





**LIBRARY**  
**Michigan State**  
**University**

This is to certify that the

dissertation entitled

Self Concept and Academic Achievement for  
Emotionally Troubled Adolescents Enrolled in Regular  
Education and Special Education and  
Normal Students Enrolled in Regular Education

presented by

J. Thomas Giroux

has been accepted towards fulfillment  
of the requirements for

Ph.D. degree in Educational Psychology

Don E. Mamache

Major professor

Date 4/16/87



RETURNING MATERIALS:

Place in book drop to  
remove this checkout from  
your record. FINES will  
be charged if book is  
returned after the date  
stamped below.

~~SEP 24 1999~~

*(Handwritten signature)*

300 A293

*(Handwritten signature)*

7983417

FEB 03 2002

*(Handwritten signature)*

APR 01 2000

107

FEB 02 2001

FEB 6 1999

*(Handwritten signature)*

OCT 04 2001

101001

SELF CONCEPT AND ACADEMIC ACHIEVEMENT  
FOR EMOTIONALLY TROUBLED ADOLESCENTS  
ENROLLED IN REGULAR AND SPECIAL EDUCATION  
AND NORMAL STUDENTS ENROLLED IN REGULAR EDUCATION

By

J. Thomas Giroux

A Dissertation  
Submitted to Michigan State University  
in partial fulfillment of the requirements  
for the degree of

Doctor of Philosophy

Department of Counseling, Special Education  
and Educational Psychology

1987

## ABSTRACT

### SELF CONCEPT AND ACADEMIC ACHIEVEMENT FOR EMOTIONALLY TROUBLED ADOLESCENTS ENROLLED IN REGULAR AND SPECIAL EDUCATION AND NORMAL STUDENTS ENROLLED IN REGULAR EDUCATION

By

J. Thomas Giroux

The purpose of the present study was to determine the relationship between self-concept and academic achievement for emotionally troubled students enrolled in regular and special education, and normal students enrolled in regular education. Samples of students ranged in age from 11- 16, were enrolled in grades 6-11, and were enrolled in public schools. Differences between these groups in academic and nonacademic self-concept, in the correlation between self-concept and academic achievement, and in the unique contribution of self-concept in predicting self-concept beyond the variables of IQ and SES were examined through three different sets of research hypotheses.

It was found that normal regular education students have more favorable academic and nonacademic self-concepts than emotionally troubled special education students. In addition, it was found that both groups of emotionally troubled students have equally poor academic self-concepts. It was also observed that there was a trend for nonacademic self-concept to decrease for the emotionally troubled students and for those students receiving special education services.

It was also found that moderate correlations of as much as .56 exist between academic self-concept and academic achievement for normal regular education students. Insignificant correlations were found between academic and nonacademic self-concept and academic achievement for emotionally troubled special education students and for emotionally troubled regular education students.

It was further found that the unique contribution of academic self-concept accounted for as much as 23% of the achievement variance beyond the variables of IQ and SES for the normal regular education students. Neither academic nor nonacademic self-concept were found to significantly increase the achievement variance beyond the variables of IQ and SES for the emotionally troubled regular or special education students. However, nonacademic self-concept was found to account for as much of the achievement variance as the variables of IQ and SES for the emotionally troubled special education students. These findings suggests that academic self concept significantly adds to the prediction of academic achievement for the normal regular education students but adds little to the prediction of academic achievement for either group of emotionally troubled students.

Overall, the findings suggest that academic achievement may be enhanced for regular education students by providing them with positive and successful academic experiences. Specific strategies are not as clearly suggested by the

present findings for the emotionally troubled regular education students, however, there is some suggestion that emotionally troubled special education students may benefit from being exposed to a variety of successful social as well as academic experiences.

## ACKNOWLEDGEMENTS

I wish to express my appreciation initially to Dr. Don Hamachek for his invaluable advisement throughout my doctoral work and whose comments, suggestions, and criticisms furthered my understanding of the illusive nature of self concept and aided in the completion of this project. I also wish to extend thanks to Drs. Clarizio, Craig, and Stollak, whose ideas and knowledge stimulated my interest not only in this project but across the broad spectrum of psychology.

My thanks and appreciation are also extended to the teaching staff, administrators, students, and parents of the Monadnock Regional School System in Swanzey, New Hampshire and the Winchendon School System in Winchendon, Massachusetts. Special thanks are given to Dave Beauchamp and the staff and students of the TNT program.

Finally, my appreciation is extended to my wife, Theresa, and members of my family whose support and encouragement provided me with the emotional sustenance to complete this project.

## TABLE OF CONTENTS

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
| List of Tables.....                                                               | viii |
| CHAPTER I: INTRODUCTION.....                                                      | 1    |
| Need for the Study.....                                                           | 1    |
| Purpose of the Study.....                                                         | 2    |
| Definitions.....                                                                  | 3    |
| Hypotheses.....                                                                   | 5    |
| CHAPTER II: REVIEW OF THE LITERATURE.....                                         | 8    |
| Self Concept and Academic Achievement<br>of Normal Students.....                  | 9    |
| Self Concept Differences Between<br>Emotionally Troubled and Normal Students..... | 17   |
| The Effects of Placement in<br>Special Education On Self Concept.....             | 19   |
| Literature Review Summary.....                                                    | 24   |
| CHAPTER III: METHOD.....                                                          | 26   |
| Description of Subjects and Sample.....                                           | 26   |
| Instruments.....                                                                  | 29   |
| Procedures.....                                                                   | 36   |
| Hypotheses and Data Analysis.....                                                 | 37   |
| Limitations and Assumptions of the Study.....                                     | 42   |
| CHAPTER IV: RESULTS.....                                                          | 46   |
| Sample Characteristics.....                                                       | 46   |
| Hypothesis Testing.....                                                           | 49   |
| Supplementary Analysis.....                                                       | 65   |
| CHAPTER V: DISCUSSION.....                                                        | 73   |
| Differences in Self Concept.....                                                  | 73   |
| Self Concept and Academic Achievement.....                                        | 79   |
| The Significance of Self Concept as<br>a Predictor of Academic Achievement.....   | 82   |

|                                                                          |     |
|--------------------------------------------------------------------------|-----|
| CHAPTER VI: SUMMARY AND CONCLUSIONS.....                                 | 88  |
| Research Findings.....                                                   | 88  |
| Practical Implications.....                                              | 90  |
| Recommendations for Future Research.....                                 | 92  |
| Appendices                                                               |     |
| A: Self Description Questionnaire II.....                                | 96  |
| B: Child Behavior Checklist<br>Teacher Rating Form.....                  | 101 |
| C: Teacher Information and Identification<br>and Rating of Students..... | 104 |
| D: Student Information and Consent.....                                  | 108 |
| E: Letter to Parents and Consent<br>to Participate.....                  | 110 |
| References.....                                                          | 112 |

## LIST OF TABLES

### Table

|                                                                                                                     |    |
|---------------------------------------------------------------------------------------------------------------------|----|
| 1. Sample Characteristics: Means and Standard Deviations for Age, Grade, IQ, SES, WRAT-R and TRF.....               | 47 |
| 2. SDQ II: Total ASC and NASC Raw Score Means and Standard Deviations.....                                          | 49 |
| 3. ANOVA Summary Table: Nonacademic Self Concept.....                                                               | 50 |
| 4. ANOVA Summary Table: Academic Self Concept.....                                                                  | 50 |
| 5. Pearson product moment correlations between WRAT-R Scores and Academic and Nonacademic Self-concept.....         | 52 |
| 6. Differences in Correlation Coefficients Between Groups.....                                                      | 53 |
| 7. Chi-square Test of Significance Between Groups for WRAT-R and Level of Self Concept.....                         | 54 |
| 8. Intercorrelations Among Variables for the ETSE Students.....                                                     | 55 |
| 9. Intercorrelations Among Variables for the ETRE Students.....                                                     | 56 |
| 10. Intercorrelations Among Variables for the NRRE students.....                                                    | 57 |
| 11. Stepwise Multiple Regression Analyses with WRAT-R Subtests as the Dependent Variable for the ETSE Students..... | 58 |
| 12. Stepwise Multiple Regression Analyses with WRAT-R Subtests as the Dependent Variable for the ETRE Students..... | 59 |
| 13. Stepwise Multiple Regresiion Analyses with WRAT-R Subtests as the Dependent Variable for the NRRE Students..... | 61 |
| 14. Summary of Increases in Correlation Coefficients for NASC and ASC for the ETSE, ETRE, and NRRE Students.....    | 62 |

|                                                                                                                                                 |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 15. Chi-square Test of Significance for Increases<br>in Correlation Coefficients for Self Concept<br>for the ETSE, ETRE, and NRRE Students..... | 64 |
| 16. Summary of the Correlations Between Self Concept<br>and IQ for the ETSE, ETRE, and NRRE Students<br>and the Total Sample.....               | 66 |
| 17. Summary of the Correlations Between Self Concept<br>and SES for the ETSE, ETRE, and NRRE Students<br>and Total Sample.....                  | 67 |
| 18. Summary of ther Correlations Between Self Concept<br>and TRF Scores for the ETSE, ETRE, and NRRE<br>Students and the Total Sample.....      | 68 |
| 19. Differences in the Variability of Self Concept<br>Scores Among the ETSE, ETRE, and NRRE<br>Students.....                                    | 69 |
| 20. Stepwise Multiple Regression Analyses<br>Incorporating TRF Scores, Age, and Grade<br>for the ETSE, ETRE, and NRRE Students.....             | 71 |

# CHAPTER I

## INTRODUCTION

### Need for the Study

Individuals involved in educating children are continually searching for variables which either predict and/or improve the academic performance of their students. Self-concept is one such variable which has been hypothesized to influence academic achievement. Research has shown that students who possess a poor self-concept tend to have difficulties in achieving academically. Similarly, it has been shown that the students who achieve academically are more likely to possess an adequate self-concept. Research further indicates that students identified as emotionally troubled possess poorer self-concepts and experience greater academic difficulties relative to their normal peers. In addition, a moderate relationship has been found between self-concept and emotional adjustment in two ways: 1) a positive self-concept is related to healthy adjustment and, 2) a negative self-concept is related to adjustment problems. This research suggests that self-concept may significantly influence academic achievement for emotionally troubled students. However, it is unknown to what degree self-concept influences academic achievement for this group and/or if the nature of the relationship is the same as it

is for normal students. The present study is needed to determine if differences exist in the relationship between self-concept and academic achievement for normal and emotionally troubled students enrolled in regular and special education.

Information about this may be useful in developing appropriate educational curricula for enhancing the academic performance of emotionally troubled students.

#### Purpose of the Study

The purpose of this study is to determine the relationship between self-concept and academic achievement for emotionally troubled adolescents placed in regular and special education. In addition, the nature of this relationship is examined for normal students placed in regular education. The present study also examines the amount of variance accounted for solely by self concept, relative to the variables of intelligence and socioeconomic status. This provides a clearer understanding of the relevance of self-concept as a predictor of academic achievement. Since previous research suggests that different aspects of self-concept differ in regard to how it relates to academic achievement, two measures of self-concept, academic self-concept and nonacademic self-concept are examined. The results of this study also yield information about the relative importance of

self-concept as a predictor of academic achievement for normal and emotionally troubled students enrolled in regular education, and emotionally troubled students enrolled in special education.

### Definitions

The following set of definitions are used in the present study:

Academic Achievement refers to proficiency in the areas of spelling, reading recognition, and arithmetic computation as measured by the Wide Range Achievement Test-Revised (Jastak and Wilkinson, 1984).

Emotionally Troubled Students refers to those students who experience difficulties with social-emotional adjustment within the school setting.

Intelligence refers to an estimated I.Q. based on selected subtests of the Wechsler Intelligence Scale for Children-Revised (Wechsler, 1974).

Normal Students refers to those students who demonstrate an adequate level of social-emotional adjustment within the school setting.

Regular Education refers to an educational environment in which a student receives instruction without any modifications of classroom structure to compensate for a handicapping condition.

Socio-economic Status refers to an estimate of position an individual occupies in the status structure of the community which is based primarily on level of education and occupation.

Special Education refers to specially designed instruction which meets the educational needs of a student with a handicapping condition.

Self Concept refers to an individual's perception of self.

Academic Self Concept refers to a student's ratings of his/her ability and enjoyment/interest in all school subjects.

Nonacademic Self Concept refers to a student's ratings of his/her self in the areas of general self, relationship with same sex peers, and emotional stability.

### Hypotheses

Three sets of hypotheses were examined in the present study. The first set examined the difference in nonacademic and academic self-concept and are as follows:

1. There will be no difference in nonacademic self-concept between emotionally troubled students enrolled in special education and normal students in regular education.
2. Emotionally troubled students enrolled in regular education will have more negative nonacademic self-concepts than either emotionally troubled students enrolled in special education or normal students in regular education.
3. There will be no difference in academic self-concept between emotionally troubled students enrolled in special education and emotionally troubled students in regular education.
4. Normal students enrolled in regular education will have more positive academic self-concepts than either emotionally troubled students in special education or emotionally troubled students in regular education.

The second set of hypotheses examined the relationship between academic achievement and self-concept and are as follows:

1. There will be a positive and significant correlation between academic and nonacademic self-concept and academic achievement for emotionally troubled students enrolled in regular and special education and normal students in regular education
2. The strength of the relationship will be strongest between academic self-concept and academic achievement for all research groups.
3. The relationship between both academic and nonacademic self-concept and academic achievement will be significantly stronger for emotionally troubled students enrolled in regular education.

The third set of hypotheses examined the significance of self-concept as a predictor of academic achievement relative to the variables of intelligence and socio-economic status and are as follows:

1. The independent contribution of academic and nonacademic self-concept in predicting academic achievement will be significant for emotionally troubled students enrolled in regular education.
2. The independent contribution of academic and nonacademic self-concept in predicting academic achievement will be insignificant for emotionally troubled students enrolled in special education and normal students enrolled in regular education.

3. Academic and nonacademic self-concept will be better predictors of academic achievement for emotionally troubled students enrolled in regular education than for emotionally troubled students in special education and normal students in regular education.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### Introduction

The purpose of this chapter is to examine the relationship between self-concept and academic achievement. The nature of this relationship is initially examined for normal students and focuses on overall self-concept and academic self-concept.

The second section of this review examines the differences in self-concept between normal and emotionally troubled/behaviorally disordered students in order to establish a data base for the relevance of self-concept in determining academic achievement for emotionally troubled individuals.

The final section of this review focuses on the effects of placement in special education on the self-concepts of academically handicapped students. This information is provided to establish a theoretical basis for understanding how placement in special education may change the self-concepts of emotionally troubled students.

Self Concept and Academic Achievement of Normal Students

Allport (1943), Coopersmith (1959) and Rogers (1951) have all suggested that students must believe in themselves to perform confidently and successfully in school. They further suggest that it is the student's self-perception which determines competent school performance. More recently, Hamachek (1987) has also advocated this hypothesis and states the following:

"The way we think about ourselves is closely related to our ability to learn and achieve academically." (p. 191)

We turn our attention to research which has been conducted on the relationship between self-concept and academic achievement, providing empirical support for these observations.

Early studies which examined the relationship between self-concept and academic achievement for regular education were conducted by Bledsoe (1969), Caplin (1969) and Piers and Harris (1964). These studies focused on school-aged children between the ages of 6 and 15 and utilized various self-concept measures. The results of these studies found positive and significant Pearson product-moment correlations of .18 to .52, suggesting a relationship between self-concept and academic achievement.

The first systematic review of the relationship between self-concept and academic achievement was conducted by Purkey (1970) using data collected from various studies in the 1950s and 1960s. Following a summation of the results of all the studies reviewed, Purkey concluded that there was a significant relationship between self-concept and academic achievement at each grade level, and further suggested that changes in one were associated with changes in the other. Although this review established the relationship between self-concept and academic achievement, most studies cited in the review utilized idiosyncratic measures of self-concept, thereby prompting criticism of the findings on the basis of inadequate measurement techniques.

In a later review by West and Fish (1983), the problem with inadequate measurement techniques was controlled for and correlations were found between self-concept and achievement on the order of .18 to .50 for children enrolled in grades 1-9. Most studies within this review focused on the relationship between general self-concept and a standardized measure of academic achievement. When examining academic self-concept, West and Fish found correlations with academic achievement of .50, with a range of .26 to .60. On the basis of the studies reviewed, West and Fish concluded that there was a significant relationship between self-concept and academic achievement and that this relationship tended to be stronger when

examining academic self-concept. They further concluded that sex appeared to be an important variable with higher correlations being reported for males over females, but that the effects of ethnic, racial and socioeconomic differences were inconclusive.

Mintz and Muller (1977), found that socioeconomic and ethnic differences were modifying variables that potentially affected the relationship between self-concept and academic achievement among fourth and sixth graders with and without spanish surnames. The authors found more significant relationships between the Primary Self Concept Scale and the Comprehensive Test of Basic Skills for fourth grade students with spanish surnames than without such surnames. This difference, however, was not observed for sixth grade students where nonspanish surname individuals showed more significant correlations. The authors concluded that the age of the individual also affects the relationship between self-concept and academic achievement with older students being more affected.

Muller, Chambliss and Wood (1977), added another variable to the self-concept academic achievement hypothesis by utilizing measures of both self-concept and self-esteem as measured by the Self Description Inventory (SDI). They obtained correlations between the SDI and the Comprehensive Test of Basic Skills (CTBS) for junior high school students on the order of an insignificant .01 to a significant .39. Overall, few differences were found

between correlations for self-concept and self-esteem. The strongest and most significant correlations were found between the peer relations and academic subtest portions of the SDI (self-concept and self-esteem) and the language, motor, and composite scores of the CTBS ( $r=.25-.39$ ). The authors concluded that the results supported other findings of significant relationships between self-concept and achievement.

Rubin, Dorle and Sandridge (1977), studied another facet of the self-concept-academic performance relationship by examining the extent to which self-concept predicted academic achievement relative to other variables. Using 530 subjects from the 1,559 participants in the Educational Follow Up Study (EFS) (Balow, Anderson, Reynolds and Rubin, 1969), data was collected for 12-year olds on measures of self-concept (Coopersmith Self Esteem Inventory), achievement (Stanford Achievement Test), intelligence (WISC), behavior (School Behavior Profile and Teacher Ratings of Behavior), and socioeconomic status (from a Socioeconomic Index developed by Myrianthopoulos and French, 1968). The results indicated that a significant relationship existed between self-concept and academic performance with correlations ranging between .22 and .34. However, it was also noted that significant correlations existed between academic achievement and SES, and academic performance and WISC IQ scores and that these relationships were slightly higher than those obtained for self-concept.

The authors concluded that while self-concept was found to be statistically significant, the amount of variance accounted for solely by self-concept was found to be 1-3%. The results of this study suggest that the independent contribution of self-concept in predicting academic achievement is rather minimal.

Rubin (1978), in a later study using 380 subjects between the ages of 9-15 from the EFS study found that as children grow older the relationship between self-concept (as measured by the Coopersmith) and achievement (as measured by the Stanford Achievement Test) becomes stronger. Correlations between self-concept and achievement for nine year olds ranged from an insignificant .12 to a significant .32. However, at age 15, correlations between the two variables were significant and correlated .41 to .42. Taken together, Rubin's studies suggest that self-concept may be a more important factor in predicting academic achievement at later ages than during younger years.

Studies up to this point suggest that there is an overall positive relationship between general self-concept and academic achievement on the order of .20 to .50 and between academic self-concept and academic achievement on the order of .26 to .60. In addition, the relationship appears to be strongest with students who are male and in adolescence.

Wylie (1979) and her colleagues conducted another extensive review examining the relationship between self-concept and academic performance. This review controlled for a number of different factors including the psychometric properties of the self-concept scales used in the studies, general measures of self-concept versus self-concept of academic ability, ability levels, and achievement levels. On the basis of the seven studies that Wylie reviewed, she concluded "...as far as self evaluations of nonacademic personality characteristics are concerned, there is no firm evidence that associations occur between self reports on such characteristics and the achievement measures." (p. 405). Wylie, however, does indicate that a stronger relationship exists between academic measures of self-concept and achievement. This does not negate the findings of other research that reported more positive results, but it does underscore the difficulties involved in doing research investigating a complex intrapsychic variable like self-concept and its relationship to achievement outcomes.

Since the publication of Wylie's review, other researchers have continued to find significant positive relationships between self-concept and academic achievement. For example, in a study by Gose (1980), 96 sixth graders were administered the Self Description Inventory (SDI), the Comprehensive Test of Basic Skills (CTBS) and the Academic Self-Concept Inventory (ASCI).

Significant correlations were found between the physical maturity, peer relations and school adaptiveness subtests of the SDI and the reading subtest of the CTBS, and the peer relations and academic peer relations, and mathematics subtest of the CTBS. These correlations ranged from .23 to .44. A significant correlation was also found between the ASCI and the CTBS of .57 which is significantly higher than what is reported for the SDI. These findings indicate that a stronger relationship exists between academic self-concept and academic achievement than between overall measures of self-concept (and their subtests) and academic achievement.

In the most extensive review to date, Hansford and Hattie (1982) conducted a meta analysis examining the relationship between various measures of self-concept and academic achievement that included over 1,136 correlations between self-concept and academic performance. An average correlation of .27 was found between measures of overall self-concept and academic achievement and .43 between academic self-concept and academic achievement. Stronger correlations were found for secondary students. Gender was not found to be a significant factor, a finding different from what has previously been reported.

Following Hansford and Hattie's seminal work, studies by Bourjaily (1983) with high school seniors, Gadzella (1984) with college undergraduates, and Marsh, Smith and Barnes (1984) and Strain (1983) with primary school aged children, also found significant positive correlations

between self-concept and academic achievement ranging between .21 and .40 as measured by standardized achievement tests or grade point average. In addition, Marsh, Smith and Barnes (1984) reported correlations between academic self-concept, as measured by the Self Description Questionnaire and academic achievement on the order of .42 to .68.

In summary, a majority of research conducted over the past twenty years with normal students between the ages of 6 and 18 indicate that there is a positive and significant relationship between measures of general self-concept and standardized measures of academic achievement with correlations ranging between .18 and .52 and averaging approximately .26. The research further suggests that stronger and significantly higher correlations exist between academic self-concept measures and academic achievement ranging between .26 and .68 and averaging approximately .43. Furthermore, the research suggests that the strength of the relationship between general self-concept and achievement is influenced by a number of factors, i.e., the age of the individual with a stronger relationship being obtained for adolescents, the psychometric properties of the self-concept scale, socioeconomic level, ethnicity, and the ability and type of achievement measures used. The results of studies focusing on gender have been equivocal with some showing significant sex differences while others have not.

Self-Concept Difference Between  
Emotionally Troubled and Normal Students

The relationship between self-concept and academic achievement for emotionally troubled students has not been reported in the literature. Instead, most studies have examined the differences in self concept of normal versus emotionally troubled individuals. One such study was conducted by Wood and Johnson (1972), who examined the self concept of 44 8 to 12 year old behavior disordered students enrolled in special classes compared to a normative sample on the Coopersmith Self Esteem Inventory (SEI). The results found that behavior disordered students reported significantly lower scores on the SEI than a control group of normal students. A more recent study conducted by Bloom, Shea and Eun (1979) examining 270 behaviorally disordered children between the ages of 6 and 12 found lower scores on the Piers-Harris Children's Self Concept Scale for behaviorally disordered children than those typically reported for normal students. The authors also report that no age, race or sex differences were obtained.

Beck (1982) also compared the self-concept of students enrolled in regular and special education programs in grades five through eight. Each subject was matched for age and sex. The Piers-Harris Children's Self Concept Scale was completed by each student and the results indicated that although behavior disordered students scored lower than

regular students, the difference was found to be insignificant.

Two other studies have found differences between normal and emotionally troubled students. Daniels-Kingsbury (1983) examined the self-concept of secondary students enrolled in alternative educational programs using the Coopersmith Self Esteem Inventory and found that special education students obtained lower scores on the Coopersmith scales than normal regular education students. Flores de Apocada and Cowen (1982) examined the self-concepts of 68 first through fifth graders with and without adjustment problems and found significant differences between the poorly adjusted and well adjusted children.

In another study conducted by Bean (1983), comparisons of self-concept as measured by the Piers-Harris were made between 74 emotionally impaired students enrolled in grades one through six and mainstreamed in general education, and 74 non-emotionally impaired students. Each subject was matched for intelligence, grade and age. The results indicated that well adjusted students had more positive general self-concepts in the subscale areas of behavior, intellectual and school status, anxiety and happiness and satisfaction.

In summary, although the results of the above studies are not unequivocal, they tend to suggest that emotionally troubled/behaviorally disordered students have lower general and academic self-concepts than their normal peers.

In addition, the results suggest that there are no differences in this relationship when considering age, grade or sex. Although these findings do not allow any conclusions to be drawn in regard to the nature of the relationship between self-concept and academic achievement for emotionally troubled students, they do suggest that self-concept may be a more relevant variable in determining academic achievement for emotionally troubled students.

#### The Effects of Placement in Special Education On Self-Concept

Some educators have suggested that placing children in special education damages self-concept (Dunn, 1968; Jones, 1972; Meyerowitz, 1967). A review of the literature by Macmillan, Jones and Aloin (1974), however, fails to provide empirical support for this view. Furthermore, Vacc (1968) indicates that two variables known to be related to self-concept, behavior and academic achievement, improve for emotionally troubled students once placed in special education. This suggests that the self-concept of emotionally troubled students may also improve once placed in special education. A review of social comparison theory as presented by Festinger (1954) may help to provide a theoretical basis in support of this assumption.

Social comparison theory suggests that a large number of individual beliefs, attitudes, and values can be verified only by comparison with other persons. In regard to self-concept formation, Festinger indicates that:

"In the absence of objective standards, people will employ others in their environment as a basis for forming estimates of self-worth." (p. 117-140)

Festinger's comments and the essence of social comparison theory suggest that a person's self-concept is partly formed on the basis of comparisons with other members of his or her immediate peer group. This suggests that for emotionally troubled students placed in special education, self-concept is influenced by the comparisons they make with students who are similar to themselves. This is in contrast to comparisons they made between themselves and regular education students prior to being placed in special education. Based on social comparison theory, it is assumed that the emotionally troubled student's self-concept will improve once placed in special education.

No studies have been conducted with emotionally troubled students to verify this hypothesis. However, studies have been conducted with other special education students which help us understand the changes in self-concept of students placed in special education from a social comparison theory perspective.

Strang, Smith and Rogers (1978) studied fifty academically handicapped children ranging from 6 to 11 years of age. Half of the subjects were partially mainstreamed for half a day, and half continued in their regular education program. Using the Piers-Harris Children's Self Concept Scale, the authors found favorable changes in self-concept for those students enrolled in the partially mainstreamed condition compared to their regular education peers. The authors suggested that the change in self-concept was due to the students' use of multiple reference groups to judge their self-concept.

A study conducted by Coleman (1983) also examined the self-concept of children with academic handicaps. Students enrolled in grades four through six were divided equally into four instructional settings: a one-hour resource room, a two hour resource room, a self-contained class, and regular education. Their level of self-concept was compared to a group of normal students matched according to age and grade and who were enrolled in a regular education program. Using the Piers-Harris Children's Self Concept Scale, the authors found no difference in self-concept between the normal and handicapped children. In addition, it was found that those students who were partially versus wholly segregated showed no difference in self-concept. However, it was also found that those children who had academic difficulties and remained in a regular classroom were more likely to have a negative self-concept.

Yauman (1980) also conducted a study designed to determine the effects of placement on the self-concepts of elementary school children experiencing academic difficulties. Forty-five third grade students were assigned to one of three groups: self-contained, regular education with an individual tutor, and regular class. Reading scores were used to control for academic differences. The results on the Piers-Harris scale demonstrated significant differences between the groups with the self-contained group obtaining a more favorable self-concept. With the effects of reading achievement covaried out, no significant differences were noted between the three groups. However, rank ordering statistical comparison revealed poorer self-concepts despite higher achievement levels for the tutored group as compared to the self-contained group. This finding supports other research which indicates that students with learning problems placed in regular education possess poorer self-concepts than their academically handicapped peers placed in special education.

Several other studies focusing on elementary students found that those students demonstrating academic difficulties who are placed in a self-contained setting exhibit no significant differences in levels of self-concept relative to their regular education peers (Battle, 1979; Boersma, Chapman and Battle, 1979; Madden and Slavi, 1982; Shuerr, Towne and Joiner, 1972). Another study focusing on eighth graders with reading difficulties

found no difference in self-concept compared to normal students when placed in special education on a part time basis (Hettinger, 1982). These findings are consistent with what is predicted by social comparison theory, i.e. the students view themselves as being similar to their peers, and thus conclude that they are equal.

What happens to students' academic self-concepts when placed in special education settings? Chapman and Boersma (1979) compared the self-concept of 81 third through sixth grade learning disabled students who were placed in a resource room for 1/2 to 1 hour per day to the self concepts of 108 regular education students on the Student's Perception of Ability Scale. The results indicated that the learning disabled group had lower self-concepts of ability in reading, mathematics, and arithmetic. This suggests that even though general self-concept may not be affected by partial mainstreaming or full time placement, specific academic areas of self-concept remained depressed when the individual is exposed to multiple reference groups.

In summary, the results of these studies generally support the social comparison theory and suggest that placement is an important variable in determining the student's self-concept and subsequent relationship with academic achievement. Specifically, the studies suggest that students who possess academic handicaps and who are placed in special education demonstrate favorable changes in overall levels of self-concept. This is in contrast to

academically handicapped students who remain in regular education and who tend to demonstrate poorer general self-concepts than their normal peers.

The social comparison theory explanation apparently fails for the academically handicapped special education student when academic self-concept is examined. The results suggest that academic self-concept does not improve relative to that of normal regular education students despite being placed in special education on a part time basis. Apparently, students who are placed in a resource room to remediate a specific academic weakness continue to doubt their academic abilities once back in the regular education setting where they make comparisons with their normal peers.

#### Literature Review Summary

Studies examining the relationship between self-concept and academic achievement for normal students suggests that a moderate but positive and significant relationship exists between general measures of self-concept and academic achievement. A slightly stronger relationship was found between academic self-concept and academic achievement. In addition, the research suggests that the nature of this relationship is stronger for adolescents. However, the sole study which examined the independent contribution of self concept as a predictor of

academic achievement (Rubin, Dorle and Sandridge, 1977), found that, in general, self-concept contributes little beyond what is contributed by intellectual ability and socioeconomic status.

Studies examining the self-concept of emotionally troubled/behavior disordered students have not focused on the relationship between self-concept and academic achievement, but have examined how this group compares to their normal peers. In general, the studies suggest that emotionally troubled/behavior disordered students possess lower levels of self-concept. However, these findings may be modified by a number of variables. For example, studies examining the effects of placement indicate that this variable is important in determining the level of self-concept of the academically handicapped special education student. The studies suggest that placement does not decrease but enhances the general levels of self-concept of these students. Furthermore, the studies suggest that students who possess academic handicaps and who are not placed in special education have poorer self-concepts. These findings indicate that the self-concepts of emotionally troubled students may be increased by placement in a special education program.

## CHAPTER III

### METHOD

#### Description of Subjects and Sample

Students selected for participation in the present study reside in towns located in the Monadnock Region of Southwestern New Hampshire and North Central Massachusetts. The population is approximately 82,000 for the entire region with the population of each town ranging between 600 and 2,000 residents. The region's economy focuses on manufacturing of a variety of products, tourism, a growing retail industry, and higher education. As such, the parents of the students in this area are employed in positions ranging from corporate management and college professors to skilled and unskilled laborers. The educational levels of these individuals is commensurate with their vocations.

Samples of students for the present study were selected from the above described population, were enrolled in public schools, and were enrolled in grades 6-11 (ages 11-16). The mean age for the total sample was 174 months and the mean grade level was 8.3. Twenty six students, 19 male and 7 female, were selected for each sample yielding an overall  $N=78$ . Specific sample characteristics for each group are presented in Chapter 4.

An adolescent population was examined due to the school districts policy of labeling emotionally troubled

preadolescents with a primary handicapping condition of learning disabled despite the presence of significant emotional disturbance. It is not until adolescence that these individuals are reclassified as being emotionally disturbed. This is, apparently, not an uncommon practice as younger children are sometimes given the opportunity to rally and develop better control over their behavior in earlier grades (Clarizio and McCoy, 1970 p.16). However, this does not appear to be the case with adolescents who are not given this same opportunity. This observation also has empirical support as Morse, Cutler and Fink (1964) report that two thirds of emotionally disturbed public school students are initially referred while enrolled in late elementary and junior high grades.

A description of each sample and the criteria used to in selecting them are presented below.<sup>1</sup>

Sample One: Emotionally Troubled Students Enrolled in  
Special Education (ETSE)

Subjects in this sample consisted of students identified as possessing a handicap of severely emotionally disturbed under P.L. 94-142, which required placement in a self contained special education setting.

---

<sup>1</sup> Each student selected to participate was provided with an information sheet outlining the nature of the study. Those students electing to participate were subsequently asked to list their teachers' names and indicate that they were willing to abide by the conditions of the study (Appendix D).

Sample Two: Emotionally Troubled Students Enrolled in  
Regular Education (ETRE)

Subjects in this sample were initially identified by teachers and/or the school guidance counselor who indicated that the student, in their opinion, experienced difficulties with social/emotional adjustment (Appendix C). In addition, several students in this sample had been referred for a psychological assessment due to their social/emotional difficulties and concomitant poor academic performance. However, no placement decision or change in academic program took place while data was being collected. The teachers of these students subsequently completed the Teacher Form of the Achenbach Child Behavior Checklist (TRF) to assess the student's level of social/emotional adjustment. Students who obtained a T score of 63<sup>2</sup> or above on the Internalizing, Externalizing or Total scales were included in the present study. Students who scored below a T score of 63 on any of the scales were excluded from the study.

Sample Three: Normal Students Enrolled in Regular  
Education (NRRE)

Subjects in this sample comprise a control group and consisted of students enrolled in a regular education

---

<sup>2</sup>Achenbach reports that a T score of 63 distinguishes between those individuals who experience social/emotional difficulties and those who do not (Achenbach and Edelbrock, 1983).

program and who did not score above a T score of 63 on any scale of the TRF. The subjects were matched to subjects in the first two samples on the basis of age, sex, and, grade.

### Instruments

#### Self Description Questionnaire II (SDQ II)

The SDQ II (Appendix A) is an instrument designed to measure the self-concept of adolescents between the ages of 11 to 18 (Marsh, Parker, and Barnes, 1985). The original scale is designed to measure seven aspects of nonacademic self-concept and three aspects of academic self-concept with 122 items. In the present study, a shortened version of the original scale was used to decrease administration time and to increase the likelihood of accurate responses by each subject. Three nonacademic and all academic scales comprising a total of 72 items for each sex were included in the scale used in the present study. The nonacademic scale was composed of the subscales of General Self, Relationship with Same Sex Peers, and Emotionality. These scales were selected as a result of their low intercorrelations with one another (average  $r=.19$ ) thus providing a good measure of the multidimensionality of nonacademic self-concept in an abbreviated form. The sum total of these scales yields a Total Nonacademic Self Concept score (NASC). The academic scale was composed of the subscales of Math Skills, Verbal Skills, and Overall

School Skills. The sum total of these scales yields a Total Academic Self Concept Scale (ASC). Each subscale contains between 10 and 12 items with the exception of the General Self scale which contains 16 items. Each scale is comprised of equal numbers of positively and negatively worded descriptors and high total scale scores reflect a more favorable self-concept.

When completing the SDQ II, subjects respond to each statement on a 6-point Likert scale where categories are labeled false, mostly false, more false than true, more true than false, mostly true, and true.

Studies by Marsh, Barnes, Cairns and Tidman (1984) and Marsh, Parker and Barnes (1985) report reliability coefficients between .78-.90. These figures tend to be similar across different age groups, although they were slightly higher for individuals in grades 11-12. Factor analysis clearly identified each of the 11 subscales with factor loadings being highest on the scale each was designed to measure and low on the other scales. Marsh reported that these findings support the construct validity of the SDQ II.

#### Hollingshead Four Factor Index of Social Status

The Hollingshead scale is a measure of socioeconomic status (SES). Hollingshead's (1975) present four factor scale is a revision of an earlier two factor index of social position (Hollingshead, 1958). The four factors

considered in the present scale include : level of education, occupation, sex, and marital status. Each factor is assigned a specific weight which is then multiplied by an individual's occupation and educational rating. Ratings for the occupational factor range between a high of nine and a low of one. Occupational scores are multiplied by a factor weight of five when summing an individual's total score. Educational ratings range between a high of seven and a low of one. Educational scores are multiplied by a weighted factor score of five when summing a total score.

Based on the present ranking system and factor weights, it is possible for an individual to obtain a raw score between 8-66 with higher scores reflecting a higher SES. Special consideration is made for families who have both spouses working<sup>3</sup>.

Previous research by Hollingshead (1958) indicates that the index of social position has an interrater reliability of .93. However, this reliability score is based on the two factor scale. Reliability estimates for the four factor scale are currently not available but it is assumed that the four factor scale is as equally reliable as the two factor scale.

---

<sup>3</sup> For a complete analysis of the Hollingshead Index of Social Status see Hollingshead, A.B. Four Factor Index of Social Status. Unpublished Paper. Department of Sociology, Yale University, New Haven, CT, 1975.

Validation of the four factor scale has been accomplished by comparing occupational rankings with data obtained from the Civilian Labor Force (CLF) (Greene, Prieve and Morrison, 1969). The results demonstrate that an increase in occupation score on the Hollingshead scales is accompanied by an increase in mean years of education and income level as provided by the CLF. In addition, occupational score was found to correlate significantly with years of education and income level on the order of .84 to .85. Hollingshead (1958) reports that these findings support the validity of the Hollingshead scale.

#### Child Behavior Checklist-Teacher Report Form (TRF)

The TRF (Appendix B) was developed by Achenbach and Edelbrock (1986), and Edelbrock and Achenbach (1984) and is intended to be a standardized method of measuring psychopathology for children and adolescents between the ages of 4-16. The instrument is based on a description of child and adolescent problems which were reported by parents and observed by mental health professionals (Achenbach, 1966; Achenbach and Lewis, 1971).

The TRF contains 118 descriptive items of common adjustment and behavior problems which the rater responds to on a three point rating scale. A value of 2 corresponds to a statement which is very true or often true of the child. A value of 1 is selected if the statement is somewhat or sometimes true of the child, and a value of 0

is selected if the statement is not true of the child.

Eight factor scores can be derived from the items and can be summed into an Internalizing scale, an Externalizing scale, and/or a Total score. Higher scores reflect a greater degree of psychopathology. Different profiles are available depending on the age and the sex of the child.

Reliability coefficients of the TRF using a test-retest format with a one week interval were found to range between .74-.96 for the eight factors with an average of .89. A total score reliability of .93 was also found. Stability of the scales were measured over two and four month intervals yielding correlations coefficients between .53-.88. These coefficients are significantly below what is reported at one week intervals and as such reflect changes in adjustment levels rather than instability within the scale.

Specific validity coefficients are not reported for the TRF, however, Edelbrock and Achenbach (1984) report that an ANOVA of school performance demonstrates significant differences between clinically referred boys and normals at the  $p < .001$  level. The authors conclude that this provides support for the discriminative validity of the scale.

Wechsler Intelligence Scale for Children-Revised (WISC-R)

The WISC-R (Wechsler, 1974) is a widely used instrument developed to provide a measure of intellectual functioning and an ability to perform academic/school related tasks. Verbal expressive and visual-perceptual motor tasks are measured within the instrument and yield Verbal, Performance, and Full Scale Deviation IQ's. The mean and standard deviation of each scale is 100 and 15 respectively with each IQ being derived on the basis of the age of the individual.

The reliability and the validity of the WISC-R is well documented with reliability coefficients ranging from .70 to .90. Criterion validity of the WISC-R has been established through correlations with the Stanford-Binet Form L-M, the Wechsler Preschool and Primary Scale of Intelligence, and the Wechsler Adult Intelligence Scale. Correlation coefficients with these instruments range between .80-.90 thereby providing sufficient evidence for the validity of the WISC-R.

An abbreviated version of the WISC-R using the Similarities, Vocabulary, Picture Arrangement, and Block Design subtests was used in the present study to facilitate data collection. Sattler (1982) reported that this tetrad of subtests most closely approximates Full Scale IQ with a correlation coefficient of  $r=.947$  being obtained. Full Scale Deviation Quotient scores were obtained from the use of the abbreviated version by use of

the transformation formula provided by Sattler (1982).

Wide Range Achievement Test-Revised Level II (WRAT-R)

The WRAT-R (Jastak and Wilkerson, 1984) is an easily administered standardized achievement test designed to measure basic skills in the areas of Reading Recognition, Spelling, and Arithmetic between the ages of 12 to adult. Within the Reading Recognition Subtest, each individual is required to read a series of words which increase in level of difficulty as the test progresses. Within the Spelling subtest, the examiner dictates a list of words to the individual who then spells them on a test booklet. Within the Mathematics subtest, the individual completes a series of mathematical computations listed on the test booklet. Problems range from simple subtraction and arithmetic to the use of logarithms. Raw scores for each item completed correctly on all three subtests are summed and then converted into standard scores with a mean of 100 and a standard deviation of 15. Grade equivalent and percentile scores can also be obtained from the raw score data.

The reliability and the validity of the WRAT-R is well established. Internal consistency reliability coefficients average .96 with a range of .94 to .99. Test retest reliabilities range between .79 to .97. Evidence for the construct validity of the WRAT-R is provided through the separation reliability coefficients and the

fact that scores from the normative sample increase with age. Concurrent validity is provided by correlations with other achievement tests e.g. the Peabody Individual Achievement Test, the California Achievement Test, and reliable ability measures. Correlations between the WRAT-R and these measures range from the high .60's to the .80's thereby providing satisfactory validity for the WRAT-R.

### Procedures

Data from the SDQ II, the WISC-R, and the WRAT-R was obtained directly from each student in each sample. Data from the TRF was obtained from teacher ratings of the student's behavior, and data on family SES was obtained from each student's parent(s). All data was collected during March through June of 1986. Each procedure is more thoroughly described below.

In all samples, the SDQ II was administered by the author to small groups of students which ranged in size from 4 to 6 individuals. Each item of the SDQ II was read aloud to minimize the problems associated with varying levels of reading ability. In addition, sample items of the SDQ II were presented to ensure understanding of how to complete the SDQ II before any of the actual items were presented. To ensure confidentiality and to decrease demand characteristics and social desirability, each subject was instructed to provide only their date of birth

on the SDQ II, and was advised that there were no right or wrong answers to the questionnaire. The students were further instructed to answer each question based on how they truly felt about themselves. Each subject was subsequently identified through their birthdates as listed in the school records.

Data from the WISC-R and the WRAT-R was obtained through individualized administration of each test and testing procedures followed those as outlined in each of the test manuals. Test scores for those students who had taken either or both of the tests in the previous three months were used in lieu of repeating the testing.

Data from the TRF was collected on each student from the teacher who best knew the student. This was determined by having each of the student's teachers fill out a rating scale of how well they knew the student. A 5 point scale with 1 being "not at all" to 5 being "very well" was used with the teacher who indicated that he/she knew the student the best being asked to complete the TRF (Appendix C). When completing the TRF, teachers were instructed to follow the directions as listed on the scale.

Data on SES from the Hollingshead scale were obtained from information based on the parents' occupation, level of education, sex, and marital status. This information was collected when the parents completed a permission form to allow their son/daughter to take part in the study (Appendix E).

### Hypotheses and Data Analysis

The sample characteristics of age, grade, IQ, SES, and TRF scores were examined by a series of one-way analyses of variance to determine if any differences existed between the sample groups. Tukey's HSD test was subsequently used to determine which groups differed from each other on the above named variables.

The first set of hypotheses examined the difference in nonacademic and academic self concept for the ETSE, ETRE, and NRRE students. Two separate one-way analyses of variance were conducted to determine differences between the groups in raw score NASC and ASC. These hypotheses are as follows:

1. There will be no difference in nonacademic self-concept between emotionally troubled students enrolled in special education and normal students in regular education.
2. Emotionally troubled students enrolled in regular education will have more negative nonacademic self-concepts than either emotionally troubled students enrolled in special education or normal students in regular education.
3. There will be no difference in academic self-concept between emotionally troubled students enrolled in special education and emotionally troubled students in regular education.

4. Normal students enrolled in regular education will have more positive academic self-concepts than either emotionally troubled students in special education or normal students in regular education.

Tukey's HSD test was subsequently performed on the NASC and on the ASC data to determine how the groups differed in regard to nonacademic and academic self-concept.

The second set of hypotheses examined the relationship and the differences in the relationship between self-concept and academic achievement for the ETSE, ETRE, and NRRE students. Pearson product-moment correlations were obtained between NASC and each WRAT-R subtest, and ASC and each WRAT-R subtest for each group. T-tests were conducted on each correlation to determine the strength of each relationship. Z-tests were next conducted on the Fisher Z-transformed correlation coefficients to determine if the relationship between ASC and WRAT-R subtests were stronger than those obtained between NASC and WRAT-R subtests for each group of students. Finally, separate chi-square tests using the U-statistic (Marascuilo, 1966) were conducted on the NASC and WRAT-R, and ASC and WRAT-R correlations to determine if there were differences in the strength of these relationships between groups. The second set of hypotheses are as follows:

1. There will be a positive and significant

correlation between academic and nonacademic self-concept and academic achievement for emotionally troubled students in regular and special education and normal students in regular education.

2. The strength of the relationship will be strongest between academic self-concept and academic achievement for all research groups.
3. The relationship between both academic and nonacademic self-concept and academic achievement will be significantly stronger for emotionally troubled students enrolled in regular education.

The third set of hypotheses examined the significance of self-concept in predicting academic achievement for the ETSE, ETRE, and the NRRE students. Intercorrelations among the variables of IQ, SES, NASC, ASC, WRAT-R Reading, WRAT-R Spelling, and WRAT-R Arithmetic and the significance of the relationship among these variables was determined for each group of students. This provided information about the covariation between variables and information for use in a stepwise analysis. Stepwise multiple regression analyses with WRAT-R subtests as the dependent variable were next performed for each group of students to determine the significance of each variable in predicting academic achievement. A series of F-tests were also performed on the multiple regression data to determine

if each successive variable contributed a significant amount to the multiple correlation. The amount of the increase in the multiple correlation as provided by NASC and ASC was then analyzed by the U statistic to determine if the amount of increase differed between groups. The third set of hypotheses are as follows:

1. The independent contribution of academic and nonacademic self-concept in predicting academic achievement will be significant for emotionally troubled students enrolled in regular education.
2. The independent contribution of academic and nonacademic self-concept in predicting academic achievement will be insignificant for emotionally troubled students enrolled in special education and normal students enrolled in regular education.
3. Academic and nonacademic self-concept will be better predictors of academic achievement for emotionally troubled students enrolled in regular education than for emotionally troubled students in special education and normal students in regular education.

A variety of supplemental analyses were conducted to glean additional information from the obtained results. These analyses further explored the correlations between ASC, NASC, IQ, SES and TRF scores for each group of students, and the significance of other sample

characteristics in predicting WRAT-R subtest scores.

In order to determine if the variables of IQ, SES, and TRF were related to raw score NASC and ASC data, correlations coefficients between each of these variables for each research group was computed. T-tests were then conducted to determine the statistical significance of the correlation coefficients thus allowing for a determination of the degree to which these variables influenced the raw score self-concept data.

In order to determine if there were any differences in the homogeneity of raw score self-concept data between groups, an F-test was conducted on the variability of scores for the ETSE, ETRE, and NRRE students. This allowed for better understanding of the diversity of self-concept within and between each group of students.

In order to determine the significance of the other sample characteristics of TRF scores, age, and grade level in predicting WRAT-R subtest scores, stepwise multiple regression analyses were computed for each group of students. F-tests were also conducted to determine if any of these variables contributed significantly to the Multiple R above what was added by the previous variables. These results provided additional information about the relevance of different sample variables in predicting the WRAT-R subtest scores for each group.

Limitations and Assumptions of the Study

Interpretation of the results of the present study are limited by several factors. Initial limitations center around the sample characteristics. Due to the wide age range of the subjects and the small number of females used in the study, specific and significant age and sex effects cannot be determined. Previous research indicates that age differences in self reported self concept do occur between the ages of 11-16 with older adolescents reporting more favorable self concepts (Hansford and Hattie,1982). Other studies indicate that when examining nonreferred students, stronger correlations are found between self-concept and academic achievement for older adolescents (Rubin, 1978; Larned and Muller, 1979). Sex differences have also been reported with males generally demonstrating less favorable academic self-concepts (Marsh,1984) but stronger relationships between overall self-concept and academic achievement (Hansford and Hattie, 1982). These limitations preclude within group interpretation of the results and may mask and thus effect between group interpretation of the findings.

A third limitation centers around the use of an abbreviated self-concept scale used in the present study. Shavelson and Bolus, 1982; Shavelson, Hubner, and Stanton, 1976, and Marsh, Parker, and Barnes, 1985 report age and sex effects when examining different components of

self-concept not included in the abbreviated scale. Use of these items may have been useful in determining within group differences and subsequently, between group differences in raw score self-concept and in the relationship between ASC, NASC and WRAT-R scores.

A fourth limitation centers around uncontrolled modifying variables. No attempt is made the present study to control the variables of IQ and SES. These variables have previously been reported to influence the relationship between self-concept and academic achievement. However, controlling these variables would have spuriously affected the multiple regression correlations and would have subsequently altered interpretation of the differences between groups in the self concept-academic achievement relationship.

A final limitation follows the edict that correlation does not imply causation. The present study focuses on the relationship between self-concept and academic achievement and no attempt is made to determine causal ordering.

Several assumptions are also made in the present study. Number one, it is assumed that the TRF has correctly identified subjects as normal or emotionally troubled. The criteria provide by Achenbach and Edelbrock (1984) have been strictly adhered to to ensure differences between groups. It is further assumed that ETSE students are emotionally troubled irrespective of the scores they obtained on the TRF. This is as a result of the current

procedures (P.L.94-142) used in identifying children with emotional handicaps and noted improvements in behavior once placed in special education (Vacc, 1968).

A second assumption centers around the measurement properties of the achievement and ability scales used in the present study. It is assumed that the WRAT-R is a valid assessment of academic achievement for all subjects in the present study. In addition, it is assumed that the abbreviated WISC-R is a valid measure of intelligence for all subjects.

A final assumption is made in regard to the accuracy of self reported self-concept. Efforts have been taken to lessen demand characteristics in hopes of increasing the probability of an accurate self report. As such, it is assumed that self reported self-concept is a valid measurement of this construct. Research examining self concept is limited by this assumption but continues, none the less, due to limited suitable alternatives.

## CHAPTER IV

### RESULTS

The analyses presented in this chapter initially examine the differences in sample characteristics among the three research groups. This is followed by hypothesis testing of the differences among groups in self-concept, in the correlations between self-concept and academic achievement, and in the differences in the degree to which self-concept by itself predicts academic achievement. A section of supplemental analyses is also presented which examines additional factors which affect the relationship between self-concept and academic achievement for the three research groups. The sample characteristics of the three research groups are presented below.

#### Sample Characteristics

Each sample was comprised of seven female and 19 male subjects yielding a Total N =78. Specific sample characteristics of age, grade, IQ, SES, WRAT-R scores, and TRF scores are presented in Table 1.

Table 1

Sample Characteristics: Means and Standard Deviations for Age, Grade, IQ, SES, WRAT-R, and TRF

| Measure  | ETSE |      | ETRE |      | NRRE |      | F         | p   |
|----------|------|------|------|------|------|------|-----------|-----|
|          | M    | SD   | M    | SD   | M    | SD   |           |     |
| Age      | 174  | 18   | 174  | 18   | 175  | 18   | .00       | .98 |
| Grade    | 8.1  | 1.4  | 8.1  | 1.4  | 8.6  | 1.5  | .88       | .42 |
| IQ       | 98   | 9.6  | 103  | 10.0 | 110  | 9.5  | 9.62      | .01 |
| SES      | 28   | 9.3  | 29   | 7.9  | 40   | 10.5 | 10.56     | .01 |
| WRAT-R-R | 89   | 12.8 | 93   | 11.7 | 105  | 12.3 | 11.90     | .01 |
| WRAT-R-S | 83   | 12.9 | 89   | 12.3 | 102  | 12.0 | 14.90     | .01 |
| WRAT-R-A | 83   | 12.7 | 92   | 15.0 | 104  | 11.8 | 16.90     | .01 |
| TRF-I    | 59   | 7.2  | 64   | 7.6  | 49   | 6.6  | 30.64     | .01 |
| TRF-E    | 59   | 9.0  | 67   | 7.2  | 49   | 6.6  | 37.30     | .01 |
| TRF-T    | 61   | 8.4  | 68   | 6.4  | 49   | 7.1  | 47.00     | .01 |
| N=       | 26   |      | 26   |      | 26   |      | Total= 78 |     |

I= Internalizing Scale, E= Externalizing Scale, T=Total Scale, R=Reading, S=Spelling, A=Arithmetic  
 $F_{2,75} (.990)=4.93$

Using a one-way analysis of variance for each variable, no significant differences were found between the groups for age or grade. However, differences were found at the  $p<.01$  level on the variables of intelligence(IQ), socio-economic status(SES), Wide Range Achievement Test-Revised subtest score (WRAT-R), and level of social-emotional adjustment as measured by the Teacher form of the Child Behavior Checklist (TRF).

Tukey's HSD test indicates significant differences at the  $p< .05$  level on the variables of IQ, SES, and WRAT-R Reading and Spelling between the ETSE and the NRRE students and the ETRE and NRRE students. No differences were observed on these variables between the ETSE and the ETRE students.

Tukey's HSD test also indicates significant differences at the  $p < .05$  level between each group of students on the WRAT-R Arithmetic and the Internalizing, Externalizing, and Total scores of the TRF.

These findings indicate that while there is no appreciable difference between the three groups on the variables of age and grade, differences do exist between IQ, SES, WRAT-R scores, and the two subscales and the Total scale of the TRF. The differences on the TRF were expected to occur between the ETRE and NRRE students as a result of the established research criteria. In addition, it is not surprising that the ETSE students obtained TRF scores significantly below those obtained by the ETRE students. This finding may result from the observation that emotionally troubled students demonstrate improvements in behavior once placed in a special education setting (Vacc, 1968). However, the improvements in behavior for the ETSE students are thought to result from placement in a structured environment designed to control behavior rather than any actual changes in level of social emotional adjustment.

## Hypothesis Testing

### Differences in Self-concept Among the Groups

The first set of hypotheses examined the differences in self-concept between the three research groups. Table 2 presents the means and standard deviations of nonacademic self-concept (NASC) and academic self-concept (ASC) raw scores for each group.

Table 2

SDQ II: Total ASC and NASC Raw Score Means  
and Standard Deviations

| Measure          | ETSE   |       | ETRE   |       | NRRE   |       |
|------------------|--------|-------|--------|-------|--------|-------|
|                  | M      | SD    | M      | SD    | M      | SD    |
| NASC             | 163.57 | 28.01 | 176.80 | 24.48 | 191.03 | 16.87 |
| ASC <sup>1</sup> | 148.69 | 36.09 | 146.92 | 28.86 | 169.50 | 21.46 |

<sup>1</sup>ASC raw scores have been transformed to equate with NASC raw scores.

A review of the results indicates that there are differences in NASC, ASC and the standard deviations among the three groups. An analysis of the standard deviations indicates statistically significant differences in the variability of ASC and NASC scores between the ETSE and NRRE students. This finding violates the assumption of equality of variances as required for performing an ANOVA to determine differences in ASC and NASC among groups. However, the effects of violating this assumption when samples sizes are equal, as in the present study, are thought to be negligible (Cochran, 1947; Godard and

Lindquist, 1940). As a result, two one-way analyses of variance were conducted on the obtained data to determine if there were differences in NASC and ASC raw scores among the three research groups. Table 3 presents a summary table for the NASC data and Table 4 for the ASC data.

Table 3

ANOVA Summary Table: Nonacademic Self Concept

| Source of Variance | SS       | df | MS      | F    | p    |
|--------------------|----------|----|---------|------|------|
| Between            | 9808.00  | 2  | 4904.00 | 8.81 | 0.01 |
| Within             | 41719.50 | 75 | 556.26  |      |      |
| Total              | 51527.50 | 77 |         |      |      |

$F(2, 75)(.990) = 4.93$

A significant main effect was found at the  $p < .01$  level indicating that differences exist in NASC between the three research groups. Tukey's HSD test was then performed on the data in Table 3 to determine where the differences in group means occurred. These comparisons indicate that the NRRE students scored significantly higher ( $p < .05$ ) on NASC than the ETSE students. However, no differences were found between the NRRE and ETRE students or the ETRE and ETSE students.

Table 4

ANOVA Summary Table: Academic Self Concept

| Source of Variance | SS       | df | MS      | F    | p     |
|--------------------|----------|----|---------|------|-------|
| Between            | 8197.00  | 2  | 4098.50 | 4.73 | 0.025 |
| Within             | 64920.00 | 75 | 865.60  |      |       |
| Total              | 73117.00 | 77 |         |      |       |

$F(2, 75)(.975) = 3.90$

A significant main effect was found at the  $p < .01$  level indicating that differences exist in ASC between the three research groups. Tukey's HSD test was then performed on the data in Table 4 to determine where the differences in group means occurred. These comparisons indicate that the NRRE students scored significantly higher ( $p < .05$ ) on ASC than either the ETSE or the ETRE students. In contrast, no differences were found between the ETSE and ETRE students.

The results presented above partially confirm the first set of hypotheses. It was found that the NRRE students demonstrated more favorable ASCs than either the ETSE or ETRE students. In addition, no differences in ASC were found between the ETSE and ETRE students. However, counter to what was predicted, it was found that the ETRE students demonstrated more favorable NASCs than the ETSE students but less favorable NASCs than the NRRE students. These differences were only found to be statistically significant between the ETSE and NRRE students, a finding which is also counter to what was predicted.

#### Academic Achievement and Self Concept

The second set of hypotheses examined the relationship between academic achievement and self-concept for the three research groups. Table 5 presents Pearson product-moment correlations between WRAT-R subtest scores and ASC and NASC raw scores from the Self Description Questionnaire II (SDQ II).

Table 5

Pearson Product Moment Correlations Between WRAT-R Subtests  
and Academic and Nonacademic Self-Concept

| <u>Academic Self</u>     | <u>ETSE</u> | <u>ETRE</u> | <u>NRRE</u> |
|--------------------------|-------------|-------------|-------------|
| WRAT-R Reading           | .21         | .00         | .52**       |
| WRAT-R Spelling          | .11         | .27         | .55**       |
| WRAT-R Arithmetic        | -.17        | .23         | .00         |
| <u>Non-academic Self</u> |             |             |             |
| WRAT-Reading             | .17         | .04         | .00         |
| WRAT-Spelling            | .26         | -.20        | .23         |
| WRAT-Arithmetic          | .16         | -.13        | -.13        |
| t(24)=2.064              |             | **=p<.01    |             |

Significant correlations were found between WRAT-R Reading and Spelling scores and ASC scores for the NRRE students. No other correlations were found to be statistically significant. These results generally fail to support the hypothesis of significant correlations for all groups between ASC, NASC and WRAT-R subtests.

It was further hypothesized that the relationship between academic achievement and self-concept would be strongest for the academic aspect of self-concept for all research groups. Fisher Z transformations of the correlations between ASC, NASC and WRAT-R subtests and a Z-test were used to test this hypothesis. The results are presented in Table 6.

Table 6

Differences in Correlation Coefficients  
Between Groups

| <u>ETSE</u>       | <u>Academic Self</u> | <u>Non-academic Self</u> | <u>Z</u> |
|-------------------|----------------------|--------------------------|----------|
| WRAT-R Reading    | .213                 | .172                     | .139     |
| WRAT-R Spelling   | .110                 | .266                     | -.591    |
| WRAT-R Arithmetic | -.172                | .161                     | -1.13    |
| <u>ETRE</u>       |                      |                          |          |
| WRAT-R Reading    | .00                  | .040                     | -.136    |
| WRAT-R Spelling   | .277                 | -.203                    | 1.63     |
| WRAT-R Aritmetic  | .234                 | -.131                    | 1.24     |
| <u>NRRE</u>       |                      |                          |          |
| WRAT-R Reading    | .576                 | .00                      | 1.96*    |
| WRAT-R Spelling   | .626                 | .234                     | 1.33     |
| WRAT-R Arithmetic | .00                  | -.131                    | -.462    |

All correlation coefficients are presented as Z-transformations.  $*=p<.05$        $Z(.950)=1.96$

The results indicate that a significantly stronger correlation was found between ASC and WRAT-R Reading than NASC and WRAT-Reading for the NRRE students. No other differences between correlations were found to be significant for any other group. These results do not support the hypothesis that stronger correlations exist between academic achievement and the academic aspect of self-concept.

The third hypothesis of the second set concerned the differences in the strength of the academic achievement-self-concept relationship among research groups. Using the U statistic as presented by Marascuilo (1966), chi-square tests of significance were performed on the correlations between ASC and each WRAT-R subtest, and NASC and each WRAT-R subtest as presented in Table 5. The results are presented in Table 7.

Table 7

Chi-square Tests of Significance Among Groups for Each  
WRAT-R Subtest and Level of Self-concept

| <u>ACADEMIC SELF</u>             | <u>U</u> | <u>p</u> |
|----------------------------------|----------|----------|
| WRAT-R Reading                   | 3.90     | .15      |
| WRAT-R Spelling                  | 3.08     | .22      |
| WRAT-R Arithmetic                | 1.91     | .39      |
| <br><u>NON-ACADEMIC SELF</u>     |          |          |
| WRAT-R Reading                   | .373     | .85      |
| WRAT-R Spelling                  | 3.15     | .23      |
| WRAT-R Arithmetic                | 2.12     | .35      |
| <hr/> Chi-square 2df (.95)= 5.91 |          |          |

The results indicate that there is no significant difference in the strength of the relationship between any WRAT-R measure and either level of self-concept for any of the research groups. This is despite the apparent differences as portrayed in Table 5. As such, no pairwise comparisons were conducted to determine if there were differences between groups. These findings fail to support the hypothesis that the strength of the relationship between self-concept and academic achievement is stronger for students identified as emotionally troubled and enrolled in regular education.

Overall, the results presented in this section generally fail to support the second set of hypotheses. Only two significant correlations between self-concept and academic achievement were found. These were between the ASC and WRAT-R subtests both of which were for the NRRE students. Only one correlation supported the hypothesis of stronger correlations between ASC and WRAT-R subtests than

NASC and WRAT-R subtests. This was again for the NRRE students on the WRAT-R Reading subtest. No differences were found between groups in the strength of the correlations for either the ASC or NASC data.

### Self-Concept as a Predictor of Academic Achievement

The third set of hypotheses examined the significance of self-concept in predicting academic achievement relative to the variables of IQ, and SES for the three research groups. Tables 8, 9, and 10 present intercorrelations between the variables of IQ, SES, NASC, ASC, and each subtest of the WRAT-R for each group to gain an understanding of the relationships between the variables. The results for the ETSE students are presented in Table 8.

Table 8  
Intercorrelations Among Variables for ETSE Students

| Variable             | 1    | 2    | 3                 | 4    | 5     | 6     |
|----------------------|------|------|-------------------|------|-------|-------|
| 1. IQ                | -    |      |                   |      |       |       |
| 2. SES               | .09  | -    |                   |      |       |       |
| 3. NASC              | -.24 | -.06 | -                 |      |       |       |
| 4. ASC               | -.29 | .02  | .21               | -    |       |       |
| 5. WRAT-R Reading    | .12  | -.07 | .17               | .21  | -     |       |
| 6. WRAT-R Spelling   | .12  | -.03 | .26               | .11  | .76** | -     |
| 7. WRAT-R Arithmetic | .26  | -.03 | .16               | -.17 | .41*  | .53** |
| t(24)=2.064          |      |      | *=p<.05, **=p<.01 |      |       |       |

Significant correlations were found at the  $p<.01$  level between the Reading and Spelling and Spelling and Arithmetic subtests of the WRAT-R, and at the  $p<.05$  level between the Reading and Arithmetic subtests of the WRAT-R. Insignificant correlations were found between IQ and each

WRAT-R subtest and SES and each WRAT-R subtest. An insignificant correlation of .21 was found between NASC and ASC. The results for the ETRE students are presented in Table 9.

Table 9

## Intercorrelations Among Variables for ETRE Students

| Variable             | 1     | 2                | 3    | 4   | 5     | 6    |
|----------------------|-------|------------------|------|-----|-------|------|
| 1. IQ                | -     |                  |      |     |       |      |
| 2. SES               | .25   | -                |      |     |       |      |
| 3. Non-academic S.C. | .08   | -.21             | -    |     |       |      |
| 4. Academic S.C.     | .07   | -.03             | .23  | -   |       |      |
| 5. WRAT-R Reading    | .55** | .35              | .04  | .00 | -     |      |
| 6. WRAT-R Spelling   | .44*  | .52**            | -.20 | .27 | .66** | -    |
| 7. WRAT-R Aritmetic  | .33   | .62**            | -.13 | .23 | .13   | .38* |
| t(24)=2.064          |       | *=p<.05 **=p<.01 |      |     |       |      |

For this group of students, significant correlations were found between IQ and the Reading and Spelling subtests of the WRAT-R at the  $p<.01$  and  $p<.05$  levels respectively. In addition, significant correlations were found between SES and the Spelling and Arithmetic subtests of the WRAT-R at the  $p<.01$  levels. The Reading and Spelling subtests of the WRAT-R, and the Spelling and Arithmetic subtests of the WRAT-R were found to be significant at the  $p<.01$  and  $p<.05$  levels of significance. An insignificant correlation of .23 was found between ASC and NASC. All other correlations were found to be statistically insignificant. The results for the NRRE students are presented in Table 10.

Table 10

## Intercorrelations Among Variables for NRRE Students

| Variable             | 1           | 2     | 3     | 4               | 5     | 6   |
|----------------------|-------------|-------|-------|-----------------|-------|-----|
| 1. IQ                | -           |       |       |                 |       |     |
| 2. SES               | .09         | -     |       |                 |       |     |
| 3. Non-academic S.C. | -.28        | .25   | -     |                 |       |     |
| 4. Academic S.C.     | .30         | .50** | .48** | -               |       |     |
| 5. WRAT-R Reading    | .38*        | .30   | .01   | .52**           | -     |     |
| 6. WRAT-R Spelling   | -.05        | .37*  | .23   | .55**           | .66** | -   |
| 7. WRAT-R Arithmetic | .28         | -.21  | -.13  | .05             | .17   | .05 |
|                      | t(24)=2.064 |       |       | *=p<.05 **p<.01 |       |     |

For this group of students, significant correlations were found between IQ and WRAT-R Reading, and SES and WRAT-R Spelling at the  $p<.05$  level. ASC and NASC were found to correlate significantly at the  $p<.01$  level, and ASC and the Reading and Spelling subtests of the WRAT-R were found to correlate at the  $p<.01$  level. Finally, the WRAT-R subtests of Reading and Spelling were found to correlate at the  $p<.01$  level. All other correlations were found to be statistically insignificant.

Stepwise multiple regression analyses were next performed for each group utilizing the intercorrelations presented in Tables 8- 10. This provided information as to whether the independent variables of IQ, SES, NASC, and ASC cumulatively added to the accounted for variance with WRAT-R scores as the dependent variable. In addition, it allowed for a determination of the increase in shared variance accounted for by adding each variable. The increases in the multiple R and the increases in the amount of shared variance were determined by conducting F-tests on

each multiple correlation coefficient. Tables 11-13 present stepwise multiple regression analyses for the ETSE, ETRE, and NRRE students with each WRAT-R subtest being presented as the dependent variable and IQ, SES, NASC, and ASC being presented as the independent variables. The results for the ETSE students are presented below.

Table 11

Stepwise Multiple Regression Analyses with WRAT-R subtests as the Dependent Variable for the ETSE Students

| Variable | R  |    |    | R <sup>2</sup> |    |    | Beta |     |     | df   |     |     | F    |   |   |
|----------|----|----|----|----------------|----|----|------|-----|-----|------|-----|-----|------|---|---|
|          | R  | S  | A  | R              | S  | A  | R    | S   | A   | R    | S   | A   | R    | S | A |
| IQ       | 12 | 12 | 26 | 01             | 01 | 07 | 24   | 23  | 29  | 1,24 | .38 | .36 | 1.81 |   |   |
| SES      | 15 | 12 | 26 | 02             | 01 | 07 | -09  | -04 | -04 | 2,23 | .26 | .20 | .90  |   |   |
| NASC     | 26 | 32 | 35 | 07             | 10 | 12 | 17   | 29  | 26  | 3,22 | .51 | .84 | 1.05 |   |   |
| ASC      | 34 | 33 | 37 | 11             | 11 | 14 | 24   | 11  | -14 | 4,21 | .70 | .68 | .88  |   |   |

decimal points precede the first digit for R, R<sup>2</sup>, and Beta  
R=Reading, S=Spelling, A=Arithmetic.                      \*p<.05    \*\*p<.01

The results in Table 11 indicate a multiple R for the four variables of .34 for Reading, .33 for Spelling, and .37 for Arithmetic. None of these correlations were found to be statistically significant. In addition, the total shared variance between the Reading, Spelling, and Arithmetic subtests and the independent measures was found to be 11%, 11%, and 14% respectively. Each successive variable was found to increase the multiple R, with the exception of SES for the Spelling and Arithmetic subtests. However, these increases were not found to be statistically significant.

A review of the independent variables indicates that IQ accounted for between 1-7% of the shared variance. In each case the negative Beta weights indicate that SES acted as a suppressor variable and did not increase the amount of variance accounted for by any of the WRAT-R subtests. The addition of NASC was found to account for between 5-9% of the variance in determining WRAT-R scores beyond what was accounted for by the variables of IQ and SES. Similarly, the addition of ASC was found to account for between 1-4% of the variance beyond what was accounted for by the preceding variables. These results suggest that NASC and ASC are relatively unimportant variables in determining academic achievement for the ETSE students. In addition, the results suggest that other unidentified variables account for a significant amount of the achievement variance which influence WRAT-R subtests for the ETSE students. Table 12 presents the stepwise multiple regression analyses for the ETRE students.

Table 12

Stepwise Multiple Regression Analyses with WRAT-R subtests  
as the Dependent Variable for the ETRE Students

| Var. | R  |    |    | R <sup>2</sup> |    |    | Beta |     |     | df   |   |   | F      |        |        |
|------|----|----|----|----------------|----|----|------|-----|-----|------|---|---|--------|--------|--------|
|      | R  | S  | A  | R              | S  | A  | R    | S   | A   | R    | S | A | R      | S      | A      |
| IQ   | 55 | 43 | 32 | 30             | 18 | 10 | 49   | 33  | 17  | 1,24 |   |   | 10.5** | 5.73*  | 2.88   |
| SES  | 59 | 61 | 64 | 35             | 37 | 40 | 25   | 41  | 57  | 2,23 |   |   | 6.36** | 6.88** | 8.30** |
| NASC | 60 | 63 | 65 | 36             | 40 | 42 | 06   | -21 | -08 | 3,22 |   |   | 4.11*  | 4.75** | 5.30** |
| ASC  | 60 | 70 | 69 | 36             | 49 | 48 | -04  | 31  | 27  | 4,21 |   |   | 2.96*  | 4.94** | 4.85** |

decimal points precede the first digit for R, R<sup>2</sup>, and Beta. R=Reading, S=Spelling, A=Arithmetic. \*p<.05 \*\*p<.01

The results in Table 12 indicate a multiple R for the four variables of .60 for Reading, .70 for Spelling, and .69 for Arithmetic. The multiple R for Reading was found to be significant at the  $p < .05$  level. The multiple R for Spelling and Arithmetic was found to be significant at the  $p < .01$  level. Furthermore, the total shared variance between the Reading, Spelling, and Arithmetic subtests and the independent measures was found to be 36%, 49%, and 48% respectively. Each successive variable was found to increase the multiple R. However, the significance level of the multiple R decreased for the Reading subtest when the variables of NASC and ASC were added.

A review of the independent variables indicates that IQ accounted for between 10-30 % of the shared variance with WRAT-R scores and SES accounted for an additional 5-30% of the shared variance. Similarly, NASC and ASC accounted for an additional 1-3% and 0-9% of the variance respectively. The negative Beta weights indicate that NASC acted as a suppressor variable for the Spelling and Arithmetic subtests while ASC acted as a suppressor variable for the Reading subtest. Overall, self-concept was found to add little to the multiple R or account for any additional variance beyond what was accounted for by the variables of IQ and SES. Table 13 presents the stepwise multiple regression analyses for the NRRE students.

Table 13  
Stepwise Multiple Regression Analyses with WRAT-R subtests  
as the Dependent Variable for the NRRE Students

| Var. | R  |    |    | R <sup>2</sup> |    |    | Beta |     |     | df   |       |       | F    |   |   |
|------|----|----|----|----------------|----|----|------|-----|-----|------|-------|-------|------|---|---|
|      | R  | S  | A  | R              | S  | A  | R    | S   | A   | R    | S     | A     | R    | S | A |
| IQ   | 38 | 04 | 28 | 14             | 00 | 08 | 14   | -33 | 24  | 1,24 | 4.26  | .04   | 2.02 |   |   |
| SES  | 46 | 37 | 36 | 21             | 13 | 13 | 07   | 09  | -28 | 2,23 | 3.14  | 1.86  | 1.74 |   |   |
| NASC | 46 | 39 | 36 | 21             | 15 | 13 | -23  | -23 | -06 | 3,22 | 2.02  | 1.34  | 1.11 |   |   |
| ASC  | 60 | 62 | 37 | 36             | 38 | 13 | 55   | 71  | 14  | 4,21 | 2.90* | 3.32* | .86  |   |   |

decimal points precede the first digit for R, R<sup>2</sup>, and Beta. R=Reading, S=Spelling, A=Arithmetic. \*p<.05

The results in Table 13 indicate a multiple R for the four variables of .60 for Reading, .62 for Spelling, and .37 for Arithmetic. The multiple R for Reading and Spelling was found to be significant at the  $p<.05$  level. However, the multiple R for Arithmetic did not approach statistical significance. The total amount of variance accounted for by the four variables for the Reading, Spelling, and Arithmetic subtests was found to be 36%, 38%, and 13% respectively. Each successive variable was found to increase the multiple R with the exception of NASC for the Reading and Arithmetic subtests. However, the multiple R only reached statistical significance with the addition of ASC.

A review of the independent variables indicates that IQ accounted for 0-14% of the shared variance with the WRAT-R scores and SES accounted for an additional 5-13% of the variance. The negative Beta weights indicate that for each subtest NASC acted as a suppressor variable and accounted for an additional 0-2% of the variance. ASC was found to account for between 0-23% of the variance beyond

what was accounted for by the previous variables. These results suggest that ASC accounts for a significant proportion of the variance in determining WRAT-R scores beyond what is determined by IQ and SES. However, NASC was not found to account for any additional variance.

Table 14 summarizes the increases in the multiple R as a result of adding the ASC and NASC variables for the three research groups. Separate F-tests were conducted to determine if adding each variable significantly increased the multiple R beyond what was accounted for by the preceding variables.

Table 14  
Summary of Increases in Correlation Coefficients for  
NASC and ASC for the ETSE, ETRE, and NRRE Students

|                                                                                                                             | <u>ETSE</u> |           |          | <u>ETRE</u> |           |          | <u>NRRE</u> |           |          |
|-----------------------------------------------------------------------------------------------------------------------------|-------------|-----------|----------|-------------|-----------|----------|-------------|-----------|----------|
| <u>NASC</u>                                                                                                                 | <u>r</u>    | <u>df</u> | <u>F</u> | <u>r</u>    | <u>df</u> | <u>F</u> | <u>r</u>    | <u>df</u> | <u>F</u> |
| <u>WRAT-R</u>                                                                                                               |             |           |          |             |           |          |             |           |          |
| Reading                                                                                                                     | .11         | 1,22      | 1.52     | .01         | 1,22      | .01      | .00         | 1,22      | .06      |
| Spelling                                                                                                                    | .20         | 1,22      | 2.11     | .02         | 1,22      | .67      | .02         | 1,22      | .40      |
| Arithmetic                                                                                                                  | .09         | 1,22      | 1.32     | .01         | 1,22      | .02      | .00         | 1,22      | .01      |
| <u>ASC</u>                                                                                                                  |             |           |          |             |           |          |             |           |          |
| <u>WRAT-R</u>                                                                                                               |             |           |          |             |           |          |             |           |          |
| Reading                                                                                                                     | .08         | 1,21      | 1.27     | .00         | 1,21      | .05      | .14*        | 1,21      | 4.55     |
| Spelling                                                                                                                    | .01         | 1,21      | .28      | .07         | 1,21      | 3.74     | .23**       | 1,21      | 7.99     |
| Arithmetic                                                                                                                  | .02         | 1,21      | .43      | .04         | 1,21      | 2.45     | .01         | 1,21      | .25      |
| *p<.05, **p<.01 = significant beyond what was predicted by other variables. $F_{(1,22)}(.950)=4.30$ $F_{(1,21)}(.950)=4.32$ |             |           |          |             |           |          |             |           |          |

The results indicate that for the NRRE students, the addition of ASC significantly added to the increase in the Multiple R of the WRAT-R Reading and Spelling subtests. The increases in these correlation coefficients were associated with an increase in the achievement variance of

between 0-23% (Table 13 p.61). NASC did not significantly add to the increase in the Multiple R for this group of students. In addition, neither NASC or ASC was found to significantly add to the increase in the Multiple R for the ETSE or ETRE students. However, for the the ETSE students, increases in the Multiple R as a result of adding NASC ranged between .09-.11 and accounted for an addition 5-9% of the achievement variance (Table 11 p.58). Furthermore, for the ETRE students, increases in the Multiple R as a result of adding ASC ranged between .00-.07 and accounted for an additional 0-9% of the achievement variance (Table 12 p.59).

These findings indicate that self-concept by itself adds little to the prediction of performance on the WRAT-R for all but ASC for the NRRE students. However, noteworthy was the finding that for the ETSE students, NASC accounted for an equal or greater amount of the achievement variance as any other variable studied. Overall, the results fail to support the hypothesis that ASC or NASC is a significant predictor of academic achievement beyond the variables of IQ and SES for the ETRE students. However, unexpectedly, ASC was found to significantly predict academic achievement beyond the variables of IQ and SES for the NRRE students. The results support the hypothesis that ASC and NASC add little to the prediction of academic achievement for the ETSE students.

In order to determine whether the increases in the correlation coefficients varied between groups, a chi-square test of significance using the U statistic was performed across each group for each WRAT-R subtest. The results are presented in Table 15.

Table 15

Chi-square Test of Significance for Increases in  
Correlation Coefficients for Self Concept for the  
ETSE, ETRE, and NRRE Students

|                          | ETSE     | ETRE     | NRRE     |          |          |
|--------------------------|----------|----------|----------|----------|----------|
|                          | <u>r</u> | <u>r</u> | <u>r</u> | <u>U</u> | <u>p</u> |
| <u>Non-academic S.C.</u> |          |          |          |          |          |
| WRAT-R Reading           | .09      | .01      | .00      | .112     | .94      |
| WRAT-R Spelling          | .20      | .02      | .02      | .511     | .86      |
| WRAT-R Arithmetic        | .09      | .01      | .00      | .112     | .94      |
| <u>Academic S.C.</u>     |          |          |          |          |          |
| WRAT-R Reading           | .08      | .00      | .14      | .226     | .88      |
| WRAT-R Spelling          | .01      | .07      | .23      | .595     | .83      |
| WRAT-R Arithmetic        | .02      | .04      | .01      | .009     | .99      |
| chi-square 2df(.95)=5.91 |          |          |          |          |          |

The results indicate that there are no significant differences in the increase in correlation coefficients beyond the preceeding variables for any research group on any WRAT-R subtest. These findings fail to fail to support the hypothesis that self-concept is a more relevant variable in predicting academic achievement for the ETRE students.

Overall, the findings fail to support the significance of self-concept as a predictor of academic achievement beyond IQ and SES for the ETSE and ETRE students. Furthermore, the findings fail to support the hypothesis

that self concept is a better predictor of academic achievement for the ETRE students than for the NRRE and ETSE students. However, also counter to what was predicted, ASC was found to significantly add to the prediction of academic achievement for the NRRE students. A section of supplemental analyses is now presented to provide additional information about the relationship between self concept and academic achievement for the ETSE, ETRE, and NRRE students.

#### Supplemental Analyses

This section offers a further analysis of the data in an effort to better understand the present research findings. Additional analyses were conducted to determine the effects of the uncontrolled variables of IQ, SES, and TRF scores on SDQ II scores for each group, to determine the differences in the variability of SDQ II score between groups, and to determine the significance of other sample variables in determining WRAT-R scores.

#### The Effects of IQ, SES, and TRF scores on SDQ II scores

Previous research indicates that the variables of IQ and SES significantly influence self reported self-concept (Hansford and Hattie, 1982; Rubin,1977). In addition, previous research indicates that self-concept and level of emotional disturbance are significantly related

(Battle,1980; Tesing and Lefkowitz 1982). None of these variables were controlled in the present study which suggests that differences between the research groups in these variables may have influenced SDQ II scores. In order to determine the effects of these variables on SDQ II scores, Pearson correlations were obtained between the SDQ II scores and the variables of IQ, SES, and TRF scores for each group and the total sample. This allowed for a determination of the degree to which each variable influenced self reported SDQ II scores. Tables 16 and 17 examine the relationship between IQ and SDQ II and SES and SDQ II to clarify how each variable influences the findings of the present study. The effects of IQ on SDQ II scores are examined below.

Table 16  
Summary of the Correlations between Self Concept and IQ for  
the ETSE, ETRE, and NRRE Students and the Total Sample

| <u>measure</u> | <u>ETSE</u> | <u>p</u> | <u>ETRE</u> | <u>p</u> | <u>NRRE</u> | <u>p</u> | <u>Total</u> | <u>p</u> |
|----------------|-------------|----------|-------------|----------|-------------|----------|--------------|----------|
| ASC            | -.29        | .15      | .07         | .73      | .30         | .12      | -.09         | .45      |
| NASC           | -.24        | .22      | .08         | .70      | -.28        | .16      | .17          | .14      |

t(24)=2.064

None of the correlations between IQ and ASC and NASC were found to be statistically significant. This suggests that the difference in intelligence between the three groups was not a major factor in influencing self reported self-concept. The correlations reported for the Total sample were also found to be insignificant which suggests

that, overall, self reported self-concept was relatively unaffected by level of intelligence. Table 17 examines the relationship between self-concept and SES.

Table 17  
Summary of the Correlations between SES and Self Concept  
for the ETSE, ETRE, and NRRE Students and the Total Sample

| <u>measure</u> | <u>ETSE</u> | <u>p</u> | <u>ETRE</u> | <u>p</u> | <u>NRRE</u> | <u>p</u> | <u>Total</u> | <u>p</u> |
|----------------|-------------|----------|-------------|----------|-------------|----------|--------------|----------|
| ASC            | .02         | .87      | -.03        | .84      | .49**       | .01      | .38**        | .01      |
| NASC           | -.06        | .77      | -.21        | .31      | .24         | .21      | .08          | .50      |
| t(24)=2.064    |             |          |             |          |             | **p<.01  |              |          |

Significant correlations were found between ASC and SES for the NRRE students and for the Total sample. This suggests that for this sample of students, an increase in SES is associated with an increase in ASC. However, no such relationship was found with NASC. These findings suggest that the difference in ASC between the NRRE students and the ETSE and ETRE students may be partially due to the significantly higher level of SES for the NRRE students.

As indicated earlier, TRF scores also differ between the three research groups. The results presented in Table 18 examine the relationship between SDQ II and TRF scores for the three research groups.

Table 18  
Summary of Correlations Between Self Concept and TRF Scores  
for the ETSE, ETRE, and NRRE Students and Total Sample

| TRF                              | ETSE |     | ETRE |      | NRRE |       | Total  |      |
|----------------------------------|------|-----|------|------|------|-------|--------|------|
|                                  | NASC | ASC | NASC | ASC  | NASC | ASC   | NASC   | ASC  |
| I                                | .00  | .35 | -.20 | -.11 | -.29 | -.26  | -.29** | -.11 |
| E                                | .14  | .06 | -.13 | .11  | -.20 | -.47* | -.19   | -.15 |
| T                                | .06  | .22 | -.19 | -.02 | -.34 | -.42* | -.28** | -.11 |
| t(24)=2.064    **p<.01    *p<.05 |      |     |      |      |      |       |        |      |

Significant correlations were found between ASC and the E and the Total(T) scales of the TRF at the  $p<.05$  level for the NRRE students. This suggests that more favorable academic self-concepts are related to lesser degrees of emotional disturbance. No other correlations were found to be significant for either of the other groups of students. However, there was a slight trend for a more favorable ASC to be related to lesser degrees of emotional disturbance for the ETRE students and for a more favorable NASC to be related lesser degrees of emotional disturbance for both the NRRE and ETRE students. In contrast, the opposite trend was noted for the ETSE students where a more favorable ASC was associated with a higher degree of emotional disturbance. In regard to the Total sample, significant correlations were found between NASC and the I and T scales of the TRF at the  $p<.01$  level. In general, these results suggest that a more favorable self-concept is associated with lesser degree of emotional disturbance. As a result, the differences in ASC between the NRRE and ETRE and ETSE students, and the differences

in NASC between the NRRE and ETSE students may partially result from the differences in TRF scores.

#### Variability of SDQ II Scores Among Groups

An examination of the variability of SDQ II scores within each group also provides information about the difference in self concept between the ETSE, ETRE, and NRRE students. A cursory review of the results presented in Table 2 reveals that the standard deviation of self-concept scores increases for students identified as emotionally troubled and for students placed in special education. The difference in the magnitude of this statistic between groups has implications for the interpretation of the ASC and NASC scores. In order to determine the significance of this difference an F-test measuring the differences in sample variances was performed. The results are presented in Table 19.

Table 19  
Differences in the Variability of Self Concept scores  
Among the ETSE, ETRE, and NRRE Students

|              | ASC                             |      | NASC     |      |
|--------------|---------------------------------|------|----------|------|
|              | F-value                         | p    | F-value  | p    |
| ETSE vs ETRE | 1.56                            | .45  | 1.30     | .51  |
| ETSE vs NRRE | 2.86*                           | .025 | 2.75*    | .025 |
| ETRE vs NRRE | 1.80                            | .17  | 2.10     | .09  |
|              | F <sub>25, 25</sub> (.975)=2.25 |      | *p< .025 |      |

The results in Table 19 indicate that there is a significant difference in the variability of ASC and NASC scores between the ETSE and NRRE students. In addition, the results indicate that the difference in variability of scores approaches significance between the ETRE and NRRE students. These results suggest that there is a higher degree of variability of self-concept scores associated with being emotionally troubled than with being relatively free from such troubles. This suggests that, in regard to self concept, the ETSE and ETRE students are a heterogeneous group with a strong probability that some individuals within these groups possess self concepts which are equivalent to those of the NRRE students.

#### The Significance of Other Variables in Determining WRAT-R Scores

The present study examined the extent to which the variables of IQ, SES, and SDQ II scores differed in their ability to predict WRAT-R scores for the three research groups. The results indicate that these variables are better predictors of WRAT-R scores for the ETRE and NRRE students compared to the ETSE students. However, the variables of social-emotional adjustment, as measured by TRF scores, and age and grade are also thought to influence academic achievement for the three research groups. This hypothesis is now examined by conducting a stepwise multiple regression analysis with WRAT-R scores as the

dependent variable and IQ, SES, SDQ II scores, TRF scores, and Age and Grade as the independent variables. The results presented in Table 20 demonstrate the increases in the multiple correlation coefficients for the variables of TRF scores, Age, and Grade beyond those of IQ, SES, NASC, and ASC for each WRAT-R score and for each group of students.

Table 20  
Stepwise Multiple Regression Analyses Incorporating  
TRF Scores, Age, and Grade for the ETSE, ETRE, and  
NRRE Students

| variable | ETSE |     |     | ETRE  |       |       | NRRE  |       |      |
|----------|------|-----|-----|-------|-------|-------|-------|-------|------|
|          | R    | S   | A   | R     | S     | A     | R     | S     | A    |
| IQ       | .12  | .12 | .26 | .55** | .43*  | .32   | .38   | .04   | .28  |
| SES      | .15  | .12 | .26 | .59   | .61** | .64** | .46*  | .37** | .36* |
| NASC     | .26  | .32 | .35 | .60   | .63   | .65   | .46   | .39   | .36  |
| ASC      | .34  | .33 | .37 | .60   | .70   | .69   | .60   | .62   | .37  |
| TRF-I    | .38  | .34 | .42 | .60   | .73   | .69   | .62   | .62   | .46  |
| TRF-E    | .38  | .36 | .42 | .60   | .74   | .69   | .62   | .62   | .65* |
| TRF-T    | .43  | .36 | .50 | .63   | .75   | .70   | .64   | .63   | .65  |
| Age      | .46  | .53 | .57 | .80** | .81*  | .72   | .65   | .63   | .71  |
| Grade    | .49  | .56 | .57 | .85*  | .81   | .73   | .78** | .80** | .71  |

\*\*significant increase over the previous variables at the  $p < .01$  level, \* $p < .05$  level.

An F-test was used to determine significant increases in the Multiple R for each additional variable, for each WRAT-R score, and for each group of students. The results indicate that none of the variables significantly increased the strength of the multiple R for any of the WRAT-R subtests for the ETSE students. However, the variables of Age and Grade significantly increased the multiple R for the Reading and Spelling subtests for the ETRE students. In addition, for the NRRE students, grade level was found to

significantly increase the multiple R for the Reading and Spelling subtests, and TRF-E was found to significantly increase the multiple R for the Arithmetic subtest.

These results indicate that the additional variables of TRF scores, age, and grade account for little additional variance in predicting WRAT-R scores for the ETSE students. However, Age accounted for a significant increase in the variance of between .3%-3% for the ETRE students and Grade accounted for a significant increase in the variance of between 2%-3% for the NRRE students. Although statistically significant, these increases are of little practical significance. The results further indicate that all of the variables examined in the present study account for only 24%-32% of variance in predicting WRAT-R scores for the ETSE students. This suggests that there are other unaccounted for variables which influence the academic achievement of this group of students. Conversely, it was found that the variables examined accounted for between 53%-72 % of the variance for the ETRE students and between 50%-64% of the variance for the NRRE students. This suggests that the variables examined are good predictors of WRAT-R scores for both the ETRE and NRRE students.

## CHAPTER V

### DISCUSSION

The major purpose of this investigation was to determine the relationship between self-concept and academic achievement for emotionally troubled adolescents placed in regular and special education, and normal students placed in regular education. Three sets of hypotheses were generated to explore the nature of this relationship among the three reseach groups. These hypotheses included examining the differences in self-concept scores, the differences in the relationship between self-concept and academic achievement, and the differences in self-concept as a predictor of academic achievement for each of the three groups. An overview and discussion of the results of each of set of hypotheses is presented below.

#### Differences in Self Concept

##### Hypotheses

1. There will be no difference in nonacademic self-concept between emotionally troubled students enrolled in special education and and normal students in regular education (not supported).
2. Emotionally troubled students enrolled in

regular education will have more negative nonacademic self-concepts than either emotionally troubled students in special education or normal students in regular education (not supported).

3. There will be no difference in academic self-concept between emotionally troubled students enrolled in special education and emotionally troubled students in regular education (supported).
4. Normal students enrolled in regular education will have more positive academic self-concepts than either emotionally troubled students in special education or emotionally troubled students in regular education (supported).

The results indicated that there are differences in self-concept among each of the three research groups. Differences were found in academic self-concept (ASC) between the normal students enrolled in regular education (NRRE) and the emotionally troubled students enrolled in regular education (ETRE). Differences in ASC were also found between the NRRE students and the emotionally troubled students enrolled in special education (ETSE). No differences were found between the ETRE and ETSE students. These findings are not surprising given the Wide Range Achievement Test-Revised (WRAT-R) scores that were obtained

by each group. The results indicate that the NRRE students obtained significantly higher scores than either of the other groups with little difference in scores noted between the ETSE and ETRE students. This suggests that low academic performance tends to be accompanied by poor academic self-concept and higher academic performance tends to be accompanied by a more positive academic self-concept irrespective of educational placement. Apparently, placement in a special education program did little to improve the academic self-concept of the ETSE students. This finding is consistent with the findings of Chapman and Boersma (1979), who indicated that with learning disabled children academic self-concept remains depressed despite placement in a special education program. These findings fail to support the idea growing out of social comparison theory that suggests relative comparisons are made between group members. In the case of ETSE students, based on this theory, it would have been expected that the ETSE students would have obtained ASC scores which were equivalent to those of the NRRE students. However, since ETSE students are more likely to have multiple reference groups, they not only compare themselves with their classmates inside the classroom, but also make comparisons with other reference groups outside the classroom. When these comparisons occur, the ETSE students continue to view themselves less favorably. Social comparison theory, however, is apparently supported for the ETRE students where their reference group

is much broader in academic ability. According to this theory, the ETRE students would be expected to have poorer self concepts than the NRRE students because of the realization that they are not achieving as well academically as their normal peers. Thus, the hypotheses that normal students enrolled in regular education possess more positive academic self-concepts than either emotionally troubled students in regular education or special education and that both groups of emotionally troubled students possess equivalent academic self-concepts are supported by the present findings.

Differences in nonacademic self-concept (NASC) were also found among the three research groups. Significantly lower NASC scores were found for the ETSE students compared to the NRRE students. No other statistically significant differences were found between groups, although, there was a trend for NASC scores to decrease initially for those students identified as emotionally troubled and for those students in special education. Although these results are counter to what was hypothesized and predicted by social comparison theory, similar findings between normal students and behaviorally disordered students enrolled in special classes have been found in other studies (Wood and Johnson, 1972; and Bloom, Shea, and Eun 1979). These findings also fail to support the social comparison theory of equivalent NASC scores for the ETSE and NRRE students. However, similar to the findings for ASC, the use of

multiple reference groups by the ETSE students is thought to account for their poorer NASCs. Despite being placed in a setting where other students also experience emotional difficulties, it is thought that the ETSE students continue to compare themselves with their peers who are not enrolled in the same school setting and thus continue to be less satisfied with their perceptions of themselves.

The use of multiple reference groups provides an adequate explanation for the ETSE students poorer NASCs, however, it does not adequately explain why the ETRE students did not also obtain significantly lower NASCs than the NRRE students. One possible explanation is that the ETRE students' level of disturbance is not so severe as to disrupt perceptions of self to the degree that is experienced by the ETSE students.

Although the above findings provide a good estimate of the differences in self-concept among the three research groups, it is important to keep in mind that several relevant variables which are known to affect self-concept were not controlled in the present study. In order to determine the relationship between each of these variables and self-concept, correlations were obtained for each group among NASC, ASC and the Variables of IQ, SES, and TRF scores. The results presented in Tables 16- 18 (pp.66-68) suggest that IQ had little effect in determining academic or nonacademic self-concept scores for any group. However, higher levels of SES and a higher level of social emotional

adjustment (as indicated by TRF scores) were found to be associated with a more favorable ASC for the NRRE students. Neither of these variables were found to influence self-concept scores for the ETRE or ETSE students. These findings suggest that the higher ASCs obtained by the NRRE students are due in part to the higher levels of SES and higher levels of social emotional adjustment. However, the differences in the uncontrolled variables between the groups appeared to have little influence on nonacademic self-concept.

The results presented in Tables 2 (p.49) and 19 (p.69) also indicate differences between the groups in the variability of self-concept scores. Significant differences in NASC and ASC were found between the NRRE and ETSE students. These findings suggest that the ETSE students' self-concepts are more heterogeneous than those of the NRRE and ETRE students and that emotionally troubled students enrolled in special education do not uniformly demonstrate low academic or nonacademic self-concepts.

Overall, the present findings generally support previous research findings of poorer self-concepts for emotionally troubled students. However, contrary to the findings for learning disabled students, placement in a special education class was not found to improve academic or nonacademic self-concept for emotionally troubled students. Apparently, these students continue to recognize their shortcomings regardless of similarities between

themselves and their immediate peer group. In addition, although the ETSE students generally possess poorer self-concepts, there is wide variability within this group suggesting that not all emotionally troubled students enrolled in special education have an unfavorable self perception. The significance of these findings as they relate to academic achievement are discussed below.

### Self Concept and Academic Achievement

#### Hypotheses

1. There will be a positive and significant correlation between academic and nonacademic self-concept and academic achievement for emotionally troubled students enrolled in regular and special education and normal students in regular education (partially supported: ASC is significantly correlated with the the WRAT-R Reading and Spelling subtests for the NRRE students).
2. The strength of the relationship will be strongest between academic self-concept and academic achievement for all research groups (partially supported: ASC is stronger than NASC with the WRAT-R Reading subtest for the NRRE students).
3. The relationship between both academic and nonacademic self-concept and academic achievement

will be significantly stronger for emotionally troubled students enrolled in regular education (not supported).

The second set of Hypotheses examined the relationship between self-concept and academic achievement for the three research groups. Only two significant correlations were found among ASC, NASC and the WRAT-R subtests. These were between ASC and the Reading and Spelling subtests for the NRRE students. However, a review of the obtained correlation coefficients presented in Table 5 (p.52) indicate that, while not statistically significant for the sample size used, the strength of the correlations for all groups are similar to what has previously been reported (Hansford and Hattie, 1982).

Although there are few significant correlation coefficients among ASC, NASC and the WRAT-R subtests, several observations about the relationship between self-concept and academic achievement for each research group appear to be warranted. For the NRRE students, ASC was found to account for a significant proportion of the achievement variance for the Reading and Spelling subtests of the WRAT-R (p.52). However, the proportion of variance accounted for by ASC was not significantly greater than the proportion of variance that was accounted for by the ETSE or the ETRE students. In addition, for the NRRE students, ASC accounted for a significantly greater proportion of the

achievement variance than NASC for only the Reading subtest of the WRAT-R. These findings suggest that ASC plays an important role in influencing academic achievement for the NRRE students. Causal ordering, however, cannot be determined from the results of the present study.

In regard to the ETSE students, no significant relationships were observed between either academic or nonacademic self-concept and academic achievement. However, the strength of the correlations between each measure of self-concept and each subtest of the WRAT-R were equivalent to what has previously been reported (Hansford and Hattie, 1982). In addition, the strength of these correlations were found to be equal to or greater than what was found between each subtest of the WRAT-R and the variables of IQ and SES (p. 55). These findings suggest that there are other unaccounted for factors which influence academic achievement for this group of students.

In regard to the ETRE students, the relationships between each measure of self-concept and each subtest of the WRAT were also found to be insignificant. There was a slight trend for academic self-concept to be associated with academic achievement on the Spelling and Arithmetic subtests of the WRAT-R, although the strength of these correlations are slightly below what has previously been reported (West and Fish, 1983; Marsh, Smith, and Barnes, 1984). These findings also suggest that there are other factors which influence academic achievement for the ETRE

students.

Overall, the results indicate that academic self-concept covaries significantly with academic achievement for only the NRRE students. These findings are similar to what has previously been reported for other groups of normal students (Gose, Wooden, and Muller, 1980; Mintz and Muller, 1977; and Muller, Chamblis, and Wood, 1977). In addition, for the ETSE students, the results suggest that both academic and nonacademic self-concept are equally important as IQ and SES in determining academic achievement. However, none of these variables were found to be significant in the present study. Furthermore, the moderate to low correlations obtained between academic achievement and academic and nonacademic self-concept indicate that other variables are also important in influencing academic achievement for the three research groups. The effects of the other variables as well as the independent contribution of self-concept are discussed below.

### The Significance of Self Concept as a Predictor of Academic Achievement

#### Hypotheses

1. The independent contribution of academic and nonacademic self-concept in predicting academic achievement will be significant for emotionally

troubled students enrolled in regular education (not supported).

2. The independent contribution of academic and nonacademic self-concept in predicting academic achievement will be insignificant for emotionally troubled students enrolled in special education and normal students enrolled in regular education. (generally supported: ASC is a significant predictor for the NRRE students).
3. Academic and nonacademic self-concept will be better predictors of academic achievement for emotionally troubled students enrolled in regular education than for emotionally troubled students in special education and normal students in regular education (not supported).

The third set of hypotheses examined the significance of self-concept as a predictor of academic achievement by determining the amount of achievement variance accounted for by academic and nonacademic self-concept beyond the amount of variance accounted for by the variables of IQ and SES. It was found that neither ASC nor NASC accounted for a significant amount of the achievement variance for the ETSE or ETRE students beyond what was accounted for by IQ and SES. However, ASC was found to account for a significant increase in the achievement variance for the NRRE students. Contrary to what was predicted, no significant difference

among the research groups was found in the amount of achievement variance accounted for by either academic or nonacademic self-concept.

Academic self concept was found to significantly increase the achievement variance of the NRRE students. This finding supports the correlations obtained between ASC and WRAT-R scores reported earlier and gives additional support to the contention that how an individual feels about his/her academic abilities can have a moderate influence on academic achievement for the NRRE students. How an individual feels about him/herself in nonacademic areas does not appear to be a significant factor in influencing academic achievement for this group of students. This is consistent with what has previously been reported (Marsh, Smith, and Barnes, 1984; Marsh, Smith, Barnes, and Butler, 1983; Shavelson and Bolus, 1982). The significance of academic self-concept for normal students can best be explained by examining the differences between what particular students would be expected to achieve on the basis of their academic ability and what they actually achieve. It appears that as long as students are achieving up to their expected potential, and there are no other factors which account for underachievement, their academic self concept has the power to influence academic achievement.

These same conclusions, however, do not appear to be valid for the ETSE students where neither ASC or NASC were

found to significantly influence academic achievement. However, NASC was found to account for as much of the achievement variance as the variables of IQ and SES. Furthermore, NASC was found add to the amount of variance accounted for beyond these variables by as much as 9%. In order to understand these findings, an examination of the differences in academic ability and achievement is also necessary. The results in Table 1 (p.47) indicate that the ETSE students obtained WRAT-R scores which were significantly below what would be expected on the basis of their ability. This discrepancy is thought to result in part from the degree of emotional trouble experienced by the ETSE students that subsequently resulted in their placement in a special education program. In addition, despite the low correlations obtained between the SDQ II scores and the TRF scores presented in Table 18 (p.68), it is felt that the low NASC scores are related to the degree of emotional trouble experienced by the ETSE students. Furthermore, it is felt that the nature of this relationship is similar to the moderate to strong correlations that have previously been reported between general self concept and social/emotional adjustment (Battle, 1980; Reynolds, 1980; Svobodny, 1982). Thus, it appears that part of the ETSE students' underachievement is due to their poorer nonacademic self-concepts. In addition, it appears that a poor nonacademic self-concept better explains the underachievement experienced by the ETSE students than does IQ, SES, age or grade factors.

Different conclusions also appear warranted for the ETRE students. Neither NASC or ASC were found to significantly influence academic achievement although ASC did account for 0-9% of the achievement variance beyond the variables of IQ and SES. In addition, SES, and IQ, were both found to account for up to 30% of the achievement variance. The influence of these variables in determining academic achievement was much greater for the ETRE students than for the ETSE or NRRE students. These findings are surprising given that it was initially hypothesized that self-concept would be a strong predictor of academic achievement for the ETRE students. However, a closer examination of this group may help to clarify these findings. Despite the higher TRF scores obtained by the ETRE students, the degree of emotional disturbance is thought to be mild and not significant enough to warrant placement in special education. The NASC scores reflect a slightly poorer nonacademic self concept, which is commensurate with what would be expected for individuals who experience slight emotional/adjustment difficulties. Consequently, NASC was found to be an insignificant variable in determining academic achievement for the ETRE students. This finding is similar to what was found for the NRRE students.

A review of ASC scores, however, indicates a level of academic self-concept commensurate with that reported for the ETSE students. These scores reflect the academic

underachievement of the ETRE students and are similar to the ASC scores obtained by the ETSE students. The lower academic achievement and lower ASC scores are thought to stem from less opportunity and/or interest in achieving academically, as reflected by lower SES scores and the identified significance of SES as a predictor of academic achievement, rather than the degree of emotional disturbance experienced by the ETRE students. In addition, the significance of SES is thought to be exaggerated as a result of the social comparisons made between the ETRE students and their regular education peers who demonstrate a greater interest in succeeding academically. As a result, SES was identified as a significant variable in predicting academic achievement for the ETRE students.

Overall, the independent contribution of academic and nonacademic self-concept in predicting academic achievement was found to be miniscule for the ETSE and the ETRE students. Only the academic aspect of self-concept was found to contribute significantly to the prediction of academic achievement for the NRRE students. Despite this significant contribution, neither ASC or NASC significantly predicted academic achievement for one group better than another. This most likely results from the finding that neither academic nor nonacademic self-concept contributes significantly to the variance in achievement beyond what is contributed by the variables of IQ, and SES.

## CHAPTER VI

### SUMMARY AND CONCLUSIONS

#### Research Findings

The purpose of the present study was to determine the relationship between self-concept and academic achievement for emotionally troubled students enrolled in regular education (ETRE), emotionally troubled students enrolled in special education (ETSE), and normal students enrolled in regular education (NRRE). The relationship between these variables is best understood by examining the differences in self-concept, the correlations between self-concept and academic achievement, and the unique contribution of self-concept in determining academic achievement.

The results indicate that NRRE students have more positive academic and nonacademic self-concepts than ETSE students. In addition, it was found that NRRE students have more positive academic self-concepts than ETRE students. No differences in either academic or nonacademic self-concept were found between the ETRE or ETSE students suggesting that placement was not a significant factor in influencing self-concept. However, there was a trend for nonacademic self-concept to decline for emotionally troubled students and for students placed in special education.

The results also showed a statistically positive relationship between academic self-concept and academic achievement for the NRRE students. Insignificant correlations were found between academic and nonacademic self-concept and academic achievement for the ETSE students and for the ETRE students.

The unique contribution of academic self-concept in predicting academic achievement beyond the variables of IQ and SES was found to account for as much as 23% of the achievement variance for the NRRE students and for between 0-9% for the ETRE students. The unique contribution of nonacademic self-concept was found to account for an insignificant 5-9% of the achievement variance for the ETSE students. The amount of variance accounted for by academic self-concept for the NRRE students and non-academic self concept for the ETSE students is comparable to or greater than the amount of variance accounted for by either IQ or SES. These findings suggest that academic self-concept is a relevant variable which influences academic achievement for the NRRE students. The findings further suggest that nonacademic self-concept is as important as any other variable examined in predicting academic achievement for the ETSE students. However, none of the variables studied were found to be significant for the ETSE students which suggests that other variables are important in determining academic achievement for this group of students.

Practical Implications

The results presented above indicate that there are differences in academic and nonacademic self-concept among the groups of students studied. Furthermore, it was found that only academic self-concept significantly covaried and added to the prediction of academic achievement beyond the variables of IQ and SES for normal students enrolled in regular education. The implications of these findings for each research group are presented below.

For the NRRE students, academic self-concept was found to significantly covary with academic achievement and to predict academic achievement beyond the variables of IQ and SES. Research examining causal relationships between academic achievement and self-concept have yet to definitively identify which comes first, high achievement or high academic self-concept. Some studies (Calsyn and Kenny, 1977; Scheirer and Kraut, 1979) suggest that successful academic achievement is preceeded by a positive academic self-concept, but the results are equivocal. Undoubtedly, there is a reciprocal effect with each serving to enhance the other and until this issue is resolved it seems best to follow the advice of Hamachek (1986) who states:

"We would probably be well advised to not worry unduly about which comes first, but to concern ourselves with helping any person with a reading problem [or other academic problem] to improve

both his/her reading skills [or other academic skills] and [academic] self-concept." (p.203)

Different advice, however, appears warranted for the ETSE students. No relationship was found between self-concept and academic achievement but nonacademic self-concept was found to account for an equal or greater amount of the achievement variance as the variables of IQ and SES. In addition, nonacademic self-concept was found to be significantly poorer for the ETSE students than for the NRRE students. These findings suggest that nonacademic self-concept may play a more important role in determining academic achievement than what is demonstrated in the present study. As a result, until the nature of this relationship can be more clearly identified, it may be useful to provide the ETSE students with successful academic experiences in the hope that a positive academic self-concept will lead to a positive nonacademic self-concept. However, a more likely possibility is that successful experiences in a variety of different areas will foster a favorable nonacademic self-concept and lead to more interest and success in achieving academically.

For the ETRE students, the results indicate that neither academic or nonacademic self-concept significantly contributes to academic achievement. However, the correlations obtained between academic

self-concept and academic achievement of as much as .27 and the significantly poorer academic self concepts reported by the ETRE students relative to the NRRE students suggest that an improvement in one may lead to an improvement in the other. Again, until the nature of this relationship can be more clearly identified, it may be possible to help this group of students to improve their academic skills in a manner similar that which was proposed for the NRRE students i.e., providing opportunities for successful academic experiences in an environment which stimulates a positive academic self-concept.

#### Recommendations for Future Research

The results of the present study failed to support the hypothesis of no difference in nonacademic self-concept between the NRRE and ETSE students. In addition, the present findings failed to support the hypothesis of a poorer nonacademic self-concept for the ETRE students. The results indicated that the NRRE students have the most positive nonacademic self-concepts followed by the ETRE students and the ETSE students. These results are counter to the idea growing out of social comparison theory that comparisons are made between group members. The use of multiple reference groups has been presented as one

possible explanation to account for these findings. Additional research is needed to explore this hypothesis and to determine if students do vary their self perceptions in different social groups. One possible method of obtaining information which addresses this issues is to preface certain questions in the Self Description Questionnaire II (SDQ-II) with the following phrases: relative to others at school, or relative to others outside of school, etc. Responses to this modified version of the SDQ-II would hopefully yield information about an individual's self-concept relative to different social groups and provide information about the use of multiple reference groups in the formation of self-concept.

The results of the present study also indicate that significant relationships between academic and nonacademic self-concept and academic achievement were not found for all groups of students. A significant relationship was found between academic self-concept and academic achievement for the NRRE students but no significant correlations were found for either group of emotionally troubled students. However, the strength of the correlations between nonacademic self-concept and academic achievement for the ETSE students and academic self-concept and academic achievement for the ETRE are equivalent to what has been reported by other researchers. Additional

research with larger sample sizes may clarify and/or support the hypothesis that the relationship between self concept and academic achievement varies according to the population being examined.

The strength of the correlation between self-concept and academic achievement is also known to be influenced by other variables. Hansford and Hattie (1982) indicate that the variables of IQ and SES are two variables which significantly influence the the relationship between self-concept and academic achievement. These variables were not controlled in the present study. Additional research is needed to determine whether or not the differences reported among groups in these variables significantly influenced the present findings. This can be accomplished by matching a group of emotionally troubled students with a group of normal students according to IQ and SES and then following the procedures outlined in the present study. This approach would hopefully provide information which illucidates the low correlations obtained between self-concept and academic achievement for both groups of emotionally troubled students.

The present findings also indicate that academic and nonacademic self-concept vary among groups in the ability to predict academic achievement beyond the variables of IQ, and SES. Academic self-concept was

found to contribute significantly to the prediction of academic achievement for the NRRE students. In addition, it was found that IQ and SES were significant predictors of academic achievement for the ETRE students and that nonacademic self-concept was as good a predictor of academic achievement as any other variable studied for the ETSE students. These results are surprising given that it was hypothesized that the variables of academic and nonacademic self-concept would significantly predict academic achievement for the ETRE students. Additional studies examining the significance of SES have already been suggested as a means of better understanding these findings. However, more perplexing than the lack of significance of self-concept as a predictor of academic achievement for the ETRE students is the insignificant amount of variance that was accounted for by all variables studied for the ETSE students. These findings suggest that for this group of students, there are other variables, beyond those normally associated with academic achievement, that account for successful school performance. Because nonacademic self-concept was found to account for as much of the achievement variance as any other variable studied, additional research which examines a broader scope of nonacademic self-concept may provide additional information about the significance of this variable as a predictor of academic achievement for the ETSE students.

## APPENDICES

## APPENDIX A

## SDQ II

D.O.B. \_\_\_\_\_

This is a chance to look at yourself. IT IS NOT A TEST. There are no right answers and everyone will have different answers. Be sure that your answers show how you feel about yourself. PLEASE DO NOT TALK ABOUT YOUR ANSWERS WITH ANY ONE ELSE. We will keep your answers private and not show them to anyone. The purpose of this study is to see how people describe themselves.

When you are ready to begin, please read each sentence and decide your answer. (You may read quietly to yourself as each sentence is read aloud.) There are six possible answers for each question--"True", "False", and four answers in between. There are six lines next to each sentence, one for each of the answers. The answers are written at the top of the page. Chose your answer to a sentence and put a checkmark on the line that corresponds to your answer. DO NOT say your answer aloud or talk about it with anyone else.

Before you start, there are three examples below. I have already answered two of the three sentences to show you how to do it. In the third one you must choose your own answer and put in your own checkmark.

|       |        |      |                 |
|-------|--------|------|-----------------|
|       | MORE   | MORE |                 |
|       | FALSE  | TRUE |                 |
|       | MOSTLY | THAN | THAN MOSTLY     |
| FALSE | FALSE  | TRUE | FALSE TRUE TRUE |

I like to read comic books \_\_\_\_\_  
 (I put a checkmark in the line under "TRUE". This means that I really like to read comic books. If I did not like to read comic books very much, I would have answered "FALSE" or "MOSTLY FALSE".)

In general, I am neat  
 and tidy \_\_\_\_\_  
 (I answered "MORE FALSE THAN TRUE" because I am definitely not very neat, but I am not really messy either.)

I like to watch T.V. \_\_\_\_\_  
 (For this sentence you have to choose the answer that is best for you. First you must decide if the sentence is "TRUE" or "FALSE" for you, or somewhere in between. If you really like to watch T.V. a lot you would answer "TRUE" by

putting a checkmark on the last line. If you hate watching T.V. you would answer "FALSE" by putting a checkmark on the first line. If you do not like T.V. very much, but you watch it sometimes, you might decide to put a checkmark on the line that says "MOSTLY FALSE" or on the line that says "MORE FALSE THAN TRUE".)

If you want to change an answer you have marked you should cross out the checkmark and put a new checkmark on a line which corresponds to the same question. For all sentences be sure that your answer is on the same line as the sentence you are answering. You should have only one answer for each sentence. Do not leave out any sentences, even if you are not sure which box to check.

1

|                                                                                  | FALSE | MOSTLY<br>FALSE | MORE<br>FALSE<br>THAN<br>TRUE | MORE<br>TRUE<br>THAN<br>FALSE | MOSTLY<br>TRUE | TRUE  |
|----------------------------------------------------------------------------------|-------|-----------------|-------------------------------|-------------------------------|----------------|-------|
| 1. Mathematics is one of my best subjects.....                                   | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 2. I often need help in mathematics.....                                         | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 3. English is one of my best subjects.....                                       | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 4. I have trouble trying to express myself when<br>I try to write something..... | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 5. I enjoy doing work in most school subjects.....                               | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 6. I have trouble with most school subjects.....                                 | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 7. I enjoy spending time with my<br>friends of the same sex.....                 | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 8. I usually look on the good side of things.....                                | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 9. I often feel confused and mixed up.....                                       | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 10. I am a usefull person to have around.....                                    | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 11. I get good marks in Mathematics.....                                         | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 12. I get good marks in English.....                                             | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 13. I'm good at most school subjects.....                                        | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 14. I am a calm person.....                                                      | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 15. I worry about alot of things.....                                            | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 16. BOYS ONLY: I have a lot in common<br>with the boys I know.....               | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 17. GIRLS ONLY: I have a lot in common<br>with the girls I know.....             | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 18. I don't get upset very easily.....                                           | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 19. I get upset easily.....                                                      | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 20. I do badly in tests of mathematics.....                                      | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 21. I get bad marks in most school subjects.....                                 | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 22. I spend a lot of time with members of my own sex..                           | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 23. I can do things as well as most other people.....                            | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 24. I never want to take another mathematics course...                           | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 25. I am hopeless in English classes.....                                        | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 26. I am a happy person.....                                                     | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 27. I am often depressed and down in the dumps.....                              | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 28. I feel that my life is not very useful.....                                  | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 29. I look forward to mathematics classes.....                                   | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 30. I look forward to English classes.....                                       | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 31. I'm not very interested in any school subjects....                           | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 32. In general I enjoy being the way I am.....                                   | _____ | _____           | _____                         | _____                         | _____          | _____ |

|                                                                      | FALSE | MOSTLY FALSE | MORE FALSE THAN TRUE | MORE TRUE THAN FALSE | MOSTLY TRUE | TRUE |
|----------------------------------------------------------------------|-------|--------------|----------------------|----------------------|-------------|------|
| 33.Sometimes I think that I am no good at all.....                   |       |              |                      |                      |             |      |
| 34.I am cheerful and on top of things most of the time.....          |       |              |                      |                      |             |      |
| 35.Nothing I do ever seems to work out right.....                    |       |              |                      |                      |             |      |
| 36.I make friends easily with members of my own sex..                |       |              |                      |                      |             |      |
| 37.I have fewer friends of the same sex than most people.....        |       |              |                      |                      |             |      |
| 38.I have always done well in Mathematics.....                       |       |              |                      |                      |             |      |
| 39.I have trouble understanding anything with mathematics in it..... |       |              |                      |                      |             |      |
| 40.I hate Mathematics.....                                           |       |              |                      |                      |             |      |
| 41.I have good friends who are members of my own sex.                |       |              |                      |                      |             |      |
| 42.I have few friends of the same sex as myself.....                 |       |              |                      |                      |             |      |
| 43.BOYS ONLY: I do not get along very well with boys.                |       |              |                      |                      |             |      |
| 44.GIRLS ONLY: I do not get along very well with girls.....          |       |              |                      |                      |             |      |
| 45.Its important to me to do well in English classes.                |       |              |                      |                      |             |      |
| 46.Its important for me to do well in Mathematics classes.....       |       |              |                      |                      |             |      |
| 47.Its important for me to do well in most school subjects.....      |       |              |                      |                      |             |      |
| 48. Overall, most things I do turn out well.....                     |       |              |                      |                      |             |      |
| 49.Overall, I am a failure.....                                      |       |              |                      |                      |             |      |
| 50.I hate myself.....                                                |       |              |                      |                      |             |      |
| 51.Work in English class is easy for me.....                         |       |              |                      |                      |             |      |
| 52.I am usually relaxed.....                                         |       |              |                      |                      |             |      |
| 53.I am a nervous person.....                                        |       |              |                      |                      |             |      |
| 54.BOYS ONLY: Boys often make fun of me.....                         |       |              |                      |                      |             |      |
| 55.GIRLS ONLY: Girls often make fun of me.....                       |       |              |                      |                      |             |      |
| 56.I have a poor vocabulary.....                                     |       |              |                      |                      |             |      |
| 57.I am not very good at writing.....                                |       |              |                      |                      |             |      |
| 58.I do well in tests in most school subjects.....                   |       |              |                      |                      |             |      |
| 59.I am stupid in most school subjects.....                          |       |              |                      |                      |             |      |
| 60.Its important to me to have a lot of friends of my own sex.....   |       |              |                      |                      |             |      |
| 61.It is difficult to make friends with members of my own sex.....   |       |              |                      |                      |             |      |
| 62.I learn thing quickly in English class.....                       |       |              |                      |                      |             |      |

3

|                                                                   | FALSE | MOSTLY<br>FALSE | MORE<br>FALSE<br>THAN<br>TRUE | MORE<br>TRUE<br>THAN<br>FALSE | MOSTLY<br>TRUE | TRUE  |
|-------------------------------------------------------------------|-------|-----------------|-------------------------------|-------------------------------|----------------|-------|
| 63.I learn things quickly in most school subjects....             | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 64.I hate reading.....                                            | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 65.I do badly on tests that need a lot<br>of reading ability..... | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 66.Most school subjects are just to hard for me.....              | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 67.Most things I do I do well.....                                | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 68.Overall, I have a lot to be proud of.....                      | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 69.I don't have much to be proud of.....                          | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 70.I can't do anything right.....                                 | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 71.Overall I am no good.....                                      | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 72.If I really try I can do almost anything<br>I want to do.....  | _____ | _____           | _____                         | _____                         | _____          | _____ |
| 73.Not many people of my own sex like me.....                     | _____ | _____           | _____                         | _____                         | _____          | _____ |

## APPENDIX B

Dear (Teacher's Name):

As part of the present study examining self concept and academic achievement it is requested that you complete the attached behavioral checklist on \_\_\_\_\_. The checklist takes approximately 15 minutes to complete and the instructions are listed on the top of page one. Please be sure to complete both sides of the checklist and return it to the school guidance office by the end of the school day or as soon as possible. Your assistance is greatly appreciated.

Sincerely,

Tom Giroux

Research Project Director

Below is a list of items that describe pupils. For each item that describes the pupil now or within the past 2 months, please circle the 2 if the item is very true or often true of the pupil. Circle the 1 if the item is somewhat or sometimes true of the pupil. If the item is not true of the pupil, circle the 0.

| 0 = Not True (as far as you know) |   |   | 1 = Somewhat or Sometimes True                                                     |   |   | 2 = Very True or Often True |                                                      |  |
|-----------------------------------|---|---|------------------------------------------------------------------------------------|---|---|-----------------------------|------------------------------------------------------|--|
| 0                                 | 1 | 2 | 1. Acts too young for his/her age                                                  | 0 | 1 | 2                           | 31. Fears he/she might think or do something bad     |  |
| 0                                 | 1 | 2 | 2. Hums or makes other odd noises in class                                         | 0 | 1 | 2                           | 32. Feels he/she has to be perfect                   |  |
| 0                                 | 1 | 2 | 3. Argues a lot                                                                    | 0 | 1 | 2                           | 33. Feels or complains that no one loves him/her     |  |
| 0                                 | 1 | 2 | 4. Fails to finish things he/she starts                                            | 0 | 1 | 2                           | 34. Feels others are out to get him/her              |  |
| 0                                 | 1 | 2 | 5. Behaves like opposite sex                                                       | 0 | 1 | 2                           | 35. Feels worthless or inferior                      |  |
| 0                                 | 1 | 2 | 6. Defiant, talks back to staff                                                    | 0 | 1 | 2                           | 36. Gets hurt a lot, accident-prone                  |  |
| 0                                 | 1 | 2 | 7. Bragging, boasting                                                              | 0 | 1 | 2                           | 37. Gets in many fights                              |  |
| 0                                 | 1 | 2 | 8. Can't concentrate, can't pay attention for long                                 | 0 | 1 | 2                           | 38. Gets teased a lot                                |  |
| 0                                 | 1 | 2 | 9. Can't get his/her mind off certain thoughts; obsessions (describe) _____        | 0 | 1 | 2                           | 39. Hangs around with others who get in trouble      |  |
|                                   |   |   |                                                                                    | 0 | 1 | 2                           | 40. Hears things that aren't there (describe): _____ |  |
| 0                                 | 1 | 2 | 10. Can't sit still, restless, or hyperactive                                      | 0 | 1 | 2                           | 41. Impulsive or acts without thinking               |  |
| 0                                 | 1 | 2 | 11. Clings to adults or too dependent                                              | 0 | 1 | 2                           | 42. Likes to be alone                                |  |
| 0                                 | 1 | 2 | 12. Complains of loneliness                                                        | 0 | 1 | 2                           | 43. Lying or cheating                                |  |
| 0                                 | 1 | 2 | 13. Confused or seems to be in a fog                                               | 0 | 1 | 2                           | 44. Bites fingernails                                |  |
| 0                                 | 1 | 2 | 14. Cries a lot                                                                    | 0 | 1 | 2                           | 45. Nervous, highstrung, or tense                    |  |
| 0                                 | 1 | 2 | 15. Fidgets                                                                        | 0 | 1 | 2                           | 46. Nervous movements or twitching (describe): _____ |  |
| 0                                 | 1 | 2 | 16. Cruelty, bullying, or meanness to others                                       |   |   |                             |                                                      |  |
| 0                                 | 1 | 2 | 17. Day-dreams or gets lost in his/her thoughts                                    | 0 | 1 | 2                           | 47. Overconforms to rules                            |  |
| 0                                 | 1 | 2 | 18. Deliberately harms self or attempts suicide                                    | 0 | 1 | 2                           | 48. Not liked by other pupils                        |  |
| 0                                 | 1 | 2 | 19. Demands a lot of attention                                                     | 0 | 1 | 2                           | 49. Has difficulty learning                          |  |
| 0                                 | 1 | 2 | 20. Destroys his/her own things                                                    | 0 | 1 | 2                           | 50. Too fearful or anxious                           |  |
| 0                                 | 1 | 2 | 21. Destroys property belonging to others                                          | 0 | 1 | 2                           | 51. Feels dizzy                                      |  |
| 0                                 | 1 | 2 | 22. Difficulty following directions                                                | 0 | 1 | 2                           | 52. Feels too guilty                                 |  |
| 0                                 | 1 | 2 | 23. Disobedient at school                                                          | 0 | 1 | 2                           | 53. Talks out of turn                                |  |
| 0                                 | 1 | 2 | 24. Disturbs other pupils                                                          | 0 | 1 | 2                           | 54. Over tired                                       |  |
| 0                                 | 1 | 2 | 25. Doesn't get along with other pupils                                            | 0 | 1 | 2                           | 55. Overweight                                       |  |
| 0                                 | 1 | 2 | 26. Doesn't seem to feel guilty after misbehaving                                  | 0 | 1 | 2                           | 56. Physical problems without known medical cause    |  |
| 0                                 | 1 | 2 | 27. Easily jealous                                                                 | 0 | 1 | 2                           | a. Aches or pains                                    |  |
| 0                                 | 1 | 2 | 28. Eats or drinks things that are not food (describe): _____                      | 0 | 1 | 2                           | b. Headaches                                         |  |
|                                   |   |   |                                                                                    | 0 | 1 | 2                           | c. Nausea, feels sick                                |  |
|                                   |   |   |                                                                                    | 0 | 1 | 2                           | d. Problems with eyes (describe): _____              |  |
|                                   |   |   |                                                                                    |   |   |                             |                                                      |  |
|                                   |   |   |                                                                                    | 0 | 1 | 2                           | e. Rashes or other skin problems                     |  |
|                                   |   |   |                                                                                    | 0 | 1 | 2                           | f. Stomachaches or cramps                            |  |
| 0                                 | 1 | 2 | 29. Fears certain animals, situations or places other than school (describe) _____ | 0 | 1 | 2                           | g. Vomiting, throwing up                             |  |
|                                   |   |   |                                                                                    | 0 | 1 | 2                           | h. Other (describe): _____                           |  |
| 0                                 | 1 | 2 | 30. Fears going to school                                                          |   |   |                             |                                                      |  |

| 0 = Not True |   |   | 1 = Somewhat or Sometimes True |                                                                   |   | 2 = Very True or Often True |   |     |                                                                       |
|--------------|---|---|--------------------------------|-------------------------------------------------------------------|---|-----------------------------|---|-----|-----------------------------------------------------------------------|
| 0            | 1 | 2 | 57                             | Physically attacks people                                         | 0 | 1                           | 2 | 84  | Strange behavior (describe) _____                                     |
| 0            | 1 | 2 | 58                             | Picks nose, skin, or other parts of body (describe): _____        | 0 | 1                           | 2 | 85  | Strange ideas (describe) _____                                        |
| 0            | 1 | 2 | 59                             | Sleeps in class                                                   | 0 | 1                           | 2 | 86  | Stubborn, sullen, or irritable                                        |
| 0            | 1 | 2 | 60                             | Apathetic or unmotivated                                          | 0 | 1                           | 2 | 87  | Sudden changes in mood or feelings                                    |
| 0            | 1 | 2 | 61                             | Poor school work                                                  | 0 | 1                           | 2 | 88  | Sulks a lot                                                           |
| 0            | 1 | 2 | 62                             | Poorly coordinated or clumsy                                      | 0 | 1                           | 2 | 89  | Suspicious                                                            |
| 0            | 1 | 2 | 63                             | Prefers being with older children                                 | 0 | 1                           | 2 | 90  | Swearing or obscene language                                          |
| 0            | 1 | 2 | 64                             | Prefers being with younger children                               | 0 | 1                           | 2 | 91  | Talks about killing self                                              |
| 0            | 1 | 2 | 65                             | Refuses to talk                                                   | 0 | 1                           | 2 | 92  | Underachieving, not working up to potential                           |
| 0            | 1 | 2 | 66                             | Repeats certain acts over and over; compulsions (describe): _____ | 0 | 1                           | 2 | 93  | Talks too much                                                        |
| 0            | 1 | 2 | 67                             | Disrupts class discipline                                         | 0 | 1                           | 2 | 94  | Teases a lot                                                          |
| 0            | 1 | 2 | 68                             | Screams a lot                                                     | 0 | 1                           | 2 | 95  | Temper tantrums or hot temper                                         |
| 0            | 1 | 2 | 69                             | Secretive, keeps things to self                                   | 0 | 1                           | 2 | 96  | Seems preoccupied with sex                                            |
| 0            | 1 | 2 | 70                             | Sees things that aren't there (describe): _____                   | 0 | 1                           | 2 | 97  | Threatens people                                                      |
| 0            | 1 | 2 | 71                             | Self-conscious or easily embarrassed                              | 0 | 1                           | 2 | 98  | Tardy to school or class                                              |
| 0            | 1 | 2 | 72                             | Messy work                                                        | 0 | 1                           | 2 | 99  | Too concerned with neatness or cleanliness                            |
| 0            | 1 | 2 | 73                             | Behaves irresponsibly (describe) _____                            | 0 | 1                           | 2 | 100 | Fails to carry out assigned tasks                                     |
| 0            | 1 | 2 | 74                             | Showing off or clowning                                           | 0 | 1                           | 2 | 101 | Truancy or unexplained absence                                        |
| 0            | 1 | 2 | 75                             | Shy or timid                                                      | 0 | 1                           | 2 | 102 | Underactive, slow moving, or lacks energy                             |
| 0            | 1 | 2 | 76                             | Explosive and unpredictable behavior                              | 0 | 1                           | 2 | 103 | Unhappy, sad, or depressed                                            |
| 0            | 1 | 2 | 77                             | Demands must be met immediately, easily frustrated                | 0 | 1                           | 2 | 104 | Unusually loud                                                        |
| 0            | 1 | 2 | 78                             | Inattentive, easily distracted                                    | 0 | 1                           | 2 | 105 | Uses alcohol or drugs (describe): _____                               |
| 0            | 1 | 2 | 79                             | Speech problem (describe): _____                                  | 0 | 1                           | 2 | 106 | Overly anxious to please                                              |
| 0            | 1 | 2 | 80                             | Stares blankly                                                    | 0 | 1                           | 2 | 107 | Dislikes school                                                       |
| 0            | 1 | 2 | 81                             | Feels hurt when criticized                                        | 0 | 1                           | 2 | 108 | Is afraid of making mistakes                                          |
| 0            | 1 | 2 | 82                             | Steals                                                            | 0 | 1                           | 2 | 109 | Whining                                                               |
| 0            | 1 | 2 | 83                             | Stores up things he/she doesn't need (describe) _____             | 0 | 1                           | 2 | 110 | Unclean personal appearance                                           |
|              |   |   |                                |                                                                   | 0 | 1                           | 2 | 111 | Withdrawn, doesn't get involved with others                           |
|              |   |   |                                |                                                                   | 0 | 1                           | 2 | 112 | Worrying                                                              |
|              |   |   |                                |                                                                   |   |                             |   | 113 | Please write in any problems the pupil has that were not listed above |
|              |   |   |                                |                                                                   | 0 | 1                           | 2 |     | _____                                                                 |
|              |   |   |                                |                                                                   | 0 | 1                           | 2 |     | _____                                                                 |
|              |   |   |                                |                                                                   | 0 | 1                           | 2 |     | _____                                                                 |

## APPENDIX C

Dear Teacher:

A study is currently being conducted in the Monadnock Region which examines the extent to which different variables influence school performance. Specifically, the study focuses on how self-concept covaries with academic achievement. The results of the study will provide information as to the relevance of self concept as a predictor of academic achievement. This information can then be used to develop educational curricula which maximizes the student's academic achievement.

As part of the present study, each student selected to participate will be asked to complete a self report self concept scale. In addition, if not already having done so, each student will be asked to complete a standardized measure of academic achievement and an abbreviated version of the Wechsler Intelligence Scale for Children-Revised. Each instrument will take approximately 15 minutes to administer and as such the student will need to be excused from class during this time. However, each testing session will be spread out over a two week period and will vary according to class period so as to minimize the amount of class time missed for each subject.

A second part of this study requires the teacher who best knows a selected student to complete a behavioral rating scale which is comprised of 115 items. This scale generally takes 15 minutes to complete. The results of this scale can be used in understanding how a student copes with their environment including school.

A third part of this study will ask the student's parents to complete a permission slip for their child to participate in the study and to indicate how many years of school they completed and their current occupation.

As mentioned earlier, the information collected during this study will be used to gain a better understanding of what variables effect a student's ability to learn in school and may ultimately provide you with a teaching strategy designed to further maximize your student's academic potential. However, before this study can begin, it is necessary to have both your cooperation, and assistance. If a student in your class is selected to participate in the study, you will be contacted and asked to encourage the student to participate in the study. If the student agrees to participate in the study, he/she will be asked to take home and return a parent permission slip.

Following return of the permission slip, the teacher who best knows the student will be asked to complete the above mentioned behavioral rating scale. As part of the study, you may also be asked to help identify potential subjects. I will discuss the specifics of the selection procedures through a memo at a later date.

If you have any questions concerning the study or how the information collected can be used to benefit your students at the present time, please don't hesitate to contact me through the Regional Office, 352-6955, or at my home, (603)352-4381. The guidance staff in the guidance office may also be able to answer any questions that you may have. Your assistance in this endeavor is greatly appreciated.

Sincerely,

Tom Giroux  
Research Project Director

Dear Teacher:

As part of the present study being conducted in the Monadnock Region it is requested that you provide the names of students who in your opinion are currently experiencing difficulties in social/emotional functioning. Characteristics which define this group and which you may have observed in the classroom are as follows:

|                     |                    |                  |
|---------------------|--------------------|------------------|
| poor peer relations | shy, timid         | sad              |
| easily frustrated   | disruptive         | defiant          |
| needs to be perfect | nervous            | suspicious       |
| withdrawn           | strange ideas      | teased by others |
| cries a lot         | bad temper         | steals           |
| alcohol, drug use   | lies, cheats       | cruel to others  |
| moody, sulks        | poor concentration | fights others    |
| odd behavior        | belligerent        | unliked          |

Students you select may display one or several of the above behaviors or others behaviors which you feel are problematic but not included above. Regardless of the number of problem behaviors, students you select should display problem behaviors over a variety of settings and over an extended period of time. When making your selection please exclude students who you know are receiving special education services.

All information you provide and the identities of the students you select will remain confidential.

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

Feel free to add additional names to this list if you have more than six students who fit the above presented criteria. Please complete this list and return to the school guidance office before \_\_\_\_\_.

Thank you very much for your assistance.

Sincerely,

Tom Giroux  
Research Project Director

Dear Teacher:

(Student's Name) has been selected to participate in the present study examining self-concept and academic achievement. Please indicate how well you feel you know this student on a 5 point scale with 5=very well to 0=not at all. Once you have completed your rating, please return this form to the student so he/she may have his/her other teachers complete this form. If you are the last teacher listed, please remind the student to return this form to the guidance office before leaving school.

| <u>TEACHER</u> | <u>RATING</u> |
|----------------|---------------|
| 1. _____       | 1. _____      |
| 2. _____       | 2. _____      |
| 3. _____       | 3. _____      |
| 4. _____       | 4. _____      |
| 5. _____       | 5. _____      |
| 6. _____       | 6. _____      |
| 7. _____       | 7. _____      |

Thank you very much for your assistance.

Sincerely,

Tom Giroux  
Research Project Director

## APPENDIX D

Dear Student:

A study is currently being conducted in the Monadnock Region which examines how different variables influence school performance. You and other students have been selected to participate in this study.

As part of the study, you will be asked to complete a series of exercises which measure your academic achievement, your academic potential, and how you feel about school and yourself. Each exercise will take approximately 15 minutes and will not affect the grades you obtain in school.

A second part of the study will include asking your teacher to complete a checklist of characteristics which may or may not be descriptive of you.

A third part of the study will include asking your parent(s) what type of job they currently hold and the number of years of school they completed.

The information obtained in this study will greatly aid in our understanding of how adolescents learn.

Several conditions, however, need to be considered before this study can begin. Initially, participation in the study requires your support and cooperation. It will be expected that you will attempt each exercise to the best of your ability and indicate how you feel about yourself as openly and honestly as possible. It is also important to keep in mind that all information collected during this study will remain confidential unless you authorize that others be allowed to see it. Secondly, your parent's permission is required before you can participate in the study. Information regarding the study and a permission slip will be sent home with you for your parents. The permission slip should be returned the following day or as soon as possible. The third and final condition requires that you not share information about any of the exercises with other students until the end of the study. This is to ensure the accuracy of the study.

If you are interested in participating in the study and feel that you can abide by the conditions listed above, please fill out the information on the next page and return it to your teacher or school counselor. If you have any questions about the study, please see your school counselor. You may keep this page for your own information.

Sincerely,

Tom Giroux  
Research Project Director

Please complete the below information and return it to your teacher or school counselor.

|       |           |       |       |
|-------|-----------|-------|-------|
| _____ | _____     | _____ | _____ |
| Name  | Birthdate | Grade | Sex   |

Teacher(s) Name(s):

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

I agree to participate in the study and abide by the conditions explained to me.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## APPENDIX E

Dear Parent:

A study is currently being conducted in the Monadnock Region which examines the extent to which different variables influence school performance. Your son/daughter has been selected to participate in this study.

As part of the study, your son/daughter will be asked to complete a series of exercises which measure how he/she feels about school, his/her academic ability, and his/her academic performance relative to others of his/her age. Completion of these exercises requires approximately three 15-20 minute sessions spread over a two week period and will not interfere with you child's educational program.

A second part of the study will include asking your son/daughter's teacher to complete a checklist of characteristics, some of which may be applicable to your child while others are not characteristic of your child.

A third part of the study asks you to provide us with information concerning the number of years of education you and/or your spouse completed in school and your and/or your spouse's current occupation. All information obtained from you and your son/daughter will remain strictly confidential.

The information obtained in this study will greatly aid in our understanding of how children learn and will help us improve the way we educate your child. In addition, I will be glad to go over with you any of the exercises your son/daughter has taken following completion of the study. If you have any questions concerning this study or would like addition information, please contact me at the Monadnock Regional School Office, 352-6955, or my home, (603) 352-4381.

I have taken the liberty of enclosing a permission slip and a return envelope should you decide to grant permission for your son/daughter to take part in the study. If you decide not to grant permission, please return the enclosed permission slip indicating that you do not wish to grant permission at this time. Thank you very much for your cooperation.

Sincerely,

Tom Giroux  
Research Project Director

Permission Form

I hereby give permission for my son/daughter to participate in the present study. I understand that I retain the right to discontinue permission at any time and have the right to have my son/daughter removed from participation in the study. I also understand that by granting permission, I have the right to have any and/or all tests results explained to me should I so desire. I also understand that any or all test results will be kept strictly confidential and will be destroyed upon completion of the study.

\_\_\_\_\_  
(signature)

\_\_\_\_\_ I do not wish to grant permission at this time.  
(Check if you do not wish to grant permission)

Please complete the following information if you have granted permission:

|                                               | <u>Mother</u> | <u>Father</u> |
|-----------------------------------------------|---------------|---------------|
| highest<br>grade<br>completed<br>in<br>school | _____         | _____         |
| current<br>occupation<br>(job title)          | _____         | _____         |

Child currently lives with: mother\_\_\_\_\_

father\_\_\_\_\_

both parents\_\_\_\_\_

other\_\_\_\_\_

describe:\_\_\_\_\_

\_\_\_\_\_

## REFERENCES

- Achenbach, T.M. The classification of children's psychiatric symptoms: A factor-analytic study. Psychological Monographs, 1966, 80 (Whole N 615).
- Achenbach, T.M., and Edelbrock, C. Manual for the Teachers' Report Form and Teacher Version of the Child Behavior Profile. Burlington, VT: University of Vermont Department of Psychiatry, 1986.
- Achenbach, T.M., and Edelbrock, C. Manual for the Child Behavior Checklist and Revised Child Behavior Profile. Burlington, VT: Queen City Printers Inc., 1983.
- Achenbach, T.M., and Lewis, M. A proposed model for clinical research and its application to encopresis and enuresis. Journal of the American Academy of Child Psychiatry, 1971, 10, 535-554.
- Allport, G.W. The ego in contemporary psychology. Psychology Review, 1943, 50, 451-478.
- Balow, B, Annderson, J., Reynolds, M. and Rubin, R. Educational and behavioral sequelae of prenatal and perinatal conditions. (USOE, BEH, Project No. 6-1176, Interim Report No. 3). Department of Special Education, University of Minnesota, September, 1969.
- Battle, J. Relationship between self esteem and depression among high school students. Perceptual and Motor Skills, 1980, 51, 157-158.
- Battle, J. Self esteem of students in regular and special classes. Psychological Reports, 1979, 44, 212-214.
- Bean, J.A. Comparison of self concepts of emotionally impaired and non-emotionally impaired boys. Dissertation Abstracts International, 1983, 43, 3263-A.
- Beck, M.A. Special education/regular education: A comparison of self concept. Education, 1982, 102, 277-279.
- Bledsoe, J. Self concept of children and their intelligence, achievement, interests and anxiety. Childhood Education, 1967, 43, 436-438.

- Bloom, R.B., Shea, R.J., and Eun, B. The Piers-Harris self concept scale: Norms for behaviorally disordered children. Psychology in the Schools, 1979, 16, 483-487.
- Boersma, F.J., Chapman, J.W., and Battle, J. Academic self concept change in special education students: Some suggestions for interpreting self concept scores. Journal of Special Education, 1979, 13, 433-442.
- Bourjaily, A.K. The relationship among self concept, and occupational aspirations of high school students. Dissertation Abstracts International, September 1984, 45, 801-A.
- Caplin, M.D. The relationship between self concept and academic achievement. Journal of Experimental Education, 1979, 16, 201-226.
- Calsyn, R.J., and Kenny, D.A. Self concept of ability and perceived evaluation of others: Cause or effect of academic achievement. Journal of Educational Psychology, 1977, 69, 136-145.
- Chapman, J.W., and Boersma, F.J. Academic self concept in elementary learning disabled children: A study with Student's Perception of Ability Scale. Psychology in the Schools, 1979, 16, 201-226.
- Clarizio, H.F., McCoy, G.F. Behavior Disorders in Children, 2nd Edition. New York: Harper and Row, 1976.
- Cochran, W.G. Some consequences when the assumptions for the analysis of variance are not satisfied. Biometrika, 1947, 3, 22-38.
- Coleman, J.M. Self Concept and the mildly handicapped: The role of social comparisons. The Journal of Special Education, 1983, 17, 37-45.
- Coopersmith, S. A method for determining types of self esteem. Journal of Abnormal and Social Psychology, 1959, 59, 87-94.
- Daniels-Kingsbury, R. Self esteem, self acceptance, and responsibility for achievement among alternative and regular secondary students. Dissertation Abstracts International, 1983, 44, 386-A.
- Dunn, L.M. Special education for the mildly retarded: Is much of it justifiable? Exceptional Children, 1968, 34, 5-22.

- Edelbrock, C., and Achenbach, T.M. The Teacher Version of the Child Behavior Checklist: I. Boys aged 6-11. Journal of Consulting and Clinical Psychology, 1984, 52, 207-217.
- Festinger, L. A theory of social comparison processes. Human Relations, 1954, 7, 117-140.
- Flores de Apocada, R., and Lowen, E.L. A comparative study of the self esteem, sociometric status, and insight of referred and non-referred school children. Psychology in the Schools, 1982, 19, 395-401.
- Gadzella, B.M., and Williamson, J.D. Study skills, self concept, and academic achievement. Psychological Reports, 1984, 54, 923-929.
- Godard, R.H. and Linquist, E.F. An empirical study of the effects of heterogeneous within-group variance upon certain F-tests of significance in analysis of variance. Psychometrika, 1940, 5, 403-414.
- Gose, A., Wooden, S., and Muller, D. The relative potential of self concept and intelligence as predictors of school achievement. Journal of Psychology, 1980, 104, 279-287.
- Greene, S., Prieve, J., and Morrison, R. The 1970 census of population occupational classification system. The Statistical Reporter, Bureau of Budget, December, 1969, No. 90-6, pp. 77-84.
- Hamachek, D.E. Encounters With the Self, 3rd ed. New York: Holt, Rinehart and Winston, 1987.
- Hansford, B.C., and Hattie, J.A. The relationship between self and academic/performance measures. Review of Educational Research, 1982, 52, 123-142.
- Hettinger, C. The impact of reading deficiency on the global self concept of adolescents. Journal of Early Adolescents, 1982, 2, 293-300.
- Hollingshead, A.B. Four Factor Index of Social Status. Unpublished manuscript. Department of Sociology, Yale University, New Haven, CT, 1975.
- Hollingshead, A.B., and Redlich, F.C. Social Class and Mental Illness: A Community Study. New York: John Wiley and Sons, Inc., 1958.
- Jastak, J., and Wilkinson, P. Wide Range Achievement Test-Revised (1984, Rev. ed.). Wilmington, DE: Jastak Associates, 1984.

- Jones, R.I. Labels and stigma in special education. Exceptional Children, 1972, 38, 553-564.
- Larned, D.T., and Muller, D. Development of self concept in grades one through nine. Journal of Psychology, 1979, 102, 143-155.
- Madden, N.A., Slavin, R.E. Count me in: Academic achievement and social outcomes of mainstreaming students with mild handicaps. Center for Social Organization of Schools Report, Johns Hopkins University, 1982, October, Report No. 329, 77.
- Marascuilo, L.A. Large sample multiple comparisons. Psychological Bulletin, 1966, 65, 280-290.
- Marsh, H.W., Barnes, J., Cairnes, L., and Tidman, M. The Self Description Questionnaire (SDQ): Age and sex effects in the structure and level of self concept for preadolescent children. Journal of Educational Psychology, 1984, 76, 940-956.
- Marsh, H.W., Parker, J., and Barnes, J. Multidimensional adolescent self concept: their relationship to age, sex, and academic measures. American Educational Research Journal, 1985, 22, 422-444.
- Marsh, H.W., Smith, I.D., and Barnes, J. Multidimensional self concept: Relationship with inferred self concepts and academic achievement. Australian Journal of Psychology, 1984, 36, 367-386.
- Marsh, H.W., Smith, I.D., Barnes, J., and Butler, S. Self concept: Reliability, stability, dimensionality, validity, and the measurement of change. Journal of Educational Psychology, 1983, 75, 772-790.
- MacMillan, L., Jones, R., and Aloin, G. The mentally retarded label: theoretical analysis and review of research. American Journal of Mental Deficiency, 1974, 79, 241-261.
- Meyerowitz, J.H. Peer groups and special classes. Mental Retardation, 1967, 5, 23-26.
- Mintz, R., and Muller, D. Academic achievement as a function of specific and global measures of self concept. Journal of Psychology, 1977, 97, 53-57.

- Morse, W.C., Cutler, R.L., and Fink, A.H. Public school classes for the emotionally handicapped: A research analysis. Washington, D.C.: Council for Exceptional Children, 1964.
- Muller, D., Chambliss, J., and Wood, M. Relationships between area specific measures of self concept, self esteem and academic achievement for junior high school students. Perceptual and Motor Skills, 1977, 45, 1117-1118.
- Myrianthopoulos, N.C., and French, K.S. An application of the U.S. Bureau of the Census socioeconomic index to a large diversified patient population. Social Science and Medicine, 1968, 2, 238-299.
- Piers, E.V., and Harris, D.B. Age and other correlates of self esteem in children. Journal of Educational Psychology, 1964, 55, 91-95.
- Purkey, W. Self Concept and School Achievement. Englewood Cliffs, N.J.: Prentice Hall, 1970.
- Reynolds, W.M. Self esteem and classroom behavior in elementary school children. Psychology in the Schools, 1980, 17, 273-277.
- Rogers, C.R. Client-Centered Therapy: Its Current Practice, Implications and Theory. Boston: Houghton Mifflin, 1951.
- Rubin, R. Stability of self esteem ratings and their relation to academic achievement: A longitudinal study. Psychology in the Schools, 1978, 15, 430-435.
- Rubin, R.A., Dorle, J., and Sandridge, S. Self esteem and school performance. Psychology in the Schools, 1977, 14, 503-507.
- Sattler, J.M. Assessment of Children's Intelligence and Special Abilities. Boston: Allyn and Bacon, Inc., 1982.
- Scheirer, M.A., and Kraut, R.E. Increased educational achievement via self concept change. Review of Educational Research, 1979, 49, 131-150.
- Shuerr, K.T., Towne, R.C., and Joiner, L.M. Trends in self concept of ability over two years of special class placement. Journal of Special Education, 1972, 6, 161-165.

- Shavelson, R.J., and Bolus, R. Self concept: The interplay of theory and methods. Journal of Educational Psychology, 1982, 74, 3-17.
- Shavelson, R.J., Hubner, J.J., and Stanton, G.C. Validation of construct interpretations. Review of Educational Research, 1976, 46, 407-441.
- Shavelson, R.J., and Stuart, K.R. In M.D. Lynch, K. Gergen, and A.A. Norem-Heiberson (Eds.), Self Concept. Boston: Balinger Press, 1980.
- Strain, S. Relationship between self concept and directly observed behaviors in kindergarten children. Psychology in the Schools, 1983, 20, 498-505.
- Strang, L., Smith, M.D., and Rogers, C.M. Social comparison, multiple reference groups and the self concepts of academically handicapped children before and after mainstreaming. Journal of Educational Psychology, 1978, 70, 487-497.
- Svobody, L.A. Biographical, self concept and educational factors among chemically dependent adolescents. Adolescence, 1982, 17, 847-853.
- Tesniy, E.P., and Lefkowitz, M.M. Childhood depression: A 6 month follow up study. Journal of Consulting and Clinical Psychology, 1982, 50, 778-780.
- Vacc, N.A. A study of emotionally disturbed children in regular and special classes. Exceptional Children, 1968, 35, 197-204.
- Wechsler, D. Wechsler Intelligence Scale for Children (1974 Rev. Ed.). New York: Psychological Corporation, 1974.
- West, C.K., and Fish, J.A. Relationships Between Self Concept and School Achievement: A Survey of Empirical Investigations. Final Report. Urbana-Champaign: University of Illinois, 1973 (ERIC No. ED-092-239).
- Wood, F.H., and Johnson, A. Coopersmith Self Esteem Inventory scores of boys with severe behavior problems. Exceptional Children, 1972, 38, 739-740.
- Wylie, R.C., Miller, P.J., Cowless, S.S., and Wilson, A.W. The Self Concept . Vol.2, Theory and Research on Selected Topics. Lincoln: University of Nebraska Press, 1979.

Yauman, B.E. Special education placement and the self  
concept of elementary school-aged children.  
Learning Disabilities Quartely, 1980, 3, 30-35.

MICHIGAN STATE UNIV. LIBRARIES



31293107737003