THE RELATIONSHIP OF CERTAIN CONATIVE FACTORS OF INTELLECTUALLY
GIFTED CHILDREN TO ACADEMIC SUCCESS

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THE RELATIONSHIP OF CERTAIN COGNITIVE FACTORS OF INTELLECTUALLY
GIFTED CHILDREN TO ACADEMIC SUCCESS

DISSERTATION

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By

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CHAPTER I

INTRODUCTION

Statement of the Problem

The problem of this study was to ascertain the relationship of certain conative factors of intellectually gifted students to academic success. It involved a comparative analysis of the relationship of those conative factors of intellectually gifted students who were nominated for a program of advanced study in the seventh grade of junior high school and of intellectually gifted students who were not nominated. This study further involved a comparative analysis of those conative factors as they related to students who were successful in an advanced study program in the seventh grade of junior high school and those students who were less successful.

Hypotheses

The following hypotheses were established and tested.

1. There was a significant difference between the measured conative factors of intellectually gifted students nominated for an advanced study program in the seventh grade of junior high school and intellectually gifted students not nominated.

Each of the following sub-hypotheses was statistically tested for the significance of the difference of the mean scores of each group on the test of these factors:
(a) Measured sociability (factor A) was greater for nominated students than for not-nominated students;

(b) Measured brightness (factor B) was greater for nominated students than for not-nominated students;

(c) Measured maturity (factor C) was greater for nominated students than for not-nominated students;

(d) Measured restraint (factor D) was less for nominated students than for not-nominated students;

(e) Measured aggressivity (factor E) was greater for nominated students than for not-nominated students;

(f) Measured enthusiasm (factor F) was greater for nominated students than for not-nominated students;

(g) Measured persistence (factor G) was greater for nominated students than for not-nominated students;

(h) Measured adventurousness (factor H) was greater for nominated students than for not-nominated students;

(i) Measured realism (factor I) was greater for nominated students than for not-nominated students;

(j) Measured individualism (factor J) was greater for nominated students than for not-nominated students;

(k) Measured confidence (factor O) was greater for nominated students than for not-nominated students;

(l) Measured individual resourcefulness (factor Q2) was greater for nominated students than for not-nominated students;

(m) Measured internal control (factor Q3) was greater for nominated students than for not-nominated students;
(n) Measured composure (factor \( \psi_4 \)) was greater for nominated students than for not-nominated students;

2. There was an initial significant difference in the measured conative factors of intellectually gifted students who were successful in an advanced study program in the seventh grade of junior high school and those of intellectually gifted students who were less successful.

Each of the following sub-hypotheses was statistically tested for the significance of the difference of the mean scores of each group on the test of these factors:

(a) Measured sociability (factor \( A \)) was greater for successful students than for less successful students;

(b) Measured brightness (factor \( B \)) was greater for successful students than for less successful students;

(c) Measured maturity (factor \( C \)) was greater for successful students than for less successful students;

(d) Measured restraint (factor \( D \)) was less for successful students than for less successful students;

(e) Measured aggressivity (factor \( E \)) was greater for successful students than for less successful students;

(f) Measured enthusiasm (factor \( F \)) was greater for successful students than for less successful students;

(g) Measured persistence (factor \( G \)) was greater for successful students than for less successful students;

(h) Measured adventurousness (factor \( H \)) was greater for successful students than for less successful students;

(i) Measured realism (factor \( I \)) was greater for successful students than for less successful students;
(j) Measured individualism (factor J) was greater for successful students than for less successful students;

(k) Measured confidence (factor O) was greater for successful students than for less successful students;

(l) Measured individual resourcefulness (factor Q2) was greater for successful students than for less successful students;

(m) Measured internal control (factor Q3) was greater for successful students than for less successful students;

(n) Measured composure (factor Q4) was greater for successful students than for less successful students.

3. There was no significant change during the year in the measured conative factors of those students who were successful in an advanced study program in the seventh grade of junior high school.

Each of the following sub-hypotheses was statistically tested for the significance of the difference of the mean scores of the group on the test and re-test of these factors:

(a) There was no change in the measured sociability (factor A) of the successful students;

(b) There was no change in the measured brightness (factor B) of the successful students;

(c) There was no change in the measured maturity (factor C) of the successful students;

(d) There was no change in the measured restraint (factor D) of the successful students;

(e) There was no change in the measured aggressivity (factor E) of the successful students;
(f) There was no change in the measured enthusiasm (factor F) of the successful students;

(g) There was no change in the measured persistence (factor G) of the successful students;

(h) There was no change in the measured adventurousness (factor H) of the successful students;

(i) There was no change in the measured realism (factor I) of the successful students;

(j) There was no change in the measured individualism (factor J) of the successful students;

(k) There was no change in the measured confidence (factor C) of the successful students;

(l) There was no change in the measured resourcefulness (factor R) of the successful students;

(m) There was no change in the measured internal control (factor IC) of the successful students;

(n) There was no change in the measured composure (factor C) of the successful students;

4. There was a significant change during the year in the measured conative factors of those students who were less successful in an advanced study program in the seventh grade of junior high school.

Each of the following sub-hypotheses was statistically tested for the significance of the difference of the mean scores of the group on the test and the re-test of these factors:

(a) Measured sociability (factor A) of the less successful students was less;
(b) Measured brightness (factor B) of the less successful students was less;
(c) Measured maturity (factor C) of the less successful students was less;
(d) Measured restraint (factor D) of the less successful students was more;
(e) Measured aggressivity (factor E) of the less successful students was less;
(f) Measured enthusiasm (factor F) of the less successful students was less;
(g) Measured persistence (factor G) of the less successful students was less;
(h) Measured adventurousness (factor H) of the less successful students was less;
(i) Measured realism (factor I) of the less successful students was less;
(j) Measured individualism (factor J) of the less successful students was less;
(k) Measured confidence (factor O) of the less successful students was less;
(l) Measured resourcefulness (factor $Q_2$) of the less successful students was less;
(m) Measured internal control (factor $Q_3$) of the less successful students was less;
(n) Measured composure (factor $Q_4$) of the less successful students was less.
5. There was no significant change during the year in the measured conative factors of those intellectually gifted students not nominated for an advanced study program in the seventh grade of junior high school.

Each of the following sub-hypotheses was statistically tested for the significance of the difference of the mean scores of the group on the test and the re-test of these factors:

(a) There was no change in the measured sociability (factor A) of the not-nominated students;

(b) There was no change in the measured brightness (factor B) of the not-nominated students;

(c) There was no change in the measured maturity (factor C) of the not-nominated students;

(d) There was no change in the measured restraint (factor D) of the not-nominated students;

(e) There was no change in the measured aggressivity (factor E) of the not-nominated students;

(f) There was no change in the measured enthusiasm (factor F) of the not-nominated students;

(g) There was no change in the measured persistence (factor G) of the not-nominated students;

(h) There was no change in the measured adventurousness (factor H) of the not-nominated students;

(i) There was no change in the measured realism (factor I) of the not-nominated students;

(j) There was no change in the measured individualism (factor J) of the not-nominated students;
(k) There was no change in the measured confidence (factor 0) of the not-nominated students;

(l) There was no change in the measured resourcefulness (factor $Q_2$) of the not-nominated students;

(m) There was no change in the measured internal control (factor $Q_3$) of the not-nominated students;

(n) There was no change in the measured composure (factor $Q_4$) of the not-nominated students.

6. There was a significant difference between the measured conative factors of intellectually gifted students who were successful in an advanced study program in the seventh grade of junior high school and of intellectually gifted students who were less successful at the close of the year.

Each of the following sub-hypotheses was statistically tested for the significance of the difference of the mean scores of each group on the re-test of these factors:

(a) Measured sociability (factor $A$) was greater for successful than for less successful students;

(b) Measured brightness (factor $B$) was greater for successful students than for less successful students;

(c) Measured maturity (factor $C$) was greater for successful students than for less successful students;

(d) Measured restraint (factor $D$) was less for successful students than for less successful students;

(e) Measured aggressivity (factor $E$) was greater for successful students than for less successful students;
(f) Measured enthusiasm (factor F) was greater for successful students than for less successful students;

(g) Measured persistence (factor G) was greater for successful students than for less successful students;

(h) Measured adventurousness (factor H) was greater for successful students than for less successful students;

(i) Measured realism (factor I) was greater for successful students than for less successful students;

(j) Measured individualism (factor J) was greater for successful students than for less successful students;

(k) Measured confidence (factor O) was greater for successful students than for less successful students;

(l) Measured resourcefulness (factor Q2) was greater for successful students than for less successful students;

(m) Measured internal control (factor Q3) was greater for successful students than for less successful students;

(n) Measured composure (factor Q4) was greater for successful students than for less successful students.

Definition of Terms

**Intellectually gifted**: Those students who, in the latter part of the sixth grade, had an intelligence quotient of at least 120 on the California Test of Mental Maturity and who scored at least two grade placements (1957 norms) advanced in reading vocabulary, reading comprehension, arithmetic fundamentals, and arithmetic reasoning on the California Achievement Test.
Nominated (N): Recommended in the latter part of the sixth grade for an advanced study program which began in the seventh grade of junior high school.

Not-nominated (NN): Not recommended in the latter part of the sixth grade for an advanced study program which began in the seventh grade of junior high school.

Advanced study program (ASP): An accelerated and enriched program of studies in science, mathematics, English and social studies beginning in the seventh grade of junior high school.

Conative factors (CF): Those factors of personality that are described as sub-conscious: having to do with motivating forces, attitudes, and feelings which may appear in cognitive behavior either in terms of action or lack of action.

Cognitive factors: Those factors of personality which are conscious: having to do with "knowing," or the conscious act of acquiring knowledge or directing behavior.

Successful (S): Those nominated students whose grade point averages place them above 0.3 of the nominated group according to teacher assigned marks.

Less successful (LS): Those nominated students whose grade point averages place them below 0.1 of the nominated group according to teacher assigned marks.


Limitations of the Study

This study was limited to the population described as intellectually gifted in two junior high schools of a large southwestern city. The findings and conclusions of this study were, of necessity, limited to those students studied and can be applied to other students only insofar as they are similar.

Basic Assumptions

The major assumptions underlying this study were:

(a) Academic success was determined operationally in relation to teachers' marks;

(b) The Jr.-Sr. High School Personality Questionnaire measures the conative factors pertinent to this study.

Need for the Study

In many school systems throughout the nation various programs designed to enrich the educational opportunities and accelerate the progress of intellectually gifted students in school have been instituted (1). Selection of students to enter these programs has been based largely upon various cognitive data (1, 20, 26, 29). Other data included in the selection of these students have been subjective, such as teacher's marks and the teacher's estimate of the industry of the individual student (1, 8). It has been indicated that many students identified as intellectually gifted through these objective techniques which measure cognitive ability, did not enter advanced placement programs (1, 11). It was also indicated that many who did enter such programs did not pursue them to a successful conclusion.
While many external factors may be related to this problem the need to study aspects of the personality not measured by intelligence and achievement tests is indicated in order to ascertain whether or not they might be factors in the student's academic success (16, 17, 19, 20).

In view of the amount of research concerning the relationship of various cognitive factors of personality and academic success it seemed to be indicated that further research would be useful concerning conative factors of personality as they relate to academic success (1). McKinnon, Holland and others have suggested that some of the most promising research in the understanding of talented individuals would be concerned with the "non-intellectual" or "non-cognitive" factors of personality as they relate to achievement (19, 20, 28, 29). By testing the hypotheses of this study it was hoped that some clues might be revealed that would indicate which, if any, of these conative factors were associated with academic achievement.

Theoretical Basis of the Study

The theoretical basis for this study was that the human personality functions as an interdependent whole (2, 3, 7, 15, 23, 24, 27). A number of intrapersonally oriented theorists and research persons hold the view that the self-concept, or the perception the individual has of himself, is the most important single attribute in the motivation and behavior of the individual (2, 7, 15, 23, 24). Allport calls attention to the part that the ego structure and ego involvement play in human conduct through contemporaneous motivation, active intention,
high level integration, or self identity, with self extension and various cognitive dynamisms (2, p. 220). Rogers postulates the position that an organism reacts as an organized whole to a phenomenal field which is the totality of experiences, symbolised or denied to awareness and to the "self" which is a differentiated portion of the phenomenal field (27, pp. 486-487). The self strives for consistency and influences the organism with its drive for actualization, maintenance and enhancement (27, pp. 487-491).

Significance of the Study

The significance of this study would appear to be related to an increased understanding of the conative factors tested as they relate to academic success. If relationships were shown to be tenable, utilization of this information should improve validity of the selection of students for advanced placement courses. Further significance was indicated in that this study could provide a base for longitudinal studies of these students as they progress through school.

Population

The population of this study included the 148 students defined as intellectually gifted in the latter part of the sixth grade who were still enrolled at the conclusion of the seventh grade in two junior high schools of a large southwestern city.

Setting of the Study

In a large southwestern city school system an advanced study program for intellectually gifted students has been devised beginning
in the fourth grade and continuing through the twelfth grade. In the latter part of the third grade students in each elementary school are identified and placed in an high academic aptitude group in relation to other students in the same school. No particular scores on intelligence or achievement tests are required although they are considered. These two considerations and the teacher's opinion as reflected by the marks the students receive from the teacher are the basis which determine the students' placement. The principal of each elementary school is the final authority in the placement of the student (6, pp. 29-36).

In the latter part of the sixth grade, students were nominated by their teachers and principal for an advanced study program to begin in the seventh grade. The teachers' opinions that the student was capable and industrious enough to do the advanced placement work was necessary for final placement in the program. Teachers' marks were also considered, and generally it was required that the student earn mostly "1's," the highest mark given in elementary school.

An intelligence quotient of at least 120 on the California Short Form Test of Mental Maturity and grade placement equivalent performance on the California Achievement Test Battery at least two grade placements (1957 NORMS) above actual grade placement at the time of testing were also required. These tests were administered in March and April of the sixth grade year.

Students had little choice whether or not they entered the program and except in rare instances in which the parents preferred otherwise or in which there were educational, personal, or social problems
which appeared to make placement in the program inadvisable, students who qualified were placed in the program (1, pp. 31-36).

Description of the Advanced Study Program

The advanced study program in the seventh grade of junior high school provides special emphasis in three particular areas: language arts, mathematics, and science (8, p. 31). Even though specific description and direction was not included as a part of the program, the students were also grouped together in social studies, and some provision was made for them in each school.

The language arts program included broadly based units drawn from the secondary curriculum guide (9). Titles of units included "Which Way?" (9, p. 17), "How Far?" (9, p. 18), "My Own Language" (9, p. 27), "Life and Times in Dallas" (9, p. 19), "The Thrill of Adventure" (9, p. 28), "Texas Leaders--Past and Present" (9, p. 21), "Newspapers Today" (9, p. 30), and "American Literary Heritage" (9, p. 31).

The program emphasized an individual development approach encouraging each student to explore his own needs and desires in the areas of reading, speaking, writing, listening, and observing. Thoroughness, exactness, and originality of thought and expression were the guidelines in the selection of activities and materials. Emphasis was placed upon widening the scope of the student's reading experience, developing the student's powers of critical understanding, and originality of thought and lucidity of expression both spoken and written (9). The scope and sequence of the program is described in the guide (9, pp. 127-128).
The mathematics program specifically identifies the areas in the advanced study program. They are: numeration and number systems, properties of numbers, geometric properties, prime numbers and composite numbers, mathematical systems, non-negative integers and rational numbers, measures and measurement, application of numbers to practical problems, the system of integers, exponents and scientific notation, and polynomials (10, pp. 25-60).

The expectation was that in covering the concepts listed that students would employ many and varied approaches to the statement and solution of problems. It was expected that students would develop advanced power in inductive and deductive reasoning and would have some experience in developing mathematical systems as well as applying various mathematical systems to problems traditionally solved in only one particular manner. The area of polynomials was the only area not explored in the regular seventh grade class. Advanced study students were expected to explore this area extensively during the second semester of the seventh grade (10).

The advanced study program in science combined the life science which is regularly taught in the seventh grade and the earth science which is regularly taught in the eighth grade into one course. Students demonstrated advanced knowledge in these areas, and, by using a unit approach, knowledge and understandings were accelerated by encouraging individual projects which assisted in further developing the individual student's interests and abilities (12, pp. 15-45).

The social studies program as such was not identified as an official part of the advanced study program, but it was readily amenable
to enrichment according to the needs and abilities of the individual student (13, p. 5). However, students were grouped for social studies. In keeping with the ideal of American democracy, the social studies program encouraged a maximum of self-direction for each individual. The emphasis was upon the right and need of every individual to develop resources for self-direction in economics, in government, in his personal development, and in an understanding of human relations, as they apply to himself and to all other people. The objective was to develop broad concepts of the individual as he operates in his society and as this society operates in the larger society of the world (13, p. 5).

It was the objective of the class activity to encourage the students to investigate multiple positions and alternatives on historical problems and contemporary issues. The students were encouraged in the extensive use of outside-the-classroom resource materials and primary information. They were taught techniques of investigation and encouraged to use logical processes in reaching conclusions. Emphasis was placed upon more extensive writing as well as reading. The program was one of depth rather than the study of facts not regularly taught in the seventh grade (13).

Instruments Used

The **Jr.-Sr. High School Personality Questionnaire** (see Appendix I) was the instrument used to measure conative factors (6). This instrument includes fourteen dimensions of personality measurement. It yields direct evaluation of those aspects of a student's personality which
theoretically contribute to or detract from his performance in school. It is adaptable for test, re-test situations. It provides a base for longitudinal studies of students' personality development. It is designed for students twelve through seventeen years of age. It is easily administered, scored and interpreted, and is reliably validated (7). Bormey and Hampleman state that the instrument is, "the product of many years of intensive factor-analysis research," and that "... this fact encourages confidence that the traits measured are consistent entities in a wide range of people and are relatively independent variables" (4, pp. 80-81). This instrument was chosen in the expectation that it could be used extensively on an operational level if findings indicate that its use would be worthwhile.

Collection of Data

In April, 1963, each elementary school which sends students to each of the two junior high schools of this study submitted a data sheet (Appendix II) which detailed a record of each student's intelligence scores, achievement test scores, an evaluation of work habits and study skills, an evaluation of conduct, a prediction of the likelihood of success in an advanced study program, and a recommendation for placement for each student with minimum intelligence test scores of 120 on the CTMM and scores on achievement tests at least two years advanced of the actual grade placement on the CAT at the time the test was given in the sixth grade. Intelligence tests were administered in the fall of 1963, and achievement tests in March and April, 1964.
The teachers, in conjunction with the principal, of each elementary school nominated those students who, in their opinion, would be successful in an advanced study program in the seventh grade of junior high school. There were 107 eligible according to these criteria who were nominated and 45 were eligible but were not nominated who enrolled in school in September, 1963. All of the eligible students were tested at the time of the test. Three of the nominated students and one of the not-nominated students were not enrolled at the time of the re-test. The population of the study included 104 nominated and 44 not-nominated eligible intellectually gifted students.

Administration of Testing Instrument

The Jr.-Sr. High School Personality Questionnaire (7) was administered by the respective counselor of each junior high school during the regular school day in a room appropriate for the size of the group tested. Absentees were tested within one week of the group tests.

The test was administered October 28, 1963, to all students of both groups in one school and October 30, 1963, in the other. The re-test was accomplished in the same order and in the same manner May 4, 1964, and May 8, 1964. The results of these tests were recorded on the data card (Appendix III).

Semester grades of all the students of the population of the study were transcribed from permanent school records to the data card (Appendix III) June 11, 1964, and June 12, 1964, by the researcher.
Treatment of the Data

All data for the study were recorded on the data card (Appendix III) for each student and translated from the data card into key punch cards for machine computation. Mean scores on each factor of the test and re-test were computed by machine for each of the groups compared: nominated, not-nominated, successful, and less successful. Mean grade point averages and quartile ranks were computed by machine on the basis of teacher marks for each group compared.

Each hypothesis and each sub-hypothesis was restated as a null hypothesis for testing purposes.

1. There was no significant difference between the measured conative factors of intellectually gifted students nominated for an advanced study program in the seventh grade of junior high school and intellectually gifted students not-nominated.

Each of the 14 sub-hypotheses was statistically tested for the significance of the difference of the mean scores of the groups on the test by the Fisher’s \( t \) technique for independent groups

\[
\frac{t = \frac{M_1 - M_2}{\sqrt{\frac{N_1 \sigma_1^2 + N_2 \sigma_2^2}{N_1 + N_2 - 2}}}}{DF = N_1 + N_2 - 2}
\]

as follows:

(a) There was no significant difference between the mean scores on the test of sociability (factor A) of \( N \) students and \( NN \) students;

(b) There was no significant difference between the mean scores on the test of brightness (factor B) of \( N \) students and \( NN \) students;
(c) There was no significant difference between the mean scores on the test of maturity (factor C) of N students and NN students;

(d) There was no significant difference between the mean scores on the test of restraint (factor D) of N students and NN students;

(e) There was no significant difference between the mean scores on the test of aggressivity (factor E) of N students and NN students;

(f) There was no significant difference between the mean scores on the test of enthusiasm (factor F) of N students and NN students;

(g) There was no significant difference between the mean scores on the test of persistence (factor G) of N students and NN students;

(h) There was no significant difference between the mean scores on the test of adventurousness (factor H) of N students and NN students;

(i) There was no significant difference between the mean scores on the test of realism (factor I) of N students and NN students;

(j) There was no significant difference between the mean scores on the test of individualism (factor J) of N students and NN students;

(k) There was no significant difference between the mean scores on the test of confidence (factor O) of N students and NN students;

(l) There was no significant difference between the mean scores on the test of resourcefulness (factor Q_2) of N students and NN students;

(m) There was no significant difference between the mean scores on the test of internal control (factor Q_3) of N students and NN students;

(n) There was no significant difference between the mean scores on the test of composure (factor Q_4) of N students and NN students.
2. There was no initial significant difference between the measured conative factors of intellectually gifted students who were successful in an advanced study program in the seventh grade of junior high school and intellectually gifted students who were less successful.

Each of the 14 sub-hypotheses was statistically tested for the significance of the difference of the mean scores of the group on the test by the Fisher's \( t \) technique for within the group

\[
 t = \frac{M_D}{\sqrt{\frac{S_D^2}{N} + \frac{S_{D'}^2}{N'}}}
\]

\[
df = N - 1
\]

as follows:

(a) There was no initial significant difference between the mean scores on the test of sociability (factor A) of successful students and less successful students.

etc. etc. (b) through (n) as above

3. There was no significant change during the year in the measured conative factors of those students who were successful in an advanced study program in the seventh grade of junior high school.

Each of the 14 sub-hypotheses was statistically tested for the significance of the difference of the change of the mean scores of the group on the test and re-test by the Fisher's \( t \) technique for within the group
as follows:

(a) There was no significant change between the mean scores on
the test and re-test of sociability (factor A) of successful students.

etc. etc. (b) through (n) as above

(b) There was no significant change during the year in the measured
conative factors of those students who were less successful in an adv-
anced study program in the seventh grade of junior high school.

Each of the 14 sub-hypotheses was statistically tested for the
significance of the difference of the change between the mean scores
of the group on the test and re-test by the Fisher's \( t \) technique for
within the group

\[
\begin{align*}
t & = \frac{M_D}{\sqrt{\frac{\sum D^2}{N} - M_D^2}} \\
\text{df} & = N - 1
\end{align*}
\]

as follows:

(a) There was no significant change between the mean scores on
the test and re-test of sociability (factor A) of the less successful
students.

etc. etc. (b) through (n) as above
5. There was no significant change during the year in the measured conative factors of those intellectually gifted students not nominated for an advanced study program in the seventh grade of junior high school.

Each of the 14 sub-hypotheses was statistically tested for the significance of the difference of the change between the mean scores of the group on the test and re-test by the Fisher's $t$ technique for within the group

$$t = \frac{M_D}{\sqrt{\frac{\sum D^2}{N} - M_D^2}}$$

$$df = N - 1$$

as follows:

(a) There was no significant change during the year between the mean scores on the test and re-test of sociability (factor A) of the not-nominated students.

etc. etc. (b) through (n) as above

6. There was no significant difference between the measured conative factors of intellectually gifted students who were successful in an advanced study program in the seventh grade of junior high school and of intellectually gifted students who were less successful.

Each of the 14 sub-hypotheses was statistically tested for the significance of the difference between the mean scores of the groups on the re-test by the Fisher's $t$ technique for within the group
\[ t = \frac{M_D}{\sqrt{\frac{\sum D^2}{N} - M_D^2}} \]
\[ \text{df} = N - 1 \]

as follows:

(a) There was no significant difference between the mean scores on the re-test of sociability (factor A) of the successful and less successful students.

etc. etc. (b) through (n) as above

Summary

This chapter has presented the statement of the problem of the study, the background, and the method of the study. Subsequent chapters will present related studies, findings, and conclusions and recommendations.
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20. MacKinnon, D. W., "What Do We Mean By Talent and How Do We Test for It," The Search for Talent, New York, College Examination Board, 1960.


CHAPTER II

RELATED LITERATURE

Historical Background

Identification and education of gifted children has been a concern of man since early recorded history. Plato contemplated upon ways for the identification of gifted children in order to educate them for leadership in the state. His plan of discovery consisted mainly in testing their ability by "trial and error" experiences. As crude as his method may appear today some aspects of it reappeared in a much more refined and elaborate form as a series of mental ability tests devised by the French psychologists Binet and Simon (23, p. 1).

The mid-nineteenth century saw the beginnings of a formal effort to identify and educate intellectually gifted children. Ironically, these programs emerged in an age when exceptionally able youngsters were regarded suspiciously as a physically weak and psychologically abnormal group whose native endowment ought not to entitle them to special recognition if democratic equality was to be preserved (26). Early scientific method was injected into what had been philosophical conjecture and generalized observations by Galton in 1869 with his genetic and statistical approach (12, p. 988).

Almost from the beginning of the studies of the gifted some consideration was given to social aspects related to the development of the gifted. De Condolle (1885) and Ward (1906) introduced scientific method
into the study of social factors favorable to the development of the
gifted contending that these were at least as important as constitu-
tional factors. Yoder, in 1894, and Ellis, in 1904, devoted special
attention to the interrelationships of precocity and health in gifted
children (12, p. 986).

In 1905, Binet’s mental test scale was published. Goddard’s
translation appeared in 1911 and Terman’s revision in 1916. Case
studies of the gifted soon showed the possibilities of the new methods
to discover superior mental ability. Ellis, Cattell, Yoder and Witty,
and others made significant contributions in the development of tests
and the study of the gifted. Hollingsworth, Cobb and Taylor published
important research concerning the academic achievement of students in
relation to intelligence as measured by these early tests. Factors,
such as the relation of size to intelligence, facial beauty, sex, ethnic
origins and social class, were all a part of the early literature (12).

Characteristics of the Intellectually Gifted

Until the analyses of the characteristics and backgrounds of boys
and girls of high I.Q. by Terman and Hollingsworth, study of gifted
children was largely descriptive and anecdotal (12, p. 984). With the
publication of the third volume of Terman and his associates of their
longitudinal studies of the gifted (27), research concerning the nature
and nurture of giftedness entered a new phase. Personal characteristics,
ereditary factors, school progress, and academic achievement of gifted
children who later became successes or failures in terms of their
personal lives, professional positions, occupation, and economic condi-
tion became of great interest.
Miles (12) summarizes the research concerning non-cognitive factors associated with gifted children as follows:

1. The gifted showed more favorable social preferences and attitudes and were less inclined to boast than were the average.
2. They cheated less and were considerably more trustworthy under stress than the average.
3. They were more mature. Interests and attitudes correlated more closely with mental age than with chronological age. Boys within the group were somewhat more mature than girls.
4. They were more emotionally stable and showed less psychopathic trends.
5. They were less troubled by fears and worries than the average.
6. They demonstrated better common sense, more originality, were more inquisitive, had more self-confidence, indicated a better sense of humor, were more conscientious, and demonstrated greater qualities of leadership than did the average.

Recent reviews of the literature by Newland (16) in 1953 and Fliegler and Bish in 1959 (5) generally support the review by Miles. In 1961, The National Education Association published an annotated bibliography by Gowan of literature on the gifted as a part of that organization's project on the Academically Talented Student. Gowan (15) indicated the following as emerging characteristics of intellectually gifted students:

1. Personal and social characteristics of academically talented students appeared more favorable than those of the generality.
2. Academically talented students appeared in somewhat greater percentages in upper socio-economic groups.
3. Academically talented children appeared well developed physically and are socially accepted by other children.
4. They appeared to experience no ill effects, academic, social or personal when grouped in school for learning purposes.
5. Their attitude toward scholarship and intellectual achievement were greatly influenced by community attitudes; however, concerted effort by school personnel can be influential in the development of more favorable attitudes where negative ones exist.
6. They indicated their particular talents early and tended to do their best work early in life.

Directly Related Studies

Studies directly related to this one would seem to be those involved with the personality characteristics of academically gifted students and academic success in school in terms of the marks students receive from teachers. Reporting the extensive work done by the Institute of Personality Assessment, MacKinnon described the purpose of that research as "the delineation of characteristics of individuals who, in their personal lives and professional careers, function with high effectiveness . . . and the discovery . . . in personality structures of such individuals those factors which contribute to and make possible their effective functioning" (10, 1-2). This has been the objective of those who have directed their attention to the academically gifted student in school and who have tried to identify differences between those who were successful in the classroom setting and those who were less successful.

Through a preliminary investigation, Hackett (6) abstracted 72 items from the Minnesota Multiphasic Personality Inventory which seemed to relate to academic achievement among college freshmen and analyzed responses to these items as they related to grade points at the end of the first quarter. The entire test battery was given to 5k5 entering freshmen. A correlation to those 72 items of 0.61 was obtained, which was higher than the correlation between grade points and scores on the ACE test (0.39). Hackett found that high achievers seemed to project
less, discriminate better, and to be less easily aroused emotionally. High achievers also appeared to tolerate tension better and to live at a more relaxed and confident tempo. Low achievers appeared to be more emotionally responsive to their environment and to live at a higher tempo although their activity was not necessarily productive. Low achievers appeared as sensitive, but felt that this should be concealed as a sign of weakness. Strength and power were important to them and weakness in others was to be exploited. Warmth and acceptance of others was lacking among low achievers and many similarities in their personalities to those of the authoritarian personality were noted.

Middleton and Guthrie (11) studied 50 business management students in their junior year of college using the Murray System and found positive correlations for achieving students with nurturance and dominance and negative correlations with self-abasement, narcissism, autonomy, aggression and counter action. They found some conflict among other factors of the test but concluded that "achievement of high grades for this population may be motivated by drives for power, resentment, dependence, social acceptance, and aggression (11, p. 68). Low achievers reflected trends toward pleasure seeking, extroversion, and denial of shortcomings. The preceding studies were concerned with college students and differed from this one in setting, population, and instruments used.

In a series of studies Shaw and others (20, 21, 22) evaluating both college and high school students found feelings of hostility, anxiety and inadequacy related to underachievement. Shaw stated that
"present data do not indicate whether differences in self concept are the causes or the result of underscience" (21, p. 196).

Haggard (17) made an intensive longitudinal study of 45 gifted children from the third through the ninth grade using the Rorschach, The Children's Apperception Test, The Thematic Apperception Test, the "draw a person" technique and a sentence completion test as his instruments. Scores on these tests were evaluated in relation to various standardized achievement tests. Findings indicated that achievers responded to socialization pressures of adults and strove toward adult standards of behavior while indicating strong antagonism toward adults and often picturing them as inadequate. Achievers were not more anxious in relation to intellectual originality and activity than low achievers, but were able to channel their anxiety productively. High achievers were more persistent, aggressive, competitive and hard driving than low achievers and retained a higher degree of spontaneity and mental flexibility. Interesting results were obtained among high achieving students who achieved higher in particular subjects: high achievers in reading seemed to be somewhat more withdrawn, high achievers in spelling and language seemed to view the authority figure as somewhat omnipotent, and high achievers in mathematics tended to view the world with curiosity and showed greater independence than other high achievers. The studies by Haggard and Shaw and their associates (20, 21, 22) gave cues that were helpful in developing this study, but there are essential differences between this study and theirs in populations and instruments used.

Helton (8) compared academically gifted male youth who had persisted in an advanced study program from the eighth through the twelfth grades
with academically gifted male youth who had entered the program in the eighth grade, but who had dropped out, on various aspects of personality. The instruments used were the Ayer Briggs Type Indicator, the California Psychological Inventory, the Occupational Interest Inventory and a personal interview. Findings were as follows:

1. No statistical differences according to scores on four scales of the California Psychological Inventory were obtained. He noted, however, that both groups scored at or above the norm on the Do (dominance) scale for the general population. The persistors scores, though not statistically significantly different, did suggest that this group is possibly characterized by a more aggressive planfulness and self-reliance than the non-persistor group (6, pp. 35-36).

2. Persistors were significantly different at the .001 level from the non-persistors on the achievement via independence scale of the CPI. High scores on this scale tend to indicate maturity, forcefulness, strength, and foresightedness, and are indicative of independence and self-reliance. Other scores on the tests indicated that the persistors were more oriented to achievement in terms of independence rather than conformance than were non-persistors (6, pp. 37-38).

3. Persistors were significantly different from non-persistors in their preference for introversion, intuitive, and judging modes of responding at the .05 level according to the MBTI measure of these factors. Although not statistically significant, the data suggested the possibility that persistors preferred thinking, rather than feeling control over their percepts (6, pp. 39-44).

In a parallel study of female persistors and non-persistors in the same program and using the same techniques, Morris (13) concluded as follows:

1. Persisting girls were characterized by greater social presence and spontaneity than were non-persisting girls.
2. Persisting girls were significantly more motivated via independence than were non-persisting girls.
3. Persisting girls were more intuitive and perceptive and received significantly higher scores on tests of interest in science while non-persisting girls received higher scores relating to business pursuits.
4. Larger percentages of girls dropped out of the program than did boys. Morris suggests the probability of cultural and sex roles as being related to this.
Recommendations of both Helton and Morris included early attention to non-intellective characteristics of intellectually gifted students in relation to educational plans and performance. Morris states, "differentiating personality structures, interest patterns and modes of psychological functioning appear to have value for identification and placement decisions" (13, p. 6).

Summary

Aspects of the personality as they relate to academic achievement have been reviewed as a background for investigating the relationships of this study. The literature indicated that academic achievement appeared to be related to feelings of adequacy, independence, ability to deal with normal anxiety constructively and a preference for personal involvement with high level ideas, rather than with concrete things, a preference for working with people, and the ability to tolerate frustration and "not-knowing." The generally well-rounded personality appears to be more likely to succeed in an educational setting. However, "the concept of a general achievement motive is too broad a term, and it may be useful to replace this construct with a series of variables that relate to more specific behavior" (14, p. 513).
CHAPTER BIBLIOGRAPHY


CHAPTER III

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

There were three essential concerns of this study. The first was to ascertain whether or not there were significant differences between certain conative factors of academically gifted students nominated for an advanced study program in the latter part of the sixth grade to begin in the seventh grade of junior high school and academically gifted students who were not nominated. The second concern of this study was to ascertain if there were significant initial and/or terminal differences between those certain conative factors of those students who were successful and those students who were less successful in an advanced study program in the seventh grade of junior high school. The third concern was to ascertain what, if any, changes in those certain conative factors occurred during the school year.

To investigate those certain conative factors of academically gifted students the Jr.-Sr. High School Personality Questionnaire (2) was the instrument used. This instrument was administered to all students of the population in the fall of 1963 and again in the spring of 1964. Findings concerning the tenability of the major hypotheses were determined by the specific findings on each of the fourteen sub-hypotheses tested.
Hypothesis One

Hypothesis one stated that there was a significant difference between the measured conative factors of intellectually gifted students nominated for an advanced study program in the seventh grade of junior high school and intellectually gifted students not nominated.

Each sub-hypothesis was re-stated in the form of the null hypothesis for the purpose of the statistical test of the significance of the difference. Table I presents the statistical data relevant to each of the sub-hypotheses.

The null hypothesis for sub-hypothesis (b) stated that there was no significant difference in measured brightness (factor B) between nominated and not-nominated students. The difference was significant at the .05 level, therefore, the null hypothesis was rejected, and the original hypothesis which stated that measured brightness was greater for nominated students than for not-nominated students was accepted. The mean raw score for nominated students was 7.56 and the mean raw score for not-nominated students was 7.05. The t score obtained was 2.30 which yielded a significance of the difference at the .05 level. High raw scores indicate greater brightness.

An examination of Table I will reveal that no other factor reached the t score of 1.96 required for significance so the null hypothesis of no difference was accepted and the original sub-hypothesis was rejected for each of the other thirteen factors.

The mean raw score for the nominated students on the test of measured control (factor C3) was 12.63 and the mean raw score of the not-nominated students was 11.66 which yielded a t score of 1.74.
TABLE I

MEAN SCORE, STANDARD DEVIATION, FISHER'S t AND LEVEL OF SIGNIFICANCE FOR THE NOMINATED AND NOT-NOMINATED STUDENTS ON THE INITIAL ADMINISTRATION OF THE JR.-SR. HIGH SCHOOL PERSONALITY QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Factor</th>
<th>Nominated Students Raw Score Mean</th>
<th>Standard Deviation</th>
<th>Not-Nominated Students Raw Score Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Significance of the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>11.23</td>
<td>3.60</td>
<td>11.34</td>
<td>2.84</td>
<td>0.18</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>B</td>
<td>7.56</td>
<td>1.23</td>
<td>7.05</td>
<td>1.30</td>
<td>2.30</td>
<td>&gt; .05</td>
</tr>
<tr>
<td>C</td>
<td>9.14</td>
<td>3.24</td>
<td>9.93</td>
<td>3.91</td>
<td>0.78</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>D</td>
<td>10.04</td>
<td>3.66</td>
<td>9.27</td>
<td>3.73</td>
<td>1.15</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>E</td>
<td>6.87</td>
<td>3.62</td>
<td>7.64</td>
<td>3.18</td>
<td>1.20</td>
<td>&lt; .02</td>
</tr>
<tr>
<td>F</td>
<td>9.89</td>
<td>3.17</td>
<td>10.70</td>
<td>2.82</td>
<td>1.46</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>G</td>
<td>12.35</td>
<td>2.88</td>
<td>12.18</td>
<td>3.62</td>
<td>0.31</td>
<td>&lt; .02</td>
</tr>
<tr>
<td>H</td>
<td>11.07</td>
<td>3.96</td>
<td>11.43</td>
<td>3.61</td>
<td>0.52</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>I</td>
<td>11.42</td>
<td>4.33</td>
<td>11.32</td>
<td>4.63</td>
<td>0.13</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>J</td>
<td>7.00</td>
<td>3.73</td>
<td>6.95</td>
<td>3.17</td>
<td>0.07</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>O</td>
<td>10.60</td>
<td>3.20</td>
<td>10.61</td>
<td>2.90</td>
<td>0.03</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Q2</td>
<td>8.76</td>
<td>2.79</td>
<td>8.73</td>
<td>2.48</td>
<td>0.86</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Q3</td>
<td>12.63</td>
<td>3.03</td>
<td>11.66</td>
<td>3.22</td>
<td>1.74</td>
<td>&lt; .02</td>
</tr>
<tr>
<td>Q4</td>
<td>8.56</td>
<td>3.27</td>
<td>8.61</td>
<td>3.62</td>
<td>0.09</td>
<td>&lt; .05</td>
</tr>
</tbody>
</table>

df = 146
Although this $t$ score did not reach the required 1.96 for significance, it approached significance at the .1 level. High raw scores indicate greater internal control.

Higher mean raw scores were made by nominated students on other factors of the test as follows: factor B, which was in the direction of less restraint, factor G, which was in the direction of greater conscientiousness, factor I, which was in the direction of greater sensitivity, factor J, which was in the direction of greater individualism, and factor Q2, which was in the direction of greater resourcefulness. On the remaining factors of the test nominated students made lower mean raw scores as follows: factor A, which was in the direction of less sociability, factor C, which was in the direction of less maturity, factor E, which was in the direction of less aggressivity, factor F, which was in the direction of less enthusiasm, factor H, which was in the direction of less adventurousness, factor O, which was in the direction of less insecurity, and factor $Q_4$, which was in the direction of less excitability.

The null hypothesis that there was no significant difference between the measured conative factors of intellectually gifted students nominated for an advanced study program in the seventh grade of junior high school was not supported for factor B and, therefore, was rejected and the original hypothesis for factor B was accepted.

**Hypothesis Two**

Hypothesis two stated that there was an initial significant difference between the measured conative factors of intellectually
gifted students who were successful in an advanced study program in
the seventh grade of junior high school and those of intellectually
gifted students who were less successful.

Each sub-hypothesis was re-stated in the form of the null hypo-
thesis for the purpose of the statistical test of the significance
of the difference. Table II presents the statistical data relevant
to each of the sub-hypotheses.

The null hypothesis for sub-hypothesis (e) stated that there was
no significant difference in measured aggressivity (factor E) between
successful and less successful students. The difference was signifi-
cant at the .02 level, therefore, the null hypothesis was rejected,
and the original sub-hypothesis which stated that measured aggressivity
was greater for successful students than for less successful students
was also rejected. The mean raw score of the successful students was
5.50 and the mean raw score of the less successful students was 7.1$.
The t score obtained was 2.53 which yielded a significance of the
difference at the .02 level. High raw scores indicate greater ag-
gressivity.

The null hypothesis for sub-hypothesis (g) stated that there was
no significant difference in measured persistence (factor G) between
successful and less successful students. The difference was signifi-
cant at the .02 level, therefore, the null hypothesis was rejected
and the original hypothesis which stated that measured persistence
was greater for successful students than for less successful students
was also rejected. The mean raw score for the successful students
was 13.77 and the mean raw score of the less successful students was
TABLE II
MEAN SCORE, STANDARD DEVIATION, FISHER'S t AND LEVEL OF SIGNIFICANCE FOR THE SUCCESSFUL AND LESS SUCCESSFUL STUDENTS ON THE INITIAL ADMINISTRATION OF THE JR.-SR. HIGH SCHOOL PERSONALITY QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Factor</th>
<th>Less Successful Students</th>
<th>Successful Students</th>
<th>t</th>
<th>Significance of the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Test Data</td>
<td>Raw Score</td>
<td>Test Data</td>
</tr>
<tr>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>12.19</td>
<td>3.50</td>
<td>11.88</td>
<td>3.26</td>
</tr>
<tr>
<td>B</td>
<td>7.42</td>
<td>1.25</td>
<td>7.50</td>
<td>1.31</td>
</tr>
<tr>
<td>C</td>
<td>9.69</td>
<td>3.42</td>
<td>9.58</td>
<td>2.95</td>
</tr>
<tr>
<td>D</td>
<td>9.92</td>
<td>3.65</td>
<td>9.35</td>
<td>3.32</td>
</tr>
<tr>
<td>E</td>
<td>7.69</td>
<td>3.09</td>
<td>5.50</td>
<td>3.04</td>
</tr>
<tr>
<td>F</td>
<td>10.42</td>
<td>2.48</td>
<td>9.31</td>
<td>3.65</td>
</tr>
<tr>
<td>G</td>
<td>11.50</td>
<td>3.10</td>
<td>13.77</td>
<td>3.00</td>
</tr>
<tr>
<td>H</td>
<td>11.23</td>
<td>3.63</td>
<td>12.15</td>
<td>3.16</td>
</tr>
<tr>
<td>I</td>
<td>10.19</td>
<td>4.84</td>
<td>12.54</td>
<td>3.68</td>
</tr>
<tr>
<td>J</td>
<td>6.54</td>
<td>3.04</td>
<td>5.65</td>
<td>3.22</td>
</tr>
<tr>
<td>O</td>
<td>11.12</td>
<td>2.12</td>
<td>10.35</td>
<td>3.81</td>
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<tr>
<td>Q&lt;sub&gt;2&lt;/sub&gt;</td>
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<td>7.81</td>
<td>2.77</td>
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<tr>
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<td>2.69</td>
<td>13.88</td>
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<td>8.15</td>
<td>3.02</td>
<td>8.42</td>
<td>3.62</td>
</tr>
</tbody>
</table>

df = 50
11.50. The \( t \) score obtained was 2.63 which yielded a significance of the difference at the .05 level. High raw scores indicate greater persistence.

The null hypothesis for sub-hypothesis (m) stated that there was no significant difference in measured internal control (factor \( Q_3 \)) between successful students and less successful students. The difference was significant at the .02 level, therefore, the null hypothesis was rejected and the original sub-hypothesis which stated that measured internal control was greater for successful students than for less successful students was accepted. The mean raw score of the successful students was 13.88 and the mean raw score of the less successful students was 11.65. The \( t \) score obtained was 2.66 which yielded a significance of the difference at the .02 level. High raw scores indicate greater internal control.

An examination of Table II will reveal that no other factor reached the \( t \) score of 2.02 required for significance so the null hypothesis of no difference was accepted and each of the original sub-hypothesis was rejected for each of the other eleven factors.

The mean raw score of the successful students on the test of realism (factor I) was 12.54 and of the less successful students was 10.19 which yielded a \( t \) score of 1.93. Although this \( t \) score did not reach the 2.02 required for significance it approached significance at the .1 level. Low raw scores indicate greater realism.

Higher mean raw scores were made by successful students on other factors of the test as follows; factor B, which was in the direction of greater brightness, factor H, which was in the direction of greater
adventurousness. On the remaining factors of the test successful students made lower mean raw scores as follows: factor A, which was in the direction of less sociability, factor C, which was in the direction of less maturity, factor D, which was in the direction of less restraint, factor E, which was in the direction of less enthusiasm, factor J, which was in the direction of less individualism, factor O, which was in the direction of less security, factor Q₂, which was in the direction of less resourcefulness, and factor Q₄, which was in the direction of less excitability.

The null hypotheses for factors E, G and Q₃ were not supported. The differences in factors E and G were in the opposite direction from that hypothesized so the original hypotheses for these factors were also rejected. The original hypothesis for factor Q₃ was accepted.

Hypothesis Three

Hypothesis three stated that there was no significant change during the year in the measured conative factors of those students who were successful in an advanced study program in the seventh grade of junior high school.

Each sub-hypothesis was originally stated as the null hypothesis and was statistically tested for the significance. Table III presents the statistical data relevant to each of the sub-hypotheses.

An examination of Table III will reveal that none of the factors reached the t score of 2.02 required for significance at the .05 level.
TABLE III

MEAN SCORE, STANDARD DEVIATION, FISHER'S t AND LEVEL OF SIGNIFICANCE FOR SUCCESSFUL STUDENTS ON THE INITIAL AND FINAL ADMINISTRATION OF THE JR.-SR. HIGH SCHOOL PERSONALITY QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Factor</th>
<th>Successful Students Raw Score Test Data Mean</th>
<th>Standard Deviation</th>
<th>Successful Students Raw Score Re-Test Data Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Significance of the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>11.88</td>
<td>3.26</td>
<td>12.15</td>
<td>4.20</td>
<td>0.25</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>B</td>
<td>7.50</td>
<td>1.31</td>
<td>7.96</td>
<td>1.13</td>
<td>1.34</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>C</td>
<td>9.58</td>
<td>2.95</td>
<td>9.73</td>
<td>3.03</td>
<td>0.18</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>D</td>
<td>9.35</td>
<td>3.32</td>
<td>9.92</td>
<td>3.33</td>
<td>0.61</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>E</td>
<td>5.50</td>
<td>3.06</td>
<td>7.00</td>
<td>2.97</td>
<td>1.76</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>F</td>
<td>9.31</td>
<td>3.65</td>
<td>10.92</td>
<td>3.45</td>
<td>1.61</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>G</td>
<td>13.77</td>
<td>3.00</td>
<td>12.38</td>
<td>3.11</td>
<td>1.60</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>H</td>
<td>12.15</td>
<td>3.46</td>
<td>12.08</td>
<td>3.97</td>
<td>0.07</td>
<td>&lt; .05</td>
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<td>3.68</td>
<td>13.00</td>
<td>4.20</td>
<td>0.11</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>J</td>
<td>5.65</td>
<td>3.22</td>
<td>6.69</td>
<td>2.54</td>
<td>1.27</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>O</td>
<td>10.35</td>
<td>3.81</td>
<td>9.92</td>
<td>3.86</td>
<td>0.39</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Q2</td>
<td>7.81</td>
<td>2.77</td>
<td>7.00</td>
<td>2.90</td>
<td>1.01</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Q3</td>
<td>13.88</td>
<td>3.23</td>
<td>12.62</td>
<td>2.62</td>
<td>1.53</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Q4</td>
<td>8.42</td>
<td>3.62</td>
<td>8.81</td>
<td>2.08</td>
<td>0.46</td>
<td>&lt; .05</td>
</tr>
</tbody>
</table>

df = 50
so the null hypothesis of no difference for each of the fourteen sub-hypotheses was accepted. The greatest change was measured on the test and re-test of aggressivity (factor E). On the test the mean raw score of the successful students was 5.50 and on the re-test the mean raw score was 7.00. A t score of 1.76 was obtained which yielded a significance of the difference which approached the .05 level. High raw scores indicate greater aggressivity.

On other factors of the re-test the successful students made higher scores than on the initial test as follows: factor A, which was in the direction of greater sociability, factor B, which was in the direction of greater brightness, factor C, which was in the direction of greater maturity, factor D, which was in the direction of less restraint, factor F, which was in the direction of greater enthusiasm, factor I which was in the direction of more sensitivity, factor J, which was in the direction of more individualism, and factor Q4, which was in the direction of more excitability. Lower scores were made on the remaining factors of the re-test as follows: factor G, which was in the direction of less conscientiousness, factor H, which was in the direction of less adventurousness, factor Q, which was in the direction of less insecurity, factor Q2, which was in the direction of less resourcefulness, factor Q3, which was in the direction of less positive self-sentiment.

The original hypothesis which was stated as the null hypothesis, that there was no significant change during the year in the measured conative factors of those intellectually gifted students who were
successful in an advanced study program in the seventh grade of junior high school, was supported and, therefore, was accepted.

Hypothesis Four

Hypothesis four stated that there was a significant change in the measured conative factors of those students who were less successful in an advanced study program in the seventh grade of junior high school.

Each sub-hypothesis was restated in the form of the null hypothesis for the purpose of the statistical test of the significance of the difference. Table IV presents the statistical data relevant to each of the sub-hypotheses.

The null hypothesis for sub-hypothesis (e) stated that there was no significant change in the measured aggressivity of the less successful students. The difference was significant at the .02 level, therefore, the null hypothesis was rejected and the original hypothesis which stated that measured aggressivity of the less successful students was less was also rejected. The mean raw score of the less successful students on the test was 7.69 and on the re-test was 10.08. The $t$ score obtained was 2.52 which yielded a significance of the difference at the .02 level. High raw scores indicate greater aggressivity.

The null hypothesis for sub-hypothesis (m) stated that there was no significant change in the measured internal control of the students (factor $Q_3$). The change was significant at the .05 level, therefore, the null hypothesis was rejected, and the original hypothesis, which stated that measured internal control of the less successful students was less, was accepted. The mean raw score of the less successful
### Table IV

Mean Score, Standard Deviation, Fisher's t and Level of Significance for Less Successful Students on the Initial and Final Administrations of the Jr.-Sr. High School Personality Questionnaire

<table>
<thead>
<tr>
<th>Factor</th>
<th>Less Successful Students</th>
<th></th>
<th>Less Successful Students</th>
<th></th>
<th></th>
<th>Significance of the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Test Data</td>
<td>Raw Score</td>
<td>Re-Test Data</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>12.19</td>
<td>3.50</td>
<td>12.00</td>
<td>3.66</td>
<td>0.19</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>B</td>
<td>7.42</td>
<td>1.25</td>
<td>7.85</td>
<td>1.13</td>
<td>1.26</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>C</td>
<td>9.69</td>
<td>3.42</td>
<td>9.77</td>
<td>3.48</td>
<td>0.08</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>D</td>
<td>9.92</td>
<td>3.65</td>
<td>10.04</td>
<td>3.36</td>
<td>0.12</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>E</td>
<td>7.69</td>
<td>3.09</td>
<td>10.08</td>
<td>3.59</td>
<td>2.52</td>
<td>&gt;.02</td>
</tr>
<tr>
<td>F</td>
<td>10.42</td>
<td>2.48</td>
<td>11.69</td>
<td>3.66</td>
<td>1.44</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>G</td>
<td>11.50</td>
<td>3.10</td>
<td>10.85</td>
<td>2.98</td>
<td>0.76</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>H</td>
<td>11.23</td>
<td>3.63</td>
<td>10.96</td>
<td>4.15</td>
<td>0.24</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>I</td>
<td>10.19</td>
<td>4.84</td>
<td>8.96</td>
<td>4.47</td>
<td>0.93</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>J</td>
<td>6.54</td>
<td>3.04</td>
<td>6.77</td>
<td>2.62</td>
<td>0.28</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>O</td>
<td>11.12</td>
<td>2.42</td>
<td>10.96</td>
<td>3.38</td>
<td>0.18</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Q₂</td>
<td>8.92</td>
<td>2.83</td>
<td>8.61</td>
<td>2.91</td>
<td>0.38</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Q₃</td>
<td>11.65</td>
<td>2.69</td>
<td>9.81</td>
<td>2.94</td>
<td>2.32</td>
<td>&gt;.02</td>
</tr>
<tr>
<td>Q₄</td>
<td>8.15</td>
<td>3.02</td>
<td>8.92</td>
<td>3.82</td>
<td>0.79</td>
<td>&lt;.05</td>
</tr>
</tbody>
</table>

\( df = 50 \)
students on the test was 11.65 and on the re-test was 9.81. The t score obtained was 2.32 which yielded a significance of the difference at the .05 level. Low raw scores indicated less internal control.

An examination of Table IV will reveal that no other factor reached the t score of 2.02 required for significance so the null hypothesis of no difference was accepted and the original sub-hypothesis was rejected for each of the other twelve factors.

Higher mean raw scores were made by less successful students on other factors of the re-test as follows: factor B, which was in the direction of greater brightness, factor C, which was in the direction of greater maturity, factor D, which was in the direction of less restraint, factor F, which was in the direction of more enthusiasm, factor J, which was in the direction of greater individualism, and factor Q4, which was in the direction of more excitability. Lower mean raw scores were made on the remaining factors of the re-test as follows: factor A, which was in the direction of less sociability, factor G, which was in the direction of less conscientiousness, factor H, which was in the direction of less adventurousness, factor I, which was in the direction of less sensitivity, factor O, which was in the direction of less insecurity, and factor Q2, which was in the direction of less resourcefulness.

The null hypotheses for factors E and Q3 were not supported. For factor E the change was in the opposite direction from that hypothesized so the original hypothesis was also rejected. The original hypothesis for factor Q3 was accepted.
Hypothesis Five

Hypothesis five stated that there was no significant change during the year in the measured conative factors of those intellectually gifted students not-nominated for an advanced study program in the seventh grade of junior high school.

Each sub-hypothesis was originally stated as the null hypothesis and was statistically tested for the significance of the difference. Table V presents the statistical data relevant to each of the sub-hypotheses.

An examination of Table V will reveal that no factor reached the t score of 1.98 required for significance at the .05 level, therefore, the null hypothesis of no difference was accepted for each of the fourteen sub-hypotheses.

Higher mean raw scores were made on the following factors of the re-test by the not-nominated students: factor B, which was in the direction of greater brightness, factor D, which was in the direction of less restraint, factor E, which was in the direction of more aggressivity, factor F, which was in the direction of more enthusiasm, factor J, which was in the direction of greater individualism, and factor Q₂, which was in the direction of greater resourcefulness. Lower mean raw scores were made on the following remaining factors of the test: factor A, which was in the direction of less sociability, factor G, which was in the direction of less maturity, factor H, which was in the direction of less conscientiousness, factor O, which was in the direction of less insecurity, factor Q₃,
TABLE V

MEAN SCORE, STANDARD DEVIATION, FISHER'S t AND LEVEL OF SIGNIFICANCE FOR NOT-NOMINATED STUDENTS ON THE INITIAL AND FINAL ADMINISTRATION OF THE JR-SR. HIGH SCHOOL PERSONALITY QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not-Nominated Students</th>
<th>Not-Nominated Students</th>
<th>t</th>
<th>Significance of the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score Test Data</td>
<td>Raw Score Re-Test Data</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>A</td>
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<td>2.84</td>
<td>11.11</td>
<td>2.99</td>
</tr>
<tr>
<td>B</td>
<td>7.05</td>
<td>1.30</td>
<td>7.52</td>
<td>1.20</td>
</tr>
<tr>
<td>C</td>
<td>9.93</td>
<td>3.92</td>
<td>9.45</td>
<td>3.06</td>
</tr>
<tr>
<td>D</td>
<td>9.27</td>
<td>3.73</td>
<td>10.07</td>
<td>3.25</td>
</tr>
<tr>
<td>E</td>
<td>7.64</td>
<td>3.18</td>
<td>7.36</td>
<td>3.62</td>
</tr>
<tr>
<td>F</td>
<td>10.70</td>
<td>2.82</td>
<td>11.36</td>
<td>3.77</td>
</tr>
<tr>
<td>G</td>
<td>12.18</td>
<td>3.02</td>
<td>11.79</td>
<td>3.48</td>
</tr>
<tr>
<td>H</td>
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<td>4.63</td>
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<td>6.95</td>
<td>3.17</td>
<td>7.18</td>
<td>3.71</td>
</tr>
<tr>
<td>O</td>
<td>10.61</td>
<td>2.90</td>
<td>10.09</td>
<td>3.28</td>
</tr>
<tr>
<td>Q2</td>
<td>8.73</td>
<td>2.48</td>
<td>8.82</td>
<td>4.08</td>
</tr>
<tr>
<td>Q3</td>
<td>11.66</td>
<td>3.22</td>
<td>11.52</td>
<td>2.94</td>
</tr>
<tr>
<td>Q4</td>
<td>8.61</td>
<td>3.62</td>
<td>8.07</td>
<td>3.30</td>
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</tbody>
</table>

df = 86
which was in the direction of less positive self-sentiment, and factor
\(Q_2\), which was in the direction of less excitability.

The original hypothesis of no difference was supported, therefore, it was accepted.

**Hypothesis Six**

Hypothesis six stated that there was a significant difference between the measured conative factors of intellectually gifted students who were successful in an advanced study program in the seventh grade of junior high school and of intellectually gifted students who were less successful at the close of the school year.

Each sub-hypothesis was re-stated in the form of the null hypothesis for the purpose of the statistical test of the significance of the difference. Table VI presents the statistical data relevant to each of the sub-hypotheses.

The null hypothesis for sub-hypothesis (e) stated that there was no significant difference in measured aggressivity (factor E) between successful and less successful students. The difference was significant at the .01 level, therefore, the null hypothesis was rejected and the original sub-hypothesis, which stated that measured aggressivity was greater for successful students than for less successful students, was also rejected. The mean raw score of the successful students was 7.00 and for the less successful students was 10.08. The \(t\) score obtained was 3.30 which yielded a significance of the difference at better than the .01 level. High raw scores indicate greater aggressivity.
TABLE VI
MEAN SCORE, STANDARD DEVIATION, FISHER'S t AND LEVEL OF SIGNIFICANCE
FOR SUCCESSFUL AND LESS SUCCESSFUL STUDENTS ON THE FINAL
ADMINISTRATION OF THE JR.-SR. HIGH SCHOOL
PERSONALITY QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Factor</th>
<th>Less Successful Students</th>
<th>Successful Students</th>
<th>t</th>
<th>Significance of the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Re-Test Data</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>A</td>
<td>12.00</td>
<td>3.66</td>
<td>12.15</td>
<td>4.20</td>
</tr>
<tr>
<td>B</td>
<td>7.85</td>
<td>1.13</td>
<td>7.96</td>
<td>1.13</td>
</tr>
<tr>
<td>C</td>
<td>9.77</td>
<td>3.48</td>
<td>9.73</td>
<td>3.03</td>
</tr>
<tr>
<td>D</td>
<td>10.04</td>
<td>3.36</td>
<td>9.92</td>
<td>3.33</td>
</tr>
<tr>
<td>E</td>
<td>10.08</td>
<td>3.59</td>
<td>7.00</td>
<td>2.97</td>
</tr>
<tr>
<td>F</td>
<td>11.69</td>
<td>3.66</td>
<td>10.92</td>
<td>3.45</td>
</tr>
<tr>
<td>G</td>
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<td>12.38</td>
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<tr>
<td>H</td>
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<td>4.15</td>
<td>12.08</td>
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<tr>
<td>I</td>
<td>8.96</td>
<td>4.47</td>
<td>13.00</td>
<td>4.20</td>
</tr>
<tr>
<td>J</td>
<td>6.77</td>
<td>2.62</td>
<td>6.69</td>
<td>2.54</td>
</tr>
<tr>
<td>O</td>
<td>10.96</td>
<td>3.38</td>
<td>9.92</td>
<td>3.86</td>
</tr>
<tr>
<td>Q2</td>
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<tr>
<td>Q3</td>
<td>9.81</td>
<td>2.94</td>
<td>12.62</td>
<td>2.62</td>
</tr>
<tr>
<td>Q4</td>
<td>8.92</td>
<td>3.82</td>
<td>8.81</td>
<td>2.08</td>
</tr>
</tbody>
</table>

df = 50
The null hypothesis for sub-hypothesis (1) stated that there was no significant difference in measured realism (factor I) between successful students and less successful students. The difference was significant at the .01 level, therefore, the null hypothesis was rejected and the original sub-hypothesis, which stated that measured realism was greater for successful students than for less successful students, was also rejected. Low raw scores indicate greater realism.

The null hypothesis for sub-hypothesis (m) stated that there was no significant difference in measured internal control (factor Q₃) between successful students and less successful students. The difference was significant at the .001 level, therefore the null hypothesis was rejected and the original sub-hypothesis which stated that measured internal control was greater for successful students than for less successful students, was accepted. The mean raw score of the successful students was 12.62 and the mean raw score of the less successful students was 9.81. The t score obtained was 3.57 which yielded a significance of the difference at the .001 level. High raw scores indicate greater internal control.

On the measure of resourcefulness (factor Q₂) the mean raw score of the successful students was 7.00 and of the less successful students was 8.62. The t score obtained was 1.97 which, although not statistically significant, approached the t score of 2.02 required for significance.

Higher mean raw scores were made by successful students on other factors of the re-test as follows: factor A, which was in the direction of greater sociability, factor B, which was in the direction
of greater brightness, factor G, which was in the direction of greater conscientiousness, factor K, which was in the direction of greater adventurousness. On the remaining factors of the re-test successful students made lower mean raw scores than less successful students as follows: factor E, which was in the direction of less maturity, factor D, which was in the direction of less restraint, factor F, which was in the direction of less enthusiasm, factor J, which was in the direction of less individualism, factor O, which was in the direction of less insecurity, and factor Q, which was in the direction of less excitability.

The null hypothesis that there was no significant difference between the measured conative factors of intellectually gifted students who were successful in an advanced study program in the seventh grade of junior high school and of intellectually gifted students who were less successful at the close of school was not supported for factors E, I, and Q. The differences for factors E and I were in the opposite direction from that hypothesized so the original hypotheses for these factors were also rejected. The original hypothesis for factor Q was accepted.
CHAPTER IV

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study was an investigation of the relationship of certain conative factors of intellectually gifted students to academic success. It was concerned with the relationship of these factors to nomination for placement in an advanced study program in the seventh grade of junior high school, the initial and terminal relationship of these factors to success in an advanced study program and what, if any, changes occurred in these factors during the school year.

The population for this study consisted of the 148 intellectually gifted students in two junior high schools of a large metropolitan southwestern city. One hundred and four of these intellectually gifted students were nominated for an advanced study program and 44 were not nominated. Definition as intellectually gifted required an intelligence quotient of 120 on the CTMM and an achievement grade placement at least two years advanced of actual grade placement in the sixth grade on the CAT.

To secure objective data concerning those certain conative factors, the Jr.-Sr. High School Personality Questionnaire was administered to all students of the population in the fall of 1963 and again in the spring of 1964. These data were statistically analyzed relative to the hypotheses and findings were made.
Findings

1. Hypothesis one, which stated that there was a significant difference between the measured conative factors of intellectually gifted students nominated for an advanced study program in the seventh grade of junior high school and of intellectually gifted students not nominated, was accepted for factor B. The difference was significant at the .05 level. Nominated students obtained a significantly higher mean score on this factor of the test than the not-nominated students. Higher scores of the nominated students on this factor indicated a tendency to show more persistence, to exhibit better morale, and school interest and greater brightness than not-nominated students. According to the authors of the test, "... in most school and clinical situations there already exists a longer and more reliable measure of general ability than this brief (and unspeeded) intelligence scale" (1, p. 13). The authors of the test report that the associations on this factor are not very highly loaded on the order of .3 and .4, but that it does indicate the tendencies described above (1, p. 13).

Although not statistically significant the difference on the measure of internal control (factor Q3) approached the .05 level with an obtained t score of 1.74. A t score of 1.96 was required to reach the .05 level of significance. The mean raw score obtained on factor Q3 by the nominated students was 12.63 and that of the not-nominated group was 11.66. High scores on this factor indicate greater internal control. The highest other t score obtained was 1.46 on the test of enthusiasm (factor P) upon which the not-nominated group obtained the
higher score. High scores on this factor are indicative of greater enthusiasm. The obtained t scores on the other factors of the test ranged downward to as low as 0.03 on the measure of confidence (factor 0).

2. Hypothesis two, which stated that there was an initial significant difference between the measured conative factors of intellectually gifted students who were successful in an advanced study program in the seventh grade of junior high school and those intellectually gifted students who were less successful, was accepted for factors E, G, and Q3.

The mean raw score of the successful students on factor E was 5.50 and the mean raw score for the less successful students was 7.42. The t score obtained was 2.33 which yielded a significance at the .02 level. The higher scores of the less successful students on this factor were indicative of greater dominance and independence of thought. High scores are usually obtained by leaders rather than followers; however, high scores correlate higher with attempted leadership than with accepted leadership. Generally high scorers interact better with peers and are more democratic. They feel free to participate and readily raise group problems and criticize group defects. High scores are also associated with rebellion and may indicate disobedience, head strong self will and perhaps anti-social behavior. The lower scores of the successful students on this factor were indicative of more submission, dependence, and conventional and conforming behavior (1, p. 14).
Successful students were significantly different from less successful students according to factor G of the test. The mean raw score for the successful group was 13.77 and the mean raw score for the less successful group was 11.50. The t score obtained was 2.63 which yielded a significance of the difference of between the .02 and .01 level. The higher scores of the successful students on this factor were indicative of more perseverance, determination, and responsibility. High factor G scorers generally achieve well in school and are popular. Generally it appears that high scorers are persons whose super ego effectively controls the id (1, p. 15). The lower scores of less successful students on factor G were indicative of more frivolity, quitting, indolence and undependability.

Successful students were significantly different from less successful students according to factor Q₃ of the test. The successful group of students had a mean raw score of 13.88 on this factor and the less successful group had a mean raw score of 11.65. The t score obtained was 2.66 which yielded a significance of the difference of better than .02 and approaching the .01 level. The higher scores of the successful students on factor Q₃ indicated more positive self-sentiment, internal control, strivings to accept approved ethical standards, ambition to do well, and conscientiousness. High scores are associated with success in mechanical, mathematical, and productive organizational activities. "... it is high in executives, personnel workers, and psychiatric technicians, in all of whom objectivity, balance and decisiveness are especially demanded" (1, p. 18).
lower scores of the less successful were indicative of emotionality, lack of control, and rejection of cultural demands (1, p. 17).

The highest t score obtained which was not statistically significant was on the test of realism (factor I). The less successful students had the lower mean raw score of 10.19 and the successful students had a mean raw score of 12.54. The obtained t score was 1.93 which approached the 2.02 required for the .05 level of significance. Low scores on this factor indicate greater realism. Other t scores ranged downward to 0.12 on the measure of maturity (factor C).

According to these tests successful students were characterized as significantly more conventional, dependent, and conforming in their behavior than less successful students. They also were more dependable, more persevering and better planners. They indicated significantly more positive self-sentiment, more self-control than the less successful students and were more striving toward accepted ethical standards, and were more ambitious and conscientious.

Less successful students were significantly more rejecting of cultural demands, more independent in thought and more democratic in their relationships with peers than successful students. Also, they were less purposeful and more lax as determined by this test.

3. Hypothesis three, which stated that there was no significant change during the year in the measured conative factors of those intellectually gifted students who were successful in an advanced study program in the seventh grade of junior high school, was accepted. Although some changes did occur in mean raw scores on various factors
of the test none changed significantly. The greatest statistical change was in factor E in which a t score of 1.76 was obtained but was less than required for the .05 level of significance. The direction of this change was toward more self assurance and independence. Other t scores ranged downward to 0.18 on factor C, the measure of maturity.

Hypothesis number four, which stated that there was a significant change during the year in the measured conative factors of those students who were less successful in an advanced study program in the seventh grade of junior high school, was accepted for factors E and Q3.

Significant changes during the year were obtained on factor E between test and re-test. The mean raw score of the less successful students on the test was 7.69, and on the re-test the mean raw score was 10.08. The t score obtained was 2.52 which yielded a significance of the difference at the .02 level. The higher scores on this factor were indicative of an increase in dominance, and independence of thought. High scores are usually obtained by leaders rather than followers; however, high scores correlate higher with attempted leadership than with accepted leadership. Generally, high scorers interact better with peers and are more democratic. They feel free to participate and readily raise group problems and criticize group defects. High scores are also associated with rebellion and may indicate disobedience, head strong self will, and perhaps anti-social behavior. Low scores are associated with submission, dependence, and conventional and conforming behavior.
Significant changes during the year were obtained on factor $Q_3$ between test and re-test. The mean raw score of the less successful students on the test was 11.65 and on the re-test the mean raw score was 9.81. The $t$ score obtained was 2.32 which yielded a significance of the difference at the .05 level. The lower scores on factor $Q_3$ indicated a more negative self-sentiment, a decrease in internal control, strivings to accept approved ethical standards, ambition to do well, and conscientiousness.

The highest other $t$ score obtained, 1.44, was on factor $F$, the measure of enthusiasm. This score did not approach significance. Other $t$ scores ranged downward to 0.12 on factor $Q_2$, the measure of resourcefulness.

Significant changes in the measured conative factors of the less successful students were toward more dominance, independence, self-sufficiency, negative self-sentiment, rebellion and rejection of cultural demands, and less internal control as measured by this test.

5. Hypothesis number five, which stated that there was no significant change during the year in the measured conative factors of those intellectually gifted students not nominated for an advanced study program in the seventh grade of junior high school, was accepted.

No statistically significant differences were obtained on any of the factors between the test and re-test. The only change which approached statistical significance was on factor $B$, the test of brightness. The $t$ score obtained was 1.77 which approached significance at the .05 level.
6. Hypothesis number six, which stated that there was a significant difference between the measured conative factors of intellectually gifted students who were successful in an advanced study program in the seventh grade of junior high school and of intellectually gifted students who were less successful at the close of the year, was accepted for factors E, I, and G3.

Successful students were significantly different from less successful students according to factor E of the re-test. The mean raw score on the re-test of this factor for the less successful students was 10.08 and the mean raw score for the successful students was 7.00. The t score obtained was 3.30 which yielded a significance of the difference of the .01 level and approaching the .001 level. The higher scores of the less successful students on this factor were indicative of greater dominance and independence of thought. High scorers may manifest these characteristics in disobedient and rebellious behavior. The lower scores of the successful students were indicative of more submission, dependence, and conventional and conforming behavior.

Successful students were significantly different from less successful students according to factor I of the re-test. The mean raw score on the re-test of this factor for less successful students was 8.96 and the mean raw score for the successful students was 13.00. The t score obtained was 3.29 which yielded a significance of the difference of .01 and approaching the .001 level. The lower scores of the less successful students on factor I were indicative of more
realism, self reliance, and self sufficiency while the higher scores of the successful students were indicative of more dependency, sensitivity, indulgence to self and others, attention seeking and anxiety. According to the authors of the test this factor is highly related to environmental influences (1, p. 16).

Successful students were significantly different from less successful students according to factor Q3 of the re-test. The successful group had a mean raw score of 12.62 on the re-test and the less successful group had a mean raw score of 9.81. The t score obtained was 3.57 which was significant at the .001 level. The higher scores of the successful students on factor Q3 were indicative of greater internal control, strivings to accept approved ethical standards, ambition to do well, and conscientiousness. The lower scores of the less successful students were indicative of more emotionality, less internal control, and more rejection of cultural demands (1, p. 17).

Differences at the close of school in the area of dominance and independence (factor F) were greater at the close of school than initially. Although the successful students made a statistically insignificant gain in the direction of greater dominance and independence, less successful students made a statistically significant gain and differences were more pronounced at the close of school than at the beginning.

No statistical difference was obtained on the re-test of perseverance (factor G) which indicated that successful and less successful students were more alike on this factor at the close of school than at the beginning. The direction of change of the less successful
students was toward less perseverance, but there was a greater change in this direction by successful students. The higher mean raw scores which were indicative of greater perseverance were obtained by the successful students on both the test and the re-test.

During the year successful students became more sensitive and teacher dependent according to the test and re-test of factor I, while less successful students became less sensitive. The difference in this area at the close of school was highly significant.

Even though successful students indicated less internal control (factor Q_3) at the close of school than initially, less successful students indicated statistically significant less internal control thereby making the difference at the close of school more pronounced than initially. The significance of difference at the close of school was the greatest obtained on any of the relationships tested.

On factor Q_2 of the test a t-score of 1.97 was obtained which approached the t score of 2.02 required for the .05 level of significance. The less successful students obtained the higher mean raw score. Higher scores on this factor indicate individual resourcefulness and are usually associated with good school achievement (1, p. 17). The less successful students had the identical mean raw score on the re-test as on the test while the mean raw score of the re-test of the successful students was less than on the test. No other differences approached significance on the re-test.

The indications of the re-test were that at the close of school the successful students were significantly more dependent, conventional
and conforming than the less successful students. They were also more sensitive and self-indulgent than the less successful students. The greatest difference indicated between the two groups was in the area of self-sentiment. The successful students were more self-controlled, more striving toward accepted ethical standards and were more conscientious and ambitious which is indicative of a more positive self-sentiment.

Less successful students were significantly more rejecting of cultural demands, more independent, and more democratic in their relationships with peers than successful students. They were more realistic and self-sufficient than successful students. They were also less self-controlled, which is indicative of a less positive self-sentiment than successful students.

Conclusions

The conclusions drawn from the data presented in this study would apply only to other populations and situations as they are similar to those of this investigation. It appears that the following conclusions may be drawn from the analysis of these data:

1. Teachers and principals are more likely to nominate those intellectually gifted students for advanced study programs in junior high school who are well adjusted to school and intellectually interested, rather than those intellectually gifted students who are less well adjusted to school and who are less intellectually interested.
2. Intellectually gifted students with a more positive self-sentiment (more perseverant, conscientious, and self-controlled) and more dependent and conforming are more likely to be successful in an advanced study program in the seventh grade of junior high school than intellectually gifted students with a less positive self-sentiment (less perseverant, conscientious, and self-controlled) and who are more dominant and independent.

3. Significant changes in the conative factors of intellectually gifted students who are less successful in an advanced study program in the seventh grade of junior high school are likely to occur in the direction of greater dominance, independence, and more negative self-sentiment.

4. No significant changes are likely to occur in the conative factors of intellectually gifted students who are successful in an advanced study program in the seventh grade of junior high school, or in the conative factors of intellectually gifted students who are in regular classes in the seventh grade of junior high school.

Recommendations

Recommendations for further study and planning for academic experiences of intellectually gifted students include the following:

1. A replication of this study at the twelfth grade level to ascertain if the relationships of certain conative factors to academic success found in this study are present at that level and to ascertain what, if any, changes have occurred.
2. Utilization of a personality evaluation should be included with other evaluations in the sixth grade for selection of students for an advanced study program to begin in the seventh grade.

3. Investigation should be made into the psychological characteristics of teachers as they relate to their attitudes toward intellectually gifted students who are less successful in an advanced study program in the seventh grade of junior high school.

4. Investigation should be made into the psychological climate of advanced study classrooms to ascertain whether or not the changes found in the conative factors of less successful students are causal.

5. Investigation should be made into the psychological climate of intellectually gifted students outside of the classroom to ascertain its relationship to academic success.

6. Investigation and experimentation should be made into various subject areas, material content, and pedagogical approaches for teaching intellectually gifted students.
CHAPTER BIBLIOGRAPHY


### APPENDIX I

**TITLES FOR DESIGNATING THE FOURTEEN DIMENSIONS OF THE TEST**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Low Score</th>
<th>High Score</th>
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<tbody>
<tr>
<td>A</td>
<td>Stiff, Critical, Aloof</td>
<td>vs. Warm, Sociable</td>
</tr>
<tr>
<td>B</td>
<td>Dull</td>
<td>vs. Bright</td>
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<tr>
<td>C</td>
<td>Emotional, Immature, Unstable</td>
<td>vs. Nature, Calm</td>
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<tr>
<td>D</td>
<td>Stodgy</td>
<td>vs. Unrestrained</td>
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<tr>
<td>E</td>
<td>Mild</td>
<td>vs. Aggressive</td>
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<td>F</td>
<td>Sober, Serious</td>
<td>vs. Enthusiastic, Happy-go-lucky</td>
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<tr>
<td>G</td>
<td>Casual, Undependable</td>
<td>vs. Conscientious, Persistent</td>
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<tr>
<td>H</td>
<td>Threat-Sensitive</td>
<td>vs. Adventurous, &quot;Thickskinned&quot;</td>
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<tr>
<td>I</td>
<td>Tough, Realistic</td>
<td>vs. Esthetically Sensitive</td>
</tr>
<tr>
<td>J</td>
<td>Liking Group Action</td>
<td>vs. Fastidiously Individualistic</td>
</tr>
<tr>
<td>Q</td>
<td>Confident</td>
<td>vs. Insecure</td>
</tr>
<tr>
<td>Q2</td>
<td>Group Dependent</td>
<td>vs. Individually Resourceful</td>
</tr>
<tr>
<td>Q3</td>
<td>Uncontrolled Lax</td>
<td>vs. Controlled, Showing Will Power</td>
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<tr>
<td>Q4</td>
<td>Relaxed, Composed</td>
<td>vs. Tense, Excitable</td>
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APPENDIX II

DATA SHEET FOR SELECTING HONORS COURSES ENROLLERS

This data sheet is to be completed in duplicate by the principal and teachers for each pupil psychometrically eligible for enrollment in honors courses (telescoped arithmetic) in Grade VII. One copy will be sent to the Research Department and the other copy to the school that will have the pupil next year.

Name __________________________ Present Grade and Section _________
Birth Date: Month ______ Day ______ Year ______ Boy ______ Girl ______
School Enrolled in __________________ Will Attend __________________ School

California Test of Mental Maturity
Grade Given Grade Total I.Q. Lang. I.Q. Non-Lang. I.Q.

California Achievement Test
Reading G. P. Arithmetic G. P.
Date Given Grade R.V. R.C. Total G. P. A.F. A.R. Total G.P.

Teacher Marks (Average)
Language Arts Arithmetic
Grade 6

Teacher(s) observations - Please indicate your opinion as to the pupil's present and future success and adjustment with reference to Honors Courses.

1. What are his work habits and study skills?
   a. Effort
      5. Really applies himself with energy - excellent effort.
      4. Tries most of the time - good effort.
      3. Exerts a fair amount of effort.
      2. Makes half-hearted attempts to work - spasmodic.
      1. Almost completely lacking in effort.
   b. Methods
      5. Always uses excellent study methods.
      4. Usually uses rather effective study methods.
      3. Usually uses fair amount of effort.
      2. Usually uses rather ineffective study methods.
      1. Always uses almost completely ineffective study methods.
2. What is his conduct in class?
   _____ 5. Excellent - cooperates and does everything he can to see that the class goes forward effectively.
   _____ 4. Usually good and cooperative, although not always.
   _____ 3. Fluctuates - sometimes good and sometimes not - about half and half.
   _____ 2. Usually bad and non-cooperative, although not always.
   _____ 1. Extremely bad - makes disturbances - interrupts discussions - interferes with work of others, and so on.

3. If you were predicting the above child's chances of continuing the Honors Program (Mathematics and/or Science) through Grade XII, how would you rate him on the following:
   _____ 5. Extremely probable
   _____ 4. Highly probable
   _____ 3. Somewhat doubtful
   _____ 2. Very doubtful
   _____ 1. Unlikely

4. Do you recommend the above child for telescoped arithmetic in Grade VII?  
   [ ] Yes  [ ] No
## APPENDIX III

### DATA CARD

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<th>Name</th>
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<tr>
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<th>Re-Test</th>
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