis of intelligence test scores. Secondly, the scores were compared for students selected on the basis of creativity with students selected on the basis of language arts achievement. Tables 14 and 15 were prepared to show the results of the analysis of covariance of the creativity test scores.

Table 14

Analysis of Covariance of Creativity Test Scores of Students Selected For a Special Program on the Basis of Creativity Test Scores With Students Selected on the Basis of Intelligence Test Scores

Grade Level	N	Mean Squares	F Ratio	Significance of F
K	12	120.357	1.937	0.169
1	18	39.151	0.492	0.494
2	18	80.269	3.707	0.073
3	18	55.646	0.825	0.378

Table 15

Analysis of Covariance of Creativity Test Scores of Students Selected
For a Special Program on the Basis of Creativity Test Scores With
Students Selected on the Basis of Achievement Test Scores

Grade Levels	N	Mean Squares	F Ratio	Significance of F
K	12	195.598	2.209	0.171
1	18	0.369	0.009	0.926
2	16	24.857	0.446	0.516
3	18	65.389	1.282	0.275

The results of the analysis of covariance on the creativity test scores of students selected on the basis of creativity with those selected on the basis of intelligence indicated an F-ratio of 1.937 with a significance level of 0.169 for kindergarten students, an F-ratio of 0.492 with a significance level of 0.494 for first grade students, an F-ratio of 3.707 with a significance level of 0.073 for second grade students, an F-ratio of 0.825 with a significance level of 0.378 for third grade students. The analysis of the scores of the students selected on the basis of creativity with those selected on the basis of achievement indicated an F-ratio of 2.209 with a significance level of 0.171 for kindergarten students, a F-ratio of 0.009 with a significance level of 0.926 for first grade students, an F-ratio of 0.446 with a significance level of 0.516 for second grade students, and an F-ratio of 1.282 with a significance level of 0.275 for third grade students. The creativity test scores were not significantly different at the .05 level of confidence. The null hypothesis that there would be no significant difference between the

creativity test scores on the basis of student selection for the special program was not rejected.

Summary

The analysis of the data was divided into three major comparisons. The first four hypotheses were tested for the purpose of comparing the test scores of students who participated in a fine arts program with those students who did not participate in the program. Four other hypotheses were tested to compare the scores of students who participated in a home-school component of the program with the students who participated only in the in-school program. Three additional hypotheses were tested to determine the differences between the test scores on the basis of student selection for the program.

To test for the differences between the scores of the students who participated in the fine arts program and those who did not participate in the program, the two experimental groups were recoded as a total group and the analysis of covariance was utilized to compare the recoded group with the control group. The statistical procedure was applied to the two groups at each of the four grade levels. The results indicated significant differences on intelligence test scores of students in kindergarten and second grade, and significant differences on tests of creativity of students in kindergarten, third grade, and in the combined grade levels. No significant differences were indicated on intelligence test scores of students in first and third grades, on creativity test scores of students in first and second grades, or on test scores of language arts achievement or personality

at any of the four grade levels. The null hypotheses 2 and 4 were not rejected. The null hypothesis 1 was not rejected for kindergarten and second grade students. It was rejected for first and third grade students. The null hypothesis 3 was not rejected for first and second grade students. It was rejected for kindergarten and third grade students.

The test scores of the students who participated in the home-school component of the program and the test scores of the students who participated only in the at-school program were also compared through the use of the analysis of covariance. No significant differences were indicated between the two groups. Null hypotheses 5 through 8 were not rejected.

The hypotheses pertaining to the differences of test scores on the basis of student selection were tested by again using the analysis of covariance. The results indicated no significant differences between the groups on achievement test scores and on creativity test scores. There was a significant difference indicated on intelligence test scores of the students selected on the basis of creativity.

Chapter 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The questions considered in this study pertained to comparisons of test scores of gifted/talented students in the areas of intelligence, language arts achievement, creativity, and personality following participation in a fine arts program. The following questions were considered:

1. Does participation in a fine arts program significantly enhance the test scores of young gifted/talented students in the areas of intelligence, language arts achievement, creativity, and personality?

2. Does participation in a fine arts program and in an additional home component of the program significantly enhance the test scores of young gifted/talented students in the areas of intelligence, language arts achievement, creativity, and personality?

3. Does the basis of selection for a special fine arts program significantly influence the test scores in the area by which the student was selected?

The following instruments were used to collect the data: (1) To test intelligence, the Henman-Nelson Tests of Mental Ability, Primary Level, were administered to students in grades Kindergarten one and two, and the Henman-Nelson Tests of Mental Ability, Levels 3-6 were administered to students in grade three. Form 1 was used for the pretest and Form 2 was used for the posttest. (2) To test language arts achievement,

the Metropolitan Readiness Tests were administered to kindergarten students. The Primer Metropolitan Achievement Tests were administered to students in grade one. The Primary I Metropolitan Achievement Tests were administered to students in grade two, and the Primary II Metropolitan Achievement Tests were administered to students in grade three. Equivalent forms were used for pre-and posttests. (3) To test creativity, Torrance Tests of Thinking Creatively with Pictures were administered to students in kindergarten through grade 3. Form A was used as the pretest, and Form B was used as the posttest. (4) To test personality and attitudes, the California Test of Personality for Primary Grades was administered to the students at all four of the grade levels. Form AA was used as the pretest and Form BB was used as the posttest. The tests of intelligence, language arts achievement, and creativity were administered to all students recommended for the program. The personality tests were administered to the 102 students who were selected for the program. The posttests were administered to ninety-seven students. Five students moved from the school district during the time of the study.

The hypotheses for the study were tested in the null format. The analysis of covariance was utilized to determine the level of differences. The test scores were compared at the individual grade levels and where meaningful, they were compared as a combined group. The .05 level of confidence was used as the indicator of significant differences.

From the analysis of the statistical data, the following findings resulted:

Null Hypothesis 1 was rejected at the first and third grade levels. It was not rejected at the kindergarten and second grade levels.

Null Hypothesis 2 was not rejected.

Null Hypothesis 3 was rejected at the kindergarten, third grade, and combined grade levels. It was not rejected at the first and second grade levels.

Null Hypotheses 4, 5, 6, 7, 8, 10, and 11 were not rejected.

Null Hypothesis 9 was rejected for students in the third grade selected for the program on the basis of creativity. It was not rejected for students in kindergarten, first, and second grade selected on the basis of creativity or for students selected on the basis of achievement.

Conclusions

Based on the findings in the study, the following conclusions were derived:

1. The scores of young gifted/talented students in first and third grades on tests of intelligence were significantly increased by participation in the fine arts program. The scores of the young gifted/talented students in kindergarten and second grade were not significantly increased.

2. The scores of young gifted/talented students on tests of language arts achievement were not significantly increased by participation in the fine arts program.

3. The scores of young gifted/talented students on tests of creativity were significantly increased after participating in a fine arts program.

4. The scores of young gifted/talented students who participated in a home-school component of the fine arts program in addition to the in-school program were not significantly higher on tests of intelligence, language arts achievement, creativity, or personality following participation in the program.

5. The test scores of young/gifted students who were selected for the fine arts program on the basis of scores on intelligence tests and language arts achievement tests were not significantly different. The scores of students selected for the program on the basis of creativity were significantly different on tests of intelligence.

Implications

Possible factors for the lack of increases in the test scores of the students could be the amount of time allotted for the special program each week. One hour per week may be insufficient for arts activities.

Another possible factor could be the need for more in-depth activities in the home-school packets. The activities suggested may be insufficient for adequate exploration and experimentation.

A third factor could be deficiency in the testing. Many of the students scored above the ninetieth percentile on the pretests. The ceilings of the tests may be insufficient for determining the students' scores.

Recommendations

Based on the findings of this study recommendations for further research of the problem were:

1. The time allotted per week for the special program should be increased.
2. A follow-up study of the same students should be attempted.
3. Since many of the students scored in the upper percentiles on the pretests, tests with higher ceilings should be utilized.
4. The home-school packets should be revised.
5. The activities used in the program should be assessed.

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APPENDICES

APPENDIX A

TEACHER RECOMMENDATIONS

RECOMMENDATIONS FOR GIFTED PROGRAM

School _____ Grade _____

Teacher _____ Class Enrollment _____

1. Student _____

2. Student _____

3. Student _____

4. Student _____

5. Student _____

TEACHER RECOMMENDATION FOR GIFTED/TALENTED PROGRAM
PRESCHOOL - GRADE THREE

(Each teacher is to submit the top 10% of her classroom
according to the criteria below.)

Criteria for Selection of Students to Be Considered for the Gifted/
Talented Program:

1. Children in the top 10% of each grade, preschool through grade three in each school, as measured by school records and teacher observation.
2. Children who perform beyond their age level in language arts and/or reading readiness skills.
3. Young children, who demonstrate by their natural ability, that they need additional help beyond that given in the regular classroom, and whose cognitive achievement could be enhanced by a program of the arts (drama, music, and art).
4. Children who are capable of maintaining their basic learning skills while being released from the classroom to participate in additional art experiences.
5. Children who are creative and productive thinkers.

* * * * *

Teacher Checklist for Identification of Gifted and Talented Children
Preschool Through Third Grade

Child's Name _____ School _____
 Birthdate _____
 Grade _____

Schwartz stated in Early Years that if a child in a classroom exhibits eight of the characteristics listed below consistently, testing is in order. If you can spot twelve or more, the child is most likely gifted and testing and intervention measures should be implemented.*

Check the following characteristics:

	Yes	No
1. Has a quick and sharp memory.		
2. Asks a lot of questions		
3. Is nervous about relationships with other children.		
4. Learns new material quickly.		
5. Easily performs difficult manual tasks.		
6. Is bored by normal activities.		
7. Has difficulty making friends.		
8. Shows unusual talent in a special area such as music or art.		
9. Shows interest and aptitude in many areas.		
10. Has larger than usual vocabulary for age.		
11. Prefers solitary activities.		
12. Is able to verbally express ideas easily.		
13. Is anxious about work being perfect.		
14. Adjusts to changes easily.		
15. Has a long attention span.		
16. Shows leadership abilities.		
17. Shows psychomotor ability.		
TOTAL		

Evaluate each child on the seventeen characteristics listed above.

Children selected for the program should include those with demonstrated high level achievement and/or potential ability in any of the following areas, singly or in combination:

	Yes	No
1. <u>Intelligence</u>		
2. <u>Achievement</u>		
3. <u>Creative and Productive Thinking</u>		
4. <u>Leadership</u>		

Child Recommended By: _____

*Susan Schwartz, "The Young Gifted Child," Early Years, X (February, 1980), 43-45.

APPENDIX B

PARENTAL PERMISSIONS

Pilot Project - Gifted/Talented
Preschool - Grade 2

Dear Parents:

Your child has been recommended for the Pilot Project - Gifted/Talented Program. The purpose of this letter is to inform you that all students recommended for the program this school year will be tested for academic ability, creativity, and intelligence, before acceptance in the program.

As soon as test results have been tabulated, letters will be sent to parents of children who qualify for the program along with permission slips for enrollment.

If you are willing for your child to be tested for the Gifted-Talented Program, please sign and return the following form.

(Return)

_____ has my permission
(Child'sName)

to be tested for the Pilot Project - Gifted/Talented Program.

(Parent's Signature)

(Date)

Dear Parents:

The Bristol Virginia School System, in cooperation with the Virginia State Department of Education - Research Division, is conducting a study of young children to find better ways to enrich their experiences in school. This study is designed for children who might need enrichment beyond their grade level.

Your child was selected to participate in the program, after a series of tests. The activities will center around the arts.

If you agree for your child to participate in the program, please sign the form below and return this letter to your child's teacher.

* * * * *

_____ I would like for my child to participate in this program.

_____ I do not wish for my child to participate in this program.

Child's Name

Parent's Signature

Date

APPENDIX C

SUMMARIES OF TEST RESULTS

SUMMARY SHEET FOR IDENTIFICATION

Child's Name _____

Birthdate _____

Student
Code
Number

School _____

Grade _____

Teacher _____

Henman-Nelson Test Score _____

Metropolitan Achievement Test Score _____

Torrance Test of Creativity Score _____

Committee Recommendation

Eligible _____

Ineligible _____

Student
Code
Number

Placed in Experimental Group I _____

Placed in Experimental Group II _____

Placed in Control Group _____

Henman-Nelson Test of Mental Ability

Child's Name _____

Grade _____ School _____

Test Form _____ Date of Testing _____
Yr. Month Day

Age _____ Birthdate _____

Number Correct on Subtest 1 _____ Intelligence Quotient _____

Number Correct on Subtest 2 _____ Mental Age _____

Number Correct on Subtest 3 _____ Percentile Rank _____

Total (Raw score) _____ Stanine _____

Metropolitan Achievement Tests
Primer Level Form

Pupil Information Box

Name:

Date of Test: Boys

Date of Birth: Girl
Day Month Year

School:

City: State:

Grades: Teacher:

Score Summary Box

	Reading	Spelling	Arithmetic	Language
Listening of Sounds	<input type="text"/>	<input type="text"/>	<input type="text"/>	1 2 3 4 5 6 7 8 9
Reading	<input type="text"/>	<input type="text"/>	<input type="text"/>	1 2 3 4 5 6 7 8 9
Numbers	<input type="text"/>	<input type="text"/>	<input type="text"/>	1 2 3 4 5 6 7 8 9
Correct answers completed on items	<input type="text"/>	of items		<input type="text"/>

6 7 8 9 10 11 12 A B C D E

**METROPOLITAN ACHIEVEMENT TESTS
PRIMARY I LEVEL—FORM G**

Pupil Information Box

Name

Date of Test Boy Girl

Date of Birth Day Month Year Girl

School

City State

Grade Teacher

Score Summary Box

Test	Raw Score	Standard Score	Grade Equivalent	Percentile Rank	Norm
1 Word Knowledge	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2 Word Analysis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3 Reading	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1-3 Total Reading	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4 Total Mathematics	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

SCORING WORKSHEET

TORRANCE TESTS OF CREATIVE THINKING, FIGURAL FORMS A and B

Pupil's Name _____ Sex _____ Test Date _____

School _____ Age _____ Grade _____ Scorer _____

Form _____

Resp. No.	Activity 1			Activity 2			Activity 3		
	Orig.	Elab.	Categ.	Orig.	Elab.	Categ.	Orig.	Elab.	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
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17									
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19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

SCORE SUMMARY

	FLU	FLEN	ORIG	ELAB
Act. 1	 	 		
Act. 2				
Act. 3				
TOTAL				
TOTAL SCORE				

COMMENTS:

California Test of Personality
 primary • form

DEvised BY LOUIS P. THORPE, WILLIS W. CLARK, AND ERNEST W. THIGGS

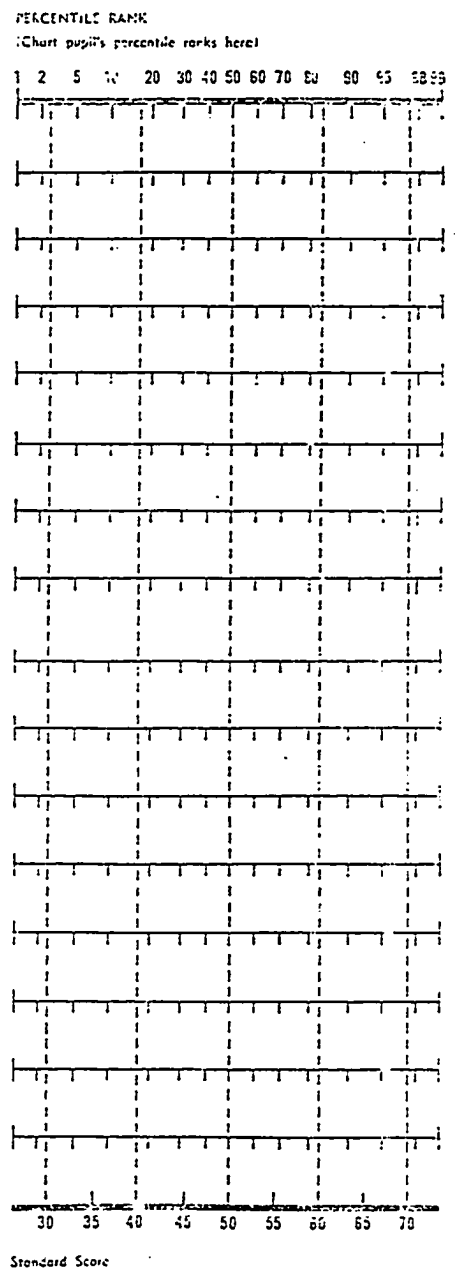
Date of Test: _____
 Date of Birth: _____
 Pupil's Age: _____
 City: _____
 School: _____
 Examiner: _____
 Sex: Boy Girl
 Grade: _____
 Month: _____ Day: _____ Year: _____
 Component: _____
 Possible Score: _____
 Pupil's Score: _____
 Percentile Rank: _____

1. PER. ADJ.
 A. S-rel. 8
 B. Per. Wit. 8
 C. Per. Fdm. 8
 D. Esig. 8
 E. Wd. Td. 8
 (fcm. from)
 F. No. S. 8
 (fcm. from)
 TOTAL (A-F) 48

2. SOC. ADJ.
 A. Soc. St. 8
 B. Soc. Sk. 8
 C. A-s. Td. 8
 (fcm. from)
 D. Em. Rel. 8
 E. Sc. Rel. 8
 F. Cr. Rel. 8
 TOTAL (A-F) 48

TOTAL ADJ. 56

See Manual for Instructions.



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APPENDIX D

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/s/

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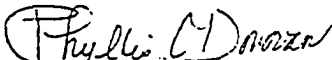
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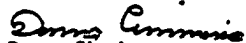
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2401 Windsor Avenue
Bristol, Tennessee 37620

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APPENDIX E

RAW SCORES

Table 16
Raw Scores of Students on Pretests and Posttests on Tests of Intelligence,
Language Arts Achievement, Creativity and Personality

Student Code Number*	Intelligence Test Scores		Language Arts Achievement Test Scores		Creativity Test Scores		Personality Test Scores	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
01114	63	75	76	76	32	51	75	80
01214	50	56	70	74	22	25	83	84
01331	46	49	49	57	17	25	50	74
01432	57	63	76	76	26	29	83	72
01524	46	51	72	76	28	23	69	78
01623	50	66	59	73	21	25	75	82
02122	33	55	65	76	11	24	57	62
02215	44	42	71	70	24	27	60	55
02332	39	58	66	76	03	14	75	79
02422	44	56	63	76	02	22	85	86
02531	45	69	65	71	18	04	76	82
02612	31	41	69	76	04	27	57	65
03123	36	40	44	61	22	35	49	58
03213	38	41	59	68	17	33	53	60
03333	36	49	62	63	15	30	71	75
03412	41	56	60	76	07	25	67	84

Table 16 (continued)

Student Code* Number	Intelligence Test Scores		Language Arts Achievement Test Scores		Creativity Test Scores		Personality Test Scores	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
03523	39	47	57	76	28	35	40	68
03635	44	53	56	73	26	12	81	83
11134	56	65	36	63	36	30	59	62
11225	67	75	27	72	30	41	53	62
11324	59	71	31	60	26	33	79	80
11431	63	74	31	69	28	30	67	83
11515	59	71	36	77	36	31	74	58
11622	67	73	28	59	41	48	74	69
11732	75	76	36	73	53	44	75	87
11815	71	78	32	61	45	18	56	57
11911	59	72	25	74	36	29	66	61
12134	34	36	31	51	46	50	79	83
12232	64	74	30	76	22	26	73	70
12314	56	65	28	45	20	30	73	76
12434	56	70	31	57	17	28	55	63
12522	53	62	35	75	26	25	65	55
12625	52	66	27	66	31	31	67	72
12711	52	66	33	76	24	32	21	77

Table 16 (continued)

Student Code Number*	Intelligence Test Scores		Language Arts Achievement Test Scores		Creativity Test Scores		Personality Test Scores	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
12821	50	68	32	72	32	47	65	71
12912	48	63	38	69	33	41	70	68
13122	48	64	34	66	30	33	62	64
13223	37	48	18	56	26	32	74	67
13333	40	52	21	71	32	35	72	66
13433	53	61	26	73	19	13	83	78
13534	55	59	27	46	25	27	79	68
13625	43	53	21	66	34	45	62	71
13711	53	72	23	74	20	38	81	78
13812	50	63	28	58	25	39	62	65
13912	49	57	28	65	32	38	65	70
21125	71	75	75	80	37	40	79	78
21222	81	81	72	78	15	25	81	83
21315	80	78	77	80	35	31	89	80
21434	72	77	76	77	16	14	72	81
21532	74	72	73	75	19	23	72	73
21611	76	80	77	82	22	21	81	70
21734	80	76	73	84	27	27	68	74

Table 1.6 (continued)

Student Code Number*	Intelligence Test Scores		Language Arts Achievement Test Scores		Creativity Test Scores		Personality Test Scores	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
21822	73	75	76	72	18	26	79	73
21914	75	81	71	79	39	37	69	68
22124	68	77	76	81	24	21	84	86
22231	58	78	75	77	13	21	62	53
22322	66	--	76	--	14	--	--	--
22435	67	71	77	79	38	42	61	72
22533	63	59	77	81	35	27	66	82
22624	74	--	74	--	27	--	--	--
22711	65	72	77	80	13	24	73	85
22812	61	71	76	81	17	15	69	78
22912	69	65	75	77	19	41	50	50
23122	63	66	72	83	28	36	65	77
23222	70	78	74	82	26	31	76	79
23313	71	80	76	83	38	51	73	86
23431	60	70	75	64	21	28	71	70
23524	63	68	75	72	26	25	71	70
23615	71	76	74	82	41	50	56	61
23732	65	69	74	79	31	32	66	54

Table 16 (continued)

Student Code Number*	Intelligence Test Scores		Language Arts Achievement Test Scores		Creativity Test Scores		Personality Test Scores	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
23811	66	71	77	81	33	40	67	74
23933	62	67	64	75	31	34	76	82
31112	61	75	79	82	29	29	76	66
31234	71	74	79	83	34	41	77	83
31335	59	78	82	82	53	56	72	83
31411	64	75	83	84	35	36	83	62
31534	81	70	82	82	16	26	81	77
31624	59	68	78	80	15	30	72	74
31712	68	82	79	80	21	22	72	77
31824	67	78	82	82	19	47	76	76
31924	67	78	84	84	28	36	81	76
31011	61	--	81	--	28	--	--	--
32121	48	76	82	83	28	37	65	76
32215	52	65	80	81	40	42	78	84
32333	42	57	73	78	25	31	75	77
32432	54	66	80	81	11	12	61	69
32523	48	69	82	79	25	37	83	85
32633	61	65	83	81	22	25	76	81

Table 16 (continued)

Student Code Number*	Intelligence Test Scores		Language Arts Achievement Test Scores		Creativity Test Scores		Personality Test Scores	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
32715	58	73	80	82	40	53	84	85
32811	39	---	77	---	25	---	56	---
32935	58	71	80	81	41	36	84	86
32023	54	75	83	84	37	43	67	63
33113	59	69	80	79	49	53	35	90
33222	57	66	77	83	37	34	77	84
33333	46	56	78	80	35	38	65	64
33425	58	---	82	---	54	---	81	---
33513	56	70	77	82	51	58	70	69
33623	57	69	77	77	33	37	78	75
33732	50	69	77	81	53	38	56	60
33825	48	64	77	81	38	40	82	89
33933	63	70	79	83	30	21	80	51
33012	42	75	79	81	38	48	76	81

* First digit of student code number = Grade (0 = Kindergarten, 1 = First Grade, 2 = Second Grade, 3 = Third Grade)

Second digit of student code number = Selection Basis (1 = Selected on the basis of Intelligence test score, 2 = Selected on the basis of Language Arts Achievement test score, 3 = Selected on the basis of Creativity test score)

* Third digit of student code number = Student identification number
Fourth digit of student code number = Research group assignment (1 = Experimental Group 1,
2 = Experimental Group 2,
3 = Control Group)
Fifth digit of student code number = School (1 = Highland View, 2 = Jefferson, 3 = Jackson,
4 = Washington-Lee, 5 = Van Pelt)

VITA

GENEVA HAMMOND DILLARD

Personal Data: Place of Birth: Bristol, Tennessee
 Marital Status: Married
 Archie K. Dillard

Education: East Tennessee State University, Johnson City,
 Tennessee; elementary education, B.S., 1971.
 University of Virginia, Charlottesville,
 Virginia; elementary education, M.Ed., 1974.
 East Tennessee State University, Johnson City,
 Tennessee; supervision, Ed.D., 1982.

Professional Experience: Teacher, Bristol Virginia School System 1971-
 present.
 Doctoral Fellow, East Tennessee State University,
 Department of Supervision and Administration,
 1981.

Professional Memberships: Phi Delta Kappa
 Phi Kappa Phi
 Kappa Delta Pi
 National Education Association
 Virginia Education Association
 Bristol Virginia Education Association
 International Reading Association
 Virginia State Reading Association
 Southwest Virginia Council of International
 Reading Association

Honors and Awards: Graduated Cum laude from East Tennessee State
 University, 1971.
 Phi Delta Kappa
 Phi Kappa Phi
 Kappa Delta Pi
 Scholarship awarded by Business and Professional
 Women
 Past President - Southwest Virginia Council of
 International Reading Association, 1978-1980
 Southwest Virginia Nominee for Virginia Teacher
 of the Year, 1979
 Doctoral Fellowship, East Tennessee State
 University, 1981