

Variations in Test Anxiety and Locus of Control Orientation in Achieving and Underachieving Gifted and Nongifted Middle School Students

Michele Marie Moore

University of Connecticut, 2006

Abstract

This study investigated the prevalence of test anxiety and locus of control orientation in three groups of middle school students: Achieving Gifted (AG), Underachieving Gifted (UAG), and Nongifted (NG) students. Two instruments were used in the study: the *Test Anxiety Inventory (TAI)* and the *Children's Nowicki-Strickland Internal-External Control Scale (CNSIE)*. Participants completed the *TAI* by indicating their level of agreement with 20 statements that measure test anxiety symptoms before, during, and after a testing session. Responses ranged between *Almost Never* (1) and *Almost Always* (4).

Participants completed the *CNSIE* by selecting *Yes* or *No* to indicate whether or not each of 25 statements described their feelings about a variety of situations. Although none of the groups received extreme scores on either instrument, a 3 x 2 MANOVA indicated significant differences between the groups by gender and achievement classification (AG, UAG, and NG). Underachieving gifted students were more externally oriented than achieving gifted students. There was also a significant difference in the locus of control orientation between achieving gifted and nongifted students; nongifted students were more externally controlled than achieving gifted students. In regards to underachievers, males were more externally controlled than females. Regarding test anxiety, females consistently reported higher levels of anxiety than males. Findings suggest the need for school interventions to reduce test anxiety among females and to assist students in

developing the thought processes that give them a sense of control over the events in their life, in particular, their academic performance.

Variations in Test Anxiety and Locus of Control Orientation in Achieving and
Underachieving Gifted and Nongifted Middle School Students

Michele Marie Moore

B.A., Quinnipiac University, 1998

M.A., University of Connecticut, 2002

A Dissertation

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

at the

University of Connecticut

2006

APPROVAL PAGE

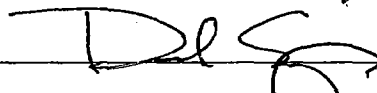
Doctor of Philosophy Dissertation

Variations in Test Anxiety and Locus of Control Orientation in Achieving and
Underachieving Gifted and Nongifted Middle School Students

Presented by

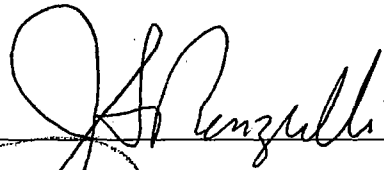
Michele Marie Moore, B.A., M.A.

Major Advisor



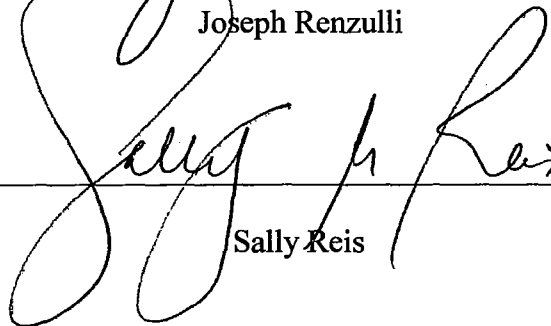
Del Siegle

Associate Advisor



Joseph Renzulli

Associate Advisor



Sally Reis

University of Connecticut

2006

ACKNOWLEDGEMENTS

I want to thank my major advisor, Dr. Del Siegle, for his continuous support and encouragement throughout my graduate career. He made me realize my full potential and provided me with numerous opportunities to use my talents. He helped me to recognize the strengths that I often overlooked. I also want to thank the rest of my advisory committee, Dr. Joseph Renzulli, Dr. Sally Reis, Dr. Jean Gubbins, and Dr. Catherine Little, for their support and guidance. I consider myself truly blessed for having had the opportunity to learn from these great scholars.

This dissertation is dedicated to my parents who have stood by my side for this entire journey. I could not have completed this process without their support, patience, and encouragement. I thank them for providing me with the best educational opportunities as I grew up so I could achieve this goal.

Copyright by
Michele Marie Moore

2006

TABLE OF CONTENTS

| | Page |
|--|------|
| ACKNOWLEDGEMENTS | iii |
| LIST OF TABLES | vii |
| LIST OF FIGURES | viii |
| CHAPTER | |
| I INTRODUCTION AND OVERVIEW OF THE RESEARCH..... | 1 |
| Introduction..... | 1 |
| Statement of the Problem..... | 3 |
| Research Questions..... | 4 |
| Definition of Terms..... | 5 |
| Summary | 7 |
| II REVIEW OF THE LITERATURE | 8 |
| Contributing Factors to Academic Achievement..... | 8 |
| Contributing Factors and Symptoms of Underachievement..... | 12 |
| Underachievement in Gifted Students | 13 |
| Gender and Academic Achievement | 16 |
| Locus of Control | 19 |
| Test Anxiety..... | 22 |
| The Relationship Between Test Anxiety and Locus of Control | 26 |
| Locus of Control and Academic Achievement..... | 27 |
| Effects of Gender on Locus of Control..... | 29 |
| Effects of Gender on Test Anxiety | 30 |
| Giftedness and Test Anxiety..... | 31 |
| Summary | 31 |
| III METHODS AND PROCEDURES | 32 |
| Participant Recruitment | 32 |
| Participants..... | 32 |
| Incentives | 35 |
| Instrumentation | 35 |
| Data Collection and Analysis..... | 38 |
| Summary | 39 |
| IV RESULTS | 40 |

| | |
|---------------------------------------|----|
| Research Question 1 | 40 |
| Research Question 2 | 42 |
| Research Questions 3-8..... | 43 |
| Research Questions 9-10..... | 47 |
| Summary | 48 |
| | |
| V DISCUSSION AND IMPLICATIONS | 49 |
| | |
| Overall Summary of the Results | 49 |
| Research Question 1 & 2 | 50 |
| Research Question 3 | 51 |
| Research Question 4 | 52 |
| Research Question 5 | 53 |
| Research Question 6 | 53 |
| Research Question 7 | 54 |
| Research Question 8 | 54 |
| Research Questions 9 & 10..... | 55 |
| Limitations | 56 |
| Implications and Future Research..... | 58 |
| Conclusions | 68 |
| | |
| REFERENCES | 61 |

LIST OF TABLES

| | Page |
|-----------|--|
| Table 2.1 | Descriptive Adjectives for High and Low Scorers on Psychoticism, Extraversion, and Neuroticism.....10 |
| Table 2.2 | Characteristics of Underachievers and Selective Consumers.....15 |
| Table 3.1 | Ethnicity of Sample of Fifth, Sixth, Seventh, and Eight Graders.....33 |
| Table 3.2 | Ethnicity of Underachieving Gifted Sample.....33 |
| Table 3.3 | Alpha Reliability Coefficients for Items Included in <i>CNSIE</i> for Current Study.....36 |
| Table 4.1 | Participants' Mean Test Anxiety Scores.....46 |
| Table 4.2 | Participants' Mean Locus of Control Scores.....46 |

LIST OF FIGURES

| | Page |
|--|------|
| Figure 4.1 Overall Relationship Between Test Anxiety and Locus of Control Orientation..... | 40 |
| Figure 4.2 Relationship Between Test Anxiety and Locus of Control for Achieving Gifted Students..... | 41 |
| Figure 4.3 Relationship Between Test Anxiety and Locus of Control for Nongifted Students..... | 41 |
| Figure 4.4 Relationship Between Test Anxiety and Locus of Control for Males..... | 42 |
| Figure 4.5 Relationship Between Test Anxiety and Locus of Control for Females..... | 43 |
| Figure 4.6 Achievement Ability Level x Gender on Test Anxiety..... | 44 |
| Figure 4.7 Ability Performance Level x Gender on Locus of Control..... | 45 |

CHAPTER ONE

INTRODUCTION AND OVERVIEW OF THE RESEARCH

Introduction

One of the most important factors to take into consideration when working towards improving academic achievement is the sense of control that students believe they have over their academic performance (Stipek & Weisz, 1981). Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, et al. (1966) and Lynch, Hurford, and Cole (2002) reported that locus of control was a significantly better predictor of grades than standardized achievement test scores. According to Rotter (1966), individuals with external locus of control believe that “reinforcements are not under their personal control but rather are under the control of powerful others, luck, chance, fate, etc.,” while individuals with internal locus of control believe that “reinforcements are contingent upon their own behavior, capacities, or attributes” (p. 618).

There has been ample research on the relationship between locus of control and school performance. Nunn, Montgomery, and Nunn (1986) reported a negative relationship between external locus of control and scores on the *Iowa Tests of Basic Skills* in middle school students. Tesiny, Lefkowitz, and Gordon (1980) found an external locus of control orientation to be negatively correlated with reading achievement and teacher ratings of study habits. Studies have shown repeatedly that students with higher degrees of internal locus of control demonstrate higher levels of achievement (Auer, 1992; Tanksley, 1993). In fact, having high levels of internal locus of control has been shown to be an even more significant variable than intelligence or socioeconomic status (Haborg, 1996).

Test anxiety is another construct that must be taken into account when discussing academic performance. According to Spielberger, Gonzalez, Taylor, and Anton (1978), test anxiety is a “situation-specific personality trait” that occurs before, during and after a testing session. Research reports that test anxiety may occur when an afflicted individual views any type of evaluative situation as being a personal threat.

Researchers have found that test anxiety negatively affects academic performance. Hembree (1988) found that test anxiety routinely caused poor performance in a meta-analysis of 562 studies that looked at the relationship between test anxiety and academic achievement. Researchers also discovered that the impact of test anxiety on students’ performance is frequently affected by the evaluation practices of the classroom teacher (Maehr & Midgely, 1991). Spielberger (1972) reported that students who are high in test anxiety also tend to have poor study habits and test taking skills.

Test anxiety includes two components: worry and emotionality. Liebert and Morris (1967) operationally define *worry* as “cognitive concerns about the consequences of failure” (p. 976) and *emotionality* as the “physiological reactions of the autonomic nervous system to stress” (p. 976). Birenbaum and Nasser (1994) claimed that test anxiety is a widespread problem in school, and Shaked (1996) estimated that 30% of all students suffer from some level of test anxiety.

Previous research has shown that males typically score lower on measurements of test anxiety than females (Berger, 2004; Chang, 1997). Nowicki and Strickland (1973) found a negative relationship between the locus of control and achievement of children in grades 3 – 12. As achievement scores went up, external scores went down, and this was

mostly found in males. Shute, Howard, and Steyaert (1984) found a relationship between cognitive abilities and locus of control in males, but not in females.

Unfortunately there is no universally accepted definition of underachievement. Many times gifted underachievers are grouped with the other “troubled” children in the school or teachers and counselors will label gifted underachievers with a physical, mental, or emotional handicap (Delisle, 1994). In schools, the emphasis is on knowledge and behavior. If students behave poorly by acting out, by excessive absences, or by choosing not to do the work, they are seen as rejecting knowledge and defying authority (Plucker & McIntire, 1996). This can lead to self-esteem problems because their talents are often ignored (Seeley, 1993).

Underachieving gifted students are a heterogeneous group; each student has his or her own needs and concerns. Home, school, and/or peer influences can cause gifted students to produce work that is below their ability level (Reis & McCoach, 2000). Renzulli, Baum, Hébert, and McCluskey (1999) reported that once the causes for a particular student’s low academic performance is understood, the use of enrichment and other curricular modifications can improve the learning situations for the student.

Statement of the Problem

With the No Child Left Behind Act (2001), high stakes testing is a major concern to both students and teachers. Many classroom hours are spent “teaching to the test.” Do students feel that success on these tests is out of their control? Does this lack of control lead to test anxiety in students? Very little research was found on the relationship between locus of control and test anxiety in middle school students. Two studies with adult participants showed that stress coping mechanisms may vary according to an

individual's locus of control orientation. Internal locus of control individuals tend to approach stressful situations with problem-solving strategies, while individuals with external locus of control respond to stress emotionally or attempt to avoid the situation (Parkes, 1984; Wiebe, 1991).

A need exists to investigate the mental state of all students and, in particular, achieving and underachieving gifted students. There is a high incidence of gifted students whose academic performance is below their expected achievement level (Kress, 1998; Whitmore, 1986). Although many researchers are interested in understanding why some gifted students underachieve, there is no clear explanation of why this occurs. This research serves as a necessary foundation in identifying and addressing the needs of students affected by an external locus of control and/or test anxiety.

The present study investigated locus of control orientation in middle school students to determine whether or not their internal versus external locus of control orientation was related to the occurrence of test anxiety. Variation in responses due to gender and academic level (achieving versus underachieving gifted versus nongifted) were also investigated. Separate analyses were conducted to look for differences in test anxiety levels and locus of control orientation due to type of school (public vs. private).

Research Questions

The following research questions guided this study:

1. Is there a relationship between test anxiety and locus of control orientation among middle school students of varying ability/performance levels?
2. Is there a relationship between test anxiety and locus of control orientation for males and females?

3. Do test anxiety levels significantly differ among achieving gifted, underachieving gifted, and nongifted middle school students?
4. Is there a difference in the locus of control orientation among achieving gifted, underachieving gifted, and nongifted middle school students?
5. Do test anxiety levels significantly differ between males and females?
6. Is there a difference in the locus of control orientation between males and females?
7. Is there an interaction between gender and ability/performance levels on test anxiety?
8. Is there an interaction between gender and ability/performance levels on locus of control orientation?
9. Is there a difference in the test anxiety levels of achieving gifted students attending public schools versus achieving gifted students attending private schools for the gifted?
10. Is there a difference in the locus of control orientation of achieving gifted students attending public schools versus achieving gifted students attending private schools for the gifted?

Definition of Terms

Gifted Achievers

Students had to meet one of the following characteristics of giftedness:

- Individual IQ test score (either *Stanford Binet LM* or *WISC-III*) of at least 120, given no earlier than 6 years of age **or**

- Composite standardized achievement test scores (administered within the past three years) in the 90th percentile **locally**.

They also had to meet both of the characteristics of expected achievement:

- Have grades in the top half of their class and/or math/language arts **or**
- Have an A or B average and is recommended by classroom teacher, gifted specialist, and/or counselor as being a bright achiever.

Gifted Underachievers

Students had to meet one of the following characteristics of giftedness:

- Individual IQ test score (either *Stanford Binet LM* or *WISC-III*) of at least 120, given no earlier than 6 years of age **or**
- Composite standardized achievement test scores (administered within the past three years) in the 90th percentile **locally**.

Students had to meet the criteria for lower than expected achievement:

- Have grades in the bottom half of his or her class and/or math/language arts **or**
- Have a C average or below and they must be labeled a bright underachiever by a classroom teacher, gifted specialist, or counselor.

Achieving Nongifted Students

Achieving nongifted students had to meet the following criteria:

- Have an A or B average
- Individual IQ test score (either *Stanford Binet LM* or *WISC-III*) between 100 and 119, given no earlier than 6 years of age **or**
- Composite standardized achievement test scores (administered within the past three years) above the 80th percentile **locally**.

Summary

This chapter provided the rationalization for this study and introduced the research questions that guided the study. It is important to determine if high test anxiety levels and an external locus of control orientation can be contributing to underachievement in gifted students. It is important to address these problems as early as possible; the negative consequences of test anxiety and external locus of control orientation can worsen as the student grows older and experiences more challenging academic situations.

CHAPTER TWO

REVIEW OF THE LITERATURE

This chapter provides a review of literature pertaining to this study. It will include information about internal and external factors that have an affect on student achievement, including personality, self-efficacy, self-regulation, and gender. Two factors, test anxiety and locus of control, will be discussed in depth.

Contributing Factors to Academic Achievement

Multiple factors influence academic performance, including intelligence (Reis & McCoach, 2000), achievement motivation (Fortier, Vallerand, & Guay, 1995), and self-esteem and test anxiety (Sarason, 1980). Cognitive ability is one of the stronger predictors of academic performance (Jensen, 1998). Walberg (1984) found a correlation between cognitive ability and academic performance at grade level to be .70. Classroom environment, including teacher characteristics, also influences student achievement (Peters, Grager-Loidl, & Supplee, 2000; Siegle, 2004).

Rolfhus and Ackerman (1996) reported that personality traits must be considered when discussing student achievement. Ackerman and Heggstad (1997) reported links between “openness to experience” (Factor 5 in the Big Five Taxonomy) and crystallized intelligence in a large meta-analytic study. The Big Five Taxonomy (e.g., Costa & McCrae, 1992) presents five dimensions (extraversion, neuroticism, agreeableness, conscientiousness, and openness to experience). The construct referred to as “conscientiousness” or “achievement striving” from the Big Five Taxonomy is directly related to intellectual performance (Chamorro-Premuzic & Furnham, 2004).

Significant research has also been conducted on the Eysenckian model of personality. Eysenck (1998) stated that the three basic dimensions of personality - psychoticism, extraversion, and neuroticism - also play a significant role in achievement. Table 2.1 displays the personality characteristics associated with each dimension. The Eysenckian Model aimed to explain why people differ, whereas the Five Factor Model aimed to explain how people differ.

A negative relationship exists between neuroticism and academic performance, with anxiety being the moderating variable (Chamorro-Premuzic & Furnham, 2003); test anxiety and fear of failure affect performance negatively (Hembree, 1988). Neuroticism may have long-term negative effects on students' perceptions of their abilities, leading to decreased academic self-efficacy and performance (Mueller, 1992).

Extraversion is negatively associated with academic performance, although it can actually benefit students in some assessment situations, such as oral examinations, interviews, or the Socratic method (Eysenck, 1994). Age does play an important role in the relationship between extraversion and academic achievement (Eysenck & Eysenck, 1985). Introverts show higher academic performance than extroverts after the age of 13. Introverts tend to have longer attention spans and more efficient study habits, while extroverts tend to be more concerned with their social life than their academic performance (Rolfhus & Ackerman, 1996).

Psychoticism is also a reliable negative predictor of academic performance (Furnham & Medhurst, 1995). Individuals with high levels of this personality trait frequently display irresponsible behavior and lack of interest in pursuing academic success. One of the main characteristics is their inability to deal with others, and their

lack of regard for authority makes it difficult for them to succeed academically (Aluja-Fabregat & Torrubia-Beltri, 1998). They are unwilling to accept the advice and encouragement of their elders.

Table 2.1

Descriptive Adjectives for High and Low Scorers on Psychoticism, Extraversion, and Neuroticism

| | Psychoticism | Extraversion | Neuroticism |
|----------|--|--|---|
| High (+) | Aggressive Hostile Psychopathic Schizophrenic | Active Outgoing Sociable Talkative | Anxious Emotional Moody Unstable |
| Low (-) | Altruistic Conformist Empathic Socialized | Quiet Restrained Unsociable Withdrawn | Calm Confident Relaxed Stable |

(Petrides, Chamorro-Premuzic, Frederickson, & Furnham, 2005)

Negative personality traits can lead to a poor academic self-concept. Academic self-concept is a significant predictor of academic achievement (Lyon, 1993; Siegle, 2004). Academic self-concept involves a description and an evaluation of one's perceived academic abilities (Byrne, 1996). It involves the individual making both internal and external comparisons. Students compare their own performance on a task with that of their peers (external comparison) as well as with their own performance on other tasks and in other subject areas (internal comparison) (Byrne, 1996).

Self-regulation also plays a role in student achievement (Reis & Rubin, 2004; Siegle, 2004). Self-regulation refers to a student's "self generated thoughts, feelings, and

actions which are systematically oriented toward the attainment of goals” (Zimmerman, 1994, p. ix). Self-regulation is used for a range of self-control activities including overriding response tendencies, such as habits or impulses; initiating actions; and making conscious or deliberate choices with limited resources (Oaten & Change, 2005).

Students’ attitudes toward school can also influence their academic performance. Underachievers have reported negative attitudes toward school more frequently than average achieving and high achieving students (McCoach & Siegle, 2003; Rimm, 1985). Students’ interests are positively correlated with their performance (Weiner, 1992). Unlike previous studies, Marjoribanks (1992) found children’s cognitive attitudes toward school and academic performance were related for girls but not for boys.

External factors can also influence students’ school performance. Parental education and family environment can influence children’s academic achievement (Kurdek & Sinclair, 1988). Children of parents who are actively engaged in their child’s education are more successful in school. Coleman (1993) observed that some parents “are deeply involved and have skills to be effective. Others are involved, but in ways that are ineffective or harmful, and still others take little time to inculcate in their children those personal traits that facilitate the school’s goals” (p. 6).

Lareau (1989) found that the type of parent involvement varied among working class and upper middle class families. Both classes of families were concerned with their children’s success in school, but they acted on those concerns differently. Working class families felt that teachers should be responsible for the education of their children, “...they seek little information about either the curriculum or educational process and their criticism of the school centers almost entirely on nonacademic matters” (Lareau,

1989, p. 8). In contrast, upper middle class parents were found “to forge a relationship characterized by scrutiny and interconnectedness between family life and school life. These parents believe that education is a shared responsibility between teachers and parents” (Lareau, 1989, p. 8).

Rosen (1973) developed a concept referred to as the Family Achievement Syndrome. Achievement-oriented families teach their children a variety of skills that make them more successful in school. Achievement motivation is believed to develop from nonverbal, emotionally based parent-child interactions early in the child’s life. They teach their children to become responsible learners and take their education seriously at an early age. They encourage their children to pursue their interests. This makes these students more comfortable when they meet up with more challenging academic situations as they grow older (Rosen, 1973).

Other family influences include number of siblings, whether or not children live in single parent households, and birth order (Zajonc & Markus, 1975). Research has shown that first born children are more achieving and later born children are more rebellious (Paullus, Trapnell, & Chen, 1999). A possible explanation for this outcome is that parental resources are not as readily available as family size increases; this includes both financial resources and parental involvement (Downey, 1995).

Contributing Factors and Symptoms of Underachievement

Educators must overcome a difficult challenge: educating each and every child in the country. Unfortunately there are many children who are undermotivated, disengaged, and underachieving. Underachievers can fall into a variety of categories (Frey, 2002):

- Female, especially during adolescence
- Member of a non-dominant cultural group

- student with other identified exceptionalities, such as a need for learning support, emotional support, and/or speech and language support
- student with a physical disability
- student with significant discrepancies between measured verbal and performance abilities, and/or with certain patterns of scatter on the WISC III intelligence test
- a lower socioeconomic background
- a non-traditional learner
- student who demonstrates at-risk behaviors

Forty years of research has helped educators understand underachieving students.

They can be characterized by attributes such as disorganization, lack of concentration, perfectionism, low self-esteem, unwillingness to conform, anxiety, vulnerability to peer pressure, and a sense of external locus of control (Coleman, et. al., 1966; Ford, 1992, 1996; Whitmore, 1980). Much of what has been written about underachievement has been written about underachieving gifted students.

General underachievers share many of the same characteristics: the student doesn't participate in school activities, the need to please others is more important to them than school and achievement, home life may be stressful, the student's family is of low socio-economic status, the student is disengaged from peers, the student has a negative attitude toward school, he or she is unable to handle structured and/or independent activities, the student has low self-esteem or self-concept, the student puts little effort into school tasks, which is reflected in his or her standardized test scores or grades, and the student becomes bored easily and is disruptive in class (Rimm, 2004).

Underachievement in Gifted Students

Unfortunately there is no universally accepted definition of underachievement. Gifted underachievers have been shown to exhibit low academic self-concept (Schunk, 1998), low self-motivation (Weiner, 1992), low goal valuation (McCall, Evahn, & Kratzer, 1992), and negative attitudes towards school and teachers (Rimm, 1995;

McCoach & Siegle, 2003) more often than achieving gifted students. On the other hand, underachievers may not lack knowledge of strategies, but rather they may not understand that strategic behavior in conjunction with effort results in achievement (Borkowski & Thorpe, 1994). These strategies can include, but are not limited to note-taking skills, time management, and test-taking strategies. This can lead to self-esteem problems because their talents are often ignored (Seeley, 1993).

Underachievement is most commonly defined as a discrepancy between potential or ability and performance or achievement (Reis & McCoach, 2000). More specifically, Reis and McCoach gave the following definition:

Underachievers are students who exhibit a severe discrepancy between expected achievement (as measured by standardized achievement test scores or cognitive or intellectual ability assessments) and actual achievement (as measured by class grades and teacher evaluations). To be classified as underachievers, the discrepancy between expected and actual achievement must not be the direct result of a diagnosed learning disability. (2000, p.158)

Another commonly used definition of underachieving gifted students was offered by Whitmore (1980): “[Underachieving gifted students] are students who demonstrate exceptionally high capacity for academic achievement and are not performing satisfactorily for their levels on daily academic tasks and achievement tests” (p. 178). According to Whitmore (1980), underachievement comprises four clusters of attributes: discrepancy, duration, scope, and intensity. It is important to consider each attribute when determining the severity of the underachievement because one by itself may not mean that underachievement is due to the child’s own behavior. The discrepancy between aptitude and achievement could be a sign of a learning disability or testing problem. The gap between the students’ test scores and their classroom performance

could be due to too high expectations on the part of the teacher, lack of appropriate skills, or psychological issues. Duration of underachievement helps distinguish between a single episode of an underachieving behavior, such as a problem with a single subject, and chronic underachievement. The scope of underachievement can range from a deficiency in one specific area to a general underachievement. The intensity of underachievement may range from mild to severe (Whitmore, 1980).

Delisle (2004) distinguished between underachievers and selective consumers. They differ in personal qualities and motivational intentions, and therefore, need to be dealt with differently. Table 2.2 lists the characteristics of the two groups.

Table 2.2

Characteristics of Underachievers and Selective Consumers

| Underachievers | Selective Consumers |
|--|--|
| do not fully understand the causes or possible solutions to low grades | can explain both the problems and cures of their low grades |
| are dependent and reactive | are independent and proactive |
| tend to withdraw when faced with challenges | tend to rebel when faced with “busy work” |
| respect or fear authority figures | see most teachers as adversaries |
| need both structure and imposed limits | require less structure and more “breathing room” |
| exhibit uniformly weak school performance across subjects | exhibit performance that varies relative to the teacher and/or curriculum area |
| often require family intervention | can usually be dealt with by flexible classroom teachers |
| experience positive change usually over the long term | experience positive change sometimes “overnight” |
| are often perfectionistic despite no pressure from others to be so | are self-satisfied with whatever level of performance is attainment |
| have a poor academic self-image | see themselves as academically competent |

Delisle (2004)

Delisle and Renzulli (1982) concluded that “bright children tend to take credit for their academic successes while delegating to others, fate or ‘bad luck’ a substantial

portion of their school failures” (p. 94). This tendency may mean that underachievers have an inadequate understanding of the learning process. They do not realize that the lack of effort on their part can contribute to failure, just as making an effort leads to success (Laffoon, Jenkins-Friedman, & Tollefson, 1989). Dweck (1986) pointed out that “a focus on ability judgments can result in a tendency to avoid and withdraw from challenge, whereas a focus on progress through effort creates a tendency to seek and be energized by challenge” (p. 104).

Unfortunately gifted underachievers are sometimes labeled by teachers and counselors as physically, mentally, or emotionally disabled (Delisle, 1994). If a student behaves poorly by acting out, by frequently missing school, or by choosing not to do the work, he or she is seen as rejecting knowledge and/or defying authority (Plucker & McIntire, 1996). As a result, underachieving gifted students are “punished” with placement in special education classes, poor grades, suspension, or even expulsion from school (Plucker & McIntire, 1996).

Gender and Academic Achievement

Research has shown that both boys and girls can have a positive attitude toward education, but the girls’ positive attitude is more related to their love of learning, as compared to boys, whose attitude toward school has more to do with the socialization aspect (Lupart, Cannon, & Telfer, 2004). It has also been reported that girls outperform boys academically in language arts courses throughout elementary and high school (Jackson & Bracken, 1998). One possible explanation is that girls usually put more effort into completing their homework accurately and pay more attention in class. Boys may take their education less seriously; they are easily distracted and are more interested in

participating in school athletics and extracurricular activities than devoting the time to studying (Barber, 1996).

Research with talented girls has resulted in the discovery of a number of personality factors, personal priorities, and social emotional issues that explain why some gifted girls cannot or do not realize their potential. These include dilemmas about abilities and talents, personal decisions about family, and ambivalence of parents and teachers toward developing high levels of potential (Reis, 2002). In a qualitative study of five talented adolescents, not one participant attributed her success in school to extraordinary ability (Callahan, Cunningham, & Plucker, 1994).

Research with gifted males shows that image management issues may cause these boys to become academic underachievers if their culture does not value academic success (Hèbert, 2001; Kerr & Cohn, 2001). Gifted boys may not only do poorly in school because they aren't motivated to study, but because they do not want to be considered “uncool” by their male classmates. Gifted males may hide their true identities to survive in a macho teenage male culture (Pollack, 2000).

Eccles (1985) proposed the Achievement-Choice Model to explain gender differences. It looks at the relationship between psychological factors and social factors and their impact on student achievement. Eccles (1994) pointed out that definitions of achievement have characteristically been based upon male standards. Boys tend to achieve less than girls because they experience a culture that is far less academically-oriented than the culture of girls (Brutsaert & Van Houtte, 2004).

Gender related achievement differences can be due to teacher gender rather than the gender of the students. The gender of teachers contributed significantly to variance in

assigned grades, whereas the students' gender only influenced achievement when the teacher was male (Klein, 2004).

Herbert and Stipek (2005) reported that the emergence of gender differences begins as early as third grade. Third grade girls rated their math competencies lower than the boys even though there were no gender differences in the actual mathematical achievement or teachers' ratings of these students' math abilities. Parents also rated boys' math competencies as higher than those of girls in third and fifth grades. This may contribute to the girls' lower ratings of their math ability. In another study, Frome and Eccles (1998) found that girls would give themselves a low rating for math ability even though they received higher math grades than their male classmates.

When it came to literacy, girls outperformed boys on a literacy achievement measure in both grades, and the teachers' ratings of the students' literacy abilities reflected this gender difference. However, no differences were found in either parents' or children's ratings of their literacy abilities. Actual achievement and teachers' ratings predicted the children's judgments of their literary skills. Pety, Kelly, and Kafafy (1984) found that males showed stronger preference for praise from parents and teachers while females preferred words of encouragement from adults. In addition, their mothers also underrated their daughters' math abilities. Fathers were more likely to accurately rate their child's abilities in math and English.

Bhanot and Jovanovic (2005) reported that boys are recipients of more parental intrusive support with homework; despite this fact, girls are more sensitive to the little help they do get, especially when the assistance is in math. These behaviors further strengthen the girls' beliefs that they are not strong in math and that it is a "male" subject.

Parents' perceptions were consistent with the actual achievement differences between the boys and girls, with boys having lower grades. At the same time, parents' gender stereotyped beliefs about math were positively related to the amount of intrusive support they provided to their daughters. Parents' intrusive support accounted for the association between parents' beliefs in math gender stereotypes and girls' perception of their math abilities (Bhanot & Jovanovic, 2005).

Locus of Control

Locus of control is a construct developed by Julian Rotter (1966) from his larger personality theory referred to as the *social learning theory*. The *social learning theory* states that one's personality is a result of the individual's interaction with his or her environment. Behavior cannot be viewed as an automatic response to stimuli, but an interaction of the individual's personal experiences and the environment. Rotter defined locus of control as a "generalized expectancy of internal versus external control over behavior outcomes. Locus of control was viewed as a cognitive expectancy which defined the individual's view of causal factors related to these outcomes" (as cited in Nunn, 1995, p. 421).

Rotter (1966) also noted that whether or not the outcome of a particular behavior served as a reinforcement depended on the value of the outcome to the individual (e.g., a student who does not value a high grade may not study for a test, even though he or she knows that a good grade depends on good study habits (an internal factor)). Phares (1976) added additional components to this idea, stating that students' expectations of a given behavior that leads to a reward depend upon three factors: 1. How many times they were rewarded for a particular behavior, 2. Whether or not they were rewarded for similar

behaviors, and 3. Whether or not they believed it was their personal behavior that led to the rewards.

Several studies have found a relationship between parental locus of control and children's locus of control (Carton & Nowicki, Jr., 1996; Gordon, Nowicki, Jr., & Wichern, 1981), while others have found little or no correlation (e.g., Ackerman & Ackerman, 1989). Goldstein and Chance (1965) reported that a parent who is warm, supportive, flexible, approving, consistent in discipline, and who expects early independence in his or her child's life is more likely to encourage his child's beliefs in internal control than the parent who is rejecting, punitive, dominating, and critical.

Locus of control also has an influence on students' responses to outside influence or control. Baron and Ganz (1972) and Baron, Cowan, and Ganz (1974) showed that externally controlled children were more responsive than internally controlled children to positive verbal feedback. Pines (1973) found that externally controlled people seemed to be more attentive to and affected by the interpersonal characteristics of the person giving the positive feedback than were internally controlled people.

Dreikurs and Cassell (1972) demonstrated that different types of intended verbal feedback may have different effects on children. Therefore, praise was viewed as judgmental. Externally oriented children completed a task because it meant that they earned someone's approval, not because of the internal benefits of completing the task. In addition, praise usually focused on the positive value or worth of a child as a consequence of performance. Encouragement, the other type of feedback, emphasized effort and improvement on the part of the child; it made children feel responsible for their

own performance. This led to an internal rather than external locus of control. The child now completed tasks because of self-improvement or an increase in self-esteem.

Anderson (1973) assessed the preference of internally versus externally controlled children for “person-oriented” vs. “task-oriented” verbal feedback. These are equivalent to encouragement and praise defined above. Anderson reported that internally controlled children perceived the “person-oriented” feedback as being more positive and useful than the “task-oriented” feedback. Anderson (1973) reported that externally controlled children in the lower grades, fourth and sixth, demonstrated a relatively stronger preference for “task-oriented” verbal feedback than internally controlled peers.

Locus of control appears to become more internal over time (Knoop, 1981). The results of the Youth in Transition project, a longitudinal study, showed that in adolescent boys, locus of control became more internal from tenth grade to one-year post-high school. The greatest change in locus of control orientation occurs between the tenth and eleventh grades in males (Bachman, O’Malley, & Johnston, 1978). Cairns, McWhirter, Duffy, and Barry (1990) found similar results. Their study spanned 18 months; participants were an average age of 17-years-old at the time on the first of two measurements. From Time 1 to Time 2 locus of control became significantly more internal. Pety, Kelly, and Kafafy (1984) found that adolescents (age 15) demonstrated significantly stronger preference for encouragement (associated with internal locus of control) than did younger students. There was a gender effect in this study – the males showed stronger preference for praise than females. Kelly (2002) found similar results.

Harter and Connell (1984) in their study of mastery motivation in children found a familiar dramatic shift in junior high school children.

Children seem to gain increasing knowledge about events that control their lives through elementary school until junior high school where there seems to be a psychological setback with regard to their understanding of the reasons for why things happen to them. (p. 235).

Adolescence, especially during the early years, is a period of important developmental changes and a time of stress and conflict. The physiological changes can lead to low self-esteem and doubts about their relationships with others (Kulas, 1996).

Skinner, Wellborn, and Connell (1990) found that children who are most actively engaged in the classroom are those who believe that: (a) Effort is an important cause of school success and failure, and they themselves can exert effort (high effort strategy beliefs and capacity beliefs); (b) Ability is not necessary for success, but they themselves are smart (low ability strategy beliefs and high ability capacity beliefs); and (c) They have access to powerful others and are lucky (high powerful others and luck capacity beliefs).

Skinner et al. (1990) reported that children who are most disaffected from school activities believe that: (a) they are incapable of exerting effort and are not smart (low effort and ability capacity beliefs); (b) powerful others and luck are needed to succeed, but they themselves are unlucky and unable to influence others (high strategy and low capacity for powerful others and luck); and (c) they do not know the causes of success and failure in school (high unknown strategy beliefs). Children's motivation accounts for more than 25% of the variance in teachers' ratings of engagement and disaffection in the classroom.

Test Anxiety

Anxiety can range from feelings of uneasiness to immobilizing bouts of terror. Sometimes, a certain amount of anxiety can be beneficial. Anxiety can be beneficial

when it leads to excitement and enthusiasm, and have negative effects when it causes worry, confusion, fear, and lowering of self-esteem (Arch, 1987). Increased cognitive and emotional alertness are basic reactions in test situations.

Birenbaum and Nasser (1994) claimed that test anxiety is a widespread problem in school, and Shaked (1996) estimated that 30% of all students suffer from some level of test anxiety. Test anxiety begins in childhood, and as testing experiences increase, an individual's test anxiety levels may also increase because of compounding episodes of poor performance. Test anxious students report the inability to recall information when in a testing situation (Mueller, 1980).

According to Spielberger, Gonzalez, Taylor, Algaze, and Anton (1978), test anxiety is a "situation-specific personality trait" that occurs before, during, and after a testing session. Research reports that test anxiety may occur when an afflicted individual views any type of evaluative situation as being a personal threat (Baker, 1996). These individuals report debilitating psychological, physiological, and behavioral reactions in a testing situation. Spielberger (1972) gave the following description of test anxious people:

In essence, high test-anxious persons are characterized by acquired habits and attitudes that involve negative self-perceptions and expectations. These self-deprecating habits and attitudes dispose test-anxious persons to experience fear and heightened physiological activity in situations such as examinations in which they are being evaluated, and influence the manner in which they interpret and respond to events in the environment. (p. 14)

Test anxiety includes two components: worry and emotionality. Liebert and Morris (1967) operationally defined *worry* as "cognitive concerns about the consequences of failure" (p. 976) and *emotionality* as the "physiological reactions of the autonomic nervous system to stress" (p. 976). A strong connection has been found between the

Worry and *Emotionality* components. However, they can be distinguished since the *Worry* component is more correlated with academic performance than the *Emotionality* component (Liebert & Morris, 1967). Those individuals who receive high scores on the *Worry* scale tend to receive lower scores on tests than those individuals who do not express excessive worry.

Nicholls (1967, p. 126) noted that “test-anxiety represents a tendency to expect failure in test situations” and is therefore more closely related to cognitive school performance than is general anxiety. Test anxious individuals respond to the testing situation with a worry reaction and irrelevant thoughts that interfere with effectiveness on their tasks (Liebert & Morris, 1967; Polotsky, 1991). Sarason (1980), for example, reported that children who have low levels of test anxiety are more successful on complicated tasks and on timed tests than their peers who have high levels of test anxiety. In situations without time limits, the anxious children will do better academically than those with no anxiety. Sarason also stated that the differences in academic performance between anxious and unanxious children are minimal in noncompetitive situations.

The effects of test anxiety are not limited to the assessment session itself. Students’ study skills play a role in how test anxiety influences academic performance. Students with high test anxiety and poor study skills do not learn the material as well as test anxious students with good study skills; this effect is demonstrated in the low levels of performance on tests, including practice tests which have no bearing on their grades (Birenbaum & Pinku, 1997).

Reports have shown that test anxiety is expressed differently during the three phases of testing (test preparation, test performance, and test reflection).

1. Test Preparation Phase

High levels of test anxiety lead to interference in working memory's articulatory processing loop, making it difficult for these anxious students to process the information presented to them during a lecture session (Ikeda, Iwanaga, & Seiwa, 1996). During the test preparation phase, students with high levels of test anxiety have difficulty learning and retaining material that they will be tested on in the future. They do not always realize that they are unprepared (Everson, Smodlaka, & Tobias, 1995). Students with high test anxiety have been shown to study as much as or more than their low anxiety peers, but the methods of study reported by the high anxiety group were highly repetitive and less effective (Culler & Holohan, 1980).

Those students who do not overestimate their preparedness are more likely to procrastinate (Cassady & Johnson, 2002). The student views the upcoming test as a stressful event due to the personal harm (on grades, self-esteem, or status) that the test can cause (Schwarzer & Jerusalem, 1992). Students' explanations for this perceived threat are that they have a generalized low self-efficacy for testing (Schutz & David, 2000) or that a specific subject is difficult (Everson, Tobias, Hartman, & Gourgey, 1993).

2. Test Performance

Test performance varies across individuals with test anxiety based on their study and coping skills (Onwuegbuzie & Daley, 1996). Students with poor study skills or preparation processes generally face reduced performance regardless of the type of test, lack of time limit, or reduced item difficulty (Covington &

Omelich, 1987). Students with adequate preparation skills are hypothesized to encounter retrieval failures only in the presence of debilitating contextual anxiety (Naveh-Benjamin, McKeachie, & Lin, 1987). Students with high cognitive test anxiety often report that they knew the material before the test, but when they entered the testing room, the material escaped them. This prompts interference, distractibility, or inefficient cue utilization strategies (Cassady & Johnson, 2002).

In addition, students will often look over the test when it is first handed out to assess the difficulty level of the test and whether or not they are prepared. This often leads to higher levels of anxiety (Zeidner, 1995). This begins a troubling thought cycle; as the students begin to focus on their lack of knowledge and consequences of failing, they actually distract themselves from the task at hand (Sarason, 1986).

3. Test Reflection Phase

The level of test anxiety experienced during this phase depends on students' self-efficacy about testing. If the student frequently fails and does not attribute the failure to his or her own actions, he/she will experience higher anxiety levels (Bandalos, Yates, & Thorndike-Christ, 1995). Students who recognize that the effort they put into a task is reflected by their grades often report lower levels of anxiety.

The Relationship Between Test Anxiety and Locus of Control

Barlow's (2002) model of anxious apprehension states that individuals who feel as if they have no control over external events that cause them anxiety or no control over their emotional or physical reaction to the stressor tend to have anxiety problems. A

number of studies found that low perceptions of control over external threats and emotional and physiological reactions are related to increased levels of anxiety (e.g., Weems, Silverman, & Rapee, 2003; Zeidner & Schleyer, 1999). Nunn (1988) found significant and positive correlations between externality on the locus of control scale and trait anxiety as measured by the *State-Trait Anxiety Inventory for Children* (Spielberger, 1972).

Locus of Control and Academic Achievement

A relationship has been found between locus of control and academic achievement. Nowicki and Strickland (1973) found a significant relationship between these two variables. High achieving seventh grade males were more internally controlled than their lower achieving classmates. Payne and Payne (1989) studied elementary school students who had been identified as at-risk by their teachers using the *CNSIE*. They found at-risk students to be more externally oriented than students not identified at-risk.

Students with an internal locus of control have an advantage over their classmates with external locus of control when it comes to academic achievement (Lefcourt, 1982; Oswald, Walker, Krajewski, & Reilly, 1994; Weisz, 1986). Gifted children are more likely to have an internal locus of control than their average achieving classmates (Harter & Connell, 1984; Kanoy, Johnson, & Kanoy, 1980; Laffoon et al., 1989). Other research has attributed this finding to the fact that children with an internal locus of control have better impulse control, can deal with delayed gratification, and are able to maintain attention in the classroom despite the usual distractions (Ferrer & Krantz, 1987; Kendall & Wilcox, 1979). Internally oriented children understand that their hard work and proper

behavior will eventually lead to a positive outcome therefore, they do not need to see the positive results of their action right away.

Perceived control is related to a variety of positive affective responses, such as positive mood, interest, curiosity, pride, and positive behaviors such as persistence and effort exertion (Skinner, 1995). Those who excel in school differ from those who do not excel in the processes by which perceived control exerts influence on the child's approach to schoolwork. This child may believe that he or she can do well on the test (control beliefs) and he or she has the ability to do well on the test (agency beliefs) and that ability is what causes one to succeed on a test (means-ends beliefs) (Musher-Eizenman, Nesselroade, & Schmitz, 2002).

Brecher and Denmark (1972) reported that academic failure may lead to a heightened sense of external control. Chronic success or failure in competitive or academic settings may lead to generalized expectancies of internal or external control. Female college students were given highly negative bogus feedback regarding a previously administered course exam immediately prior to an experimental testing session. Their mean locus of control score was significantly more external than that of the control group that did not receive the negative feedback.

Individuals with an internal locus of control tend to be more achievement-oriented than those with external locus of control. Internally oriented individuals put more time and effort into completing academic tasks, have a greater desire to succeed in school, and get higher grades. Internals spend more time in intellectual activities, exhibit more intense interest in academic pursuits, and score higher on intelligence tests and other academic tests than do externals (Crandall, Katkovsky, & Crandall, 1965).

Herskovits and Gefferth (1992) stated that above average ability and favorable teacher ratings are both positively related to internal control orientation. In the poor ability groups, those who have stronger internal control were those that were positively rated by teachers. Those with the lowest ability and lowest teacher ratings had the weakest internal locus of control but not exceptionally high external control. It is unknown whether the children who received positive ratings from their teachers are overrated due to their strong internal control, their sense of responsibility, or some other positive personality traits or the teacher notices high ability in children and her favorable feedback helps to strengthen their internal control.

Effects of Gender on Locus of Control

Results on gender differences in locus of control have varied. Nowicki and Strickland (1973) found a negative relationship between the locus of control and achievement of children in grades 3 – 12. As achievement scores went up, external scores went down, and this was mostly found in males. Shute, Howard, and Steyaert (1984) found a relationship between cognitive abilities and locus of control in females, but not in males. Females with an internal locus of control had more advanced cognitive abilities than those with an external locus of control. McLaughlin and Saccuzzo (1997) found that gender effects were apparent with females showing a slight but significantly greater internal locus of control. Young and Shorr (1986) found that females tend to attribute both success and failure outcomes to internal causes significantly more often than males.

A relationship between cognitive developmental level and locus of control was found in a study by Shute et al. (1984). This relationship was clearly demonstrated for

women, but was nonexistent for men. Dweck, Davidson, Nelson, and Enna (1978), in particular, suggested that the academic environment provides differential reinforcement for various behaviors exhibited by males and females. For instance, males are more likely than females to receive feedback for a wide range of activities, whereas females, more often than males, receive feedback which is specific to academic achievement. Therefore, females may be more likely to develop an attributional pattern that is more closely related to their cognitive abilities, while males may develop an attributional pattern that covers a wide range of behaviors.

Effects of Gender on Test Anxiety

Previous research has shown that males typically score lower on measurements of test anxiety than females (Berger & Schechter, 1996; Chang, 1997). The different test anxiety constructs affect males and females in different ways. Results show that: (a) worry was related to task-orientation and preparation and low avoidance coping in females; (b) emotionality was related to seeking social support in male students and to task-orientation and preparation in female students; and (c) interference was related to avoidance coping in females (Stober, 2004). There was a gender effect on worry and emotionality test anxiety for high achieving students. Overall, females reported more test anxiety than males; and females experienced higher worry than emotionality, while males reported little difference between the two dimensions (Everson, Millsap, & Rodriguez, 1996). Sowa and LaFlour (1986) also reported that woman show greater symptom intensity than men in public self-consciousness, social anxiety, and test anxiety, however, gender differences in test anxiety were not reflected in performance.

Giftedness and Test Anxiety

There was little research on the relationship between academic achievement and test anxiety. Willimas (1996) found that the worry component was more strongly related to lower performance than the emotionality component. Hembree (1988) reported that the worry component had a more negative effect on the performance of average students than gifted students. Zeidner and Schleyer (1999) found a slightly lower level of evaluation anxiety in gifted students than nongifted students. Gifted students placed in self-contained gifted classrooms reported higher levels of test anxiety than gifted students mainstreamed into the regular classroom (Schwarzer, 1984). In a self-contained gifted classroom, students set higher academic goals for themselves, teachers had higher expectations of students, peers competed with one another to be at the top of the class, and failure is looked upon more negatively than in a regular classroom (Schwarzer, 1984).

Summary

This chapter reviewed the available research and factual information pertaining to the topics addressed in this study. The factors affecting student achievement, underachievement in gifted students, locus of control, and test anxiety were discussed. Locus of control orientation and test anxiety have been researched in gifted students independently of one another, but the need existed to look at the interaction of these two variables as related to student performance.

CHAPTER THREE

METHODS AND PROCEDURES

Participant Recruitment

To recruit the achieving gifted (AG) and nongifted (NG) students for the study, the researcher sent a letter and Participation Agreement Form to the superintendents of 123 selected school districts across the United States and the principals of 6 private schools for the gifted. Two weeks later, the researcher followed up with a phone call to confirm receipt of the letter and to answer any questions the superintendents or principals may have had about the study.

There were two rounds of recruitment for the underachieving gifted (UAG) students. During the first round, all teachers participating in the *Increasing Academic Achievement Study* (2003) during the 2004-2005 school year were contacted to see if they would be willing to administer two more questionnaires to the student(s) with whom they were already working. This yielded a total of 17 gifted underachievers. During the second round, teachers working with gifted underachievers were recruited from the Underachievement Strand during Week 2 of Confratute 2005. Two of the teachers responded to a follow-up email and gained parental permission for 10 of their students identified as gifted underachievers to participate in the study.

Participants

The final sample consisted of 220 students [110 males, 110 females], enrolled in the fifth, sixth, seventh, and eighth grades, representing nine public middle schools and three private schools from seven states including California, Connecticut, Florida, Louisiana, Massachusetts, New York, and Ohio.

Students from private schools for the gifted represented 21.3% of the sample.

The grade distribution of students was as follows: 16.8% of the students were in Grade 5, 24.1% of the students were in Grade 6, 25.0% of the students were in Grade 7, and 34.1% of the students were in Grade 8.

Of the males, 52 were identified as achieving gifted, 19 were underachieving gifted, and 39 were achieving non-gifted. Forty-eight females were identified as achieving gifted, 8 were identified as underachieving gifted, and 54 were achieving non-gifted. Table 3.1 displays the ethnic breakdown of the sample.

Table 3.1

Ethnicity of Sample of Fifth, Sixth, Seventh, and Eighth Graders

| | <i>N</i> | <i>Percentage</i> |
|-------------------|----------|-------------------|
| African American | 28 | 12.7% |
| Asian American | 15 | 6.8% |
| Caucasian | 132 | 60.0% |
| Hispanic American | 26 | 11.8% |
| American Indian | 4 | 1.8% |
| Other | 15 | 6.8% |

Table 3.2

Ethnicity of Underachieving Gifted Sample

| | <i>N</i> | <i>Percentage</i> |
|-------------------|----------|-------------------|
| African American | 1 | 3.7% |
| Caucasian | 18 | 66.7% |
| Hispanic American | 4 | 14.8% |
| Other | 4 | 14.8% |

To be classified as gifted achievers, students had to meet the criteria developed for the NRC/GT *Increasing Academic Achievement Study* (2003). Students had to meet one of the following characteristics of giftedness: individual IQ test score (either *Stanford Binet LM* or *WISC-III*) of at least 120, given no earlier than 6 years of age, **or** composite standardized achievement test scores (administered within the past three years) in the 90th percentile **locally**. They also had to meet both of the characteristics of expected achievement: have grades in the top half of their class and/or math/language arts **or** have an A or B average and is recommended by classroom teacher, gifted specialist and/or counselor as being a bright achiever.

To be classified as gifted underachievers, students had to meet the criteria developed for the NRC/GT *Increasing Academic Achievement Study* (2003). Students had to meet the one of the characteristics of giftedness stated above. In addition, they needed to meet the criteria for lower than expected achievement: have grades in the bottom half of his or her class and/or math/language arts **or** have a C average or below

and they must be labeled a bright underachiever by a classroom teacher, gifted specialist, or counselor.

Subjects in the nongifted group were chosen through a cluster random sampling method. Three school districts were randomly selected and from those districts fifth, sixth, seventh, and eighth graders were randomly chosen to participate. Ninety-three nongifted students participated in the study [39 males and 54 females].

To be classified as achieving nongifted students, they had to meet the following criteria: have an A or B average, individual IQ test score (either *Stanford Binet LM* or *WISC-III*) between 100 and 119, given no earlier than 6 years of age **or** composite standardized achievement test scores (administered within the past three years) above the 80th percentile **locally**.

Incentives

All participants were given the option to enter a raffle for one of five Toys R Us gift cards. The raffle was held in September and the gift cards were sent to the winners' home addresses.

Instrumentation

The *Test Attitude Inventory (TAI)* is a 20-item instrument used to measure frequency of anxiety symptoms before, during, and after testing sessions (Spielberger, 1980). Participant responses were measured on a 4-point scale that ranged from *Almost Never* (1) to *Almost Always* (4). After reverse scoring Item 1, I feel confident and relaxed while taking tests, individual scores were determined by adding the responses for each item. *TAI* scores can range between 20, the minimum level of test anxiety, and 80, the maximum level of test anxiety (Spielberger, 1980). In this particular study, scores ranged

between 20 and 62. The mean score of the 220 participants was 34.1 (median = 32.5, $SD = 9.7$). The alpha reliability coefficient was .88 in the present study. Alpha reliability coefficients between .80 and .81 have been reported in previous studies (Spielberger, 1980).

The 40-item *Children's Nowicki-Strickland Internal-External Scale (CNSIE)* was used to measure locus of control (Nowicki & Strickland, 1973). It is based on Rotter's (1966) definition of the internal-external control of reinforcement dimension. The instrument has a fifth-grade readability level; participants recorded their responses by responding *Yes* or *No* to each question (e.g., Do you usually feel that it is almost useless to try in school because most other children are just plain smarter than you are?). On the original instrument, scores can range from 0-40, in which higher scores reflected more external locus of control. In the present study, the scores could range from 0 – 25 and the actual scores ranged between 1 and 21, with a mean of 8.0 (median = 7.0, $SD = 4.2$). In the present study, an alpha reliability of .755 was found after removing 15 items that did not adequately measure locus of control orientation. Table 3.2 shows the alpha reliability coefficients of the *CNSIE* of the 25 items that were retained for this study. The *CNSIE* had a test-retest reliability of .66 over a 6-week period for seventh-graders, in a previous study (Nowicki and Strickland, 1973).

Table 3.3

Items Included in CNSIE for Current Study (Cronbach alpha = .755)

| <i>Item</i> | <i>Reliability Coefficient If Item Deleted</i> |
|---|--|
| 3. Are some kids just born lucky? | .753 |
| 5. Are you often blamed for things that just aren't your fault? | .751 |

Table 3.3

Items Included in CNSIE for Current Study (Cronbach alpha = .755) (continued)

| <i>Item</i> | <i>Reliability Coefficient If Item Deleted</i> |
|--|--|
| 6. Do you believe that if somebody studies hard enough he or she can pass any test? | .749 |
| 7. Do you feel that most of the time doesn't pay to try hard because things never turn out right anyway? | .747 |
| 9. Do you feel that most of the time parents listen to what their children have to say? | .743 |
| 11. When you get punished, does it usually seem it's for no good reason at all? | .739 |
| 13. Do you think that cheering more than luck helps a team to win? | .752 |
| 14. Do you feel that it is nearly impossible to change your parent's mind about anything? | .740 |
| 17. Do you believe that most kids are just born good at sports? | .752 |
| 18. Are most of the other kids your age stronger than you are? | .755 |
| 19. Do you think that one of the best ways to handle most problems is to just not think about them? | .745 |
| 20. Do you feel you have a lot of choice in deciding who your friends are? | .753 |
| 23. Do you feel when a kid your age decides to hit you, there's little you can do to stop him or her? | .754 |
| 26. Will your parents usually help you if you ask them to? | .745 |
| 27. Have you felt that when people were mean to you it was usually for no reason at all? | .747 |
| 28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today? | .744 |
| 29. Do you believe that when bad things are going to happen they are just going to happen no matter what you try to do to stop them? | .739 |
| 30. Do you think that kids can get their own way if they just keep trying? | .751 |
| 31. Most of the time, do you find it useless to try and get your own way at home? | .741 |
| 32. Do you feel when good things happen they happen because of hard work? | .755 |
| 33. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters? | .745 |

Table 3.3

Items Included in CNSIE for Current Study (Cronbach alpha = .755) (continued)

| <i>Item</i> | <i>Reliability Coefficient If Item Deleted</i> |
|---|--|
| 35. Do you feel that you have little to say about what you get to eat at home? | .740 |
| 36. Do you feel that when somebody doesn't like you there is little you can do about it. | .738 |
| 37. Do you usually feel that it is almost useless to try in school because most other children are just plain smarter than you are? | .752 |
| 39. Most of the time, do you feel that you have little to say about what your family decides to do? | .736 |

Data Collection and Analysis

Standardized directions as well as the two questionnaires were individually administered to all participants. Questionnaires were completed in approximately 20 minutes. Data were collected from gifted students during their special services time. Nongifted students completed the questionnaires on their own time and mailed them back to the researcher.

A Pearson's r correlation was conducted to look for a relationship between test anxiety scores and locus of control orientation scores in all three intellectual ability/performance groups. The three levels of intellectual ability/performance (UAG, AG, and NG) and two levels of gender (male and female) were analyzed for differences in the test anxiety levels and locus of control levels using a 3 x 2 MANOVA. Post hoc analyses were conducted with analyses of variance (ANOVA) and independent t -tests. Separate analyses were conducted to look for differences due to type of school.

Summary

This chapter outlined the methods and procedures carried out in the study. It was divided into the following sections: participant recruitment, participants, incentives, instrumentation, and data collection and analysis.

CHAPTER FOUR

RESULTS

This chapter presents the results of the study. The research questions under investigation were addressed by several different statistical methods. The research questions have been provided in each subsection to assist the reader.

Research Question 1

Is there a relationship between test anxiety and locus of control orientation among middle school students of varying ability/performance levels?

The possible range on the *TAI* was 20 – 80, where higher scores indicated higher levels of test anxiety. The obtained range was 20 – 62. The possible range on the *CNSIE* was reduced to 0 – 25 from 0 - 40 because of the removal of 15 items; higher scores indicated a more external locus of control orientation. The obtained range was 1 – 21. Overall, there was a significant positive correlation between test anxiety and locus of control for middle school students, $r = .27, p = 0.01$, as shown in Figure 4.1. Increasing levels of test anxiety were associated with a more external locus of control.

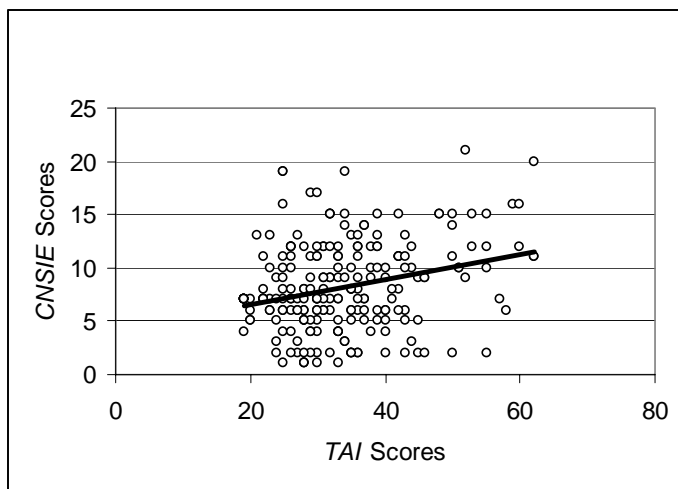


Figure 4.1. Overall Relationship Between Test Anxiety and Locus of Control Orientation.

Upon further investigation, a significant positive correlation was found between test anxiety scores and locus of control orientation for achieving gifted students, $r = .31$, $p = 0.02$, as shown in Figure 4.2 and for nongifted students, $r = .30$, $p = 0.04$, as shown in Figure 4.3. However, there was not a significant correlation between the two constructs for underachieving gifted students, $r = .168$, $p = .403$.

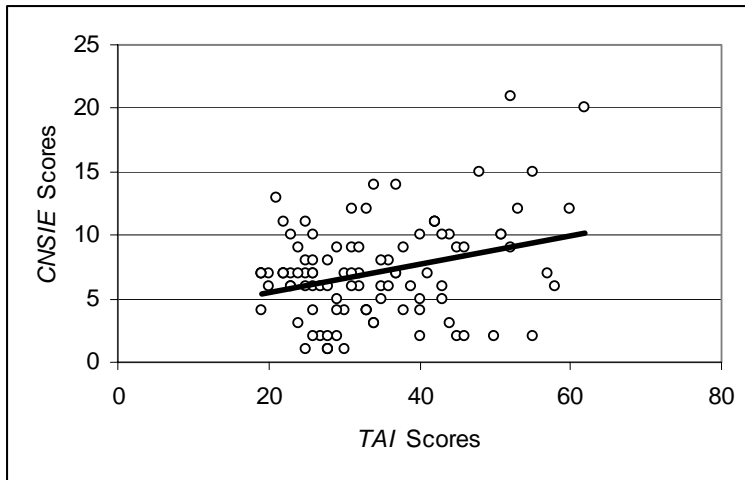


Figure 4.2. Relationship Between Test Anxiety and Locus of Control for Achieving Students.

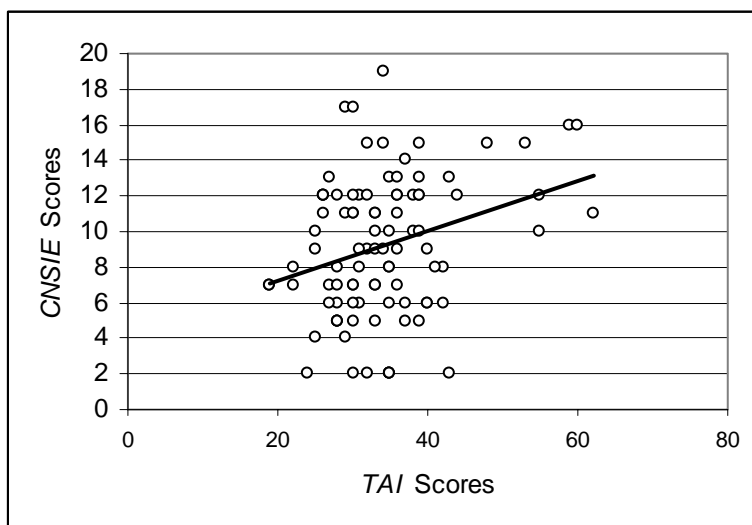


Figure 4.3. Relationship Between Test Anxiety and Locus of Control for Nongifted Students.

Research Question 2

Is there a relationship between test anxiety and locus of control orientation for males and females?

A Pearson's r correlation was also conducted to see whether or not there was a significant relationship between test anxiety and locus of control orientation for males and females. A significant positive correlation was found for males, $r = .203$, $p = .034$, as shown in Figure 4.4 and for females, $r = .323$, $p = .001$, as shown in Figure 4.5.

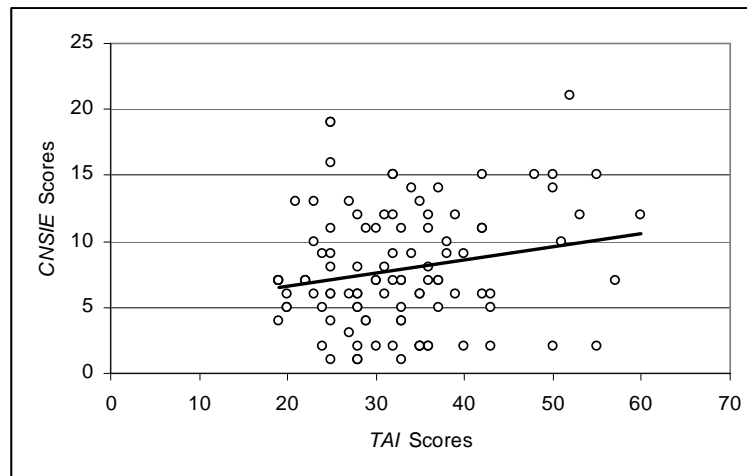


Figure 4.4. Relationship Between Test Anxiety and Locus of Control for Males.

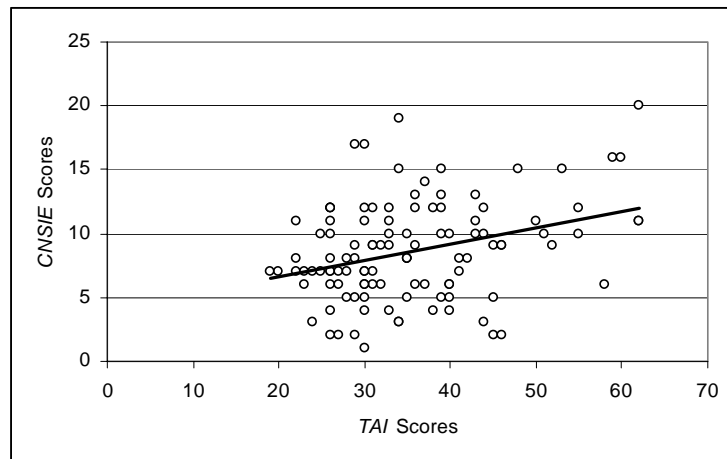


Figure 4.5. Relationship Between Test Anxiety and Locus of Control for Females.

Research Questions 3 – 8

Question 3. Do test anxiety levels significantly differ among achieving gifted, underachieving gifted, and nongifted middle school students?

Question 4. Is there a difference in the locus of control orientation among achieving gifted, underachieving gifted, and nongifted middle school students?

Question 5. Do test anxiety levels significantly differ between males and females?

Question 6. Is there a difference in the locus of control orientation between males and females?

Question 7. Is there an interaction between gender and ability/performance levels on test anxiety?

Question 8. Is there an interaction between gender and ability/performance levels on locus of control orientation?

A 3 x 2 between-subjects multivariate analysis of variance (MANOVA) was performed on two dependent variables: test anxiety and locus of control orientation. As previously stated, Cronbach's alphas for the two instruments were within an acceptable

range. The data met the necessary assumptions to conduct a MANOVA. Independent variables were ability/performance level (achieving gifted, underachieving gifted, and nongifted) and gender (male and female). SPSS 13.0 MANOVA was used for the analysis.

Wilks' Lambda criterion was used to assess significance. The combined dependent variables were significantly affected by achievement, $F(4, 426) = 3.43, p = .009$, gender, $F(2, 213) = 5.47, p = .050$, and their interaction, $F(4, 426) = 4.81, p = .010$. The interactions can be seen in Figure 4.6 and Figure 4.7. The results reflect a small association between ability/performance level and the combined dependent variables, partial $\eta^2 = .03$. There was also a small association between gender and the combined dependent variables, partial $\eta^2 = .05$, and between the interaction of ability/performance level and gender, partial $\eta^2 = .04$. To evaluate the significant main effect of ability/performance level and the interaction of the two variables determined by the MANOVA, univariate analyses of variance (ANOVA) were performed. To evaluate the main effect of gender determined by the MANOVA, an independent t -test was performed. Scheffé post-hoc comparisons were also performed.

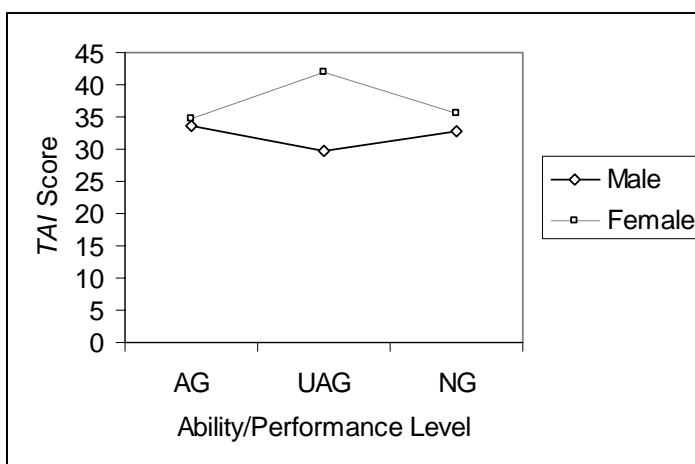


Figure 4.6. Ability/Performance Level x Gender on Test Anxiety.

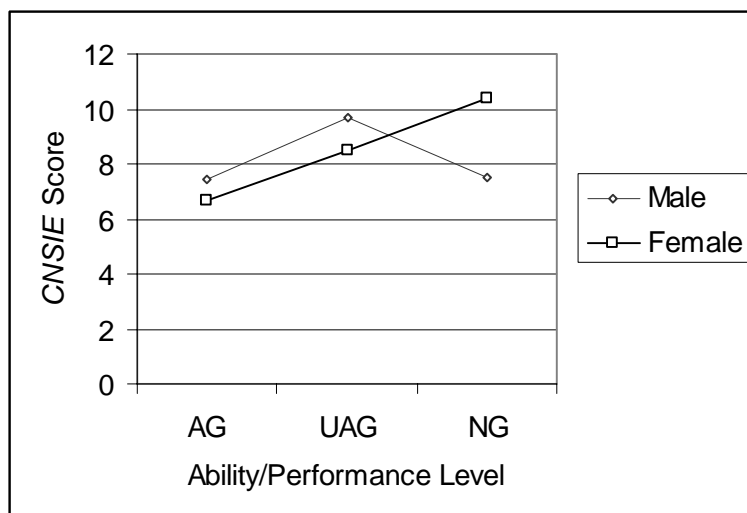


Figure 4.7. Ability/Performance Level x Gender on Locus of Control.

For ability/performance level, there was not a significant difference between the three levels of students on test anxiety, $F(2, 217) = .114, p = .892$. There was a significant difference between the three levels of students on locus of control orientation, $F(2, 217) = 7.731, p = .001$, indicating that underachieving students were more externally controlled than achieving gifted students, with a mean difference of 2.28 points. Nongifted students were more externally oriented than achieving gifted students, with a mean difference of 2.14 points. There was no significant difference in locus of control orientation between the underachieving and nongifted groups.

For gender, there was a significant difference between males and females on test anxiety, $t(218) = 2.305, p = .022$. Females had higher levels of test anxiety than males ($M = 35.58$ and $M = 32.57$, respectively). No significant differences due to gender were present on locus of control orientation, $t(218) = 1.347, p = .179$. Tables 4.1 and 4.2 show participants' mean scores on the two instruments.

Table 4.1

Participants' Mean Test Anxiety Scores

| | Males (<i>n</i> = 110) | | Females (<i>n</i> = 110) | |
|-----------------------|-------------------------|-----------|---------------------------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Achieving Gifted | 33.58 | 11.25 | 34.69 | 9.93 |
| Underachieving Gifted | 29.63 | 9.62 | 41.88 | 11.63 |
| Nongifted | 32.67 | 5.59 | 35.44 | 9.67 |

Table 4.2

Participants' Mean Locus of Control Scores

| | Males (<i>n</i> = 110) | | Females (<i>n</i> = 110) | |
|-----------------------|-------------------------|-----------|---------------------------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Achieving Gifted | 7.42 | 4.08 | 6.65 | 3.64 |
| Underachieving Gifted | 9.68 | 6.18 | 8.50 | 2.39 |
| Nongifted | 7.54 | 3.93 | 10.39 | 3.89 |

Two one way ANOVAs were conducted to determine whether or not ability/performance level and gender interacted to affect test anxiety and locus of control. A significant difference was found between the different classifications of ability/performance level in regards to gender on test anxiety, $F(5, 214) = 2.310$, $p = .045$. Female underachieving gifted students reported higher levels of test anxiety than male underachieving gifted students, with a mean difference of 12.243 points ($M = 41.88$ and $M = 29.63$, respectively).

A significant difference was also found between the different classifications of ability/performance level in regards to gender on locus of control, $F(5, 214) = 5.824$, $p = .001$. Male gifted achievers were more internally oriented than female nongifted students with a mean difference of -2.97 points ($M = 7.42$ and $M = 10.39$, respectively). Male nongifted students were more internally controlled than female nongifted students with a mean difference of -2.85 points ($M = 7.54$ and $M = 10.39$, respectively). Female achieving gifted students were more internally controlled than nongifted females with a mean difference of -3.74 points ($M = 6.65$ and $M = 10.39$, respectively).

Research Questions 9-10

Question 9. Is there a difference in the test anxiety levels of achieving gifted students attending public schools versus achieving gifted students attending private schools for the gifted?

Question 10. Is there a difference in the locus of control orientation of achieving gifted students attending public schools versus achieving gifted students attending private schools for the gifted?

Two independent *t*-tests were conducted to look for differences in the locus of control and test anxiety of achieving gifted students who attend public schools versus achieving gifted students who attend private schools for the gifted. A significant difference was found between the two groups of students on test anxiety, $t(218) = 1.976$, $p = .049$. Achieving gifted students who attend private schools exhibited more test anxiety than achieving gifted students who attend public schools ($M = 35.26$ and $M = 32.66$, respectively). No significant difference was found between the groups in regard to locus of control orientation ($M = 8.29$ and $M = 8.17$, respectively).

Summary

A 3 x 2 MANOVA indicated significant differences between the groups by gender and achievement classification (AG, UAG, & NG). There was a significant difference in locus of control orientation between achieving gifted and underachieving gifted students; based on their responses, underachieving gifted students were significantly more likely to report an external locus of control orientation than achieving gifted students. There was also a significant difference in the locus of control orientation between achieving gifted and nongifted students; nongifted students reported an external locus of control orientation more often than achieving gifted students. Underachieving males were more likely to report an external locus of control orientation than underachieving females.

CHAPTER 5

DISCUSSION

This chapter provides a discussion of the study's findings. A general summary of the findings will be followed by a discussion of the results for each research question. The study's limitations as well as its implications and suggestions for future research will also be included.

Overall Summary of the Results

This study was conducted to determine the prevalence of test anxiety and its relationship to locus of control orientation in students of three ability/performance levels. Although there were no exceptionally high test anxiety scores or exceptionally high external locus of control scores, some important differences were found. Test anxiety was positively related to locus of control orientation; increased test anxiety levels were prominent in participants with an external locus of control. This was true for achieving gifted students and nongifted students; however, this relationship was not significant for underachieving gifted students. In regards to gender, this relationship was significant for both males and females.

Underachieving gifted students were more externally oriented than achieving gifted students. There was no significant difference between the three ability/performance groups on test anxiety. However, ability/performance level was related to locus of control orientation. Achieving gifted students were more internally oriented than both underachieving and nongifted students. There was a significant difference due to gender on test anxiety levels; females reported higher levels of test

anxiety than males. However, gender did not have an effect on locus of control orientation.

The interaction of gender and ability/performance level also yielded significant results for both test anxiety and locus of control. Female underachieving gifted students reported higher levels of test anxiety than underachieving males. Male gifted achievers were more internally oriented than female nongifted students. For the nongifted students, the males were more internally controlled than the females. Female achieving gifted students were more internally oriented than nongifted females.

School environment also played an important role in test anxiety levels. Students classified as gifted achievers who attended private schools for the gifted reported higher levels of test anxiety than those who attended public schools.

Research Questions 1 and 2

Question 1. Is there a relationship between test anxiety and locus of control orientation among middle school students of varying ability levels?

Question 2. Is there a relationship between test anxiety and locus of control orientation for males and females?

As a result of the initial Pearson r , a positive relationship was found between the two constructs regardless of gender and ability/performance levels. Additional Pearson r 's revealed that the relationship existed for achieving gifted and nongifted students, and males and females. This relationship was cited in previous studies (e.g., Nunn, 1988; Weems et al., 2003).

This could be explained by Barlow's anxiety apprehension theory (2000). Individuals who believe they have little control over situations that arise in their lives are

more likely to experience anxiety. In this case, it is academic ability and success that students believe they have a lack of control over, and this lack of control is manifested through anxious behavior in response to testing situations. If students have failed in the past and have not taken the time to think about why they failed or what they could have done differently on future tests to improve performance, or if they do not have the metacognitive skills to reflect upon their poor performance, they will see every test as another sure failure. They will begin to develop anxiety about the consequences of another failure.

Research Question 3

Question 3. Do test anxiety levels differ among achieving gifted, underachieving gifted, and nongifted middle school students?

There were no significant differences between the three groups in regards to test anxiety. All three groups had low to moderate test anxiety scores. These results conflicted with those of Zeidner and Schleyer (1999) who reported that test anxiety scores were slightly lower in achieving gifted students than underachieving gifted students. In this study, underachieving gifted students actually had the lowest mean test anxiety score. While students in this study only reported moderate levels of test anxiety, other studies have found that gifted students are likely to suffer from test anxiety (Birenbaum & Nasser, 1994; Shaked, 1996).

Test anxiety is reported to be a “situation-specific personality trait” (Spielberger et al., 1972). It is possible that at the time when students were completing the *Test Anxiety Inventory*, there was no testing session in the recent past or near future. Therefore, test anxiety was not a trait displayed by these students at the time of study.

Research Question 4

Question 4. Is there a difference in the locus of control orientation among achieving gifted, underachieving gifted, and nongifted middle school students?

There were significant differences among the three levels of students on locus of control orientation, indicating that underachieving gifted students were more externally controlled than achieving gifted students. Nongifted students were more externally oriented than achieving gifted students. These findings concur with those of previous studies that achieving gifted students are more internally oriented than their nongifted or underachieving gifted peers (Harter & Connell, 1984; Kanoy et al., 1980; Laffoon et al., 1989; Nowicki & Strickland, 1973; Payne & Payne, 1989). A significant difference was not expected between the achieving gifted students and the achieving nongifted students. Because both groups were achieving in school, it can mean that they approached learning situations with an understanding that their actions prior to and during learning and assessment situations were determining factors in their rate of academic success.

The interesting question is whether the giftedness leads to the internal locus of control orientation or the internal locus of control orientation leads to achievement. Herskovits and Gefferth (1992) briefly touched upon this topic. It makes sense to say that students are identified as gifted with academic achievement being one of the most important factors in the identification process. Because these students have always done well academically, they realize that it was their hard work and dedication that has led them to excel academically. This would lead them to develop an internal locus of control.

Research Question 5

Question 5. Do test anxiety levels significantly differ among males and females?

Females reported significantly higher levels of test anxiety than males. This is consistent with the previous research on gender effects on test anxiety (Berger & Schechter, 1996; Chang, 1997). The difference in the socialization patterns of males and females has been the primary explanation for this difference (Brutsaert & Van Houtte, 2004; Eccles, 1994). More pressure is placed on females to succeed in school than males. This leads to the increase in test anxiety levels because girls essentially are afraid to fail; each testing situation is seen as another possible chance of failure.

Research Question 6

Question 6. Is there a difference in the locus of control orientation among males and females?

No differences were found between males and females in regards to locus of control orientation, although females were slightly more externally oriented than males. Similar results were found by Nowicki and Strickland (1973). However, the results of this study did not support by the findings of McLaughlin and Saccuzzo (1997) who reported that females were more likely to have an internal locus of control orientation than males. One possible explanation of this finding is the age of the students. Several studies reported that individuals tend to become more internally oriented with age (e.g. Bachman, O'Malley, & Johnston, 1978; Cairns, McWhirter, Duffy, & Barry, 1990). This shift usually occurs in early adolescence, around the age of 13 years (Kelly, 2002). This study may have come at a time when these students were beginning the process of

developing true self-awareness and had not yet realized their role in life experiences.

This time is particularly difficult for females (Kulas, 1996).

Research Question 7

Question 7. Is there an interaction between gender and ability/performance levels on test anxiety?

Female underachieving gifted students reported higher levels of test anxiety than male underachieving gifted students. Females in general are more likely to report higher levels of test anxiety (Berger & Schechter, 1996; Chang, 1997). The nongifted females may not put the same level of pressure on themselves to excel at each and every academic task. Since there were no significant differences between three ability/performance groups on test anxiety, it can be assumed that the difference between the underachieving males and females was entirely due to gender. It is important to note, however, that there were only nine females as opposed to 18 males in the underachieving gifted group. This could have skewed the results. The test anxiety scores were not exceptionally high, as would be expected based on previous research (Harter & Connell, 1984).

Research Question 8

Question 8. Is there an interaction between gender and ability/performance levels on locus of control orientation?

An interesting effect occurred when the interaction of gender and ability/performance levels was considered in respect to locus of control orientation. Previous research has reported that females tend to be more internally controlled than males (Berger & Schechter, 1996; Chang, 1997). In this study, male nongifted students were more internally controlled than female nongifted students.

Male gifted achievers were more internally oriented than female nongifted students. This difference could be attributed to the giftedness, since gifted students tend to be more internally controlled than nongifted students (Harter & Connell, 1984; Kanoy et al., 1980; Laffoon et al., 1989; Nowicki & Strickland, 1973; Payne & Payne, 1989). Female achieving gifted students were more internally controlled than nongifted females. This difference is attributable to the giftedness.

Research Questions 9 & 10

Question 9. Is there a difference in the test anxiety levels of achieving gifted students attending public schools versus achieving gifted students attending private schools for the gifted?

Question 10. Is there a difference in the locus of control orientation of achieving gifted students attending public schools versus achieving gifted students attending private schools for the gifted?

Although neither group reported very high levels of test anxiety, achieving gifted students who attend private schools for the gifted exhibited higher levels of test anxiety than achieving gifted students in public schools. This could be due to the fact that the classroom environment in exclusive private schools is extremely competitive. Not only are higher expectations placed upon these students, they have the additional pressure of maintaining their grades so that they continue to meet the academic requirements of the school. These results are consistent with the findings of Schwarzer (1994) who found that students in self-contained gifted classes experience higher levels of test anxiety than gifted students who are mainstreamed into the regular classrooms.

Academic self-concept could be a contributing factor in the difference in test anxiety levels among these students. Byrne (1996) stated that individuals make internal and external comparisons. Students compare their own performance on a task with that of their peers (external comparison) as well as with their own performance on other tasks and in other subject areas (internal comparison). In a school for the gifted, all students will have a high level of academic performance. Therefore, when they are making these external comparisons, they are more likely to find that their performance is similar to or even below that of the other students. In turn, when they compare their performance in this particular area to their performance in other areas of their academic life, they will rate their performance even lower than it actually is. This could lead to a lower academic self-concept, in turn, leading to higher test anxiety scores because of their fear of failure that will further decrease their academic performance. When gifted students in a public school make external comparisons, it is a guarantee that they will find their performance to be above that of at least some of their peers. This will lead to greater self-confidence; when they make the internal comparisons, they are going to be happier with their performance. Therefore, they may not feel as much anxiety in the testing situation because of the confidence in their abilities.

Limitations

There were several limitations that could have affected this study. There was a large discrepancy between the number of achieving gifted and underachieving gifted students in the sample ($n = 100$ and $n = 27$, respectively). The low number of underachieving gifted students that were located to participate in the study could be due to the fact that underachieving gifted students are often overlooked for gifted services.

Sometimes they are labeled as learning disabled (Delisle, 1994). Although some significant differences were found between the three groups, there is no way to determine if these differences would exist to the same degree if the sample sizes were similar. It is also possible that the sample was not representative of the population.

Another limitation is the reliability of the students' responses. First, there is no way to know if the participants read each statement carefully and gave an honest response. It is also a possibility that the students became bored or fatigued while completing the two instruments and just randomly selected responses, therefore, giving a false representation of their test anxiety levels and locus of control orientation. Finally, an incentive was offered to those students who participated in the study, the chance to win a \$50 Toys R Us gift card. It is possible that students completed the questionnaire just to be given the opportunity to win the gift card, without carefully reading and responding to the items. The acceptable reliability estimates of the instruments used would indicate that this was not the situation.

One of the more serious limitations of the study was the instrument chosen to measure locus of control orientation in these students. As Chubb (1997) stated, sometimes students may not have a clearly defined internal or external locus of control; they may fall somewhere in the middle so it would be difficult to label them as internally or externally oriented. That was the case in this study. Chubb (1997) also reported that locus of control orientation can be situation specific; the questions on the *CNSIE* were very general, so there is no way of knowing the students' frame of mind when they were answering the questions. Were they responding based on their overall attitude toward life events or based on their emotional status at the time they completed the instrument?

The instrument itself proved itself to be a weak measure of locus of control orientation in children. Fifteen items had to be removed to reach an adequate reliability coefficient. In the process of scoring the exams, the researcher found a variety of comments from students stating that they were unsure what the question was asking and that their response would be different based on the specific purpose of the question; these were the questions that had to be removed from the instrument before analysis could take place. For example, on Item 15, “Do you believe your parents should allow you to make most of your own decisions?” several students commented that it would depend on what they were asking their parent to do; there were some situations that their parents would allow them to make their own decisions, but in other situations, a parent would make the decision for them if it was something that would be harmful to themselves or others. In another example, Item 22 asked, “Do you often feel whether you can do your homework has much to do with what kinds of grades you get?” students commented that it depended on how much the homework counted towards their grades. Other students wrote that they did not think homework counted towards their grades because the teacher never collected their homework.

Implications and Future Research

This research demonstrated that test anxiety is a psychological issue that is experienced by middle school students, in particular, female students, regardless of ability/performance level. From this small sample of middle school students, it has been shown that educators need to be aware of the signs of test anxiety and recognize the detrimental effects it could have on academic performance. Professional development sessions should be offered to educators to help them recognize when poor test

performance is due to a lack of effort or debilitating test anxiety. Future research can study the effectiveness of different professional development methods.

In addition, future research could be conducted to look at the effectiveness of intervention programs for students with test anxiety. Schools should offer individual counseling sessions to students suffering from severe anxiety to control the problem before it leads to more severe problems such as low academic self-concept or even depression. For students with low levels of test anxiety, group counseling sessions may be more beneficial. Students can share their personal experiences and coping strategies with others so they know that they are not alone.

The major finding was that an external locus of control orientation was prominent among gifted underachievers. This important factor could contribute to underachievement in gifted students. It is possible that these students had one too many experiences with failure when they were “achieving” and were unable to deal with the fact that they cannot always be perfect. In turn, these students could have lost that achievement-striving attitude; they now believe that the number of hours they study and their attention span in class have nothing to do with their performance, so they no longer put in the effort. It would be interesting to have teachers identify gifted students who are at risk for becoming underachievers (those students who have experienced failures in the recent past) and track their behavior and performance, to see if and when change in attitude takes place, and how the students explain it.

Conclusion

This study investigated whether or not test anxiety and locus of control orientation were related in students of three ability/performance levels, and whether gender was a moderating variable. The purpose of the study was to look at the interaction of two factors that have both been shown to have an impact on the academic performance of students. It was found that test anxiety and locus of control orientation were positively related. Test anxiety was most prominent in female students, regardless of achievement/ability level, and underachieving gifted students tend to have an external locus of control, which could contribute to their poor academic performance.

References

- Ackerman, L., & Ackerman, P. (1989). Generational differences and parent-child resemblance in achievement motives and locus of control: A cross-sectional analysis. *Personality and Individual Differences, 10*, 1237-1242.
- Ackerman, P. L., & Heggstad, E. D. (1997). Intelligence, personality, and interests: Evidence for overlapping traits. *Psychological Bulletin, 121*, 219-245.
- Aluja-Fabregat, A., & Torrubia-Beltri, R. (1998). Viewing of mass media violence, perception of violence, personality and academic achievement. *Personality and Individual Differences, 25*, 973-989.
- Anderson, N. H. (1973). Functional measurement of social desirability. *Sociometry, 36*, 89-98.
- Arch, E. C. (1987). Differential responses of females and males to evaluative stress. In R. Schwarzer, H. M. van der Ploeg, & C. D. Spielberger (Eds.), *Advances in test anxiety research, Volume 5* (pp. 97-106). Hillside, NJ: Erlbaum.
- Auer, C. J. (1992). A comparison of the locus of control of first and second grade students in whole language, basal reader, and eclectic instructional approach classrooms. *Dissertation Abstracts International, 53*, 3856.
- Baker, J.A. (1996). Everyday stressors of academically gifted adolescents. *Journal of Secondary Gifted Education, 7*, 356-368.
- Bandalos, D. L., Yates, K., & Thorndike-Christ, T. (1995). Effects of math self-concept, perceived self-efficacy, and attributions for failure and success on test anxiety. *Journal of Educational Psychology, 87*, 611-623.

- Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. *Child Development, 67*, 3296-3319.
- Barlow, D. H. (2000). Unraveling the mysteries of anxiety and its disorders from the perspective of emotion theory. *American Psychologist, 55*, 1247-1263.
- Baron, R. M., Cowan, G., & Ganz, R. (1974). Interaction of locus of control and type of feedback: Considerations of external validity. *Journal of Personality and Social Psychology, 30*, 285-292.
- Baron, R. M., & Ganz, R. L. (1972). Effects of locus of control and type of feedback on the task performance of lower-class black children. *Journal of Personality and Social Psychology, 21*, 124-130.
- Berger, R., & Shechter, Y. (1996). Guidelines for choosing an “intervention package” for working with adolescent girls in distress. *Adolescence, 31*, 709-717.
- Brecher, M., & Denmark, F. L. (1972). Locus of control: Effects of a serendipitous manipulation. *Psychological Reports, 30*, 461-462.
- Bhanot, R., & Jovanovic, J. (2005). Do parents’ academic gender stereotypes influence whether they intrude on their children’s homework? *Sex Roles, 52*, 597-607.
- Birenbaum, M., & Nasser, F. (1994). On the relationship between test anxiety and test performance. *Measurement & Evaluation in Counseling & Development, 27*, 293-302.
- Birenbaum, M., & Pinku, P. (1997). Effects of test anxiety, information organization, and testing situation on performance on two test formats. *Contemporary Educational Psychology, 22*, 22-38.

- Borkowski, J. G., & Thorpe, P. K. (1994). Self regulation and motivation: A life-span perspective on underachievement. In D. H. Schunk, & B. J. Zimmerman (Eds.), *Self-regulation of learning and performance: Issues and educational applications* (pp. 45-73). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Brutsaert, H., & Van Houtte, M. (2004). Gender context of schooling and levels of stress among early adolescent pupils. *Education and Urban Society, 37*, 58-73.
- Byrne, B. (1996). *Measuring self-concept across the lifespan: Issues and instrumentation*. Washington, DC: American Psychological Association.
- Cairns, E., McWhirter, L., Duffy, U., & Barry, R. (1990). The stability of self-concept in late adolescence: Gender and situational effects. *Personality and Individual Differences, 11*, 937-944.
- Callahan, C. M., Cunningham, C. M., & Plucker, J. A. (1994). Foundations for the future: The socio-emotional development of gifted, adolescent women. *Roeper Review, 17*, 99-105.
- Carton, J. S., & Nowicki, S., Jr. (1996). Origins of generalized control expectancies: Reported child stress and observed maternal control and warmth. *Journal of Social Psychology, 136*, 753-760.
- Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and academic performance. *Contemporary Educational Psychology, 27*, 270-295.
- Chamorro-Premuzic, T., & Furnham, A. (2003). Personality traits and academic examination and performance. *Journal of Personality, 17*, 237-250.

- Chamorro-Premuzic, T., & Furnham, A. (2004). Gender and personality differences in self- and other ratings of business intelligence. *British Journal of Management*, *16*, 91-103.
- Culler, R. E., & Holohan, C. J. (1980). Test anxiety and academic performance: The effects of study-related behaviors. *Journal of Educational Psychology*, *72*, 16–26.
- Chang, J. I. (1997, November). *Contexts of adolescent worries: Impacts of ethnicity, gender, family structure, and socioeconomic status*. Paper presented at the annual meeting of NCFR Fatherhood and Motherhood in a Diverse and Changing World, Arlington, VA.
- Chubb, N. (1997). Adolescent self-esteem and locus of control: A longitudinal study of gender and age differences. *Adolescence*, *32*, 113-129.
- Coleman, J. C. (1993). Understanding adolescence today: A review. *Children and Society*, *7*, 137-147.
- Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfeld, E., et al. (1966). *Equality of educational opportunity*. Superintendent of Documents, Catalog No. FS 5.238:38001, Washington, DC: Government Printing Office.
- Costa Jr., P. T., & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and Individual Differences*, *13*, 653-665.
- Covington, M. V., & Omelich, C. L. (1987). Item difficulty and test performance among high-anxious and low-anxious students. In R. Schwarzer, H. M. Van der Ploeg, & C. D. Spielberger (Eds.), *Advances in test anxiety research*, Vol. 5 (pp. 127-136). Lisse, The Netherlands: Swets & Zeitlinger.

- Crandall, V., Katkovsky, W., & Crandall, V. (1965). Children's beliefs in their own control of reinforcement in intellectual-academic situations. *Child Development*, 36, 91-109.
- Delisle, J. (1994). Dealing with the stereotype of underachievement. *Gifted Child Today*, 17, 20-21.
- Delisle, J. (2004, Winter). Comfortably numb: A new view of underachievement. *Gifted Education Communicator*, 35, 17-20.
- Delisle, J., & Renzulli, J. (1982). The revolving door identification and programming model: Correlates of creative production. *Gifted Child Quarterly*, 26, 89-95.
- Downey, D. (1995). Understanding academic achievement among children in stephouseholds: The role of parental resources, sex of stepparent, and sex of child. *Social Forces*, 73, 875-894.
- Dreikurs, R., & Cassel, P. (1972). *Discipline without tears*. New York: Hawthorn.
- Dweck, C. S. (1986). Motivation processes affecting learning. *American Psychologist*, 41, 1040-1048.
- Dweck, C. S., Davidson, W., Nelson, S., & Enna, B. (1978). Sex differences in learned helplessness: II. The contingencies of evaluative feedback in the classroom and III. An experimental analysis. *Developmental Psychology*, 14, 268-276.
- Eccles, J. (1985). Why doesn't Jane run? Sex differences in educational and occupational patterns. In F.D. Horowitz, M. O'Brien (Eds.), *The gifted and talented: Developmental perspectives*, (pp. 251-295). Washington, DC: American Psychological Association.

- Eccles, J. (1994). Understanding women's educational and occupational choices: Applying the Eccles et al. model of related choices. *Psychology of Women Quarterly, 18*, 585-609.
- Everson, H. T., Millsap, R. E., & Rodriguez, C. M. (1991). Isolating gender differences in test anxiety: A confirmatory factor analysis. *Educational and Psychological Measurement, 51*, 243-251.
- Everson, H. T., Tobias, S., Hartman, H., & Gourgey, A. (1993). Test anxiety and the curriculum: The subject matters. *Anxiety, Stress, & Coping: An International Journal, 6*, 1-8.
- Eysenck, H. J. (1994). Cancer, personality and stress: Prediction and prevention. *Advances in Behavior Research and Therapy, 16*, 167-215.
- Eysenck, H. J. (1998). *Intelligence: A new look*. New Brunswick, NJ: Transaction.
- Eysenck, H. J., & Eysenck, M. W. (1985). *Personality and individual differences: A natural science approach*. New York: Plenum Press.
- Ferrer, M., & Krantz, M. (1987). Self-control, locus of control and social status in children. *Psychological Reports, 60*, 355-358.
- Ford, D. Y. (1992). Determinants of underachievement as perceived by gifted, above-average, and average Black students. *Roepers Review, 14*, 130-136.
- Ford, D. Y. (1996). *Reversing underachievement among gifted black students: promising practices and programs*. New York: Teachers College.
- Fortier, M. S., Vallerand, R. J., & Guay, F. (1995). Academic motivation and school performance: Toward a structural model. *Contemporary Educational Psychology, 20*, 257-274.

- Frey, C. (2002, Spring). *Dealing with the needs of underachieving gifted students in a suburban school district. What works!* Storrs, CT: The National Research for the Gifted and Talented, University of Connecticut.
- Frome, P., & Eccles, J. (1998). Parents' influences on children's achievement-related perceptions. *Journal of Personality and Social Psychology, 74*, 435-452.
- Furnham, A., & Medhurst, S. (1995). Personality correlates of academic seminar behavior: A study of four instruments. *Personality and Individual Differences, 19*, 197-208.
- Goldstein, A. G., & Chance, J. E. (1965). Effects of practice on sex-related differences in performance on Embedded Figures. *Psychonomic Science, 3*, 361-362.
- Gordon, D. A., Nowicki, S., & Wichem, F. (1981). Observed maternal and child behaviors in a dependency-producing task as a function of children's focus of controlled orientation. *Merrill-Palmer Quarterly, 27*, 43-51.
- Hagborg, W.J. (1996). Self-concept and middle school students with learning disabilities: A comparison of scholastic competence subgroups. *Learning Disability Quarterly, 19*, 117-26.
- Harter, S., & Connell, J. (1984). A model of children's achievement and related self-perceptions of competence, control, and motivational orientation. In J.G. Nicholls (Ed.). *Advances in motivation and achievement* (pp. 219-250). New York: JAI Press.
- Hèbert, T. P. (2001). If I had a new notebook, I know things would change: Bright underachieving young men in urban classrooms. *Gifted Child Quarterly, 45*, 174 - 194.

- Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. *Review of Educational Research, 58*, 47-77.
- Herbert, J., & Stipek, D. (2005). The emergence of gender differences in children's perception of their academic competence. *Journal of Applied Developmental Psychology, 26*, 276-295.
- Herskovits, M., & Gefferth, E. (1992). Locus of control as an important factor in teacher's rating of highly able children. *Gifted Education International, 8*, 79-85.
- Ikeda, M., Iwanaga, M., & Seiwa, H. (1996). Test anxiety and working memory system. *Perceptual and Motor Skills, 82*(3, Pt 2), 1223-1231.
- Jackson, L. D., & Bracken, B. A. (1998). Relationship between student's social status and global and domain-specific self-concepts. *Journal of School Psychology, 36*, 233-246.
- Jensen, A. R. (1998). *The g factor: The science of mental ability*. Wesport, CT: Praeger.
- Kanoy, R., Johnson, B., & Kanoy, K. (1980). Locus of control and self-concept in achieving and underachieving bright elementary students. *Psychology in the Schools, 17*, 395-399.
- Kelly, W. E. (2002). Harnessing the river of time: A theoretical framework of time use efficiency with suggestions for counselors. *Journal of Employment Counseling, 39*, 12-21.
- Kendell, P. C., & Wilcox, L. E. (1979). Self-control in children: Development of a rating scale. *Journal of Consulting and Clinical Psychology, 47*, 1020-1029.
- Klein, J. (2004). Planning middle school schedules for improved attention and achievement. *Scandinavian Journal of Educational Research, 48*, 441-450.

- Knoop, R. (1981). Age and correlates of locus of control. *Journal of Psychology, 108*, 103-106.
- Kress, C. A. (1998). Understanding the consistently misunderstood: The “underachieving gifted” child. Reclaiming Children and Youth. *Journal of Emotional and Behavioral Problems, 6*, 204-207.
- Kulas, H. (1996). Locus of control in adolescence: A longitudinal study. *Adolescence, 31*, 721-729.
- Kurdek, L. A., & Sinclair, R. J. (1988). Relationship of eight graders’ family structure, gender, and family environment with academic performance and school behavior. *Journal of Educational Psychology, 80*, 90-94.
- Laffoon, K., Jenkins-Friedman, R., & Tollefson, N. (1989). Causal attributions of underachieving gifted, achieving gifted and nongifted students. *Journal for the Education of the Gifted, 13*, 4-21.
- Lareau, A. (1989). *Home advantage: Social class and parental intervention in elementary education*. New York: Falmer. (ED 329 605)
- Lefcourt, H. M. (1982). *Locus of control: Current trends and theory and research (2nd ed.)*. Hillsdale, NJ: Erlbaum.
- Liebert, R. M., & Morris, L. W. (1967). Cognitive and emotional components of test anxiety: A distinction and some initial data. *Psychological Reports, 20*, 975-978.
- Lupart, J. L., Cannon, E., & Telfer, J. (2002). *Gender differences in student participation in the sciences: Choice or chance?* Calgary, AB: University of Calgary.
- Lynch, S., Hurford, D. P., & Cole, A. (2002). Parental enabling attitudes and locus of control of at-risk and honors students. *Adolescence, 37*, 527-550.

- Lyon, M. A. (1993). Academic self-concept and its relationship to achievement in a sample of junior high school students. *Educational and Psychological Measurement, 53*, 201-211.
- Maehr, M. L., & Midgley, C. (1991). Enhancing student motivation: A schoolwide approach. *Educational Psychologist, 26*, 399-427.
- Mandel, H. P., & Marcus, S. I. (1988). *The psychology of underachievement*. New York: John Wiley.
- Marjoribanks, K. (1992). Environmental and individual differences on Australian students' likelihood of staying in school. *Journal of Genetic Psychology, 163*, 368-381.
- McCall, R. B., Evahn, C., & Kratzer, L. (1992). *High school underachievers: What do they achieve as adults?* Newbury Park, CA: Sage.
- McCoach, D. B., & Siegle, D. (2003). The SAAS-R: A new instrument to identify academically able students who underachieve. *Educational and Psychological Measurement, 63*, 414-429.
- McGregor, H. A., & Elliot, A. J. (2002). Achievement goals as predictors of achievement relevant processes prior to task engagement. *Journal of Educational Psychology, 94*, 381-395.
- McLaughlin, S. C., & Saccuzzo, D. P. (1997). Ethnic and gender differences in locus of control in children referred for gifted programs: The effects of vulnerability factors. *Journal for the Education of the Gifted, 20*, 268-283.
- Mueller, J. H. (1980). Test anxiety and the encoding and retrieval of information.

- In G. Sarason (Ed.), *Test anxiety: Theory, research and applications* (pp. 63-86). Hillsdale, NJ: Erlbaum.
- Mueller, J. H. (1992). Anxiety and performance. In A. P. Smith & D. M. Jones (Eds.), *Handbook of human performance: Volume 3: State and trait* (pp. 127-60). London: Academic Press.
- Musher-Eizenman, D. R., Nesselroade, J., & Schmitz, B. (2002). Perceived control and academic performance: A comparison of high- and low-performing children on within-person change patterns. *Journal of Behavioral Development, 26*, 540-547.
- Naveh-Benjamin, M., McKeachie, W. J., & Lin, Y.G. (1987). Two types of test anxious students: Support for an information processing model. *Journal of Educational Psychology, 79*, 131-136.
- Nicholls, A. (1967). The opinions on co-education of a group of secondary modern school children in the Manchester area. Their teachers and their parents. *British Journal of Educational Psychology, 37*, 396-397.
- Nowicki, S., Jr., & Strickland, B. R. (1973). A locus of control scale for children. *Journal of Consulting and Clinical Psychology, 40*, 148-154.
- Nunn, G. D. (1988). Concurrent validity between the Nowicki-Strickland Locus of Control Scale and State-Trait Anxiety Inventory for Children. *Educational and Psychological Measurement, 48*, 435-438.
- Nunn, G. D. (1995). Effects of a learning styles and strategies intervention upon at-risk middle school students' achievement and locus of control. *Journal of Instructional Psychology, 21*, 421-433.

- Nunn, G. D., Montgomery, J. D., & Nunn, S. J. (1986). Criterion-related validity of the Nowicki-Strickland Locus of Control Scale with academic achievement. *Psychology: A Quarterly Journal of Human Behavior, 23*, 9-11.
- Oswald, L., Walker, G., Krajewski, K., & Reilly, E. (1994). General and specific locus of control in cocaine abusers. *Journal of Substance Abuse, 6*, 179-190.
- Onwuegbuzie, A. J., & Daley, C. E. (1996). The relative contributions of examination-taking coping strategies and study coping strategies to test anxiety: A concurrent analysis. *Cognitive Therapy and Research, 20*, 287-303.
- Parkes, K. R. (1984). Locus of control, cognitive appraisal, and coping in stressful episodes. *Journal of Personality and Social Psychology, 46*, 655-668.
- Paulhus, D. L., Chen, D., & Trapnell, P. D. (1999). Birth order and personality within families. *Psychological Science, 10*, 482-488.
- Payne, B. D., & Payne, D. A. (1989). Sex, race, and grade differences in the locus of control orientations of at-risk elementary students. *Psychology in the Schools, 26*, 84-88.
- Peters, W., Grager-Loidl, H., & Supplee, P. (2000). Underachievement in gifted children and adolescents: Theory and practice. In K. A. Heller, F. J. Mönks, R. J. Sternberg & R. F. Subotnik (Eds.), *International handbook of giftedness and talent* (2nd ed., pp. 609-620). Oxford: Pergamon.
- Petrides, K.V., Chamorro-Premuzic, T., Frederickson, N. & Furnham, A. (2005). Explaining individual differences in scholastic behavior and achievement. *British Journal of Educational Psychology, 17*, 239-255.

- Pety, J., Kelly, F. D., & Kafafy, T. (1984). The praise-encouragement preference scale for children. *Individual Psychology, 40*, 92-101.
- Phares, E. J. (1976). *Locus of control in personality*. Morristown, NJ: General Learning.
- Pines, H. A. (1973). An attributional analysis of locus of control orientation and source of informational dependence. *Journal of Personality and Social Psychology, 26*, 262-272.
- Plucker, J., & McIntire, J. (1996). Academic survivability in high-potential, middle school students. *Gifted Child Quarterly, 40*, 7-14
- Polatsky, L. (1992). *Test anxiety among children administered screening tests for giftedness*. Paper presented at the Proceedings of the Ninth World Conference on Gifted and Talented Children, Van Gorcum, Assen/Maastricht, The Netherlands.
- Pollack, W. S. (2000). *Real boys' voices*. New York: Penguin Books.
- Reis, S.M. (2002). Social and emotional issues faced by gifted girls in elementary and secondary school. *The SENG Newsletter, 2(3)*, 1-5.
- Reis, S. M., & McCoach, D. B. (2000). The underachievement of gifted students: What do we know and where do we go? *Gifted Child Quarterly, 44*, 152-170.
- Reis, R. M., & Rubin, L. M. (2004). Compensation strategies used by high ability students with learning disabilities. In T. M. Newman & R. J. Sternberg (Eds.), *Students with both gifts and learning disabilities: Identification, assessment, and outcomes* (pp. 155-198). New York: Kluwer.
- Rimm, S. (1985). *Achievement identification measure*. Watertown, WI: Educational Assessment Service.

- Rimm, S. (1995). *Why bright kids get poor grades and what you can do about it*. New York: Crown Trade Paperbacks.
- Rimm, S. (2004, Winter). Reversing underachievement: A psychological perspective. *Gifted Education Communicator*, 35, 7-11.
- Rolfhus, E. L., & Ackerman, P. L. (1996). Self-report knowledge: At the crossroads of ability, interest, and personality. *Journal of Educational Psychology*, 88, 174-188.
- Rosen, B. (1973). Social change, migration and family interaction in Brazil. *American Sociological Review*, 38, 198-212.
- Rotter, J. (1966). Generalized expectancies for internal vs. external control of reinforcement. *Psychological Monographs*, 80, 1-28.
- Sarason, I. G. (1986). Test anxiety, worry, and cognitive interference. In R. Schwarzer (Ed.), *Self-related cognition in anxiety and motivation* (pp. 19-34). Hillsdale, NJ: Erlbaum.
- Sarason, I. G. (1980). *Test anxiety: Theory, research, and applications*. Hillsdale, NJ: Erlbaum.
- Schwarzer, R. (1984). Worry and emotionality as separate components in test anxiety. *International Review of Applied Psychology*, 33, 205-220.
- Schwarzer, R., & Jerusalem, M. (1992). Advances in anxiety theory: A cognitive process approach. In K. A. Hagtvet & T. B. Johnsen (Eds.), *Advances in test anxiety research*, Vol. 7, (pp. 2-17). Lisse, Netherlands: Swets & Zeitlinger.

- Schunk, D. H. (1998, November). *Motivation and self-regulation among gifted learners*. Paper presented at the annual meeting of the National Association for Gifted Children, Louisville, KY.
- Schutz, P. A., & Davis, H. A. (2000). Emotions and self-regulation during test taking. *Educational Psychologist, 35*, 243-256.
- Seeley, K. (1993). Gifted students at risk. In L. Silverman (Ed.). *Counseling the gifted and talented*. Denver, CO: Love.
- Shaked, Y. (1996, September 30). During the test I am in a shock. *Marive, AI*, 6-7.
- Shute, G., Howard, M., & Steyaert, J. (1984). The relationships among cognitive development, locus of control, and gender. *Journal of Research in Personality, 18*, 335-341.
- Siegle, D. (2004). Living up to their potential: Strategies for promoting achievement-oriented students. *Gifted Education Communicator, 35*(4), 31-35.
- Skinner, E. A. (1995). *Perceived control, motivation, and coping* (Vol. 8). Thousand Oaks, CA: Sage.
- Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I've got it: The role of perceived control in children's engagement and school achievement. *Journal of Educational Psychology, 82*, 22-32.
- Sowa, C. J., & LaFlour, N. K. (1986). Gender differences within test anxiety. *Journal of Instructional Psychology, 13*, 75-80.

- Spielberger, C. D. (1972). Current trends in theory and research on anxiety. In C. D. Spielberger (Ed.), *Anxiety: Current trends in theory and research* (pp. 3-9). New York and London: Academic.
- Spielberger, C. D., Gonzalez, H. P., Taylor, C. J., Algaze, B., & Anton, W. D. (1978). Examination stress and test anxiety. In C. D. Spielberger and I. G. Sarason (Eds.), *Stress and anxiety* (Vol. 5, pp. 167-191), New York: John Wiley & Sons.
- Spielberger, C. D., Gonzalez, H. P., Taylor, E. D., Anton, B., Algaze, Ross, G. R., & Westbury, L. G. (1980). *Test Anxiety Inventory*. Redwood City, CA: Mind Garden.
- Stipek, D., & Weisz, J. (1981). Perceived personal control and academic achievement. *Review of Educational Research, 51*, 101-137.
- Stober, J. (2004). Dimensions of test anxiety relations to ways of coping with pre-exam anxiety and uncertainty. *Anxiety, Stress, and Coping, 17*, 213-226.
- Tanksley, M. D. (1994). *Building good self-esteem for certain fifth grade children through cooperative learning, individualized learning techniques, parental involvement, and student counseling*. (ED 367 095).
- Tesiny, E. P., Lefkowitz, M. M., & Gordon, N. H. (1980). Childhood depression, locus of control, and school achievement. *Journal of Educational Psychology, 72*, 506-510.
- U.S. Congress. (2001). *Public Law No. 107-110, No Child Left Behind Act*. Washington, DC: U.S. Congress.
- Walberg, H. J. (1984). Improving the productivity of America's schools. *Educational Leadership, 41*, 19-27.

- Weems, C. F., Silverman, W. K., & Rapee, R. M. (2003). The role of control in childhood anxiety disorders. *Cognitive Therapy and Research, 27*, 557-568.
- Weiner, B. (1992). *Human motivation: Metaphors, theories, and research*. Newbury Park, CA: SAGE.
- Weisz, J. (1986). Contingency and control beliefs as predictors of psychotherapy outcomes among children and adolescents. *Journal of Consulting and Clinical Psychology, 54*, 789-795.
- Whitmore, J. R. (1986). Understanding a lack of motivation to excel. *Gifted Child Quarterly, 30*, 66-69
- Whitmore J. R. (1980). *Giftedness, conflict, and underachievement*. Boston: Allyn & Bacon.
- Wiebe, D. J. (1991). Hardiness and stress moderation: A test of proposed mechanisms. *Journal of Personality and Social Psychology, 60*, 89-99.
- Wigfield, A. (1994). The role of children's achievement values in the self-regulation of their learning outcomes. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulation of learning and performance: Issues and educational applications* (pp. 101-124). Mahwah, NJ: Lawrence Erlbaum.
- Willimas, J. E. (1996). Gender-related worry and emotionality test anxiety for high-achieving students. *Psychology in the Schools, 33*, 159-162.
- Young, T., & Shorr, D. N. (1986). Factors affecting locus of control in school children. *Genetic, Social, and General Psychology Monographs, 112*, 405-417.
- Zajonc, R. B., & Markus, G. B. (1975). Birth order and intellectual development. *Psychological Review, 82*, 74-88.

Zeidner, M. (1995). Adaptive coping with test situations: A review of the literature.

Educational Psychologist, 30, 123-133.

Zeidner, M., & Schleyer, E. J. (1999). Test anxiety in intellectually gifted school

students. *Anxiety, Stress, and Coping, 12*, 163-189.

Zimmerman, B. J. (1994). Dimensions of academic self-regulation: A conceptual

framework for education. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-*

regulation of learning and performance: Issues and educational applications (pp.

3-21). Mahwah, NJ: Lawrence Erlbaum.