

2011

Advanced learner perceptions of psychological well-being and school satisfaction in two educational settings

Janice C. Robertson

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**ADVANCED LEARNER PERCEPTIONS OF PSYCHOLOGICAL WELL-BEING AND
SCHOOL SATISFACTION IN TWO EDUCATIONAL SETTINGS**

A Dissertation

Presented to

**The Faculty of the School of Education
The College of William and Mary in Virginia**

In Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

by

Janice C. Robertson

November 2010

**ADVANCED LEARNER PERCEPTIONS OF PSYCHOLOGICAL WELL-BEING AND SCHOOL
SATISFACTION IN TWO EDUCATIONAL SETTINGS**

By

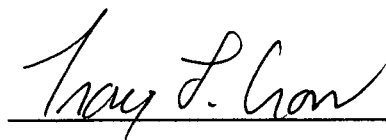
Janice C. Robertson

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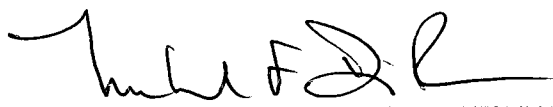


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Acknowledgments

My gratitude goes out to my two advisors, Dr. Joyce VanTassel-Baska and Dr. Carol Tieso. I gained so much not only from the courses I took with them, but also from their mentorship and encouragement during this journey of several years. Their passion for supporting gifted children and students at the College of William and Mary, and their dedication to the field of gifted education, inspired me to persist in pursuing my degree. As the chairperson of my doctoral committee, Dr. Tieso has always been there to share perspectives as a teacher, offer important insights and recommendations, and to mentor and befriend me.

I learned much from every faculty member, but, in particular, I wish to thank Dr. Michael DiPaola and Dr. Tracy Cross who served on my committee and were so helpful in improving my research and expanding my knowledge. The School of Education Educational Policy, Planning and Leadership faculty deserve accolades for providing such a beneficial program, and I wish all professors and staff members only the best in the future. I already miss a number of my fellow students, as many of us bonded and became friends during class and group projects.

As I near the end of my dissertation study, I must express my unwavering gratitude to my family and friends for their understanding and support. Many of my family members are educators who have excited and encouraged me to be a lifelong learner. My husband, Tom, and children, Sara, Jimmy, Leslie, and Laura, have always inspired me to pursue my passions, and have encouraged me through difficult challenges. Specifically for my dissertation, Laura gave constructive feedback and provided the technology skills needed to format one important appendix.

My children have taught me firsthand about gifted young people, and sparked my curiosity to learn more. They were my major impetus in seeking both my educational specialist degree in school psychology and my doctorate from the College of William and Mary. I must also thank my parents, grandparents, aunts, and uncles who left us many years ago, but who continue to set an inspiring example of what a life spent pursuing knowledge and dreams is all about.

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ADVANCED LEARNER PERCEPTIONS OF PSYCHOLOGICAL WELL-BEING AND SCHOOL SATISFACTION IN TWO EDUCATIONAL SETTINGS

ABSTRACT

The intent of this study was to explore the effects of two settings on self-concept and school satisfaction of academically advanced high school students. The research designs were causal-comparative and correlational. Participants were 224 partial-day academic Governor's School students and 56 academically advanced students in district schools in a southern U.S. state.

Self-concept for the total group appeared adequate to strong, and the two student groups were similar in total self-concept and its dimensions ($p > .01$), as measured by the Piers-Harris Children's Self-Concept Scale – Second Edition (Piers-Harris 2). However, frequent worry, nervousness, and feelings of differentness were revealed by a number of participants. The findings for the School Attitude Assessment Survey – Revised suggested that the Governor's School students were more satisfied with the Governor's Schools than with their district schools ($p < .05$), although academic self-perception, on average, was significantly lower in the Governor's Schools. They also appeared more satisfied with the Governor's Schools than the district students were

with their schools ($p < .05$). Several positive correlations were found between self-concept and school attitudes.

For the total sample, while obtaining similar results to those of the males in most self-concept dimensions, the females obtained a significantly lower mean score for the Piers-Harris 2 Freedom From Anxiety domain ($p < .05$). In addition, significantly higher goal valuation and motivation/self-regulation, and lower academic self-perception ($p < .05$), were found for the sample of 159 females in the district setting. Implications for educational practice, counseling interventions, and future research are provided.

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**ADVANCED LEARNER PERCEPTIONS OF PSYCHOLOGICAL WELL-BEING AND SCHOOL
SATISFACTION IN TWO EDUCATIONAL SETTINGS**

CHAPTER ONE

The Problem

Introduction

Over 25 years after the publication of *A Nation at Risk: The Imperative for Educational Reform* (National Commission on Excellence in Education, 1983), and 17 years after the U.S. Department of Education report, *National Excellence: The Cause for Developing America's Talent* (Ross, 1993), leaders across the nation continue to emphasize that the United States has fallen behind other leading developed nations in educating our youth, particularly in mathematics and sciences (U.S. Department of Education, 1997). President Barack Obama (The White House, 2009) emphasizes the need, even in the current difficult economic climate, to do everything possible to improve the academic performance of all students from pre-school through college or post-high school technical training.

We must invest in our youth not only to help them achieve personal success and satisfaction, but to prepare our nation to meet the challenges of the global economy. As part of this national initiative, the academic strengths of our most able students must be developed. Yet, diminishing enrollment of the gifted in institutions of higher learning,

particularly in scientific areas, is occurring (Watters, 2010). It is imperative for the welfare of the nation that at the community as well as the national and state levels policy leaders, educators, and parents work together to help academically advanced high school students attain their talent potentials.

Gifted youth are a critical national resource. They will have the potential as adults to provide the innovation and wise leadership necessary to improve the lives of all citizens. As psychological health is linked with academic talent development and productivity (Craven & Marsh, 2008; Knuver & Bransma, 1993; Lyubomirsky, King, & Diener, 2005), the current study proposes to explore how two specific educational settings for advanced high school learners affect their reports of psychological well-being and self-concept. In addition, the investigation examines school satisfaction and attitudes toward school in the two educational settings. This study also compares the self-concepts of advanced youth with those of more typical students.

Most past studies of well-being of the gifted have concentrated on limited markers such as uni-dimensional measurements of global self-concept or single self-image dimensions such as academic self-perception, rather than investigating multiple dimensions of psychological health. The current study was approached through a comprehensive positive psychological perspective, as psychological health is more complex than measures of general self-concept or its single dimensions alone reveal (Jin & Moon, 2006; Plucker et al., 2004). The investigation explores significant dimensions of psychological well-being which have yielded equivocal empirical results in the past or

have a limited research base for academically-advanced adolescents, including self-perceptions of overall happiness and satisfaction, freedom from anxiety, academic and social self-concept, school satisfaction and motivation, and academic goal valuation.

Although traditional gender-determined roles are consistently challenged in contemporary western society (Bardwick, 1972), many academically talented young women continue to experience the role conflicts of previous generations. A significant number of gifted females appear to have unrealistically low self-images. Residual prejudices that deny women's talents, and lingering traditions that discourage women from adopting roles that in the past were reserved for males, continue to negatively impact female self-esteem. This remains true although several significant initiatives are currently underway to nurture female self-confidence and encourage girls to pursue careers in the sciences, mathematics, and technical fields (Center for American Progress, 2009). Therefore, this study includes an exploration of possible gender differences in psychological self-perceptions and school satisfaction.

Psychological Well-Being

Psychological well-being contributes in a fundamental fashion to academic achievement, high school and college course selection, and the career decisions of young people. For gifted students to become highly successful contributors to society, not only their academic needs but also their socio-affective needs must be met. In a meta-analysis of 225 studies, Lyubomirsky et al. (2005) found a strong link between perceptions of happiness and satisfaction, and life success. The advancing fields of

neuropsychology and positive psychology provide new evidence that psychological well-being is a necessary foundation for optimal cognitive functioning, learning, and engagement in tasks such as academic coursework (Olenchak, 2009). Positive affect and psychological health improve higher order thinking and problem solving skills (Damasio, 1994, 1999; Immordino-Yang & Damasio, 2007; Isen, 2004; Knuver & Brandsma, 1993; Zins, Bloodworth, Weissberg, & Walberg, 2004). These are cognitive processes that promote academic talent as well as leadership development. On a broader level, core strengths that accompany ongoing well-being include courage, humanitarianism, a sense of justice and fairness, wisdom, connection to greater goals and meanings, emotional balance, and self-regulation (Dahlsgaard, Peterson, & Seligman, 2005). These dimensions contribute to the development of character and integrity and are evident in leaders who advance civilization in all cultures.

Positive personal characteristics and emotional well-being, as well as positive institutions that provide affective support to individuals and groups, lay the necessary groundwork for success for all students (Seligman, 1990, 2004, 2007). However, gifted students have unique intellectual and emotional characteristics that call for differentiated educational practices (Jin & Moon, 2006; VanTassel-Baska, 1998). The larger question is whether demanding high quality academic programs, designed specifically for high ability learners, can also support their optimal psychological well-being and, therefore, optimal talent development.

The results of past research suggest that, on average, the gifted population is as well-adjusted emotionally and behaviorally as the more typical student population. However, partly because methodological issues have emerged for much of this research, knowledge gaps remain. Many studies had small sample sizes or did not systematically compare gifted to non-gifted students; some quantitative studies, due to their statistical nature, may have concentrated on average scores and thus masked extreme or unique psychological characteristics and profiles that can be found within this highly diverse sub-population of students. In addition, educational research most often relies on volunteer subjects. The gifted individuals who agree to participate may not be representative of the total gifted population. Some studies point to better adjustment for intellectually able students. However, recent meta-analyses that included reviews of those studies which had the most statistical rigor suggest that there is as yet meager evidence that gifted students have less risk of depression than typical children (Martin, Burns, & Schonlau, 2010).

Qualitative studies have helped delineate characteristics of giftedness. Many have explored personal perspectives on how it feels to be gifted and how these feelings affect psychological adjustment (Cross et al., 2004; Cross, Cook, & Dixon, 1996). However, some of the older qualitative research is also considered less than definitive in outlining strengths as well as challenges. Many studies of the social and emotional needs of gifted students have concentrated on discerning maladjustment or psychological problems. A number of studies may be characterized as “psychological

autopsies” that focused on negative characteristics of small samples using a medical model.

Relatively few studies have taken a comprehensive view of the flip side of the coin – positive characteristics that contribute to psychological strength, and the factors that nurture psychological well-being in this subgroup of talented students (Jin & Moon, 2006). As one of these important nurturing factors is educational context, there is a need to concentrate on examining strong academic programs and school cultures that also foster psychological and emotional development in gifted pupils (Moon, 2003). This is especially important because evidence exists that the wrong educational placement may be a cause of adjustment issues and significant stress in gifted young people (Neihart, Reis, Robinson, & Moon, 2002).

Psychological well-being is now viewed as multi-dimensional (McCullough, Huebner, & Laughlin, 2000; Ryff, 1989). Specific dimensions of self-concept and satisfaction in various areas of life are psychological constructs that lie at the heart of adolescent well-being (Craven & Marsh, 2008). Representative lists of positive factors influencing affective well-being typically include: stability of emotions and behavior; satisfaction with one’s abilities and skills; self-images of positive physical attributes and health; self-perception of psychological growth; feelings of integrity and autonomy; appropriate goals based on realistic self-concept, strong motivation, a sense of purpose; a sense of control over environmental factors and confidence in one’s ability to adapt; satisfaction with family, peer, school, and work relationships; a manageable level of

anxiety; and, lack of depression (Harter, 1999; Jahoda, 1958; Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2006; Piers & Herzberg, 2002; Ryff, 1989).

Olenchak (2009) reminds us that, “Human beings naturally seek a place of well-being in their lives” (p. 46). Schools that are emotionally safe and that help build positive self-concepts along with character, protect academic self-concept and confidence, although they may simultaneously be academically rigorous and, therefore, somewhat stressful at times. Higher levels of self-regard and happiness result when individuals master skills and conquer challenges (Seligman, 2007). Helping students learn to accept and grow through their mistakes is an important part of learning, although anxiety may normally increase temporarily during the process. Promoting academic risk-taking, while supporting the child’s confidence, is an important objective. However, if a child experiences a series of significant failures in school, overall academic achievement and self-confidence are likely to fall, and the student may disengage from learning and from relationships with teachers and academic peers. This challenge requires educators to manage a complex balancing act with talent development as the ultimate goal.

Although, when results are averaged across grades, the gifted appear to experience an equal amount or less anxiety than others, a few studies suggest that gifted students in high school may experience a higher level of significant anxiety or worry than the non-gifted, a condition that can decrease motivation and aspirations (Forsyth, 1987; Norman, Ramsey, Roberts, Martray, & Roberts, 1999; Tong & Yewchuk, 1996). Due to conflicting evidence about substantial anxiety in gifted students, especially in

adolescents, more information is needed about levels, causes, and amelioration of anxiety in this population. Cross (1997) emphasizes that educators and parents should keep in mind that gifted students are first of all children with the basic human needs of all persons. Maslow (1943, 1970) in his Theory of Motivation described a hierarchy of human needs. All individuals must first meet basic needs in order to reach their personality, character, and talent potentials. In this scheme, physiological needs (including sleep, nutrition, and health needs) and safety needs are basic requirements.

As people are social beings, next in the hierarchy are the needs for psychological bonds with family and friends, and the need for self-esteem and confidence through accomplishment and respect. Finally, a limited percentage of individuals reach the highest level of need fulfillment which is designated self-actualization (Maslow, 1970). Armed with advanced skills and socio-emotional support from significant others and their schools, gifted individuals have a good chance of reaching self-actualization and development of outstanding talent. However, again, it is essential, according to this theory, that basic and intermediate needs are met as a prerequisite for attaining the pinnacle of self-actualization. The strong inherent motivation to fulfill these more basic needs must be respected. Parents and educators, therefore, should help students develop physical, psychological, and social well-being along with academic and other talents.

Challenges Facing Gifted Education That Influence Student Affective Well-Being

Over the past several decades much has been learned about the instructional interventions and educational settings that best develop the academic talents of gifted students (Davis & Rimm, 2004; Kulik & Kulik, 1992; VanTassel-Baska, 1998). However, the field of gifted education continues to struggle with consistently providing best practice curricular interventions. This academic challenge diminishes student satisfaction and affective as well as academic outcomes (VanTassel-Baska, 1998). Not all gifted youngsters are identified by school systems, some minority groups are typically under-represented, and school divisions in low-income areas may lack the necessary resources, or accessibility to outstanding enrichment opportunities, needed to consistently provide well for the gifted. Access to the best academic settings is limited, and this access is competitive even in more affluent areas. In addition, program effectiveness in public schools varies greatly. The outcome of these challenges is a subgroup of talented young individuals whose academic needs are not well met.

Unfortunately, a significant number of gifted students underachieve, never reaching their personal and career potentials (Seeley, 1993). Some become disillusioned with school or have family or personal issues that command their immediate attention. By definition, the gifted are significantly different cognitively, and perhaps affectively, from more typical peers. Educators and parents should keep in mind that even in the best of settings, some talented pupils will suffer from emotional or social problems. An appropriate match between school and gifted child is critical in ameliorating more

serious psychological issues as well as in addressing the unique affective issues of emotionally adjusted gifted students.

Educators must also be aware that both gifted females and academically advanced males face unique and complex personal challenges that must be addressed for academic and career potential to be achieved. These stressors may lead some high ability students to leave school before graduation. It has been estimated that approximately 18 to 25 percent of high school drop-outs in the United States are intellectually gifted students (Renzulli & Park, 2000).

In addition, many highly able students must also cope with intellectual boredom in regular classroom settings (Larson, 2000; Swiatek, 1995). Tedium can substantially decrease school satisfaction and academic motivation, and consequently negatively affect the futures of advanced learners (Seeley, 1993). Others with obvious strong abilities have low self-confidence, which makes it more difficult to accept academic challenges. Females, in particular, may avoid enrollment in advanced classes, particularly in mathematics and science, believing that they will not succeed (University of Wisconsin-Milwaukee, 2008).

In addition, many gifted students need help from counselors and knowledgeable teachers in adjusting to their differentness, coping with unique psychological characteristics and the social stigma of giftedness, selecting appropriate courses and specialty programs at the middle school through college levels, and planning for their future careers. Unfortunately, schools lack the staff and many school counselors lack

the training necessary to implement appropriate social-emotional and career counseling strategies for advanced students. Often, well-designed differentiated psychological and career counseling that could help gifted students remain and thrive in school is unavailable, due to inadequate school resources.

Self-Concept

According to a number of researchers, the construct of self-concept is central to psychological well-being and mental health, and is an important factor in school achievement (Craven & Marsh, 2008; Dodgson & Wood, 1998; Greenberg, Carr, & Summers, 2002; Marsh, 1991; 1993; Marsh & Hau, 2004; Sommer & Baumeister, 2002). Academic self-concept appears to be both a determinant and a consequence of academic achievement (Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2005). Lowered intellectual or academic self-concept may significantly affect course selection and educational and career aspirations. Low self-concept or self-esteem may inhibit motivation to apply to special secondary schools, with fear of failure a prohibitive factor.

Once enrolled in the special school, students with fragile confidence may have lingering self-doubts, leading to increased anxiety, particularly when confronted with stiffer academic challenges. Even students with stronger academic self-concept upon enrollment may experience a dip in this self-perception dimension when confronted with increased competition with other advanced learners (Marsh & Parker, 1984; Wright & Leroux, 1997). In fact, this drop in academic self-concept may occur for many students of all ability levels when placed in high ability high schools.

It is hypothesized through social comparison theory and reference group theory that this dip in academic self-concept results from the student comparing his or her capabilities with those of other participants. This theory is termed the Big-Fish-Little-Pond Effect (BFLPE) by Marsh and colleagues (Marsh, 1991; Marsh & Parker, 1984; Marsh & Yeung, 1997; Young, 1997). It would be more realistic to compare oneself with the much larger group of typical students attending regular schools, but this is a difficult accomplishment for an adolescent in an environment where she or he is surrounded by intellectually advanced peers, as occurs in special schools for the gifted.

Some researchers do not agree that this dip in academic self-concept is highly significant, emphasizing that the substantial benefits of attending specialized programs for the gifted may outweigh this negative factor (Dai, 2004; Plucker et al., 2004). There is a need for additional data on the impact of a variety of specific settings on the academic self-esteem of the gifted, and on the long-term impact of the BFLPE on the talent and socio-emotional development of advanced learners.

School Satisfaction

School satisfaction is an important personal factor in student psychological well-being. It is positively associated with engagement in assignments, academic achievement, and academic self-concept (Clay, 2008). Strong relationships between students and educators, a positive school climate, and positive relationships with classmates are important contributors to school satisfaction. McCoach and Siegle (2003b) found positive interfactor associations between academic self-perception and

attitudes toward teachers/classes and attitudes toward school in their School Attitude Assessment Survey –Revised (SAAS-R) validity studies.

Negative attitudes toward school are associated with underachievement of gifted students (McCoach & Siegle, 2003a). However, only a few studies have related school satisfaction with specific self-perception dimensions. One of these studies (Huebner & McCullough, 2000) found school satisfaction and academic self-efficacy to be related in positive fashion.

Relationships with others (family and friends) are significantly related to and predictive of level of happiness in children (Holder & Coleman, 2009). For students of all ability levels, the affective support of school peers is associated with improved engagement in school tasks (Shin, Daly, & Vera, 2007). However, not much is known about possible relationships between peer relations, attitudes toward teachers, school satisfaction, and other specific dimensions of psychological well-being in special school settings for the gifted teenager.

Educational Context

School satisfaction hinges on school quality and culture as well as on other personal factors such as self-concept. One negative aspect of school quality for gifted individuals is the climate of anti-intellectualism too common in regular school settings. One study found when surveying more than 3,500 secondary students residing in Minnesota that teenagers were very aware of the common stigma against intellectualism (Schroeder-Davis, 1999). In regular high schools, this may be a frequent

source of stress for the gifted (Cross, 2001; Cross, Coleman, & Terhaar-Yonkers, 1991). It is possible that this particular stress may be reduced when the academically- gifted are segregated in special settings where intellectual pursuits are valued and encouraged.

Special school settings for gifted adolescents, whether residential, day school, or advanced classes within a regular school, provide opportunities to work within a community of other advanced learners and uniquely qualified teachers (Kolloff, 2003). Benefits can include developing friendships with peers of similar ability, exposure to differentiated advanced curricula, more flexible instructional approaches and scheduling, mentorships, early enrollment in college level courses, and advantages in the college application process. Segregated classrooms and special academic enrichment programs for the gifted enhance their academic lives when teachers offer appropriate challenge along with support (Jin & Moon, 2006; Kulik & Kulik, 1992; Rogers, 1993; Stake & Mares, 2001; VanTassel-Baska, 1998). However, while overall effectiveness is noted, the quality of specific programs for advanced learners varies across the United States (Winner, 1997).

There is a need to examine the impact of the full variety of educational options for the gifted on their psychological well-being as past research points to equivocal results including both positive and negative psychological consequences of gifted programming (Jin & Moon, 2006). This is particularly true at the secondary level, where decisions of advanced students significantly affect the full development of academic and creative talents, and where educational context and placement are crucial for success. If

the community's goals are nurturing talent development through academic challenge as well as development of psychological well-being in young people, creating appropriate environments lies in the hands of the community stakeholders.

Conceptual Framework

This study's main intent is to explore the impact of partial-day academic Governor's School enrollment on self-perceptions of well-being and school satisfaction. The possible influences of Governor's School enrollment were compared with those of the more typical high school programs for the gifted and other advanced learners within their home high schools, which included advanced placement (AP) courses, International Baccalaureate (IB) classes, dual enrollment courses conducted in conjunction with area colleges, and honors level classes. As questions remain about the impact of giftedness on psychological well-being, the participants' score were also compared with those of the general student population, and some subscale scores were analyzed in comparison with those of other advanced learners in a national sample. The possible relationship between self-perceptions and school satisfaction was also analyzed, as there is a dearth of information about these associations for intellectually advanced high school students.

The independent variables are educational setting/placement and gender. The dependent variables are student perception of psychological well-being, including global self-concept and the following specific dimensions of self-concept: general intelligence, freedom from anxiety and dysphoria, popularity among peers, physical attributes,

behavioral adjustment, and overall satisfaction and happiness, as well as motivational and goal valuation factors, and academic self-perception. School Satisfaction and attitude factors include attitudes toward teachers and classes and attitudes toward the school. This study is based on a conceptual framework or model of psychological health in gifted students proposed by Neihart (1999) which hypothesizes that the consequences of giftedness on the psychological well-being of gifted children and adolescents, whether positive or negative, are based on reciprocal relationships between personal characteristics, the environmental factor of appropriateness of educational setting or “fit,” and the level and type of giftedness. The current study focuses on the influence of educational placement on the personal characteristics of self-perception, school satisfaction, and overall self-concept; the relationships between these factors; and, their influence on the level of perceived psychological well-being in teenagers.

Problem Statement and Significance

Overall, on average, broad psychological well-being indicators such as self-esteem have yielded positive results for the gifted. However, there is much variability in this population and, therefore, there is a need to focus on understanding specific domains and possible multi-dimensional profiles of well-being among advanced learners. For gifted students, some sub-domains of self-concept appear to be lower and others higher than for typical students. In particular, physical attributes and skills and social relationship self-perceptions may be lower, while academic and intellectual self-

concept may be strong. However, additional information is needed in this area, as research results are equivocal. There is evidence that the levels of academic and social self-concept perceptions vary to some extent based on educational setting.

Little is known about the impact of special part-time programs for advanced learners on overall self-esteem, multiple psychological self-perception domains including academic self-concept and others, and level of school satisfaction for high ability students. The effects of these programs warrant further exploration. In addition, some common unique characteristics of giftedness, such as perfectionism and overexcitabilities, may increase anxiety to a significant extent and therefore decrease psychological well-being. As investigations of anxiety in academically advanced adolescents have been scarce, anxiety and worry as a separate dimension of self-concept was explored in a preliminary fashion.

The existence and significance of Marsh and colleagues' BFLPE theory regarding academic self-concept for advanced students in settings other than full-time high-ability high schools has yet to be determined, as well. In particular, part-time educational placement in special schools warrants examination in terms of possible impact on the BFLPE phenomenon. As the results of previous research regarding well-being of gifted students are more equivocal at the secondary level, and adolescents are making choices at school that directly impact their futures, further exploration for this age group is also warranted. In addition, relationships between the dimensions of self-concept and

attitudes of satisfaction toward school call for analysis, as little information is available in the research literature.

Gender comparisons should also be explored, due to persistent suggestions that some gifted girls experience low self-confidence and increased worry, or feel a need to hide or de-emphasize their academic abilities due to anti-intellectual prejudice and the continuation of conflicting societal role messages. Evidence also exists that gifted boys may experience some unique self-esteem difficulties and issues related to stress, as well, that need further delineation (Kline & Short, 1991; Plucker & Stocking, 2001; Ryan, 1999).

The findings of the current study may have important repercussions for creating optimal learning environments for gifted students. In addition, a major theme of the positive psychology movement is that optimism and persistence in the face of obstacles can be taught (Csikszentmihalyi, Rathunde, & Whalen, 1997; Olenchak, 2009; Seligman, 1990, 2004, 2007). When policy leaders and educators know more about the impact on affect and school satisfaction of various educational settings they can focus more effectively on improving programs and developing interventions to improve psychological well-being, including building persistence, resiliency, and optimism in youth. Improving these qualities will lead not only to more satisfying individual lives, but also to more successful talent and career development in the United States.

Study Purpose

Neihart's (1999) framework suggests that the impact of giftedness on the affective well-being of talented young people hinges on relationships between these factors: (1) type and level of giftedness; (2) the appropriateness or "fit" of the educational setting; and, (3) personal psychological factors. A synergy between factors is suggested. Type of giftedness for this study encompasses intellectual or academic giftedness only, as defined by the gifted identification criteria of individual school districts or the Governor's Schools.

Following this research-based framework of Neihart (1999), the major purposes of this study are to compare the effects of two high school settings on the personal characteristics of self-concept and school satisfaction for academically gifted or high ability students, and to examine the relationships between these self-perception factors. The two school settings are a partial-day special high schools for academically advanced students, and regular high school academic gifted programs for advanced pupils. As the Governor's School students in this study attended both types of programs each day, their self-concepts and school attitudes were also compared between the two educational settings.

An additional purpose is to compare the self-perceptions of well-being of Governor's School students and advanced learners in regular district high schools with those of more typical high school students, as questions remain about the psychological health of gifted students. Total and domain-specific self-perception mean scores for all

students were compared with those of the self-concept Piers-Harris 2 normative sample by age in order to gauge self-perceptions of psychological well-being in comparison with the general population. In addition, student school attitude scores were compared with those of academically achieving gifted adolescents in a School Attitude Assessment Survey (SAAS-R) sample group (McCoach & Siegle, 2003a; McCoach & Siegle, 2003b). This comparison was made because three of the subscales are indicators of well-being (academic self-perception, goal valuation, and motivation/self-regulation) while two indicate school satisfaction, and therefore, the results of this analysis helped provide a more comprehensive picture of the current sample's psychological characteristics and the level or sense of well-being.

High ability students enrolled in public partial-day Governor's Schools and those attending advanced classes in regular high schools alone were included in the current study, whether these students were officially identified as gifted or not by the school district or Governor's School. Levels of intellectual and academic giftedness were limited to those served by public school gifted programs within regular and special high schools.

For the Governor's School students, the study also compared their attitudes within the Governor's School environment with their level of satisfaction with their home high school environment. As gender differences in self-perception are demonstrated in some of the research literature, the possible effects of gender on self-perception and school satisfaction in the two settings were examined. The BFLPE theory

was also analyzed in these two school settings, as it is important to explore whether this theory is confirmed for high ability students in partial-day programs.

A substantial number of instruments have been developed to measure global self-perception of personal well-being, competence, and self-worth, as well as specific self-concept dimensions, such as the child's view of his or her intellectual functioning, physical traits, happiness, and appropriateness of behavior (Harter, 1999; Piers & Harris, 1984; Piers & Herzberg, 2002). The self-concept domains of interpersonal social skill and popularity have also been studied by some theorists, such as Song and Hattie (1984), Piers and Harris (1984), and Piers and Herzberg (2002). Fewer instruments measure both individual dimensions as well as overall self-concept.

The Piers-Harris Children's Self-Concept Scale, Second Edition (Piers & Herzberg, 2002) is particularly useful as an indicator of psychological well-being, as it includes not only a global self-concept/self-esteem score and a measure of academic self-concept (Intellectual and School Status), but also includes self-perception scales for overall Happiness and Satisfaction, Freedom from Anxiety, Popularity, Behavioral Adjustment, and Physical Attributes and Appearance (Piers & Herzberg, 2002). The inclusion in the Piers-Harris Children's Self-Concept Scale, Second Edition (Piers-Harris 2) of Freedom from Anxiety (nervousness, worry, sadness, and a feeling of being left out or alienated), and overall Happiness and Satisfaction scales, is unique and made this instrument particularly useful in the proposed study.

An additional benefit of the Piers-Harris 2 is that it is one of the most frequently used self-concept/self-esteem scale (Butler & Gasson, 2005). It has been used in numerous studies of intellectually typical children and youth. The manual provides interpretive guidelines for the global and domain scores based on *T*-score ranges that provide a framework for describing hypotheses about affective adjustment for the individual student. In addition, The Piers-Harris was used in one previous Canadian study that compared the dimension of anxiety self-concept between gifted and non-gifted adolescents and found higher anxiety scores for the gifted (Tong & Yewchuk, 1996).

The domains of attitudes toward school including school satisfaction that have been operationally defined for use with academically able students by McCoach and Siegle (2003b) in the School Attitude Assessment Survey – Revised (SAAS-R) include: Attitudes toward School, Attitude toward Teachers and Classes, Academic Self-Perceptions, Motivation and Self-Regulation, and Goal Valuation. The SAAS-R was selected for use in the current study, as it was developed specifically for use with gifted adolescents and includes two school satisfaction scales critical to the current study of effect of educational placement, Attitudes toward Teachers and Classes and Attitudes toward School. In addition, the Academic Self-Perception dimension (similar to academic self-concept as measured by several other self-concept scales), focuses more directly on school self-concept than does the Intellectual and School Status domain of the Piers-Harris 2.

Thus, for the current study it was more helpful in delineating feelings about academic abilities. The authors provide means for academically successful gifted students and underachieving high ability pupils. In addition, the SAAS-R provides two sub-scales that measure two additional characteristics of psychological well-being, goal valuation and motivation/self-regulation. The SAAS-R also assesses the students' perception of cumulative grade point average (GPA) and time spent on homework, so that attitudes toward school may be examined in relation to grades and homework time. For the current study, homework time was omitted from analysis. Student self-report on age, grade, gender, ethnicity, and student-reported grade point averages (GPA) were collected on the student assessment protocols and summarized by the investigator. This study attempted to answer the following research questions:

Research Questions

1. Do academic ability and educational placement or fit influence global and dimensional perceptions of psychological well-being for advanced students, as measured by the Piers-Harris 2 (Piers & Herzberg, 2002)?
 - A. Does global psychological self-perception differ between students attending partial-day Governor's Schools and academically talented students in the same grades who are enrolled full-time in their home high schools?
 - B. Do these two groups of students differ in the self-perception domains of overall intelligence, freedom from anxiety and dysphoria, popularity, physical attributes, behavior, and overall happiness and satisfaction?

- C. Do students in the sample differ in global and domain self-concept standard scores (*t*-scores) from the normative sample of the Piers-Harris 2?
2. Does Governor's School attendance influence school attitudes including academic self-image, school satisfaction, academic goal valuation, and motivation of academically advanced students, as measured by the School Attitude Assessment Survey - Revised (SAAS-R)?
 - A. Do Governor's School students differ in their academic attitudes and school satisfaction with their Governor's Schools from their academically talented peers in their attitudes toward their district high schools?
 - B. Do students who attend partial-day Governor's Schools differ from their academically advanced peers who attend high school full-time with respect to attitudes toward their district high schools?
 - C. Do Governor's School students differ in their attitudes towards their Governor's Schools and their district high schools?
 - D. Does the current sample differ in attitudes toward school from gifted high achieving students in the SAAS-R (McCoach & Siegle, 2003b) sample?
3. Are there relationships between self-concept and school attitudes in the Governor's School and district high school settings?
4. Are there gender differences in self-concept, and in school attitudes and satisfaction, in the Governor's School and district high school settings?

Definition of Terms

In the current study, the following definitions are used:

Advanced Learner –An individual of high achievement ability or aptitude, or possessing natural gifts. However, these aptitudes, while necessary for exceptional talent expression, may not yet be fully developed into talents Gagné (1985). For the current study, the student was enrolled in a high school honors level academic class, advanced placement (AP), International Baccalaureate, or dual enrollment (college/high school) course, whether or not she or he was formally identified as gifted by the participating public school district.

Educational Fit – Educational placement (Neihart, 1999). Positive fit includes participation in classes or educational programs suitable for the student’s educational or academic abilities. For the current study, school satisfaction, as Measured by two of the SAAS-R subscales (Attitudes toward Teachers and Attitudes toward School) is used as an estimate of educational fit. See the definition of School Satisfaction below.

Giftedness – Advanced development in intellectual ability or academic performance. Giftedness definitions most often include advanced intellectual ability (VanTassel-Baska, 1998). Each of the participating public school districts has determined specific definitions of giftedness and specific criteria for formal educational gifted identification. Not all participants were formally identified as “gifted” by a school district. However, it was assumed for the current study that each participant had demonstrated intellectual ability or academic achievement within the High Average to Superior or above ranges.

Self-Concept – Cognitive self-evaluation of personal qualities and skills. These include global and individual dimensions of ideas and images one has about oneself (Harter, 1999; Neihart, 1999).

Self-Esteem – Global uni-dimensional self-concept, including an affective perception of self-worth (Craven & Marsh, 2008; Rosenberg, 1979). In this study, global or overall self-concept was equated with global self-esteem.

Self-Perception of Psychological Well-Being - Total Self-Concept and the specific self-perception domains of overall Happiness and Satisfaction, Intellectual and School Status (academic self-concept), Popularity, and Freedom From Anxiety, as measured by the Piers-Harris 2 (Piers & Herzberg, 2002). In addition, this construct will include Goal Valuation and academic Motivation/Self-Regulation, as measured by the SAAS-R (McCoach , 2002; McCoach & Siegle, 2003a; McCoach & Siegle, 2003b).

School Satisfaction - Included Attitudes toward Teachers and Classes, Attitudes toward School, as measured by the SAAS-R (McCoach , 2002; McCoach & Siegle, 2003a; McCoach & Siegle, 2003b).

Limitations

Limitations are conditions in the study design that are beyond control by the investigator (Locke, Spirduso, & Silverman, 2007). The limitations of the current study include the factors described in this section. First, generalizability of the proposed study is limited by the exclusive use of volunteer subjects, a convenience sample, and a small

sample size. This limitation may exclude other important subgroups of the gifted adolescent population and creates a selection threat.

The study was limited to high school students of high intellectual ability or advanced academic achievement formally identified as gifted, or who are enrolled in advanced courses in a regular high school or a Governor's School, as this is the population served by the participating Governor's Schools. As the Governor's Schools served grades 10 through 12 or 11 and 12, the comparison group in the district high schools was also limited to these grades to increase similarities in the characteristics of the two groups. However, gifted identification criteria between school districts, criteria for admission into various advanced classes may vary widely. Therefore, although the assumption was made by the researcher that participants had intellectual ability or academic achievement capacity within the High Average to Superior Ranges or above, the investigator was not able to control for intelligence quotients or levels of academic skill level.

The study was non-experimental, utilizing a causal comparative and correlational approach using pre-existing groups of students. Lack of random assignment to true experimental groups raises threats to validity and reliability. The study was also descriptive and correlational in nature; therefore, associations between factors may be suggested, but causal information was not obtained or analyzed.

Although major challenges are development of academic talent among female and minority populations, and the current study addresses possible gender differences,

it was not possible to explore possible ethnic concerns and differences, due to the small sample size for each ethnic group represented in the study. In addition, although socioeconomic status (SES) can profoundly influence achievement, the self-report format of the current study limited the possibility of comparing students according to SES.

Therefore, SES data for the sample was limited to the estimate of percentages of students eligible for free or reduced cost lunch provided by the state Department of Education.

The investigator was not able to control for time of survey administration within the school day, week, and month, although all surveys were completed late in the spring of the second semester of one school year (2009-2010). Other contextual factors were likewise difficult to control, although specific written administration guidelines were provided to the school personnel administering the survey. Also, it would have been preferable to administer the SAAS-R to each Governor's School student once while he or she was in the Governor's school settings, and once while within his or her regular high school setting, as specific context of administration may influence responses. However, logistical limitations prevented this. The fact that each of these subjects completed the SAAS-R twice while in a Governor's School classroom in one sitting (once for the Governor's School and once for his or her home high school) may have influenced their attitudes toward school as well as their ratings of the two schools.

Delimitations

The investigator imposed certain limitations on the study. These are termed delimitations (Rudestam & Newton, 2007). Restriction of sampling to public school high school students officially identified by their districts as intellectually or academically gifted, enrolled in at least one advanced class (advanced placement or International Baccalaureate) in district high schools, or attendees of Governor's Schools, is one of these delimitations. Although these students may also have been formally identified in their school districts for the gifted program in fine or performance arts, technology, leadership, or other areas, these factors were not explored. In addition, the study was limited to high school students in grades 10, 11, and 12.

The Governor's Schools included were public partial-day academic-year schools only, as these are schools for which limited or no information on student psychological well-being is currently available, and these are the schools that agreed to participate. Geographical delimitations included restriction to the south-central, eastern, and north-central regions of one U.S. southern state, due to logistical concerns.

Data on self-concept were included in the study, as one aim of the study was to determine whether the BFLPE is present in the two school settings. However, the important self-perception construct of self-efficacy was not included, as it was beyond the scope of the current study to examine on a large scale the psychological outcomes of specific assignments and the impact of other particular academic tasks on self-perception.

Ethical Considerations

All policies of the College of William and Mary and the School of Education were honored. Participation of subjects was strictly voluntary and confidential. Participants, their parents (guardians), and their schools were notified of the purposes of the study, and participants were informed that they could withdraw from the study at any time without penalty. Individuals and their schools are not identified and data was aggregated across the two school scenarios (simultaneous enrollment in a Governor's Schools and a regular high school or enrollment in a regular high school alone).

Organization of the Study

Chapter Two describes the theoretical and research literature regarding psychological well-being of gifted students, anxiety and unique characteristics of the gifted that may impact well-being, student self-perceptions, and school satisfaction, and the influence of educational context on well-being. Gender differences and implications for further research are also considered. Appendix A provides a table of specifications that outlines key research studies. Chapter Three presents the study procedures and methodology and contains a detailed description of the participants and their schools. The study findings and analysis are found in Chapter Four. In Chapter Five, the findings are discussed, conclusions drawn, and implications presented.

CHAPTER TWO

Literature Review

Chapter Two first describes what is known about the mental health and unique psycho-social characteristics of gifted students. It then focuses on research regarding self-perceptions and environmental context and how these factors may influence psychological well-being of the gifted. Not only support from parents and teachers, but well-designed academic programs that nurture psychological strengths and positive affect appear to be significant for optimal talent development (Gagné, 1965; Neihart, 2008; Piirto, 2004). Therefore, it is critical for development of outstanding talents that parents, educators, and policy makers understand the impact of various programmatic options.

Perceptions such as dimensions of self-concept, including freedom from anxiety, overall happiness and satisfaction, popularity, motivation, and school satisfaction, are psychological constructs that lie at the heart of student well-being. These are the factors that are addressed in the current study. Some types of giftedness, such as artistic and creative writing ability, may be associated with an increased risk of mental health concerns (Neihart, 1999). The impact of giftedness on the psychological adjustment of gifted students has been theorized by Neihart (1999) as dependent on relationships between individual personal attributes, school environmental fit, and each individual's

unique profile of giftedness (level and type). However, this study does not focus on level of giftedness, but rather on personal and environmental factors. Regarding type of giftedness, participants were academically advanced but not necessarily formally identified as gifted by their school district. Chapter Two is organized around the personal and environmental (educational) factors described in this theory (Neihart, 1999). As gender differences may exist in several dimensions of psychological well-being, a section is included on this important topic.

Personal Factors

Psychological well-being.

Overview.

Psychological well-being is a vague term defined in past medical and psychiatric models as absence of pathology or disease. Most past and current definitions include affect (both negative and positive) as a key component, and many also include self-report of life dissatisfaction or satisfaction (Diener, 1984; Huebner & Dew, 1996; McCullough et al., 2000; Warr, 1990; Watson, Clark, & Tellegen, 1988). Craven and Marsh (2008) stress that self-perceptions are major factors in psychological well-being. The trend is toward multi-dimensional and hierarchical definitions (Shavelson, Hubner, & Stanton, 1976). In current positive psychology models, psychological well-being is couched in terms of strength and resiliency factors. In measuring psychological well-being, clinicians typically include self-reports by clients, as well as reports provided by family members and members of the education community, and direct clinical

evaluations. The current study focuses on self-reports of psychological well-being for high school age students rather than on the professional impressions of student well-being reported by clinicians, educators, or clinical researchers.

Ryff (1989) included in his model six dimensions of psychological well-being: autonomy and self-control/self-regulation, environmental mastery, personal growth, positive relations with others, motivation and purpose in life, and self-acceptance. However, happiness and life satisfaction, specific dimensions of self-concept, and freedom from negative emotions (such as anxiety or depression) were not included in this model. This psychological well-being instrument was created for use with adults rather than adolescents. Danna and Griffin (1999) included overall life satisfaction and general and specific work satisfaction factors in adults. McCoach (2002) included teacher/course and overall school satisfaction in the SAAS-R instrument which measures academic and school attitudes as well as academic self-concept in adolescents.

Psychological strengths of gifted students.

Gifted individuals display many strengths; some are more highly developed in the gifted than the non-gifted. Many intellectually able individuals are highly perceptive, have high level problem-solving abilities, attain a higher level of moral development at an earlier age than typical children, and have other advanced qualities that may contribute to psychological resiliency, such as strong academic motivation. Personality differences contribute to unique psychological profiles for many gifted individuals. Sak (2004) reviewed 14 studies with 19 independent samples and found significantly

increased incidences among gifted adolescents as compared to the normative group of high school students, of Introversion, Intuitive, Thinking, and Perceiving personality dimensions, based on the Myers-Briggs Type Indicator (Myers & McCaulley, 1985).

Representative studies that point to stable and positive psychological outcomes for the gifted are numerous (Cross et al., 2004; Dauber & Benbow, 1990; Grossberg & Cornell, 1988; Nail & Evans, 1997; Olszewski-Kubilius, Kukieke, & Krasney, 1988; Parker, 1996; Ramaseshan, 1957; Robinson, Lanzi, Weinberg, Ramey, & Ramey, 2002; Terman, 1925, 1959; Witty & Coomer, 1955). For example, a study of third grade students formerly enrolled in a Head Start program found that the higher ability students had better social and emotional adjustment ratings (Robinson et al., 2002). Saylor and Brookshire (1993), in a longitudinal study of over 1,000 randomly selected students, found better emotional and social adjustment in eighth grade accelerated students in heterogeneous classes and students in gifted pull-out classes than in regular students. However, due to some methodological issues and a lack of recent large-scale studies, researchers cannot state definitively that the gifted are more emotionally stable or affectively capable than the non-gifted (Martin et al., 2010).

Giftedness and pathology.

According to the National Institute of Mental Health (2008), about 26 percent of adults 18 and older in the United States have a diagnosable mental disorder, and about six percent have a serious mental condition. Overall, for gifted students identified by their school districts for inclusion in public school gifted programs, psychological

disorders have been identified in about the same proportion as for the general population. The majority of gifted individuals appear to be emotionally healthy.

However, part of the difficulty in painting a clearer picture of the emotional health of gifted students, as noted earlier, is that the gifted sub-population is a diverse group whose members range along a continuum from strong emotional adjustment to significant maladjustment.

Further complicating the picture of emotional health for the gifted, clinical literature and anecdotal information from parents and educators frequently point to significant unique psychological factors and social challenges for the gifted (Gowan & Demos, 1964; Hoge & Renzulli, 1991; Webb, Amend, Webb et al., 2005). Some clinical studies suggest unique psychological and some neurological characteristics common to giftedness, and unique environmental stressors, that can put the gifted individual at risk for emotional issues (Cross, 1997; Csikszentmihalyi et al., 1997; Derevensky & Coleman, 1989; Hollingworth, 1942; Moon, 2004, 2009; Neihart et al., 2002; Peterson, 1993, 2003, 2009; Reis, 1995, 1998, 2002; Silverman, 1990, 1993, 1997; Tieso, 1999; Webb, 1994; Winner, 1996). Dirkes (1983) suggested increased intensity of emotion and thinking among many gifted individuals. Affective intensity and self-scrutiny, although not usually pathological for this population in and of itself, are common among gifted individuals, particularly adolescents, as noted by Cross (1997). These characteristics can continue into adulthood. Clance and Imes (1978) found that emotional intensity, and self-criticism and doubt, continue for many gifted women and some gifted men even

after success in advanced and esteemed careers, resulting in what is termed the “Imposter Syndrome.”

A number of authors have attempted to dissect the relationships between giftedness and pathology (Freeman, 1983; Richards, 1981; Richards & Kinney, 1989; Rothenberg, 1990), particularly as reports of suicide among the adolescent population have increased in our country. However, it has been determined that suicide rates for the gifted do not differ from other groups (Gust-Brey & Cross, 1999), although these individuals may have a greater suicide success rate (Dixon & Scheckel, 1996). Likewise, overall, research suggests that serious depression seems no more common in identified gifted students than in the general population (Neihart, 1999). Studies do reveal a tendency, however, toward mood disorders for gifted writers and artists (Andreasen, 1988; Feldman, 1989; Jamison, 1989, 1993; Piirto, 2004). There is qualitative evidence that when it occurs, depression in gifted individuals may be associated with loneliness. In addition, eating disorders may be associated with intelligence levels (Garner 1991).

Depression may result from communication difficulties associated with unique intellectual interests, complexity of emotions and thought processes, isolation when modes of communication are thwarted, or from other stressful life or school situations (Jackson, 1998; Kaiser & Berndt, 1985). As noted earlier, there is a great need for contemporary large-scale studies comparing the prevalence of serious psychological disorders in gifted and non-gifted students (Martin et al., 2010). It is noteworthy that 15 to 20 percent of high school students in one Governor’s School for the gifted

experienced affective upheaval, although most of the students in the school reported good adjustment (Kaiser & Berndt, 1985).

The literature suggests overexcitabilities among the gifted (Colangelo, & Davis, 2003; Coleman, 1996; Dabrowski 1938, 1964; Dirkes, 1983; Gross, 2007; Mendaglio, 1995, 2006; Neihart, Peterson, 2009; Piechowski, 1979, 1999; Tieso, 1999, 2007; VanTassel-Baska, 1998; VanTassel-Baska, Cross, & Olenchak, 2009). In well-adjusted individuals, overexcitabilities can be misconstrued as pathological by those who are ignorant of the unique psychological characteristics associated with giftedness (Webb et al., 2005).

All who work with the gifted should also be aware, however, that at times, intensity and heightened sensitivities, combined with an early intellectual capability for metacognition and consideration of life's deeper issues and its inherent inequalities result in feelings of powerlessness and loneliness. These factors can cause a unique type of depression termed existential depression. This is not a category of depression clinically identified in the Diagnostic and Statistical Manual of Mental Disorders – Text Revision (American Psychiatric Association, 2000). However, it is reasonably common in intellectually gifted students and adults (Webb et al., 2005).

Anxiety and its relationship to unique characteristics of gifted students.

Anxiety is a complex and significant psychological construct. It is frequently referred to as ongoing fear, worry, nervousness, mental discomfort, or edginess. At modest levels, anxiety can motivate; at moderate to high levels it can interfere with

student achievement, as well as life satisfaction and school adjustment and functioning (Greenberg et al., 2002; Mychailyszyn, Mendez, & Kendall, 2010). Anxiety can have a direct impact on specific academic achievement, such as classroom mathematics performance. For example, Ashcraft and Moore (2009) found that the anxiety created when students are stressed by timed “high stakes conditions” in a mathematics assignment negatively affected working memory.

Several studies point to lower anxiety for gifted students when data are aggregated across grades. One of the early studies was conducted by Milgram and Milgram (1976). However, most studies of anxiety in the gifted have looked at pre-adolescent children only, combined data across age groups, or did not control for social-economic status (SES), (Neihart, 1999). Reynolds and Bradley (1983) found gifted students in special programming had lower anxiety levels than the general population. Scholwinski and Reynolds (1985) likewise, in an investigation of 584 high ability students, found lower levels of anxiety in gifted students aged 6 to 19. Neihart (1999) noted only one study that suggested elevated results for anxiety among gifted students. This study (Tong & Yewchuk, 1996) was the single one reviewed that involved only high school students, and it had a small sample size. Utilizing the Freedom From Anxiety subscale of the Piers-Harris Children’s Self-Concept Scale, the investigators found that gifted high school students in a Canadian high school had scores more significant for anxiety than did non-gifted students.

There are a few other studies that have focused on anxiety among gifted adolescents. One example, (Forsyth, 1987) found that the gifted (particularly female) students had increased anxiety and lower self-concept, yet were more secure than French Immersion students and typical students in regular classes. In the middle school population, Norman et al. (1999) found moderately to highly gifted rising seventh through eighth grade girls to have higher anxiety and over-sensitivity than gifted boys. In conclusion, it appears that additional research is needed to determine whether gifted adolescents experience greater anxiety than the non-gifted, and which subgroups of the gifted may experience higher levels of anxiety, as well as the causes of excessive anxiety. In older teenagers and young adults, one study of 400 college undergraduates in Kuwait (El-Anzi, 2005) negative correlations for academic achievement and anxiety, as well as for achievement and pessimism were found.

Unique psychological characteristics of gifted students can put these pupils at risk for increased anxiety, decreased life and school satisfaction, and negative social and emotional experiences. Asynchronous development is common in highly able students (Silverman, 1993). For example, some are advanced in one or more cognitive and academic areas, but similar to, or slower to develop than typical children in other areas, such as social and peer relationships, emotional or psychological maturity, or physical skills (Cross, 1997). Being internally and externally “out of sync” with others increases the risk for elevated anxiety. Some gifted students have social adjustment difficulties including low social self-concept or social withdrawal. They may have weak social skills and lack interpersonal awareness; some present themselves as overly verbal or

arrogant. Social stressors and behavioral differences can hinder peer relationships and contribute to anxiety.

Exacerbated perfectionism is related to anxiety and depression for some students (Hewitt, Flett, & Ediger, 1996). Friedman-Nimz (2006) argues that an increasing number of gifted youth set either improbably high goals or lower their goals due to fear of failure, leading to underachievement at times. They may attempt to complete every assignment perfectly or procrastinate. This unhealthy perfectionism can heighten anxiety (Friedman-Nimz, 2006; Parker & Mills, 1996). Teachers frequently observe perfectionism in advanced students. Some attribute unhealthy perfectionism partially to parents and educators who habitually push adolescents to perform at extraordinary levels and are overly critical of young people (Greene, 2004).

An additional stressor for students with one or more exceptional talents that may increase anxiety is termed multipotentiality (Silverman, 1993). By high school and beyond, students with multiple gifts simply lack the time to develop each talent fully. Multiple gifts can lead to intense inner conflict and angst as the adolescent struggles to decide which talents to pursue and which to neglect or abandon. Those who try to do it all are over-stressed by the time commitments, and sacrifice sleep and relationships in the process. They also have a stressful time selecting majors in college and may vacillate when choosing a career path (Cross, 1997). Multipotentiality may also be a factor in existential depression (Webb et al., 2005).

Social development issues of the gifted.

Berndt and Keefe (1992) and other investigators have determined that school peers influence students' self-perceptions. The importance of peer relationships in life satisfaction and psychological adjustment can hardly be overstated (Wigfield, Eccles, & Pintrich, 1996). Popularity strongly influences school satisfaction, while social isolation and poor relationships can decrease satisfaction and self-esteem in students of all ability and academic skill levels.

The young gifted child often has positive social development and social self-concept. Early in the 1980's, Austin and Draper (1981) reviewed relevant literature and concluded that, overall, gifted elementary age students were accepted and respected by peers, and had a reasonable social standing among peers. One should note, though, that the preferred peer group is not always an age-peer group but rather an intellectual-peer cohort. Kelly and Colangelo (1984) compared identified gifted students in middle school with non-identified students and found that the gifted students had significantly higher social self-concept as well as academic self-esteem. They also described a positive correlation between academic ability and social self-concept.

For the gifted population, popularity and social self-concept may diminish as adolescence progresses. Gifted male adolescents may regain some stature, while gifted teenage girls may struggle with lowered social acceptance and social self-esteem for a number of years. Interviews with gifted adolescents reveal that many experience the gifted label as a handicap in social situations (Coleman & Cross, 1988). Some students

work to diminish their recognition as “gifted” to reduce their “differentness,” fearing rejection by peers (Coleman, 1996; Coleman & Cross, 1988; Cross & Coleman, 1993). Others don’t seem to notice or care about potential negative social consequences and may even flaunt their talents and de-value less capable peers, increasing chances of rejection by classmates.

Intensity of emotion can surface in social relationships. Many highly able students are teased and some are bullied due to their differentness. Cornell (1989) argued that young children whose parents use the term “gifted” may have poorer adjustment as a result. Culbertson (1984) pointed out that gifted high school students have a wide span of affective responses to the label of giftedness, ranging from stronger confidence to lowered self-esteem, anger, and loneliness.

There is evidence that gifted students may experience a feeling of stigmatization when they perceive the prevalent anti-intellectual climate and feel different from others (Schroeder-Davis, 1999), and when more intellectually typical students are critical of them or tease or bully them. Gifted high adolescents can feel “rage” in these situations (Cross, 2001). However, gifted students can learn to accept and appreciate their own differentness, even though resentment toward the gifted, and any special programming they receive, may currently be impossible to avoid (Callahan, 2003; Ford, 2003; Mathews & Kitchen, 2007; Robinson, 2003; Salminen, 1994).

Quantitative research may reveal social strengths for gifted students overall, while teacher reports indicate incidences of weaker social skills (McCallister, Nash, &

Meckstroth, 1996). Once again, studies show that the gifted, even at a young age, are diverse in their self-concepts and functioning. Janos, Fung, and Robinson, (1985) studied elementary gifted students and found 37% saw themselves as different from peers. The students who saw themselves as different exhibited more signs of social difficulties.

There is evidence that the small percentage of students who are exceptionally or profoundly gifted may benefit the most from special schools that can provide the greatest opportunity for academic advancement. Clustering these exceptionally able pupils with other highly gifted students may also increase the probability that they will make friends, since this group of extremely gifted individuals often has the most difficulty of any subgroup of the gifted in relating well to same-aged more typical peers (Austin & Draper, 1981; Feldman, 1989; Hollingworth, 1942; Neihart, 1999).

Self-Perception.

Overview.

Self-perception is awareness of one's own personality traits, skills, emotions, and levels of satisfaction; it is one of the most widely studied constructs in psychology (Bracken, 2003; Seefeldt, 2005, p. 136-137). Swann (2007) observes that self-concept and self-esteem are significant psychological constructs. Self-concept is a central cognitive and affective aspect of being human. Positive self-perception is a key element of overall psychological well-being and is linked to academic and career achievement. Poor social adjustment and emotional problems such as depression or neuroticism have been associated with low self-perceptions or a sense of inferiority (Ehrenberg, Cox, &

Koopman, 1991; Falci, 2005; McCrea & Costa, 1997; Weiner, 1982). It should be noted, however, that self-perception is not viewed as a core personality trait, as delineated in the commonly cited “Big Five” personality traits: Extroversion, Conscientiousness, Agreeableness, Openness, and Neuroticism (McCrea & Costa, 1997). Self-perception is considered a more malleable personality construct than are these core constructs.

The self-system is a key dynamic contributor to motivation and human action (Bandura, 1989; Craven & Marsh, 2008). Humans possess an element of control over their own behavior and motivation. Bandura (1977, 1986, 1989) terms this faculty “human agency.” Based on social cognitive theory and his Theory of Triadic Reciprocal Causation, Bandura (1986) theorized that behavior and motivation stem from the interaction of three variables. These are environmental factors, behaviors, and personal factors which are reciprocally related. Humans constantly make decisions about daily and future behaviors based on their own personal biased analyses and predictions. Self-perceptions substantially influence these personal decisions and the level of motivation concerning actions.

While much of the original self-perception research focused on global ideals about the self, more recent studies address the specific hierarchical aspects and the dynamic nature of self-images (Bracken, 1980, 2003; Harter, 1999; Piers & Harris, 1984; Piers & Herzberg, 2002; Purkey, 1988). Self-concept is now thought to be multi-dimensional (Colangelo & Davis, 2003; Shavelson & Bolus, 1982). Consequently, educational researchers have more recently focused on academic self-concept

dimensions, and argue that academic self-concept is quite strongly related to both educational and career success (Bee & Mitchell, 1984; Byrne, 1996; Hamachek, 1995; Harter, 1999; Manning, 2007; Weiner, 1982).

James (1890) noted that one's conscious recognition of self is contextual, complex, and takes a developmental path from childhood into adulthood. He was among the first writers to identify self-esteem. He noted that self-esteem is molded through the development of competencies (Pajares, 2002). Another eminent psychologist, Erik Erikson (1963), identified development of a unique self identity as the important psychological task of adolescence. The self-concepts of young children are often exaggerated. Self-concept becomes more realistic as the older child or adolescent accumulates information about his or her success and failure experiences, and as the cognitive capacity for more accurate evaluation and information processing develops (Harter, 1999; Manning, 2007).

A person's self-concept does not develop in isolation. The child's impressions about himself or herself as a unique and valued (or unworthy) person form in the context of social interaction. Within the framework of social learning theory (Vygotsky, 1978), the child's self-cognitions are influenced not only by the opinions expressed by others, but through learning experiences facilitated by teachers and parents. The attitudes and communications of significant others to the child about her or his strengths and weaknesses have a major impact on her or his levels of positive or negative self-concept (Harter, 1999). Self-views are modified as the individual reflects

on perceived accomplishments and failures, taking into account the views of others and one's own self-evaluations.

There is now strong evidence that academic self-concept is both an outcome of one's personal evaluation of past achievements (Manning, 2007) and a contributor to future accomplishments (Byrne, 1996; Marsh & Hau, 2004; Marsh, Kong, & Hau, 2000; Marsh & O'Mara, 2008; Marsh et al., 2005). Bandura (1986, 1989) also emphasizes that humans reflect upon their past accomplishments and measure their own capabilities to some degree through observing others performing the task. They then predict the probability of their own future success in the given activity.

Within the research and lay literature, vocabulary about the "self" is often confusing and contradictory (Harter, 1999). Several terms are used interchangeably, which can confound research results. Self-esteem, self-concept, self-image, self-respect, and self-worth are several of the frequently used terms. Three of these constructs extensively studied by psychologists and educators are self-concept, self-esteem, and self-efficacy. These three terms are closely intertwined and inter-related constructs, and their relationship is viewed by many as reciprocal (Pietsch, Walker, & Chapman, 2003). For example, Lent, Brown, and Gore (1997) conducted a factor analysis that suggested academic self-concept, overall academic self-efficacy, and mathematics self-efficacy are distinct yet closely related dimensions of self-awareness.

At least one study found that instruments attempting to operationalize self-esteem, self-efficacy, locus of control, or neuroticism may be measuring very similar

concepts or the same over-riding construct (Judge, Erez, Bono, & Thoresen, 2002). Some believe that in the real world, overall self-concept and self-esteem cannot be separated, or easily measured independently. Self-evaluation is seen by many to have both cognitive and affective elements, and it is very difficult to create test items that separate emotion from cognitive self-criticism. Typically, self-concept scales provide a general overall score combining or equating self-concept and self-esteem. For example, the Piers-Harris Children's Self-Concept Scale global score may actually estimate overall self-esteem, as well, as some questions pertain to affect (Butler & Gasson, 2005).

Self-Concept.

The majority of authors agree that self-concept is the cognitive evaluation one holds of oneself in general and specific areas (Hattie, 1992; Harter, 1999; Huitt, 2004; Neihart, 1999). However, as self-concept is intertwined with feelings concerning the self, global self-concept is often equated with global self-esteem. The cognitive and affective aspects of these two constructs are very difficult to measure separately. Many if not most investigators use the two terms interchangeably (Pajares & Schunk, 2001). This is the approach adopted for the current proposed study; global self-concept will be equated with global self-esteem. Global self-concept is more than the sum of distinct domains; it is one's overall conception of personal characteristics and level of competency, and includes feelings of self-worth regarding these competencies (Pajares & Miller, 1994).

In recent decades, specific areas of self-concept, such as academic self-concept; popularity or social self-concept; self-evaluations of one's behaviors; one's self-view of anxiety level, emotionality, or neuroticism, and other specific dimensions, have been the basis of research, typically based on the multi-dimensional hierarchical model of Shavelson and Bolus (1982). In a hierarchical system, there are even more finely differentiated areas of dimensional self-concept (such as math self-concept and writing self-concept) that together are components of the more general construct of academic self-concept, and that warrant study (Marsh & Parker, 1984).

Previously, research on the effect of global self-perception on personal achievements yielded conflicting results. More recently, studies concentrating on the dimensions of self-concept have resulted in more powerful and clearer evidence of the relation between self-concept and life success, and more accurate comparisons of self-concept between groups (O'Mara, Marsh, Craven, & Debus, 2006). For example, more recent studies have suggested that academic success appears to be weakly or moderately associated with global self-esteem or self-concept but strongly related to academic self-concept (Baumeister, Campbell, Krueger, & Vohs, 2003; Davies & Brember, 1999; El-Anzi, 2005; Lyon, 1993; Marsh & Craven, 2006). Academic self-concept is a mediating factor between academic success and overall self-esteem, according to Skaalvik and Hagtvet (1990).

Equivocal results have been found in a few studies examining whether academic self-concept has as significant an impact on overall self-concept, as do other dimensions

of self-concept such as popularity, and one's perception of physical attributes and athletic skills (Marsh, 1991; Marsh & Parker, 1984). Student self-perceptions about family may on average be more strongly related to life satisfaction than is school self-concept (Dew & Huebner, 1994).

Self-Esteem.

Self-esteem is most clearly defined as a global term referring to one's feeling of overall self-worth or value, or of failure. It is an affective state rather than a cognitive one (Huitt, 2004; Rosenberg, 1979). A group member's self-esteem is strongly influenced by community and cultural behavioral norms and values. For example, if the group values height, left-handedness, and honesty, individuals who know or believe they possess these qualities will be prone toward higher self-esteem. Once one cognitively evaluates oneself as defective in the skills most esteemed by the group in several self-concept dimensions, a persistent feeling of overall low self-esteem or self-worth will typically follow.

Lowered self-concept and self-esteem, in turn, may lower self-efficacy, the belief that one can achieve in certain future tasks. Positive psychology research suggests that persistence in tackling challenging tasks and subsequent skill improvement, on the other hand, can improve overall self-esteem over time (Bandura, 1982, 1989; Baumeister et al., 2003; Dweck, 2000).

Self-Efficacy.

Another construct related to self-concept, and quite frequently confused with it, is self-efficacy. Although self-efficacy is not a specific factor addressed in the proposed study, it is described here, due to its close connection to self-concept. It is a concept studied extensively by Bandura and colleagues (Bandura, 1977, 1978, 1986, 1994; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). Positive self-efficacy is an expectation of personal success in a specific task in any domain of human endeavor. Self-efficacy theory is a prominent cognitive theory of motivation (Tollefson, 2000). Self-efficacy is based on constant self-appraisal and perception of probabilities of future success and failure. Past success in dealing with specific experiences and circumstances may increase one's feeling of confidence in undertaking similar tasks in the future (White, 1959).

Context-specific, self-efficacy perceptions may be clustered into more general domains, such as general academic self-efficacy. Self-efficacy for subject areas predicts academic achievement results for specific assignments and course assessments more accurately than does overall self-efficacy or self-concept (Pajares, 1996a). While students are engaged in academic tasks, they judge their own progress toward the goals they or others have set and adjust their self-efficacy beliefs accordingly. If they reach the goals, they are more likely to feel positive about their capabilities and, in turn, they may be more willing to accept new academic goals that may challenge them (Schunk, 1990; Schunk & Pajares, 2001).

According to Bandura (1986) a child develops competence and perceptions of self-efficacy through observing models (vicarious effect), verbal persuasion, and physiological cues. Self-efficacy is modified through reflection on past performance in the specific task area. Low self-efficacy is associated with wavering goal commitment, weak motivation to overcome adversities in the given task areas, and lowered motivation to seek high level goals (Bandura, 1994). Bouffard-Bouchard, Parent, and Parivee (1991) found that students who have enhanced problem-solving self-efficacy display more successful self-regulation strategies and are more persistent.

Positive self-efficacy has been associated in a broad number of studies with a variety of positive academic outcomes (e.g. Bandura, 1986, 1994; Bandura et al., 1996; Malpass, O'Neil & Hocevar, 1999; Pajares & Miller, 1994; Zimmerman, & Bandura, 1994; Zimmerman, Bandura, & Martinez-Pons, 1992). Conversely, strong self-efficacy may be negatively related to worry and depression in teenagers (Ehrenberg et al., 1991; Maddux, Scheiber, & Bass, 1982).

Bong and Skaalvik (2003) explain the similarities and differences between self-concept and self-efficacy. Both constructs are multi-dimensional, and also componential. Both concern personal views of competence and both predict achievement and affect. However, self-efficacy is future-oriented and an estimate of the probability of success in a task, while self-concept is retrospective, broader in scope, and based on one's evaluation of past experiences of self. Self-efficacy focuses on the likelihood of reaching achievement goals, and is more directly related to very specific

contexts (as well as being more amenable to change) than is self-concept. Bong and Clark (1999) view self-efficacy as a dynamic organizer and precedent for self-concept. How other investigations view the relationship between self-concept and self-efficacy as reciprocally reinforcing. Self-efficacy research helps clarify the depth of connection between academic self-concept and success (Gorrell, 1990).

Self-perceptions of gifted students.

As noted earlier, self-concept research has been plagued by varying definitions of self-perception constructs, reliance on measurement of global constructs, and small sample sizes. Various definitions of giftedness clouded the picture and can confound the data, as well (Hoge & Renzulli, 1991; Martin, et al., 2010). Research interest in self-concept and in the relationship between self-perception and giftedness increased and was revisited in the 1990s (Colangelo & Davis, 2003).

The evidence is now quite compelling that global self-concept levels of the gifted appear equal to those of non-gifted students, or more positive (Ablard, 1997; Bracken, 1980; Colangelo & Pflieger, 1978; Feldhusen et al., 1990; Field et al., 1998; Karnes & Wherry, 1981; Kelly & Colangelo, 1984; Hoge & Renzulli, 1993). For example, Ablard (1997) used the Adjective Checklist and the Multidimensional Self-Concept Scale with 178 eighth grade students in the Talent Search Program. These gifted students demonstrated higher overall self-esteem than the standardization sample. In addition, their academic self-confidence was higher than the normative group, while social self-

concept was similar to that of the normative sample. For the girls, social self-concept seemed to serve a protective function for overall self-esteem.

Likewise, Hoge and Renzulli (1993) conducted an extensive meta-analysis of self-esteem studies and found academic self-esteem, overall, to be higher for the gifted. However, research results varied, particularly between age groups. Also, complicating the measurement of self-concept, gifted students may rate themselves by different criteria than those used by the non-gifted. Kammer (1986) suggested that students in gifted programs may attribute academic success to strong effort or hard work more so than do non-identified students. This may affect their self-rating scores on self-concept assessment instruments.

Another study indicating stronger self-confidence was conducted by Kelly and Colangelo (1984). The investigators found in a study of 266 adolescents that gifted junior high school students ($N=57$) had higher academic and social self-concept than general students ($N=184$) and special needs students ($N=25$). In addition, certain specific domains of self-efficacy, such as math and self-regulation self-efficacy, have also been suggested to be stronger for identified gifted students than for regular education middle school pupils (Pajares, 1996b).

Some studies indicate that the self-perceptions of gifted students can vary between settings, depending on the specific circumstances and influences within each setting. For example, there is compelling evidence that homogeneous classroom grouping of gifted students is associated with decreases in academic self-confidence,

especially in older age groups. These findings are discussed in greater depth later in this chapter.

There is also evidence that there may be uneven development of dimensional self-concept strengths for gifted students, and that specific dimensions of self-perception may be weaker than those of the non-gifted. For example, Chan (1988) discovered that academically advanced primary grade students had higher self-concepts in intellectual and general self-worth than non-gifted peers, but scores that were lower than those of general education students in social and physical domains. Similarly, Hoge and McSheffrey (1991) suggested in a study of 280 fifth to eighth graders that in self-contained enrichment programs, the gifted had somewhat lower social and athletic competence self-concept results, but higher school-related and global self-image.

Loeb and Jay (1987) found that for nine to twelve year olds, identified gifted boys had similar global self-worth estimates as non-identified males. The gifted boys, however, had lower self-concept scores in the area of physical attributes than the more academically typical boys. The gifted girls had more positive overall self-concepts and internal locus of control than non-identified females.

Recently, Hoogeveen, van Hell, and Verhoeven (2009), studying high school students in the Netherlands, argued that although overall self-concept was relatively equal for the gifted and non-gifted populations, and the gifted subjects had stronger academic and mathematics self-concepts, they had lower social self-image. A significant aspect of this recent study is that when students were rated by their peers, a relatively

large number of gifted students were placed in the “rejected” category from a social popularity perspective.

Also, analyzing patterns of self-esteem for the gifted from a developmental perspective, Colangelo and Assouline (1995) found that general self-concept was strong at each school level; however, high school students showed a drop in self-concept, and high school girls revealed the largest drop. In another recent study, Bénony et al. (2007) found that depression was higher for gifted adolescents and accompanied lower overall and academic self-concept. Intriguingly, at times a high self-concept in one area, such as mathematics, may contribute to lowered self-concept in another area for teenagers, such as verbal ability (Plucker, 1998).

Dixon, Cross, and Adams (2001) found generally adequate self-images in a residential school setting for gifted students, although these investigators also identified one group of low self-concept students in this population among the six groups that were identified through cluster analysis. The remaining cluster groups were: Math Focus, Verbal Focus, Non-spiritual/Religious Group, Social Focus, and a Non-Athletic Group. The researchers emphasized that gifted adolescents in homogeneous settings are not psychologically homogeneous. Some gifted children are very self-critical and have self-doubts (Cross, 1997). When the impact of educational settings for the gifted are explored, one should anticipate psychological diversity within each setting.

Gender differences in self-perception.

Academically advanced males and females may experience the “synergy” between personal characteristics, educational context, type of giftedness, and level psychological well-being, as proposed by Neihart (1999) differently as they adjust to different school settings. It is important to note that for more typical as well as gifted students there is some compelling evidence for gender differences in the self-perceptions of pupils that may affect their school satisfaction and sense of well-being. This is of particular importance as the nation strives to improve mathematics and science competencies for both genders.

Females may experience weaker self-perceptions in some dimensions (Kerr, 1994; Meece, & Courtney, 1992; Rinn, Mendaglio, Rudasill, & McQueen, 2010; Sanford & Donovan, 1985). As noted earlier, typical elementary girls and boys may have similar positive self-concepts, but by adolescence there is evidence that self-esteem and self-concept are frequently lowered, particularly for girls (Ahmavaara & Houston, 2007; Arnold, 1995; Arnold & Bye, 1989; Austin & Draper, 1981; Falci, 2005; Howard-Hamilton & Robinson, 1991; Kline & Short, 1991; Kline & Zehms, 1996; Lea-Wood & Clunies-Ross, 1995; Luftig & Nichols, 1990; Luscomb & Riley, 2001; Norman et al., 1999; Powell, 2004; Reis, 1995, 1998, 2002; Rudasill et. al., 2009; Ryan, 1999; Straus, 2007; Wilgenbusch & Merrell, 1999). In a meta-analysis conducted for the American Association of University Women (1992) it was found for the general population that approximately 70% of elementary school boys and 60% of elementary female students report an overall

positive self-image. By high school these percentages had dropped to 46% for the boys and 29% for the girls. Wilgenbusch and Merrell (1999) reviewed 22 studies involving over 19,000 children and adolescents. For girls, research revealed evidence of a statistically significant decline in overall self-esteem, a more negative body-image, and increasing depression following the elementary years and continuing through adolescence.

However, it should be observed that for many of the studies included in this meta-analysis, although the differences between genders were statistically significant, they were small and may not have been meaningful in practical terms. One example was a study completed by Crain and Bracken (1994). Howard-Hamilton and Franks (1995) found few differences between older male and female teenagers. Kelly (1993) reported that for high school students, gender did not affect career interests.

There is conflicting information about possible gender differences in self-images of gifted students. While in one study of gifted students in two summer programs there was little evidence of gender or grade differences (Plucker & Stocking, 2001), other studies regarding gender and self-image in gifted students reveal differences between males and females. Rudasill et al. (2009) found that gifted female adolescents had lower self-concept scores than males for most dimensions. Both genders can experience anxiety and emotional crises, although girls may have more role conflicts (Kwan, 1992). Both gifted boys and adolescent gifted girls may experience a decline in some specific self-concept dimensions as well as overall self-esteem as they age. For example, in a

recent study, older gifted adolescents and females had lower self-concept in most dimensions. Arnold (1995) also found girls to have decreasing self-confidence, and also self-esteem fluctuation. Powell (2004) observed internal conflicts and identity issues for adolescent girls. Silverman's (1993) conclusion was that social self-concept drops for gifted girls, in particular, as they become increasingly aware of their own unique strengths, and attempt to cope with their differentness, potential conflicts with peer and societal expectations, and any self-perceptions of weakness. Many gifted females are distressed by isolation at school (Rimm, 2001). They may also exhibit more perfectionistic tendencies than do boys, which can be associated with lowered self-concept (Dweck, 2000).

Boys may experience a decline in self-esteem as they become more self-aware during adolescence and compare themselves to the most popular and athletic boys in the school. Kline and Short (1991) concluded that boys can be vulnerable and that male affective concerns such as discouragement were highest for middle school boys.

Although they may experience a general lowering of self-concept, gifted girls may also be more facile in social skills than gifted males, giving some a self-confidence boost in this particular domain of self-concept. Some intellectually bright girls use this facility to enhance their coping skills in various school cultures. This can help improve their affect, satisfaction level, and attitude toward school. Others use this skill to camouflage strong abilities, which hurts their academic progress (Rimm, 2001). As noted earlier, some investigators argue that differences between male and female self-esteem

in the gifted may exist but are minimal. There is a need for additional research to clarify possible gender differences in specific dimensions of self-concept between gifted and non-gifted students, and within the gifted populations in various educational settings.

School satisfaction.

Life and school satisfaction are important factors in the self-perception of psychological well-being. According to McCullough et al. (2000), a low sense of well-being in adults can be associated with negative life consequences, such as mood disorders and feelings of rejection. In a study of 7,000 students in 212 schools in the Netherlands, the investigators found that satisfaction and comfort level with the school culture, and positive emotions and acceptance of oneself, were related to academic success (Knuver & Brandsma, 1993). School satisfaction was found to be an independent indicator of adolescent academic engagement in a recent study by Elmore and Huebner (2010). For gifted students, school satisfaction is directly related to educational "fit," (Neihart, 1999). For the gifted, school dissatisfaction can contribute significantly to school drop-out behavior. As noted earlier, according to one report, between 18 and 25 percent of students who could be classified as intellectually gifted do not graduate from high school in the United States (Renzulli & Park, 2000).

Most researchers recognize three dimensions of school satisfaction: overall school satisfaction, attitudes toward teachers, and academic commitment (Epstein & McPartland, 1976). Strong academic self-perceptions are positively correlated with school satisfaction (Baker, 1998; Huebner & McCullough, 2000). As school satisfaction

affects motivation and academic engagement, there is a need for additional research to determine the satisfaction of gifted students in a variety of placements (McCoach & Siegle, 2003a).

Unfortunately, school dissatisfaction may be quite common. In a survey of the attitudes of over 430,000 public school students in Arizona (Okun, Braver, & Weir, 1990), the investigators found very significant school dissatisfaction in approximately 25 percent of students, with a decline in satisfaction from grades one through eight. The least satisfied 25 percent did not endorse any of the satisfaction survey items. In general, the researchers noted that students are much less comfortable with their role as students than are adult workers with the worker role. When measuring student satisfaction with school, student perceptions of academic programs, interventions, and social context are as important as the actual physical and social environments and interventions. In addition, certain personal qualities and attitudes are significant. For example, Hoekman, McCormick, and Gross (1999) found the personal quality of optimism to be highly important in school satisfaction.

McCoach and Siegle (2003a) found that specific dimensions of school attitudes and satisfaction are associated with academic achievement. The study involved a national sample of 178 high school students in grades nine through twelve; 122 were regular students and 56 were academically gifted. Twenty-eight school districts were involved. Underachievement was defined as a GPA of 2.5 or lower, or grades placing the student in the lower 50 percent of his or her class. The researchers found that

academically achieving gifted adolescents and gifted students who underachieve differ in the following factors: attitudes toward school and their teachers, motivation/self-regulation, and goal valuation. However, somewhat surprisingly, no significant difference was found between the two groups for the Academic Self-Perception subscale (McCoach & Siegle, 2003a). The lack of relationship to academic self-concept was in contrast to earlier findings about underachievement of McCoach and Siegel and other researchers examining typical non-gifted students (McCoach & Siegle, 2003a).

The quality of the academic program and the academic and psychological support students receive are critical underpinnings for school satisfaction. Quality programs focus on meaningful, challenging, and engaging materials and instructional techniques; gearing instruction to the variety of skill levels; and valuing and respecting students. Student respect for and liking of teachers is linked to academic success (Davis & Lease, 2007). Also, when students are interested in the subject matter, motivation is spurred (Csikszentmihalyi, 1990; Hunter & Csikszentmihalyi, 2003). When students feel supported in a sustained pursuit of their talents and interests, they can experience optimal task engagement or “flow” (Nakamura, Csikszentmihalyi, 2002; Shernoff, Csikszentmihalyi, Schneider, & Shernoff, 2003).

Challenge can promote meaningful learning and positive psychological development, even though anxiety may be temporarily increased during the process (Dabrowski, 1964; Piechowski, 1979). Successful talent development requires persistence through sometimes stressful challenges (Csikszentmihalyi et al., 1997).

However, there must be a balance between level of challenge and psychological comfort, as reasonable satisfaction with educational fit and school climate is associated with positive academic and socio-emotional outcomes, while persistent discouragement and stress are associated with lowered motivation. Social and psychological support, combined with specific instruction or interventions to build persistence, optimism, a sense of autonomy, and resiliency skills, are necessary for full talent development in any school setting (Gagné, 1965; Olszewski-Kubilius, 2000; Piirto, 2004; Seligman, 1990, 2004, 2007).

School satisfaction is a complex construct, as not only school factors, but also life experiences and personal factors outside of school, influence it (Huebner & McCullough, 2000). Ash and Huebner (1998) found that gifted middle school students attribute a greater degree of life satisfaction to school related experiences than do non-gifted students. However, for all students, life experiences outside of school influence their overall feeling of life satisfaction. Ainley (1991) found that personal and socio-cultural factors, school achievement, and student perception of negative school life were variables related to dropping out of high school.

Although not enough is known about the causes of high school dropping-out behavior, educational aspirations, school climate and culture, and socio-economic variables are suspected as significant influences (Renzulli & Park, 2000). Some of these cultural and economic factors include low educational level of parents, a primary culture that does not expect its youth to graduate, economic disadvantages including the

necessity to work, minority identity, and personal issues such as pregnancy and child-care responsibilities. Interestingly, daily life events, even more than major life experiences, may affect reported well-being to a greater extent than global self-concept in adolescents (McCullough et al., 2000).

There is a dearth of data on relationships between psychological well-being and school satisfaction for gifted students, although information on these associations could provide educators with specific information to assist with the development of affectively strong programs. In respect to overall life satisfaction among typically achieving and at-risk students, Huebner and Alderman (1992) suggested a positive correlation between self-esteem and life satisfaction utilizing the Students' Life Satisfaction Scale. They also found a significant negative correlation between scores on this life satisfaction scale and scores on assessment measures of depression and loneliness. Leung and Leung (1992) and McCullough et al. (2000) found a positive correlation between self-concept and life satisfaction.

Jin and Moon (2006) assessed psychological well-being, as well as student school satisfaction at a residential science high school for the gifted and compared these results with those for gifted adolescents attending gifted programs at regular high schools. This study which was conducted in Korea with a total of 299 students, used the Psychological Well-Being Scales (Ryff, 1989), as well as a Satisfaction With School Life scale developed for the study by the investigator that included 13 specific areas of school satisfaction, such as attitudes toward curriculum, teachers, and peer relations.

The Psychological Well-Being Scales measure six domains of well-being: autonomy, environmental mastery, personal growth, positive relations with others, self-acceptance, and purpose in life (Ryff, 1989). The Korean version of the Psychological Well-Being Scales was designed in 1993. Prior to this Korean high school study, the Psychological Well-Being Scales had only been used with adults.

The results for Jin and Moon (2006) suggested that school satisfaction was generally higher for those high ability students in the special residential science high school. However, contrary to the researchers' expectations that their psychological well-being would also be rated as higher by the gifted students in the specialized school, overall perceptions of psychological well-being were similar between the two groups. The investigators concluded that the Psychological Well-Being Scales may not be an appropriate research tool for evaluations of psychological well-being that are short-term in nature and involve youth instead of adults. This study did not attempt to determine relationships between satisfaction and other well-being indicators. However, the researchers pointed out the need for additional research on the emotional health of advanced students in homogeneous school contexts for high ability students from a comprehensive positive psychology perspective.

Another complicating factor affects school satisfaction for gifted students. The under-identification of culturally diverse students for gifted services, when combined with the ongoing tension between those who see special programs for gifted students as elitist and those who advocate for optimal learning environments for each child, can

create an uncomfortable environment for highly able students congregated by ability or academic skills within a regular school (Ford, 2003). Gifted students are often highly perceptive, concerned with social justice, and acutely aware of social inequities where they exist. They can experience intense feelings of exclusion when denied access to special programs for advanced learners, and when included in special programs they may feel guilty when they perceive favored treatment for themselves and their academically advanced peers.

Combined with the ongoing discomfort of feeling very different from same-aged peers, such social stressors may be detrimental to talent development and increase dissatisfaction with school (Cross & Coleman, 1993; Manor-Bullock, Look, & Dixon, 1995; Swiatek, 1995). Special schools for the gifted may relieve some of this daily stress and increase school satisfaction for some participants, but contribute to the guilt and discomfort of others.

Schools must also address the question of whether ongoing segregation from less academically talented students deprives the gifted student of opportunities to learn social coping mechanisms and to interact positively with more typical students. Educators must explore the possibility that for some gifted students other options, such as flexible grouping in regular school settings, and partial-day segregated gifted programs, such as those explored in the current study, may serve them best.

Although there is a need to know more about the impact of school satisfaction on talent and socio-emotional development of gifted students in various educational

settings, some factors are becoming clearer. For one thing, it appears that the social environment or milieu in special schools for the gifted is the foundation of the overall experience as lived by the children (Cross, Stewart, & Coleman, 2003). A sense of belonging and a positive community appear to be crucial to their satisfaction. Special programs have smaller populations than do regular school settings, a factor which can lead more easily to this sense of community. Academic demands may increase stress and anxiety in special programs for the gifted, but these effects may be mitigated by positive socio-emotional elements of the programs. In addition, the process of coping with increased demands may lead to greater affective bonding among the participants.

Immediate program satisfaction, of course, is only part of the picture, as some graduates of high level programs who report that they experience high stress and some dissatisfaction while enrolled in these programs, report significant delayed satisfaction about their enrollment as they reflect back on their experiences in the years following graduation, and see long-lasting positive benefits later on. Such was the case in a study by Taylor and Porath (2006), who surveyed a limited number of graduates of high school International Baccalaureate (IB) programs in Canada. The programs were remembered as being challenging and stressful at the time. However, the investigators found that the graduates were generally satisfied about their past enrollment in the IB program, and reported that the IB program improved their critical thinking and time management skills.

In summary, from a positive psychology perspective, the level of school satisfaction is one important indicator of student adjustment to the educational environment (Baker, Dilly, Aupperlee, & Patil, 2003). School satisfaction is directly related to educational context. It is one of several factors, along with school environment and the type and level of giftedness, that interact to determine the impact of giftedness on well-being (Neihart, 1999).

School Environments and Educational Context

Educational environment has a significant influence on student satisfaction, motivation, and educational goals (Hoekman et al., 1999; Meece, 1991). Hoekman et al. (1999) found that motivation was reduced by tedious assignments and improved with appropriate challenge. Higher motivation is associated with academic success and less anxiety about academics. Many studies have found academic benefits for segregated gifted programs (Gross, 1997, 1998;; Kulik & Kulik, 1992; Lim & Tan, 1997; Sowell, 1993; Taffel, 1987). For example, Kulik and Kulik (1992) conducted a widely cited meta-analysis on the academic effects of various student grouping options. Accelerated classes and enrichment programming for the gifted had the most positive effect on the advancement of academic achievement. The researchers also discovered that, overall, grouping by academic skill level did not have negative effects on academic or emotional well-being of students who were less able.

Not only do gifted students advance academically at a faster pace, and learn at a deeper and more advanced level in homogeneous settings and segregated programs,

there is also tentative information that students of all ability levels may enhance their academic and social self-efficacies through observing similar peers being successful, as they frequently do when homogeneously grouped (Schunk, 1987).

Academic program design directly affects psychological adjustment of the gifted, including their self-concepts and their school satisfaction. Several older studies point to improved self-esteem and creation of a positive social system stemming from interaction with intellectual peers in stimulating settings (Coleman & Fults, 1985; Feldhusen et al., 1990; Higham & Buescher, 1987; Karnes & Wherry, 1981; Maddux et al., 1982). However, the response to special programming, such as self-contained classes, depends heavily on individual personal factors such as personality and emotional stability (Moon, Swift, & Shallenberger, 2002; Neihart, 1999). Vaughn, Feldhusen, and Asher (1991) in a meta-analysis of the effectiveness of pull-out programs, found evidence of increased creativity and critical thinking skills, but no positive effect on self-concept.

In typical heterogeneously grouped classes in regular schools, many gifted students experience stress due to boredom, the slower pace of instruction, and tedious assignments. As noted earlier, special classes can raise interest and student achievement. Due to these factors, part-time programs and full time options have become mainstays of appropriate gifted education. In addition, at least one study found that, over time, the less common option of residential schools for the gifted may help ease the stress experienced by some students in heterogeneous settings (Cross et al.,

2004). Exemplary specialized programs and schools can adequately meet the affective needs of exceptional students (e.g. Coleman, 2001; Feldhusen & Boggess, 2000; Feldhusen & Saylor, 1990; Lando & Schneider, 1997). For example, Taylor (1995) found a significant increase in positive attitudes toward school and enhanced vocational aspirations of students participating in a gifted vocational-technology enrichment program. The challenging classes in many selective programs are described by participants as interesting and enjoyable. Friendships and positive interactions with peers, well-trained supportive teachers, increased respect and responsibilities, and a sense of accomplishment in meeting challenges are also described.

Research results, as noted earlier, however, also reveal that specialized programming can have negative as well as positive affective influences. Disadvantages such as excessive workloads that are detrimental to well-being, the stress of high-stakes tests, feelings of inadequacy when students compare themselves to their most brilliant peers, isolation from students in regular programs, and continued derogatory labeling and stereotyping by more typical students are noted by some gifted students placed in special settings, particularly at the high school level (Foust, Hertberg-Davis, & Callahan, 2009; Taylor & Porath, 2006).

One recent study involving 14 school districts in 10 states found negative as well as positive influence on specific dimensions of self-concept for gifted students in pull-out homogeneous gifted classes (Delcourt, Cornell, & Goldberg, 2007). The gifted students in segregated classes had higher achievement outcomes and felt comfortable

with friends, but also experienced lower academic self-concepts and lower feelings of peer acceptance by typical peers than did non-gifted or gifted students in other settings. Coleman and Fults (1985) found that self-concept was reduced (particularly for children who were more mildly or moderately gifted) when they were placed in homogeneous gifted settings, although intelligent students tended overall to have strong self-esteem. Pajares (1996b) discovered that gifted middle school students when placed in heterogeneous algebra classes with more typical students, have higher mathematics self-efficacy and self-regulated learning self-efficacy, and lower math anxiety than those in these classes who were not identified as gifted.

Gifted students, being a widely diverse group, respond in a variety of ways to educational contexts (Dixon et al., 2001). In selective schools, some talented teenagers feel significant stress and do not bond well with peers. For example, one study of female high school students in a science and mathematics specialty high school found many were discouraged to apply, felt extreme pressure to succeed, and faced a diminished social life while in the program (Callahan et al., 1996). In one residential program for the gifted, depression indicator scores increased for 12th grade students feeling isolated in the residence halls (Yadusky-Holahan & Holahan, 1983).

Adams-Byers, Whitsell, and Moon (2004) administered a questionnaire or interviewed 44 fifth to 11th graders at a residential summer program for the gifted. The students saw educational benefits, but were not sure their social needs were met when separated from non-gifted peers. Another study of five females in AP or IB programs

noted appropriately challenging work, interesting assignments, and peer friendships, but also a very high volume of work and significant stress around the required year-end tests (Vanderbrook, 2006). In this particular setting, personal and academic support from friends and teachers were present and were seen as program strengths. The teachers themselves were central to student satisfaction.

Interviews about the benefits and disadvantages of AP and IB programs in four high schools revealed positive relationships with other students in the program and respect from teachers, educational fit, and appropriate challenges (Foust et al., 2009). The perceived disadvantages were consistent across programs but the students' levels of satisfaction and dissatisfaction varied from mild to intense, suggesting that individuals can respond differently to the same environment due to individual personal perceptions and other idiosyncratic factors. Workload dissatisfaction was common and increased with the amount of time spent in a special setting. Students in another study of an IB program reported a more positive school climate, higher academic self-efficacy, less externalizing psychopathology, and more satisfaction with friendships than general education students (Shaunessy, Suldo, Hardesty, & Shaffer, 2006). However, the authors highlighted that appropriate psychological and career counseling for these students was frequently inadequate.

McHugh (2006) reviewed eight studies of summer Governor's School programs conducted from 1965 through 1994 and found, overall, that students were very satisfied with the friendships and social networks that developed. However, research designs

were limited in that the studies did not always compare gifted with non-gifted students. Lack of recent studies about similar special programs minimized the significance of these earlier results.

Marsh (1991) warns that academic self-concept, course selections, and career aspirations of adolescents may be negatively affected by placement in high schools where the school-average achievement is high. The result of lower academic self-esteem is consistent with the frame of reference and social comparison hypotheses, which predict that in educational settings populated exclusively by high ability academically-proficient students, the gifted child will compare his or her academic performance to that of others in the setting and, therefore, may have lowered academic self-concept in the affected academic areas. Although the self-perceptions of students may temporarily soar when they learn they have been admitted to a special high school, self-perceptions may dip and anxiety increase once they are actually attending classes in the new school. Conversely, in a heterogeneous academic setting, many gifted children have enhanced academic self-concept. The Big Fish Little Pond Effect (BFLPE) has been studied extensively by Marsh and his colleagues (Marsh, 1991, 1993, 2005; Marsh, Chessor, Craven, & Roche, 1995; Marsh, Kong, & Hau, 2000; Marsh, & Parker, 1984).

Marsh (1991), in a large longitudinal study of high schools in the United States involving approximately 30,000 students in 1,000 high schools, found that academic self-concept and educational and career aspirations were lowered in high schools where

the average ability is high. This evidence supported an earlier study (Alwin & Otto, 1977) that suggested that intelligent young people in the United States in higher ability high schools on average have lowered academic self-concepts that can continue over time, choose less rigorous classes, and lower their academic and career aspirations.

However, it should also be noted that there may be mitigating factors that booster self-concept in high ability school settings. For example, Marsh et al. (2000) found a positive effect on academic self-concept in high ability high schools when students identify with other able students within selective high schools (termed the Reflected Glory Effect), within a longitudinal four-year study of selective high schools in Hong Kong involving almost 8,000 students in 44 high schools. The Reflected Glory Effect “counterbalanced” the negative BFLPE to some extent, but not entirely, suggesting the significant strength of the BFLPE.

Similar results regarding a dip in self-concept in adolescents in selective academic settings were found in other studies for students of various ability levels in the United States and other nations (Coleman & Fults, 1985; Delcourt et al., 2007; Gibbons, Benbow, & Gerrard, 1994; Marsh, 1993, 2005; Marsh et al., 1995; Marsh et al., 2000; Marsh et al., 2005; Marsh et al., 2006; Marsh & Craven, 1997, Marsh & Craven, 2002; Marsh & Hau, 2003; Marsh et al., 2004; Marsh & Parker, 1984; Marsh & Yeung, 1997; Zeider & Schleyer, 1999).

Dai (2004) and Plucker et al. (2004) refer to a study by Gibbons et al. (1994) that indicates a dip in academic self-concept may be temporary and can rebound fairly

quickly. However, this study involved a sample of 162 gifted adolescents in a limited three-week summer academic program, rather than a full-time academic-year high-ability school. There was a drop in academic self-concept for some of the male students. Scores returned to pre-program levels after these students returned to their regular schools. This study confirmed the BFLPE can operate in a short-term setting, and also suggested that self-concept is malleable and dependent on educational setting and social comparison. However, it did not measure academic self-concept changes over time within a long-term academic-year program.

Coleman (1995) called for additional research on social context in relationship to giftedness. For mildly and moderately gifted adolescents, who make up the majority of gifted teenagers, special schools are wise to do all they can to reduce the competitive culture and stressors that can dominate high-ability schools and lead students to compare themselves unfavorably with peers, and to build a strong positive sense of community (Marsh, 1991).

The current study attempted to measure self-concept in advanced learners within two academic-year high school program options. One setting was placement in special partial-day public Governor's Schools and the other was enrollment in advanced courses within regular public high schools.

Methodological Issues

Part of the difficulty in deciphering accurate psychological profiles of giftedness is the existence of methodological issues that limit the generalizability of research

results. These include small sample sizes, over-reliance on qualitative studies, relatively few empirically rigorous studies, and the use of volunteer subjects who may differ from more representative random samples of gifted students in their inherent characteristics and in their responses to survey items and experimental treatments. (Moon, 2004).

Most studies of the mental health of intellectually able students do not utilize consistent definitions of giftedness and many do not compare gifted and non-gifted pupils, or are qualitative in design. Large sample sizes are rare (Martin et al., 2010). Another sampling issue is that the gifted students most closely studied are those officially identified as gifted. This process alone may bias the samples, as behavioral adjustment and academic success are frequently included in the criteria rubrics for gifted identification. Also, those participating in special programs for the gifted often were identified as candidates by their teachers. It may be that high ability or talented students who have emotional or behavioral issues, lower grades, or “invisibility” within the classroom have not been included in some of the “gifted” samples.

In addition, minority students and those from lower income families are currently under-represented in identified gifted populations in the United States, and, therefore, research samples may not adequately represent certain sub-populations. Of particular importance for the current research proposal, older studies looked at psychological health or global self-esteem issues that concentrated on too limited a set of indicators of well-being that did not capture intra-personal dimensional differences in gifted students, and that emphasized pathology rather than components of mental

health. Multi-dimensional examinations of self-concept and well-being yield more accurate and useful pictures of self-perception and emotional health. However, few of these studies have differentiated age groups within the gifted population.

Summary

Neihart (1999) emphasizes that for better or worse, educational setting, working in “synergy” with personal factors and type and level of giftedness, determines the impact of giftedness on the psychological well-being of children and adolescents. There is evidence that personal factors such as negative academic self-concept, anxiety, social isolation, and school dissatisfaction, can negatively impact educational performance and psychological well-being. Evidence of declining self-esteem through the development process, particularly in gifted girls, as well as conflicting results about the effects of high ability schools on the psychological well-being of gifted high school students, call for additional research to clarify whether particular types of educational programs and settings have positive versus negative effects on the psychological well-being of academically advanced high school students.

While some studies have explored the effects of full-time special schools and high average ability high schools on the psychological well-being for gifted students, little is known about the impact of part-time congregated programs. It is important to examine the effects of these programs on academic and other domains of self-concept and school satisfaction, including attitudes toward school, and to investigate whether the BFLPE exists for students in these schools, and, if so, to what degree. Such part-time

segregated programs may provide a cost effective design that enhances academic as well as psychological well-being. There is also a need for additional information on anxiety levels of gifted students as compared to regular education students, and anxiety levels of gifted students in different educational settings, such as part-time special programs. Neuropsychological research suggests that constant stress can lead to biochemical effects contributing to significant anxiety, which can in turn be a precursor for depression (Ardayfio & Kim, 2006).

Little information currently exists about relationships between the dimensional factors of school satisfaction and psychological well-being. The current study may help fill this research gap. This information may be valuable to policy makers, educators, and mental health professionals, as they design programs based on a positive psychology framework to enhance affective health as a necessary foundation for academic talent development. Appendix A outlines the key research studies in a table of specifications related to the well-being and school attitudes of advanced learners.

Chapter Three describes the details of the proposed study. The goals of this study are to compare the psychological impact of part-time special high schools for advanced learners and gifted programs within regular high schools on self-perception of psychological well-being and school satisfaction, and the possible relationship between dimensions of school satisfaction and other aspects of self-perception in high ability secondary students. As noted earlier, teaching practices that also promote psychological development are vital for student progress and well-being. However, little is known

about possible gender differences in student satisfaction with these practices and the possible impacts on self-concept. Therefore, possible gender differences in self-perception and school satisfaction are also be explored in the current study.

Challenging and motivating academic programs for the gifted that also foster affective development, reduce anxiety, and help maintain positive self-concept dimensions, support the highest level of academic talent development. Variability in academic program components and quality, including degree of attention to socio-emotional needs, may account in some measure for differences in research findings concerning the affective impact of congregated settings. There are indications in the research literature that many students who appreciate the academic benefits of special programming and the community of advanced learners also feel significant stress. Students often attribute this stress to an excessive quantity of homework, an over-emphasis on grades rather than on learning and talent development, and the lack of time to develop friendships (Adams-Byers et al., 2004; Vanderbrook, 2006). Excessive workloads, whether in special school settings or regular high schools, can be counter-productive to the more desirable outcomes of an internal locus of control and strong self-regulation skills, and may lead to sleep deprivation and fatigue, burnout, and resentment for some students.

It is important for adolescents and adults to become “autonomous” and internally motivated learners (Betts, 1985). In a study of 248 gifted students in South Carolina, Berndt, Kaiser, and Van Aalst (1982) found that those who were not self-

actualizing types (Maslow, 1943) tended toward low self-esteem, depression, guilt, learned helplessness, and some cognitive problems. Adolescents need the experience of choosing activities independently and the time to explore talents and interests in a supportive environment (Csikszentmihalyi et al., 1997; Renzulli & Park, 2000). All policy makers, educators, and parents must keep these facts in mind as they develop optimal programs for academic talent development.

CHAPTER THREE

Methodology

There is a need for clarifying information about the psychological well-being and student satisfaction of academically advanced high school students within the context of various high school placement options. This knowledge is necessary to provide optimal interventions and educational placements that enhance the well-being and the academic potential of this talented population of students.

The major purpose of this study is to examine the effects of two high school settings for academically advanced or gifted students on self-perceptions of overall well-being and on specific personal characteristics of self-concept, school satisfaction, motivation, and the valuing of academic goals. A second purpose is to compare their perceptions of psychological well-being with those of more typical teenagers, and to compare their school attitudes with those of other advanced and achieving students in order to gauge the strength of their well-being in comparison with other students. These comparisons are made to assist in estimating the influence of educational fit and satisfaction in the two settings on the overall sense of psychological well-being and on self-concept dimensions, and because research in the past has come to conflicting conclusions about the mental health of the gifted. A third purpose is to determine whether there is a relationship between school satisfaction attitudes and self-

perceptions of well-being for students in the two educational settings. Exploring possible gender differences in self-perception and school attitudes is the fourth goal.

Two common learning environments for academically talented teenagers are regular public high schools offering advanced placement (AP), dual (college) enrollment, or International Baccalaureate (IB) programs, and special high schools created specifically for gifted students. Some special schools are residential and others are full or partial-day programs. For the current sample, each Governor's School student attends an off-site Governor's School daily as well as his or her district high school. Little is known about the socio-emotional effects and school satisfaction of enrollment in partial-day programs for gifted teens. This study provides information comparing the self-perceptions of psychological well-being and attitudes toward school of students in partial-day academic Governor's Schools with those of their academically advanced peers who are enrolled in regular district high schools full-time, and the relationships between these personal characteristics and school setting. This study attempts to answer the following research questions:

Research Questions

1. Do academic ability and educational placement or fit influence global and dimensional perceptions of psychological well-being for advanced students, as measured by the Piers-Harris 2 (Piers & Herzberg, 2002)?

- A. Does global psychological self-perception differ between students attending partial-day Governor's Schools and academically talented students in the same grades who are enrolled full-time in their home high schools?
 - B. Do these two groups of students differ in the self-perception domains of overall intelligence, freedom from anxiety and dysphoria, popularity, physical attributes, behavior, and overall happiness and satisfaction?
 - C. Do students in the sample differ in global and domain self-concept standard scores (*t*-scores) from the normative sample of the Piers-Harris 2?
2. Does Governor's School attendance influence school attitudes including academic self-image, school satisfaction, academic goal valuation, and motivation of academically advanced students, as measured by the School Attitude Assessment Survey - Revised (SAAS-R)?
- A. Do Governor's School students differ in their academic attitudes and school satisfaction with their Governor's Schools from their academically talented peers in their attitudes toward their district high schools?
 - B. Do students who attend partial-day Governor's Schools differ from their academically advanced peers who attend high school full-time with respect to attitudes toward their district high schools?
 - C. Do Governor's School students differ in their attitudes towards their Governor's Schools and their district high schools?
 - D. Does the current sample differ in attitudes toward school from gifted high achieving students in the SAAS-R (McCoach & Siegle, 2003b) sample?

3. Are there relationships between self-concept and school attitudes in the Governor's School and district high school settings?
4. Are there gender differences in self-concept, and in school attitudes and satisfaction, in the Governor's School and district high school settings?

Method

Causal comparative and correlational research designs were utilized. One group of participants attended academic-year partial day public Governor's Schools as well as their regular home high schools part-time in a southern U.S. state. The comparison group was composed of academically advanced high school students who are enrolled in their regular public high schools full-time in the same state. The independent variables are school setting and gender. The dependent variables are total and domain scores for the Piers-Harris 2 and for the subscale scores of the SAAS-R. The Total Piers-Harris 2 self-concept score provides one indication of overall self-esteem or perception of psychological well-being. Dimensions of well-being and school satisfaction are measured by the dimensional subscales of these two instruments. These comparisons should be helpful in understanding the relationships between school setting and personal characteristics of gifted or advanced students and how these factors may affect overall self-concept and psychological well-being.

An additional objective is to gauge whether the study participants were similar in self-concept to more typical teens, as there have been variable results in the research concerning the similarity of the dimensions of self-perception for advanced learners in

comparison to more average adolescents. Therefore, comparisons in self-concept scores were made with the standard scores of the normative standardization sample provided for teenagers for the Piers-Harris 2. To assess whether the current sample is similar to other groups of academically advanced high school students, school attitude sub-scale scores of each participant were compared with those of high achieving students in the SAAS-R study (McCoach & Siegle, 2003b).

Educational Settings

The Governor's School Program was established by the state legislature in 1973. The first Governor's Schools were residential summer schools. Currently, there are more than 40 Governor's School sites around the state, including 18 academic-year full or partial-day Governor's Schools. Although applicants are not required to be officially identified as gifted, many of the local school districts identify the enrolled Governor's School students as gifted once they are admitted and enrolled. Four Academic-Year Governor's Schools are full-time schools and have their own separate locations. The remaining 14 Academic-Year Governor's Schools share facilities with community colleges, universities, public schools, or other public or private entities. Governor's Schools focus on science, math, technology, international studies, or the humanities and arts. Partial-day academic Governor's Schools have specific high level curricular requirements.

These special high schools accelerate the curriculum and offer college credit options and AP courses. The state legislature established Governor's Schools as "joint

schools.” Most have regional governing boards composed of local school district representatives. The board of each school establishes admission policies. The admission process is highly competitive and involves meeting multiple criteria. Specific aspects of Governor’s School programming have been well documented (The Virginia State Department of Education, 1989). The state Department of Education administers the Governor’s School Program (in cooperation with the local school districts) and evaluates the Academic-Year Governor’s School.

Four partial-day academic Governor’s Schools that focus on science, mathematics, and technology participated in the current study. Through the participation of 224 of their students, 88 percent of the Governor’s School member school districts were involved (28 of 32), and 43 or more public high schools within these districts. [Forty-one of the Governor’s School students did not identify their district high schools.] Acceptance to these special public school programs is highly competitive, but does not require formal district identification as gifted prior to admission. Two of these Governor’s Schools include courses in English or humanities, as well. A total of approximately 590 students were enrolled in the four Governor’s Schools during the 2009-2010 school year. Of these, approximately 38% participated in the current study. The total Governor’s School sample was 48% female and 52% male.

In the selected state, general intellectual aptitude and specific academic aptitude are two areas of giftedness served in the public schools. Multiple criteria are required for identification of giftedness. Typically, in determining eligibility for participation in the gifted program, the school district considers the results of a group or

individual aptitude or intelligence test, group or individual nationally-normed achievement tests, records of previous academic grades and accomplishments, and reports of advanced intellectual or academic behaviors from teachers and parents.

Two of the four participating Governor's Schools are located in the eastern part of the state, one in the south central region, and one in the northern region. GS-A provides instruction in science, technology, mathematics, and research to 10th, 11th, and 12 graders at three sites. It serves 13 school districts. Admission requirements include completion of certain high school mathematics and science courses, a "B" average in the freshman and sophomore years, a score at 85% or higher on a standardized achievement and/or ability test, or 85% or higher on a mathematics or science quantitative standardized subtest, teacher recommendations, mathematics and science activities and honors. Each school district determines selection criteria.

GS-B serves academically able 11th and 12th grade students in seven districts. GS-B courses in science, research methods and ethics, and technology at one site. Pre-requisite courses vary, based on one of three curriculum strands. Test scores, grades, and teacher recommendations are considered for admission to a pre-Governor's School 9th and 10th grade program in local high schools. Students who decide to apply to the Governor's School then compete for admission in a second tier selection process.

GS-C enrolls 11th and 12th graders in five school districts at two sites. The curriculum includes science, mathematics, research, and English. Specific mathematics and science pre-requisite courses are required. Standardized test achievement scores,

an Otis-Lennon School Ability Test score, a Matrix Analogy Test (MAT) score, GPA, a timed writing sample, and faculty recommendations are reviewed by the selection committee.

GS-D enrolls 11th and 12th grade students from seven school districts. It offers courses in science, mathematics, humanities, and research at two sites. There is an emphasis on interdisciplinary approaches. Students must be accepted to the Governor's School by their local school district committees and must meet all science and mathematics pre-requisites.

The half-day Governor's School participants attended regular district high schools half day, as well as the Governor's Schools for a part of each day. Twenty-six localities (counties and cities) were involved in the study. Twenty (77%) of these counties and cities had populations less than 50,000. Almost 50% of the 26 localities (12) had populations of less than 20,000. Two localities (eight %) were localities that exceeded 100,000 in population. However, only eight of the 224 Governor's School participants attended schools in these two most populated localities. Nine % (13) of the high schools had enrollments in the 2009-2010 school year of less than 600 students. Sixteen % (24) of the schools had student populations of 1,000 or more.

Fifteen percent of the participating schools exceeded the 2009-2010 state average of 37% students eligible for free or reduced cost lunches (Virginia State Department of Education, 2010a). Appendix B summarizes information about the local

school districts and the 43 high schools identified by the Governor's School students. The four district high schools in the comparison group are designated # 101, # 106, # 124, and # 129 in Appendix B.

Participants

Each participant was either attending an advanced class in a district high school or was enrolled in a Governor's School. Of the 18 academic-year Governor's Schools in the state, seven were contacted by the investigator for participation over the 10 months preceding administration of the study protocols. Of those not contacted, four were full-day programs and/or schools for artistically or technically talented students, and seven were logistically infeasible sites.

The investigator visited two of the Governor's Schools (GS-A and GS-B) to conduct brief presentations about the proposal to the local district Gifted Coordinators whose districts participate in the Governor's Schools and the Governor's School directors. Individual school district administrators required review of the finalized approved proposal for consideration of the study. Of these districts, 12 were designated as possible participants and the investigator made direct contact with administrators in each of these by email, telephone, or personal visit. Of these 12 districts, four reviewed the finalized approved university proposal and formally agreed to participate. Unfortunately, one additional school district determined toward the end of the data collection period that, due to unforeseen detrimental circumstances, its students would be unable to participate, making it impossible to increase the district high school

student sample size from 56 to 100 or more during the designated school year (2009-2010).

The study utilized a total convenience sample of 280 volunteer public school high school students in grades 10, 11, and 12 in a southern U. S. state attending the local school districts that feed into the participating Governor's Schools. All student participants were granted permission to participate by their parents or legal guardians, and by the local school districts or Governor's Schools. All participants signed a research assent and their parents signed a consent form (Appendix C). Their participation was voluntary and confidential.

The two comparison groups were half-day Governor's School students and academically advanced district high school students who didn't attend a Governor's School. The participating Governor's School students totaled 224, and the district high school pupils totaled 56.

Formal gifted identification.

Approximately 83% of the total sample of participants reported formal gifted identification by their school within their school career, while 13% reported lack of gifted identification. Approximately five

percent of the students did not respond to this survey item. For the Governor's Schools, 90% of the students indicated gifted identification; this percentage was 54% for the district high school students.

Participant ages.

The participants were 15, 16, 17, and 18 year olds. In addition, two 19-year-old 12th grade students participated, as a relationship between age and self-concept measurements has not yet been established for ages eight through 23 (Piers & Herzberg, 2002, p. 44). Approximately 26% of the participants were 16, 44% were 17, and 24% were 18 years old. Only three percent were 15, and one percent 19. For the total sample, one percent did not disclose age.

Four Academic-Year Governor's Schools (GS-A, GS-B, GS-C, and GS-D) and four regular high schools participated. Of the total Governor's School participants, 62 attended GS-A, 61 attended GS-B, 90 attended GS-C, and 11 attended GS-D. Thirty-eight % of the total number of the enrolled Governor's School students at the four schools participated in the current study.

Participant grade levels.

These four Governor's Schools enrolled a total of 595 students during the 2009-2010 school year. At its three sites, GS-A enrolled 203 students in 10th through 12th grade. GS-B is located at one site and enrolled 140 students in 11th and 12th grade. GS-C enrolled 11th and 12th graders totaling 129 at two sites. GS-D enrolled 123 students in grades 11th and 12th at its two sites.

As noted earlier, a total of 56 district high school students who did not attend a Governor's School participated in the comparison group. These students attend four

different district high schools. Two of these four high schools are in school districts within the GS-A region; student participants totaled 27 from these two schools. Twenty-seven additional students participated from one regular district high school in the GS-B official region. Two students in the GS-C area participated at one district magnet high school.

Overall, most of the participants reported that they were 11th graders (52%) or 12th graders (35%). Twelve percent were 10th graders. Three students did not indicate their grade level. The Governor's School breakdown was approximately 15% tenth grade, 62% 11th grade, and 22% 12th grade enrollment. The regular high school group was older with approximately two% 10th graders, 13% 11th graders, and 86% of these participants reporting 12th grade enrollment.

Participant gender.

The total sample of 280 students was approximately 57% female (160 students) and 38% male (107 students). Five percent of the students did not report their gender. One may compare this with the overall public school state enrollment estimate of total students officially identified as gifted for the 2008-2009 school year (the last year for which data was available at this writing), in which the composition approached an even balance with 51% female and the 49% male students (Virginia State Department of Education, 2009).

Approximately 55% (124) of the 224 Governor's School participants in the current study reported female gender, while 39% (88) indicated they were male, with

approximately five % (12) not reporting. Of the 56 high school participants who did not attend a Governor's School, 64% (36) indicated that they were female, while 34% (19) identified themselves as male, with one student not reporting gender.

Participant ethnicity.

The total sample was largely (approximately 75%) Caucasian, and involved fewer Asian students than one would expect were the sample representative of the total state population of identified gifted students. Ten % of the study participants reported African American heritage, 5% identified themselves as Asian, four percent indicated Hispanic heritage, one % reported being Native American, and approximately 4% reported "Other" ethnicity. Approximately 2% did not indicate ethnicity. By comparison, for the total state during the 2008-2009 school year, 68% of identified gifted students were reported to be Caucasian, 12% were African American, 11% were Asian, and 5% were identified as Hispanic (Virginia State Department of Education, 2009).

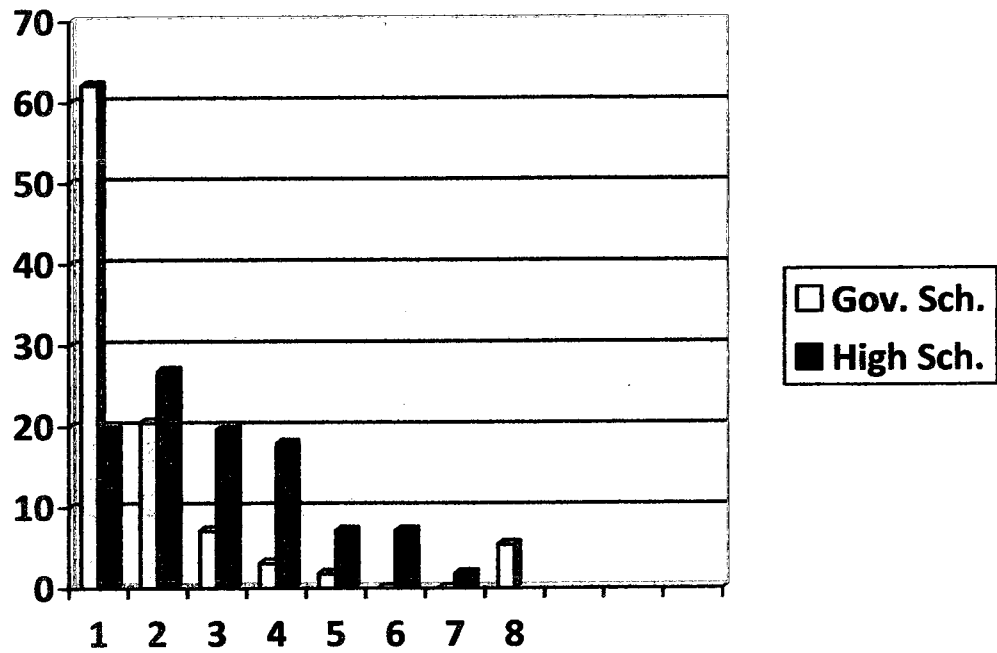
The greatest difference in reported ethnicity between two major groups in the study, the Governor's Schools and regular high school students, was that the Governor's School sample indicated approximately 77% White and 8% Black heritage, while the high school group reported 66% White and 18% Black identification.

Participant grade point average (GPA).

Most of the students also reported estimated Grade Point Average (GPA). Overall, in the district high school setting, 91% of the total sample estimated GPAs of

3.25 or higher (more Bs than As to all As). Approximately 83% of the Governor's School students reported earning mostly As to all As at their district high schools, while approximately 46% of the district high school students reported earning mostly As to all As in this setting. Approximately 84% of the district high school students reported GPAs of 3.25 or higher, and approximately 20% reported earning all As. Data for the district high school setting are presented in Figure 1.

Approximately 85% of the Governor's School students reported Governor's School GPAs of 3.25 or higher and 66% reported mostly As to all As, with approximately 46% earning all As. Approximately five % of the Governor's School participants did not report GPA.



1 = All As

5 = Mostly Bs, Some As and Cs

2 = Mostly As

6 = More Bs than Cs

3 = More As Than Bs

7 = More Cs Than Bs

4 = More Bs Than As

8 = Missing Data

Figure 1. Self-reported district high school GPAs for Governor's School and district high school students.

Data Collection

Instrumentation.

Two assessment instruments were selected to measure psychological well-being factors and school attitudes and satisfaction. These measures are described below.

Measures of the perception of psychological well-being.

This study measured the self-perceptions of psychological well-being of each student with the Piers-Harris Children's Self-Concept Scale, Second Edition (Piers-Harris 2). This instrument measures self-concept for ages seven through 18 years utilizing a 60 item "yes or no" format (Piers & Herzberg, 2002). There are items consisting of 25 positive statements and 35 negative statements. The Piers-Harris 2 assessment items are listed in Appendix D. This instrument was selected due to its strong reliability and validity in measuring multi-dimensional self-concept and well-being factors, and to enable the investigator to compare the current sample scores to those of typical students in the norm group.

It includes not only a total score measurement of overall self-concept/self-esteem (Butler & Gasson, 2005), but also the domain scale scores of overall satisfaction and happiness, freedom from anxiety or psychological distress, intellectual self-concept, and social or popularity self-perception. These are four dimensional constructs of particular relevance to the current study. The Piers-Harris 2 also measures the domain self-images of behavioral adjustment and physical appearance and characteristics. The

Piers-Harris has proven to be a valid and reliable measure of these constructs over a number of years through numerous studies involving its several editions. The manual also provides written instructions for the administration by the proctor, including recommended oral instructions for the proctor to use in orienting the participants, which was of great assistance in standardizing instrument administration.

The Piers-Harris 2 has been widely used in clinical and school settings over several decades, having undergone revisions, the latest occurring in 2002. It is viewed as highly valid and reliable (Page & Chandler, 1994). For interpretation purposes, raw scores are converted to normalized *T*-scores. The instrument's authors transformed raw scores of the original Piers-Harris 2 distribution using a non-linear transformation to approximate the statistical normal curve (Piers & Herzberg, 2002). *T*-scores for the total and the domain scales were calculated and analyzed. The Piers-Harris 2 Manual provides means and standard deviations for the standardization sample raw scores for the Total score and each domain scale, as well as average *T*-scores for the standardization sample by gender and age group. The *T*-scores are based on a national normative sample of approximately 1400 students.

The Piers-Harris 2 is suitable for use with special populations, including gifted and learning disabled students. Although gifted students may achieve high Piers-Harris scores than typical children, across all age groups and special populations, intelligence quotients do not seem to correlate significantly with these scores, suggesting gifted factors other than IQ may be impacting scores. In addition, adolescence may be

associated with a decline in self-concept or self-esteem for some gifted students (Piers & Herzberg, 2002).

Interpretation based on *T*-score ranges includes the following categories for Total scale scores: Very High, High, High Average, Average, Low Average, Low, and Very Low. For the domain or sub-scales, these ranges are: Above Average, Average, Low Average, Low, and Very Low.

The Happiness and Satisfaction (HAP) domain estimates general satisfaction with self and life. Above Average range scores (*T*-scores equal to or above 56) indicate a feeling of overall well-being and accomplishment, and generally positive life experiences. Average to Low Average range scores (*T*-scores of 40 to 55) suggest a self-image of life satisfaction that is more positive than negative. Low to Very Low Range scores (*T*-scores equal to or less than 39) indicate generally negative or unsatisfying experiences, frequent unhappiness, a lowered sense of psychological well-being, or a self-critical attitude.

The Freedom from Anxiety (FRE) scale assesses negative emotionality (dysphoria) and anxiety or worry. Above Average range scores suggest mood and personality that is not burdened by negative emotions such as fear, anxiety, or depression. Average range scores indicate typically positive emotions, with some negative experiences. Low range scores suggest frequent anxiety about tasks such as academic assignments or concerning life experiences.

The sub-scale of Intellectual and School Status (INT) measures self-perception of overall intelligence and satisfaction in school and other settings. Above Average range scores indicate self-confidence in overall intellectual activities as well as self-perception of strong skills in specific academic areas. Scores that fall in the Average range indicate a self-image of adequate school skills with a few academic difficulties at times. Students with low range scores tend to see themselves as struggling with many academic tasks, and generally feel inadequate intellectually.

The Popularity (POP) scale estimates the degree of satisfaction with peer relationships, and has been used as a social competence measure in research (Frankel & Myatt, 1996). Above Average range scores suggest a self-image of strong popularity and positive peer relationships including friendships. Average range scores indicate a self-perception of satisfactory social relationships with some social difficulties. Low range scores reveal a self-concept of unsatisfactory relationships, lack of friendships, including unhappy feelings about classmates.

The Piers-Harris (Piers & Harris, 1984) was revised in development of the Piers-Harris 2 in order to update norms through a process of restandardization and to improve certain specific items. The restandardization was conducted with students from across the United States from elementary, middle, junior high, and high schools. This was a large sample of almost 1,400 students aged 7 to 18 years in grades 2 through 12 in the general public school student population. The male sample was 689 students and the female sample was 698. Two hundred and fifty-five students were in the 15-16 years

age group, while 165 students were in the 17-18 years age group. Ethnic group distribution was similar to that of the 2000 U.S. Census results, with the exception that Asians and Hispanic students were under-represented to a limited extent. Grade level and socio-economic (SES) sampling were reasonably representative of the U. S. population, as well. Head-of-household educational level was used as the measure of SES. The restandardization sample under-represented the West and over-represented the Midwest to some extent, as compared with the U. S. Census. The South was under-represented to a very limited extent, while the Northeast was slightly over-represented.

Regarding reliability, for an older 1984 version of the Piers-Harris reliabilities in a number of studies were .89 to .93 for total score internal consistency (Piers & Harris, 1984). Test-retest correlations ranged from .42 to over .90 over several weeks to one year, as highlighted in a review of several studies (Piers & Herzberg, 2002). Convergent validity correlations with alternative self-concept instruments ranged from .32 to .85. A study of the current edition conducted by Sun (2005) yielded excellent reliability for the total score, and good reliability for the subscales. Good internal consistency reliability was also found by its authors (Piers & Herzberg, 2002) for the Piers-Harris-2, for the Total scale and five domain scales. However, unexpectedly, the Popularity Scale should be interpreted with caution for the youngest students ($\alpha = .60$) and for 17 and 18-year-old students ($\alpha = .62$). The original Piers-Harris instrument was longer by 20 test items and had excellent internal consistency for all student ages and grades. Overall, previous studies of the original Piers-Harris showed good test-retest reliability, and the Piers-Harris 2 has excellent internal stability (Piers & Herzberg, 2002).

Concerning validity, an exploratory factor analysis supported construct validity, in that the six domain scales appear to be inter-related but separate constructs of self-perception. However, further research may be warranted regarding construct validity, as Benson and Rentsch (1988) found that the phrasing of items as well as instrument content contributed to construct validity outcomes. Criterion validity was supported by a number of studies that indicate that the Piers-Harris 2 can differentiate between groups of students regarding self-concept (Piers & Herzberg, 2002). It should also be noted that while the Freedom From Anxiety and the Happiness and Satisfaction Domain scales provide more adequately reliable indices of affective difficulties than do any specific item responses, it is important to refrain from diagnosis based on specific item responses or on domain scores (Piers & Herzberg, 2002).

The Piers-Harris 2 has been viewed by many researchers in the past as one of the most psychometrically sound self-esteem assessment tools for use with children; however, it may best be viewed as a screening instrument that can be one useful indicator as part of a comprehensive evaluation of emotional health, or as a research instrument (Chiu, 1988). In addition, three sub-scales of the SAAS-R (Academic Self-Perception, Goal Valuation, and Motivation/Self-Regulation) were used to gauge additional personal characteristics associated with psychological well-being. These three sub-scales are described in the following section.

Measures of school attitude.

Attitudes toward school, including satisfaction with school and classes, was measured with the SAAS-R (McCoach, 2002), an assessment instrument developed to help distinguish the school attitudes of academically achieving gifted students from able students who underachieve. The primary reason that the SAAS-R scale was selected for the current study is that it is one of few instruments that specifically assesses the opinions and feelings of academically gifted high school students about their school experiences in respect to their teachers, classes, and the overall school environment. It also contains a specific academic self-concept subscale (Academic Self-Perceptions), which is more specific to educational self-concept than is the Intellectual and School Status domain of the Piers-Harris 2. As noted earlier, in addition, two SAAS-R factors, Goal Valuation and Motivation/Self-Regulation, may be useful as additional factors of psychological well-being.

The students participating in the development of the SAAS-R were reasonably similar in intellectual abilities, and in ethnic and gender proportions, to the sample in the proposed study. Two of the SAAS-R samples used in its development, were a convenience sample of 146 rising junior and senior high school students in a competitive summer gifted program, and an additional sample of 299 “academically able” sophomores, juniors, and seniors in 27 United States school districts. The first sample represented ethnic groups in a broadly similar proportion to the U.S. Census; however, two-thirds of these students were female. The second sample had approximately equal

numbers of male and female students, and an ethnic breakdown roughly similar to that reported by the U. S. Census. Seventy percent were Caucasian, and 8% were African American. A third sample was composed of ninth graders in an urban high school in the Northeastern United States. This group was approximately 56% female, 57% Latino American, and 18% African-American (McCoach & Siegle, 2003b).

In the SAAS-R there are 35 items arranged utilizing a seven-point Likert scale which ranges for “strongly disagree” to “strongly agree.” Appendix E lists the SAAS-R assessment items. Mean scores are determined for each factor, but a global score is not calculated. The five factors measured are: Academic Self-Perceptions (academic self-concept), Attitudes toward School, Attitude toward Teachers and School Classes, Goal Valuation (commitment to current academic and future goals), Motivation and Self-Regulation. Attitudes toward School are student evaluations of their own general interest level in school and their feelings toward school. Attitude toward Teachers and Classes include student interest in course subjects and overall perceptions of teachers strengths. Academic Self-Perception is self-confidence, and sense of self-worth and self-concept regarding academic skills, strengths, and weaknesses. The SAAS-R also requires participants to estimate their current GPA, as well as hours spent on homework per week. For the current study, one question regarding school identification of giftedness was added to the SAAS-R (see Appendix E).

The validity and reliability of the SAAS-R were determined in a study by McCoach and Siegle (2003b). The validity and reliability are adequate for research purposes.

Reliability for the five individual factors was above .85 in the McCoach and Siegle (2003b) psychometric study. Suldo, Shaffer, and Shaunessy (2008) supported through factor analysis the existence of the five factors. Criterion-related and convergent validity were supported, as well.

In the SAAS-R sample (McCoach & Siegle, 2003b), gifted achievers had a GPA of at least 3.75 or were in the top 10% of the class. The gifted achievers and underachievers were a convenience sample of 176 academically gifted students in grades 9 through 12 in regular high schools from 28 school districts across the United States. 20 freshmen, 50 sophomores, 53 juniors, and 50 seniors, and three students who did not indicate their grade, participated. Each student (whether achieving or underachieving) had achieved a standardized IQ or academic achievement score of at least the 92nd percentile. More males participated than females, and 78% of the sample was Caucasian.

Procedures

The Governor's School students completed the Piers-Harris 2 and the SAAS-R. They completed the SAAS-R twice, once for the Governor's School and once to measure their attitudes toward their district high schools. Due to logistical constraints, the Governor's School students completed both copies of the SAAS-R, as well as one copy of the Piers-Harris 2 protocol at the Governor's School in one sitting. The two SAAS-R measurement protocols were color-coded and clearly labeled so that the Governor's School students could easily distinguish between these two copies of the SAAS-R.

Students in the regular district high schools (the comparison group) completed one Piers-Harris 2 protocol and one copy of the SAAS-R for their home high school.

Administration took place in reasonably quiet and confidential environments, such as a classroom, guidance office, school auditorium, empty cafeteria, or conference room, with proctor supervision throughout the administration. The participating students were not, to the investigator's knowledge, penalized by teachers or other school representatives for participation in the survey. If applicable, it is believed that additional time to complete assignments or homework was also provided by the teachers, in accordance with guidance provided by the investigator.

All materials were provided free of charge by the investigator. It is probable that all participants completed the assessment instruments in one sitting during the last month of the 2009-2010 school year, as advised by the investigator. It is also believed that the specified procedures for instrument administration were adhered to, per the written instructions provided by the investigator, in order to maintain standardization of test administration. The proctors were most often the students' regular teachers. These school staff members were instructed to read written directions aloud to the students before they completed the protocols. Self-explanatory written directions were also provided on the instrument protocols. Each student was advised to complete the instruments without consultation with other students, although he or she was allowed to ask questions of the proctor. It is believed that the proctors were available

throughout the administration to supervise completion. Completion took approximately 10 to 20 minutes. The administration guidelines are provided in Appendix F.

Two students were administered the instruments by a school district gifted coordinator. In one district high school, the investigator administered the assessments. Twenty-seven students of the 56 total district school participants were involved in this administration at one high school. The investigator followed the pre-determined administration protocol. This may have influenced the responses of these students, but the extent of this possible influence is unknown.

At one GS-C site, the investigator gave an in-class presentation to approximately 25 twelfth grade students prior to teacher administration of the assessment. Twenty – three of the 28 enrolled 12 grade students at this site completed the assessment a few days after this investigator presentation. It is unknown what influence the investigator’s presence had on responses given by students on the assessment protocols.

The assessment protocols and individual student envelopes were labeled with identification codes. Students did not provide their names on the forms. The packets were distributed in random order to students who returned consent forms signed by their parent/guardian and themselves. Students were allowed to withdraw from participation at any time with no punishment or negative repercussions. The investigator was not informed of any withdrawals. When each packet was handed to a student, the proctor checked a box on this student’s consent form, indicating that the packet was distributed. After the student completed the instruments, he/she placed the

instruments back in the packet and returned the envelope to the proctor. The proctor thanked the student and gave him/her a small gift packet in return. [In GS-B, the students were given pens only, due to a district regulation.] All completed materials and consent forms were stored securely for pick up by the investigator. The investigator collected all assessment packets in person from each Governor's School, gifted coordinator, or district high school. All assessment protocols are stored confidentially by the investigator in a locked cabinet.

Data Analysis

This study is descriptive, causal comparative, and correlational. For causal comparative research, it is recommended that there are at least 15 participants in each group, and a minimum of 30 participants are recommended for each correlation study (Gall, Gall, & Borg, 2007). The total and two school type samples exceeded these sample size guidelines.

The dependent variables are self-concept as measured by the Piers-Harris 2 (global and six dimensions of self-perceptions of well-being (Happiness and Satisfaction, Freedom from Anxiety, Intellectual and School Status, Behavior, Popularity, and Physical Attributes and Appearance), as well as the five subscales of school attitude as measured by the SAAS-R [the school satisfaction scales of Attitude toward Teachers and Classes and Attitudes toward School, as well as Academic Self-Perceptions (academic self-concept), Goal Valuation, and Motivation/Self-Regulation].

The two independent variables are enrollment in a partial-day academic Governor's School and gender. SPSS software was used for all analyses. Descriptive statistics were calculated, such as means and standard deviations. Independent *t*-tests were conducted comparing dependent variable scores for Governor's School students with those of the students who do not attend a Governor's School. Due to the fact that three Governor's School students completed only 31 of the 60 Piers-Harris 2 protocol items, the Piers-Harris 2 responses for these three students were excluded from the *t*-test and correlational analyses.

As there were unequal numbers of participants in the two major comparison groups (224 Governor's School students and 56 regular high school students), the alpha level was set at .01 for the independent *t*-tests. As noted earlier, two regular high school student participants were 19 years of age and in grade twelve at the time of the study. They were included, as the Piers-Harris 2 manual indicates a history in the literature of similarities between self-concept scores within this age group (Piers & Herzberg, 2002).

To assist in answering whether giftedness affects global and dimensional perceptions of psychological well-being (one aspect of Research Question #1), Piers-Harris 2 Total and domain *T*-scores were compared with those provided for the normative sample for the instrument in the Piers-Harris 2 manual for the age groups 15-16 and 17-18 using one-sample *t*-tests, as a means to gauge the current sample against a more typical student population. The Total self-concept standard *T*-scores for each

school group (Governor's School and district high school) were also interpreted in accordance with the guidelines provided for the Piers-Harris 2 (Piers & Herzberg, 2002). As noted earlier, interpretive guidelines are provided in the Manual for each categorical range for the total *T*-Score and the domain *T*-scores (Piers & Herzberg, 2002). In this analysis, the percentages of study participants falling within each interpretive category were calculated, which may suggest hypotheses concerning psychological well-being profiles for these advanced learners within each of the two educational settings.

To gauge as well as the school satisfaction of the current sample against a national sample of other high achieving students, mean scores for the total group and for the two major educational settings, were compared using one-sample *t*-tests and the mean scores for achieving gifted secondary students provided for the SAAS-R (McCoach & Siegle, 2003b). As the gifted achievers in the previous study were deemed to be similar to the current sample, any differences noted in school satisfaction could possibly indicate that education placement or fit was responsible. Based on descriptions provided by these previous investigators, the sample of gifted achievers were assumed to be reasonably equivalent to the current sample in age, gender, SES level, ethnic identities, intellectual ability, public school enrollment, and academic achievement. In addition, the SAAS-R personal factors of well-being of academic self-perception, academic goal valuation, and motivation/self-regulation were also measured in comparison to the gifted achiever sample in order to supplement the findings of the effects of giftedness on perceptions of psychological well-being provided by the Piers-Harris 2 results.

In addition, the Governor's School students completed the SAAS-R twice, once for the Governor's School and a second time for their home high school. These scores were compared utilizing paired or related samples *t*- tests. However three of these Governor's School students did not complete any of the 35 protocol items of the SAAS-R for their respective regular district high schools, although they did complete this protocol for their Governor's Schools. Therefore, these three students were excluded from the paired *t*- test analysis.

Relationships between Piers-Harris 2 and SAAS-R scores for the two major groups of students (Governor's School and Regular High School), were analyzed through Pearson Product-Moment correlations. Due to the minimal participation of minority ethnic groups, and the fact that almost the entire sample indicated gifted identification by a school, the results were not analyzed according to these two variables – self-identification of ethnicity and gifted identification.

Item analyses were conducted for eight of the Piers-Harris 2 items within the Freedom From Anxiety domain, and two within the Popularity domain, as there were many students in both school settings who indicated substantial levels of worry or nervousness. Appendix G presents the research framework which provides a brief summary of the research questions, the data sources, and the data analysis.

CHAPTER FOUR

Analysis of Results

The current study explores the conceptual framework presented by Neihart (1999) which proposes that psychological well-being is influenced by giftedness for better or for worse depending on the relationships between three factors. These factors are: the suitability or fit of the academic environment, individual personal attributes, and giftedness or talent type and level. Talent type for the current level is academic for all study participants. Educational placement or fit is compared for two high school environments.

The major purpose of this study is to examine the possible influence of educational placement in these two high school settings on psychological characteristics and self-perceptions of well-being, personal attitudes toward academics, and school satisfaction of academically gifted or high ability students. School satisfaction is addressed as one indicator of proper education placement. The total sample consisted of two public school comparison groups – partial-day Governor’s School students and advanced students in district high schools. As questions continue to be raised in the research literature regarding the general psychological health of gifted students as compared to more typical young people, a second purpose is to compare perceptions of

psychological well-being of advanced students to those of more typical teenagers in the Piers-Harris 2 normative group, and to compare their school satisfaction and attitudes with those of other advanced students in the School Attitude Assessment Survey-Revised (SAAS-R) validation group.

Another important purpose is to determine whether there is a relationship between student perceptions of overall and dimensional aspects of psychological well-being and their school attitudes and satisfaction. A final goal is to make gender comparisons on well-being dimensions and school attitudes within the context of the two educational placements in the study.

To meet these purposes, analyses were conducted on the current sample data to address the specific research questions specified in Chapters One and Two. The total sample size was 280. Of these, the subgroup of 56 academically advanced district high school students completed the two required assessment instruments. Of the required assessment protocols for the Governor's School students, 218 of 224 students completed all three. Table 1 provides a summary of the current sample's demographic data.

Table 1

Participant Demographic Data (Percentages)

	District High School	Governor's School	Total
Gifted Identification	54%	90%	83%
Gender			
Female	64%	55%	57%
Male	34%	39%	38%
No Response	25%	5%	5%
Age			
15	0%	4%	3%
16	7%	31%	26%
17	27%	49%	44%
18	63%	15%	24%
19	4%	0%	1%
No Response	0%	2%	1%
Grade			
10	2%	15%	12%
11	13%	62%	52%
12	86%	22%	35%
Ethnicity			
Caucasian	66%	77%	75%
A. American	18%	8%	10%
Asian	4%	6%	5%
Hispanic	5%	4%	4%
N. American	4%	0%	1%
Other	4%	4%	4%
No Response	0%	2%	2%

The results of the current study suggest overall psychological strength and a few areas of psychological concern for the total sample. A few significant differences emerged between the self-perceptions and attitudes toward school of the Governor's School students and those of the high school students enrolled full-time in their district high schools. Some gender differences were also uncovered. Relationships were found between self-concept perceptions of well-being and school attitudes and satisfaction factors, and some of these relationships varied in strength between the two educational settings.

Measurement of Well-Being and Personal Psychological Factors

The Piers-Harris 2 (P-H 2) was used to measure dimensions of self-concept and self-esteem (Piers & Herzberg, 2002), including general intelligence in home and school settings, popularity, behavioral adjustment, freedom from anxiety and depression, physical attributes, and overall happiness. In addition, the P-H 2 Total score may be viewed as an estimate of self-perception of overall psychological health. P-H 2 *T* scores were calculated for Total self-concept and the instrument's six domains: Behavioral Adjustment (BEH), Intellectual and School Status (INT), Physical Appearance and Attributes (PHY), Freedom from Anxiety (FRE), Popularity (POP), and Happiness and Satisfaction (HAP).

The Student Attitude Assessment Survey – Revised (SAAS-R) was used to estimate additional personal psychological factors including: specific academic self-

concept, student satisfaction with teachers, classes, and school, and the psychological well-being factors of academic goal valuation and motivation/self-regulation (McCoach & Siegle, 2003b) The P-H 2 and SAAS-R assessment items are presented in Appendices D and E.

Findings Related to Research Question 1

Do academic ability and educational placement or fit influence global and dimensional perceptions of psychological well-being for advanced students, as measured by the Piers-Harris 2 (Piers & Herzberg, 2002)?

To address the question of whether school placement affects perceptions of psychological well-being, the Governor's School students' P-H 2 Total and domain mean *T*-scores were compared with those of the district high school students using two-tailed independent-samples *t* tests at an alpha level of .01. This conservative alpha level was selected to increase the rigor of the analysis, due to the discrepancy in sample size between the two groups. No significant differences were found between the mean scores for these two groups for the P-H 2 total score and the six specific domain scores. This result suggests that educational placement in a partial-day special school does not negatively affect overall perceptions of psychological well-being in academically advanced high school students, as defined by total self-concept, nor the dimensions of self-concept that are measured by the selected research instrument.

As discussed in Chapter Two, approximately 26% of adults in the United States aged 18 and older experience diagnosable mental disorders (National Institute of

Mental Health, 2008). Although previous studies have in the main provided evidence that gifted individuals have overall mental health and self-esteem that are equal to, or in some cases higher than those of the general population, some evidence points to lower self-concepts in some specific dimensions of self-concept for the gifted, such as physical attributes and popularity, and lowered self-esteem as gifted students enter adolescence, particularly in the area of anxiety. Self-concept in the area of intelligence may be higher overall for the gifted. However, in certain challenging settings academic self-concept appears to dip, as well (Marsh, 1991; Marsh 1993; Marsh & Hau, 2003).

To address the question of whether academic ability or giftedness affect psychological well-being, the mean self-concept *T*-scores of the sample were compared (using two-tailed one-sample *t* tests with a level of .05) with those of the more typical teenagers who comprised the P-H 2 standardization sample, for two age groups, as provided in the P-H 2 Manual (Piers & Herzberg, 2002). For the 15 to 16 year olds, no significant differences between group means were found for the Total and Domain P-H 2 *T*-scores of students in the normative sample and those in the current sample.

For the older students (ages 17 to 19) self-perceptions of well-being were similar to those of the standardization sample for the TOTAL PH-2 mean *T*-score and four of the six domain scores. In addition, the current sample achieved mean *T*-scores for FRE and POP that were significantly higher than those of the standardization sample. These were the only significant results for this age group: FRE $t(191) = +2.314, p < 0.05$; POP $t(191) = +2.081, p < 0.05$. The effect size was small in both cases (FRE - $d = .17$; POP - $d =$

.15). [By convention, .2 is interpreted as a small effect size; .5 as a moderate effect size, and .8 as a large effect size, regardless of sign.] These results suggest that most of the participants in the total sample, according to this self-report, exhibited signs of psychological strength that were similar to those found in the general high school population in the United States, as reflected in the P-H 2 standardization sample. These data may also suggest somewhat stronger social skills and popularity for older academically able adolescents, as compared to more typical students, as well as more positive overall mood or freedom from substantial dysphoria. Therefore, it is hypothesized that giftedness or high academic ability may affect some dimensions of well-being in older high school students in a positive direction. These results are presented in Table 2.

Three additional personal characteristics associated with psychological well-being were also analyzed using the SAAS-R. These were measured with the SAAS-R subscales of academic self-perception, goal valuation, and motivation/self-regulation. The results of these analyzes are presented below in the Question 2 findings section.

Table 2

One-Sample *t* Test Results for the P-H 2 Between the Sample and Students in the Standardization Group – Ages 17 - 18 (Piers & Herzberg, 2002)

Subscale	Sample <i>T</i> -Score Means		Standardization <i>T</i> -Score Means		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>p</i>	<i>d</i>
TOTAL	50.40	9.90	49.1	.070	--
BEH	50.80	9.50	50.1	.310	--
INT	50.38	9.98	49.2	.103	--
PHY	49.54	10.22	49.5	.954	--
FRE	50.42	9.72	48.8	.022	.17
POP	50.10	9.97	48.6	.039	.15
HAP	50.11	10.05	48.8	.072	--

Note. Two 19-Year-old students were included in the current study sample. BEH = behavioral adjustment; INT = intellectual and school status; PHY = physical appearance and attributes; FRE = freedom from anxiety; POP = popularity; HAP = happiness and satisfaction. Standard deviations for standardization group not provided. Sample *N* = 192. Standardization group *N* = 165.

To provide additional descriptive information about the overall psychological well-being or self-concept scores for the current total sample, individual *T*-scores for the Total score and the six domains were categorized by the interpretive ranges provided in the P-H 2 manual (Piers & Herzberg, 2002). The investigator assumes that the P-H 2 standardization group was composed largely of academically typical teenagers. [The percentage of advanced students in the standardization sample is not available.]

The Governor's School students and the district high school students, overall, had very similar interpretive range frequencies for the P-H 2. To provide an estimate of the perceptions of psychological well-being for academically advanced high school

students, the *T*-scores of a total of 277 students who completed the entire P-H 2 protocol were analyzed. The majority of this sample (approximately 77%), obtained standard Total *T*- scores on the P-H 2 within the Average Range or higher, based on the interpretive guidelines provided for the P-H 2. Approximately 43% of the student scores were within the Average Range and 34% within the High Average to High ranges.

Nine percent had Totals with the Low Average Range, and this figure was 14% for the Low to Very Low Ranges. The interpretive guidelines were established by the authors through transformation of the restandardization group raw scores into a normalized *T*-scores that gives an approximation of a normal statistical distribution, and have a standard distribution of 10 and a mean of 50 (Piers & Herzberg, 2002).

The Governor's School and district high school groups were quite similar in attained P – H 2 interpretive categories. Approximately 75% of the district high school students who did not attend a Governor's School attained Total P-H 2 *T*- scores in the Average Range or above, while this percentage was approximately 78% for the Governor's School sample. Approximately 14.3% of the district high school students had Total *T*- scores in the lowest ranges (Low and Very Low Ranges), while approximately 13.6% of the Governor's School students had Total *T*- scores within these lowest ranges. These interpretive percentages were reasonably similar to those achieved by the P-H 2 standardization sample.

Examination of the P-H 2 Freedom From Anxiety domain.

One important component of mental health is freedom from substantial emotional turmoil or anxiety. Neihart (1999) found only one study of gifted students in which anxiety exceeded that of the general population (Tong & Yewchuk, 1996), and this sample involved only two small groups (39 students per group) of adolescents. Other studies aggregated data across age levels and found no heightened anxiety or less anxiety. Neihart (1999) postulated that the teenaged gifted may experience heightened anxiety and suggested that further research be conducted with larger samples. The investigator uncovered no evidence that item analyses for the P-H 2 have been conducted by other researchers for the FRE domain. As there is a dearth of information about the anxiety levels of adolescent gifted students (Martin et al., 2010; Neihart, 1999), further analyses of the FRE P-H 2 domain were conducted.

As noted above, overall, the total current sample demonstrated strength in the FRE domain of the P-H 2, with total mean score exceeding the P-H 2 standardization sample mean. However, this P-H 2 self-concept dimension, which includes the 14 assessment items presented in Table 4, measures not only nervousness, worry, and fear but also dysphoric mood including sadness and unhappiness, and feelings of isolation, shyness, and discomfort with self, as well. A simple analysis of specific P-H 2 assessment items can assist in describing the frequencies of certain feelings endorsed by participants. Therefore, frequency counts were conducted of P-H 2 items that address worry and nervousness, concepts that are integrally related to the construct of anxiety.

Item analyses for the Freedom from Anxiety domain revealed heightened worry and nervousness within the sample. Appendix H provides the 14 FRE assessment items.

The following five items were selected for frequency analysis because they specifically address worry, nervousness, or fear: Items 7, 10, 23, 29, 56. In order to assess the frequency of endorsement of FRE domain items directly related to sadness or depression, the investigator also conducted a frequency analysis of two P-H 2 assessment items (#4 and #40) related to dysphoric mood for the 277 students who completed the entire P-H 2. In addition, frequencies for Items # 1, # 47, and #57 from the POP domain were also calculated, as it was conjectured that teasing or bullying may contribute to anxiety and dysphoria. Percentages for the total sample of endorsement for these P-H 2 items are presented in Table 3.

Table 3

Endorsement of Selected P-H 2 Items for the Current Total Sample

Item	Percentage
# 1. People pick on me.	16%
# 4. I am often sad.	15%
# 7. I get nervous when the teacher calls on me.	25%
# 10. I get worried when we have tests in school.	45%
# 23. I am nervous.	29%
#29. I worry a lot.	58%
# 40. I am unhappy.	8%
# 47. My classmates make fun of me.	17%
# 56. I am often afraid.	11%
# 57. I am different from other people.	87%

Note. Three participants completed the first 31 of the 60 P-H 2 assessment items only; they failed to complete the second side of the protocol. These three students were excluded from the majority of the P-H 2 analyses. However, their responses were included in the analyses of items # 4, 7, 10, 23, and 29 within the Freedom from Anxiety domain, as these items are included within the first 31 assessment items. $N = 280$ for items # 4, 7, 10, 23, 29. $n = 277$ for items # 40 and # 56.

Findings Related to Research Question 2

Does Governor's School attendance influence school attitudes including academic self-image, school satisfaction, academic goal valuation, and motivation of academically advanced students, as measured by the School Attitude Assessment Survey – Revised (SAAS-R)?

To address this question, one-sample two-tailed t tests were conducted for the five subscales of the School Attitude Assessment Survey –Revised (SAAS-R) to compare the half-day Governor’s School students’ SAAS-R subscale means for this setting to the SAAS-R factor mean scores of the students who are educated in their district high schools full-time.

These results indicated that the Governor’s School students had significantly higher means for Attitudes toward Teachers and Classes (ATT) - $t(223)= +11.012, p < 0.05$, and Attitudes toward School (ATS) - $t(223)= +14.638, p < 0.05$ for their Governor’s Schools than the district high school advanced learners had for their regular home high schools. The effect size ($d = .74$) for ATT was within the moderate strength range and within the large range ($d = .98$) for ATS. The Governor’s School students also had significantly higher means for academic Goal Valuation (GV) - $t(223)= +3.118, p < 0.05$, and for Motivation/Self-Regulation (MOT/S-R) - $t(223)= +4.300, p < 0.05$. The effect range was within the small range ($d = .21$ for GV; $d = .29$ for MOT/S-R). These results leads to the conjecture that for advanced students, educational placement or fit (as reflected by school satisfaction, level of motivation, self-regulation, and the valuing of academic goals), may be more evident in the Governor’s School setting, and suggest that educational fit is associated with personal attitudes and characteristics and may interact with these individual factors.

However, the results suggest that these two groups of students did not differ significantly in their academic self-concept (ASP), which is school related self-concept. One-sample *t* test results for each of the five SAAS-R factors are found in Table 4.

Table 4

One-Sample *t* Test SAAS-R Results Between the Governor's School and District High School Students

Subscale	Governor's School Students' Scores		District High School Students' Scores		<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ASP	5.60	0.987	5.70	0.856	.134	--
ATT	5.92	0.951	5.22	1.067	.000	.74
ATS	6.15	1.121	5.05	1.369	.000	.98
GV	6.68	0.643	6.55	0.612	.002	.21
MOT/S-R	5.64	0.987	5.36	1.030	.000	.29

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. Governor's School students' *N* = 224. District high school students' *N* = 56.

In their responses on the SAAS-R regarding their attitudes toward their district high schools, Governor's School students appeared to have significantly stronger academic self-perceptions (ASP) than did the full-time district high school students within the district high school setting. With an alpha level of .01 and a two-tailed independent-samples *t* test, the mean SAAS-R score of the Governor School students for the district high schools for the dimension of ASP was significantly greater than the mean SAAS-R academic self-perception score of district high school students ASP- $t(275)$

= -5.831, $p < 0.01$ ($d = -.82$ – large range). This conservative alpha level was selected to increase the rigor of the analysis, due to the discrepancy in sample size between the two groups. For their home high schools, the Governor’s School ATT mean score was significantly lower than the mean score for the full-time district high school advanced learners, although barely so – ATT $t(275) = +2.010$, $p < 0.01$. The effect size for ATT was within the small range ($d = .28$).

The results for the remaining three SAAS-R dimensions were not statistically significant, suggesting that any differences between the school satisfaction, goal valuation, and motivation/self-regulation mean scores were not significant for these two groups of students for the high school setting ($p > .01$). The results of this analysis are found in Table 5.

Table 5

Independent *t* Test Results for the District High School SAAS-R Between Governor's School and District High School Students

Subscale	District High School Students		Governor's School Students		<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ASP	5.70	0.856	6.41	0.573	.000	-.82
ATT	5.22	1.067	4.88	1.120	.045	.28
ATS	5.05	1.369	4.64	1.591	.080	--
GV	6.55	0.612	6.64	0.719	.392	--
MOT/S-R	5.36	1.030	5.15	1.169	.229	--

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. Governor's School *N* = 221. District High School *N* = 56.

Paired-samples *t* tests were conducted to address the question of whether the attitudes of Governors' School students differed between their two simultaneous educational placements. For the Governor's School students, there were significant differences between their attitude scores for the Governor's School and those for their district high schools, for all dimensions of the SAAS-R except GV, at the 0.05 alpha level. Their mean scores for ATT $t(220) = +12.240$, $p < .05$, and ATS $t(220) = +11.425$, $p < .05$ were significantly higher for the Governor's Schools than were their mean scores for their district high schools. Effect sizes were in the large range for ASP ($d = .93$) and ATT ($d = .82$). MOT/S-R - $t(220) = +9.813$, $p < .05$ also yielded a significant result. Effect sizes were within the moderate range for ATS ($d = .77$) and MOT/S-R ($d = .66$). However, their ASP mean score was significantly lower in the Governor's School setting than for their

district high schools – ASP $t(220) = -13.902, p < .05, d = -.93$ – large range. This may suggest that the Big Fish Little Pond Effect (BFLPE) was operating for the majority of the students in the Governor’s School sample. That is, their estimation of their academic abilities and skills is lower for the Governor’s School than in the regular high school setting. The results for these two-tailed paired –samples t tests are listed in Table 6.

Table 6

Paired-Sample t Test Results for the SAAS-R for the Governor’s School Students

Subscale	Governor’s School Scores		District High School Scores		p	d
	M	SD	M	SD		
ASP	5.59	0.992	6.41	0.573	.000	-.93
ATT	5.92	0.954	4.88	1.120	.000	.82
ATS	6.14	1.126	4.64	1.591	.000	.77
GV	6.68	0.647	6.64	0.719	.103	--
MOT/S-R	5.64	0.992	5.15	1.169	.000	.66

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. $N = 221$.

To get a clearer picture of whether the current participants have more positive or more negative levels of satisfaction with educational placement, and levels of academic goal valuation and motivation, than those of a benchmark sample of advanced students from across the nation, the SAAS-R mean scores for the total current sample were compared with those of the gifted achievers in the SAAS-R study (McCoach & Siegle, 2003b). Although the SAAS-R gifted achiever sample was not constructed to

represent a national standardization sample, the 120 gifted achievers who participated were from 28 school districts across the United and were 9th through 12th graders and academic achievers, as were the vast majority of the current study's sample. For the total current sample, a one-sample two-tailed *t* test was conducted for each SAAS-R factor for their district high school mean scores. These results are provided in Table 7.

The means for the current study total sample for four of the five SAAS-R factors differed significantly at the 0.05 alpha level from those of the gifted achievers in the McCoach and Siegle study. Results were not significant for GV. ASP was significantly stronger for the current study's total sample than for the achiever group: ASP [$t(276) = +2.28, p < 0.05$]. The mean scores for ATT, ATS, and M/S-R were higher for the achiever students: ATT - $t(276) = -5.66, p < 0.05$; ATS - $t(276) = -6.511, p < 0.05$; MOT/S-R $t(276) = 2.87, p < 0.05$. These results were influenced by the larger number of Governor's School students than district high school students in the current study.

Table 7

One-Sample *t* Test Results for the District High School SAAS-R Between the Total Sample and the Achieving Students (McCoach & Siegle, 2003b)

Subscale <i>d</i>	Total Sample		Gifted Achiever		<i>p</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ASP	6.27	0.698	6.17	0.590	.023	.14
ATT	4.95	1.115	5.33	0.915	.000	-.34
ATS	4.72	1.555	5.33	1.19	.000	-.39
GV	6.62	0.699	6.56	0.592	.160	--
MOT/S-R	5.19	1.144	5.39	0.975	.004	-.17

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. Total sample *N* = 277. Gifted achiever scores *N* = 120.

The mean scores for the Governor's Schools as reported by the Governor's School students were also analyzed in comparison with the SAAS-R 2003 achiever sample utilizing one-sample *t* tests (two-tailed at the 0.05 alpha level). Significant differences in means were obtained for each SAAS-R factor. The Governor's School students' means for four subscales (ATT, ATS, GV, and M/SR) in the Governor's school setting were significantly higher than those of the achiever study students. The mean score for ASP was significantly lower for the Governor's School students (McCoach & Siegle, 2003b), as noted below and outlined in Table 8: ASP $t(223) = -8.629$, $p < 0.05$ ($d = -.58$ – moderate effect size); ATT $t(223) = +9.282$, $p < 0.05$ ($d = .62$ – moderate effect size); ATS $t(223) = +10.900$, $p < 0.05$ ($d = .73$ – moderate effect size); GV $t(223) = +2.885$, $p < 0.05$ ($d = .19$ – small effect size); MOT/S-R $t(223) = +3.845$, $p < 0.05$ ($d = .26$ – small effect

size). The result for ASP for the Governor's School students may be one indicator of the presence of the BFLPE in the Governor's School Setting.

Table 8

One-Sample *t* Test Results for the Governor's School SAAS-R Between Governor's School Students and the Achieving Students (McCoach & Siegle, 2003b)

Subscale	Governor's School		Gifted Achiever		<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ASP	5.60	0.987	6.17	0.590	.000	-.58
ATT	5.92	0.951	5.33	0.915	.000	.62
ATS	6.15	1.121	5.33	1.190	.000	.73
GV	6.68	0.643	6.56	0.592	.004	.19
MOT/S-R	5.64	0.987	5.39	0.975	.000	.26

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. Governor's School *N* = 224. Gifted achievers *N* = 120.

The mean scores for the SAAS-R for the district high school advanced learners were also analyzed in comparison with the SAAS-R gifted achiever sample (McCoach & Siegle, 2003b), utilizing one-sample *t* tests (two-tailed at the 0.01 level). No significant differences in means were obtained for four of the SAAS-R factors: ATT, ATS, GV, and M/SR were not significantly different than those of gifted achievers. However, the mean score for Academic Self-Perceptions was significantly lower for the current study's district high school students (ASP $t(55) = -4.072$, $p < 0.01$). This conservative alpha level was selected to increase the rigor of the analysis, due to the discrepancy in sample size between the two groups. The effect size was within the moderate range ($d = -.54$). This may be an indication that the BFLPE operated in advanced classes within the high school

for this comparison group of non-Governor's School students, in that the students did not feel as intellectually competent, on average, as one would expect, perhaps due to comparisons they made between themselves and other students in class. The results are outlined in Table 9.

When the Governor's School students' mean scores for ATT and ATS for their district high schools were compared with the mean subscale scores of the McCoach and Siegle (2003b) gifted achievers (two-tailed one-sample t tests at the 0.01 level) it was found that the Governor's School students may have been somewhat dissatisfied with their home high schools, as their mean scores were significantly lower than the gifted achiever scores: ATT $t(220) = -5.932$ $p < 0.01$ ($d = -.40$); ATS $t(220) = -6.452$, $p < 0.01$ ($d = -.43$). The Governor's School district high school ASP scores were significantly higher, however: ASP $t(220) = 6.178$ $p < 0.01$ ($d = .42$), suggesting that within the high school setting the Governor's School Students on average felt academically strong and did not conclude that they were inadequate intellectually in comparison to other students. Goal Valuation differences were not significant; however, Motivation/Self-Regulation indicated that the Governor's School students had lower motivation in the high school setting than the gifted achievers had in theirs: MOT/S-R - $t = -3.037$ $p < 0.01$ ($d = -.20$). These results are found below in Table 10.

Table 9

One-Sample *t* Test Results for the District High School SAAS-R Between the District High School Students and the Achieving Students (McCoach & Siegle, 2003b)

Subscale	District High School		Gifted Achiever		<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ASP	5.70	0.856	6.17	0.590	.000	-.54
ATT	5.22	1.067	5.33	0.915	.431	--
ATS	5.05	1.369	5.33	1.19	.127	--
GV	6.55	0.612	6.56	0.592	.880	--
MOT/S-R	5.36	1.030	5.39	0.975	.812	--

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. District High School *N* = 56. Gifted Achiever *N* = 120.

Table 10

One-Sample *t* Test Results for the District High School SAAS-R Between the Governor's School Students and the Achieving Students (McCoach & Siegle, 2003b)

Subscale	District High School		Gifted Achiever		<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ASP	6.41	0.573	6.17	0.590	.000	.42
ATT	4.88	1.067	5.33	0.915	.000	-.40
ATS	4.64	1.591	5.33	1.19	.000	-.43
GV	6.64	0.719	6.56	0.592	.112	--
MOT/S-R	5.15	1.169	5.39	0.975	.003	-.20

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. Governor's School *N* = 221. Gifted Achiever *N* = 120.

Reviewing the SAAS-R means for the current sample, it is enlightening to observe that the highest ASP scores were obtained for the Governor's School students in the

district high school setting ($M = 6.41$), followed by the district high school mean for the total sample ($M = 6.27$); this second mean was influenced by the large proportion (approximately 80%) of Governor's School students in the total sample. The previous study's sample (McCoach & Siegle, 2003b) mean was 6.17. The two lowest means were 5.70 for the district high school students within their own schools, and 5.60 for the Governor's School students within the Governor's Schools.

Findings Related to Research Question 3

Are there relationships between self-concept and school attitudes in the Governor's School and district high school settings?

For the total sample of district and Governor's School students, positive relationships were found between the total P-H 2 mean T - scores and all five subscales mean scores of the SAAS-R for the district high schools. There were significant positive Pearson product-moment correlations for each SAAS-R factor. For the total sample for the P-H 2 domains, most associations with SAAS-R district high school subscale scores were statistically significant. Correlations for the P – H 2 Total mean T - score and P-H 2 domain mean T - scores are presented in Table 11. Cohen (1988) suggested the following interpretive guidelines for correlational research in the social sciences: small correlation: .01 - .29; moderate: .30 – .49; large: .50 or greater. Effect sizes were found for several correlations, including the following, among others: P-H 2 Total with ATT $r^2 = .10$; P-H 2 Total with ATS $r^2 = .09$; BEH with ATT $r^2 = .12$; BEH with GV $r^2 = .13$; BEH with MOT/S-R $r^2 = .18$; INT with ASP $r^2 = .20$; with GV $r^2 = .12$; INT with MOT/S-R $r^2 = .15$. Correlations between Physical Appearance and Attributes (PHY) and SAAS-R

subscales are not presented in this chapter, as these were not a focus of the current study.

Table 11

Correlations Between P-H 2 Total and Domain Scores and District High School SAAS-R Subscales for the Total Sample

Variables	1	2	3	4	5	6	7	8	9	10	11
1.PH	---	.641**	.780**	.838**	.800**	.739**	.282**	.319**	.302**	.230**	.286**
2.BEH		---	.533**	.344**	.330**	.398**	.207**	.340**	.285**	.359**	.430**
3.INT			---	.546**	.499**	.409**	.444**	.265**	.217**	.350**	.392**
4.FRE				---	.658**	.695**	.161**	.167**	.176**	.099	.096
5.POP					---	.515**	.124*	.227**	.248**	.073	.067
6.HAP						---	.083	.203**	.213**	.143*	.139*
7.ASP							---	.133*	.020	.313**	.192**
8.ATT								---	.596**	.186**	.395**
9.ATS									---	.072	.237**
10.GV										---	.438**
11.MOT/S-R											---

Note. PH = total P-H 2; BEH = behavioral adjustment; INT = Intellectual and School Status; FRE = freedom from anxiety; POP = popularity; HAP = happiness and satisfaction. $N = 274$.

* $p < .05$. ** $p < .01$.

The current results suggest that educational fit or placement may significantly influence the relationships between school satisfaction and overall self-concept, as results varied between the mean scores for the two groups analyzed, the district students and the Governor's School participants. Significant positive correlations were found between the P-H 2 Total scores and four of the five SAAS-R factor high school scores for the district high school student sample. Three of these four correlations with

Total P-H 2 (ASP, ATT, AND MOT/S-R) were in the large range : ASP ($r = .57, r^2 = .32$); ATT ($r = .57, r^2 = .32$); MOT/S-R ($r = .50; r^2 = .25$). There was a moderate strength correlation for P-H 2 and ATS ($r = .40; r^2 = .16$). Goal Valuation did not yield a significant correlation with the P-H 2 Total score. The Governor's School students in the district high school setting had a different result in that they demonstrated small strength positive correlations for the five SAAS-R subscales with global self-concept ($r < .30$).

In Governor's School settings, significant positive relationships were found between Total P-H 2 mean scores and the five SAAS-R Governor's School mean factor scores. These relationships were of moderate strength for ASP ($r = .37, r^2 = .14$), ATT ($r = .36, r^2 = .13$), and ATS ($r = .34, r^2 = .12$), and of weak strength for GV and MOT/S-R. It should also be noted that McCoach and Siegle (2003b) found positive interfactor correlations for ASP with ATT and with ATS, suggesting a possible relationship between academic self-concept and school satisfaction.

A number of significant positive correlations between P-H 2 domain mean T -scores and SAAS-R subscale district high school scores for the high school students and the Governor's School students were also found. Several correlations for the district high school students for the domains of particular interest in this study (FRE, POP, and HAP) exhibited moderate to low correlation strength with SAAS-R subscales. [FRE with ATT – $r = .37, r^2 = .14$; POP with ASP – $r = .33, r^2 = .11$; POP with ATT – $r = .40, r^2 = .16$; POP with ATS – $r = .46, r^2 = .21$; HAP with ATT – $r = .28, r^2 = .08$.]

Significant correlations for the Governor's School students within the high school setting for FRE, POP, and HAP displayed low range strength with SAAS-R subscales (FRE with APS and ATS; POP with ATT and ATS; and, HAP with ATT, ATS, and GV). Table 12 provides correlations for the district high school students, while Table 13 presents these correlations for the Governor's School students. In addition, FRE was positively and strongly related to HAP and to POP for both groups of students

Significant correlations for the Governor's School students between the P-H 2 domains and the Governor's School SAAS-R subscales are displayed in Table 14. A number of the significant correlations had correlational strength within the moderate range; however, for FRE, POP, and HAP, correlational strength was again in the low range, although perhaps these associations for the Governor's School students could be viewed as minimally stronger than their FRE, POP, and HAP relationships with the SAAS-R subscales within the district school setting. Again, FRE was positively, significantly, and strongly correlated with HAP and with POP.

The current results answer Research Question # 3 in the affirmative, as significant relationships were found between self-concept and school attitude factors of academically advanced teenagers in both educational settings. The current findings are consistent with the findings of other researchers (Huebner & Alderman, 1992; Leung & Leung, 1992) that satisfaction with one's life is positively and significantly related to self-concept. Differences found between the factor relationships in the two school settings for the two main groups of subjects suggest that school placement or fit has an

influence on the associations between global and dimensional self-concept and personal attitudes or attributes.

Table 12

Correlations Between P-H 2 Domain Scores and District High School SAAS-R Scores for District High School Students

Variables	1	2	3	4	5	6	7	8	9	10
1. BEH	—	.657**	.435**	.508**	.488**	.548**	.411**	.323*	.345**	.526**
2. INT		—	.343**	.479**	.264*	.691**	.552**	.399**	.263*	.649**
3. FRE			—	.658**	.690**	.223	.371**	.073	.100	.259
4. POP				—	.598**	.325*	.402**	.460**	-.031	.206
5. HAP					—	.195	.279*	.165	.159	.253
6. ASP						—	.538**	.409**	.074	.454**
7. ATT							—	.558**	.097	.530**
8. ATS								—	-.047	.151
9. GV									—	.565**
10. MOT/S-R										—

Note. BEH = behavioral adjustment; INT = Intellectual and School Status; FRE = freedom from anxiety; anxiety; POP = popularity; HAP = happiness and satisfaction. $N = 56$. * $p < .05$. ** $p < .01$.

Table 13

Correlations Between P-H 2 Domain Scores and District High School SAAS-R Scores for Governor's School Students

Variables	1	2	3	4	5	6	7	8	9	10
1. BEH	—	.503**	.323**	.290**	.375**	.147*	.320**	.274**	.367**	.407**
2. INT		—	.607**	.508**	.453**	.387**	.192**	.178**	.374**	.333**
3. FRE			—	.659**	.697**	.153*	.121	.202**	.098	.061
4. POP				—	.496**	.085	.187**	.206**	.094	.038
5. HAP					—	.051	.186**	.226**	.140*	.113
6. ASP						—	.085	-.038	.411**	.182**
7. ATT							—	.598**	.214**	.361**
8. ATS								—	.101	.247**
9. GV									—	.421**
10. MOT/S-R										—

Note. BEH = behavioral adjustment; INT = Intellectual and School Status; FRE = freedom from anxiety; POP = popularity; HAP = happiness and satisfaction. $N = 221$. * $p < .05$. ** $p < .01$.

Table 14

Correlations Between P-H 2 Domain Scores and Governor's School SAAS-R Scores for Governor's School Students

Variables	1	2	3	4	5	6	7	8	9	10
1. BEH	—	.503**	.323**	.290**	.375**	.314**	.428**	.388**	.353**	.387**
2. INT		—	.607**	.508**	.453**	.483**	.429**	.435**	.355**	.385**
3. FRE			—	.659**	.697**	.266**	.230**	.244**	.064	.050
4. POP				—	.496**	.146*	.133*	.086	.043	.047
5. HAP					—	.166*	.282**	.236**	.113	.089
6. ASP						—	.473**	.553**	.248**	.458**
7. ATT							—	.825**	.483**	.458**
8. ATS								—	.463**	.368**
9. GV									—	.490**
10. MOT/S-R										—

Note. BEH = behavioral adjustment; INT = Intellectual and School Status; PHY = physical appearance and attributes; FRE = freedom from anxiety; POP = popularity; HAP = happiness and satisfaction. $N = 221$. * $p < .05$. ** $p < .01$.

Findings Related to Research Question 4

Are there gender differences in self-concept, and in school attitudes and satisfaction, in the Governor's School and district high school settings?

Analyses regarding gender and self-concept.

To address global self-concept and domains of well-being, independent-samples 2-tailed *t* tests were completed at alpha level .05 to compare the sample means by gender. No significant differences were found for the P-H 2 TOTAL and for five of the six P-H 2 domain mean *T*- scores for the total current sample. However, the females had a significantly lower FRE mean score [FRE $t(262) = +2.278$ $p < 0.05$]. The effect size value was small ($d = .32$). These results are reported in Table 15.

Table 15

Independent-Samples *t* Test Results for the P-H 2 Between the Male and the Female Students in the Total Sample

Subscale	Male mean <i>T</i> -Scores		Female mean <i>T</i> -Scores			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>p</i>	<i>d</i>
TOTAL	50.79	9.008	49.98	10.288	.508	--
BEH	49.38	10.776	50.75	8.986	.281	--
INT	49.66	9.996	50.62	9.773	.441	--
PHY	50.70	9.604	49.83	10.085	.486	--
FRE	51.96	8.986	49.19	10.159	.024	.32
POP	50.85	9.271	49.80	10.210	.399	--
HAP	49.93	8.893	50.59	10.441	.595	--

Note. BEH = behavioral adjustment; INT = intellectual and school status; PHY = physical appearance and attributes; FRE = freedom from anxiety; POP = popularity; HAP = happiness and satisfaction. Male *N* = 106. Female *N* = 158.

To compare the current male and female sample Total and domain P-H 2 mean scores with those achieved by the males and females in the P-H 2 standardization group, two-tailed one-sample *t* - tests were completed at an alpha level of .05. No significant differences were observed in mean scores between the current samples and the standardization groups for either gender.

Analyses regarding gender and the P-H 2 Freedom From Anxiety domain.

As noted earlier, for the total sample, nervousness and worry were endorsed by a significant number of participating students, as indicated by an item analysis of five Piers-Harris 2 assessment items (7, 10, 23, 29, and 56). In addition, some gender differences in frequency of endorsement were noted for these five items. In the current study, females typically confirmed these items with greater frequency than did the boys. For the P-H 2, girls have in several studies scored lower than males for the total Freedom From Anxiety (FRE) domain (Piers & Herzberg, 2002, p. 45).

To estimate feelings of dysphoria and being left out of things, item frequency analyses were conducted for three additional FRE items, # 4 ("I am often sad"), #40 ("I am unhappy"), and for Item # 32 ("I feel left out of things"). Item #32 was analyzed to explore the possibility that the high frequencies of feelings of worry for the sample may be related to feelings of sadness or feeling left out of group activities. Two POP domain items (# 1 and # 47) also were analyzed for frequency, as these items may be related to being picked on or bullied. Table 16 presents the approximate percentages of response to each item for each school group by gender.

Table 16

Endorsement of Anxiety and Dysphoric Mood P- H 2 Items by School Group and Gender

<u>ITEM</u>	<u>HS Boys</u>	<u>HS Girls</u>	<u>GS Boys</u>	<u>GS Girls</u>
# 1. My classmates make fun of me.	26%	14%	22%	15%
# 4. I am often sad.	11%	11%	10%	18%
# 7. I get nervous when the teacher calls on me.	21%	25%	16%	30%
# 10. I get worried when we have tests in school.	26%	58%	47%	44%
# 23. I am nervous.	32%	33%	25%	27%
#29. I worry a lot.	42%	75%	41%	65%
#32. I feel left out of things.	26%	31%	32%	36%
# 40. I am unhappy.	5%	11%	7%	7%
# 47. People pick on me.	21%	6%	17%	17%
# 56. I am often afraid.	11%	11%	5%	13%

Note. Three participants completed the first 31 of the 60 P-H 2 assessment items only; they failed to complete the second side of the protocol. These three students were excluded from the majority of the P-H 2 analyses. However, their responses for the Freedom From Anxiety domain, as these items are included within the first 31 assessment items. $N = 280$ for items # 4, 7, 10, 23, 29. $N = 277$ for items # 32, 40, and 56.

Analyses regarding gender and school attitudes.

To check for possible gender differences in SAAS-R district high school scores, the scores for the total study sample were analyzed with two-tailed independent t tests at the 0.05 alpha level. Significant differences between gender means were found for the factors of GV [GV $t(262) = -3.435, p < 0.05, d = -.48$; MOT/S-R [MOT/S-R $t(262) = -4.144, p < 0.05, d = -.58$], with higher means for the females. The mean score for males for ASP was statistically significantly higher than that of the girls, although minimally so -

ASP $t(262) = +2.009$ $p < 0.05$, $d = .28$. No significant differences were found between means for ATT and ATS These results are displayed in Table 17.

Table 17

Independent-Samples t Test Results for the District High School SAAS-R Between Males and Females for the Total Sample

Subscale	Male		Female		p	d
	M	SD	M	SD		
ASP	6.37	0.669	6.19	0.716	.046	.28
ATT	5.02	1.068	4.95	1.086	.590	--
ATS	4.82	1.613	4.70	1.464	.516	--
GV	6.45	0.865	6.76	0.411	.001	-.48
MOT/S-R	4.86	1.208	5.43	1.031	.000	-.58

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. Males $N = 105$. Female $N = 159$.

Independent-samples t test analyses of male and female mean differences in Governor's School SAAS-R mean scores for Governor's School students revealed significantly higher mean scores for girls for GV and MOT/S-R: GV $t(210) = -2.398$, $p < 0.05$ ($d = -.34$ – small range effect size); MOT/S-R $t(210) = -3.695$, $p < 0.05$ ($d = -.52$ – moderate range effect size). Thus, stronger motivation, self-regulation attitudes, and academic goal valuation were noted for academically advanced females in both educational settings. No significant mean differences were for the remaining three factors, ASP, ATT, ATS. The results are displayed in Table 18.

Table 18

Independent-Samples *t* Test Results for the Governor's School SAAS-R Between Males and Females

Subscale	Males		Female		<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ASP	5.68	0.929	5.53	1.034	.281	--
ATT	5.87	1.140	5.99	0.745	.371	--
ATS	6.14	1.182	6.21	0.994	.662	--
GV	6.59	0.745	6.80	0.391	.018	-.34
MOT/S-R	5.36	1.080	5.87	0.846	.000	-.52

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. Male *N* = 88. Female *N* = 124.

Paired –samples two-tailed *t* tests were conducted for both female and male Governor's School students, comparing their SAAS-R scores for their district high schools and their Governor's Schools. At the 0.05 alpha level, three of the girls' SAAS-R mean factor scores (ATT, ATS, and MOT/S-R) for the Governor's School were significantly higher than their means for their district high schools: ATT $t(122) = +9.957, p < .05$; ATS $t(122) = +9.610, p < .05$; MOT/S-R $t(122) = +7.046, p < .05$. School satisfaction and motivation/self-regulation were significantly stronger in the Governor's School setting. For ASP, however, the girls' mean score for the district high schools was significantly higher than for the Governor's Schools - ASP $t(122) = -9.807, p < .05$. Effect sizes for ASP, ATT, and ATS were in the large range; the effect size for MOT/S-R was in the moderate range. No significant difference in means was found for GV, suggesting that valuing of

academic goals. Goal valuation related to doing well in school remained strong for girls in both settings. These results are delineated in Table 19.

Table 19

Paired-Sample *t* Test Results for the SAAS-R for the Female Governor's School Students

Subscale	Governor's School		District High School		<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ASP	5.52	1.037	6.37	0.584	.000	-.88
ATT	6.00	0.747	4.88	1.062	.000	.90
ATS	6.20	0.996	4.62	1.467	.000	.87
GV	6.80	0.393	6.78	0.397	.671	--
MOT/S-R	5.87	0.849	5.38	1.074	.000	.63

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. *N* = 123.

For the Governor's School boys, there were significant differences for three factor means with higher means for the participating boys in the Governor's School setting. ATT $t(85) = +7.304, p < .05$; ATS $t(85) = +6.181, p < .05$; MOT/S-R $t(85) = +6.643, p < .05$. School satisfaction and motivation/self-regulation were significantly stronger in the Governor's School setting for the boys as well as the girls. As was the case for the girls, ASP was higher for the district high school setting than for the Governor's School setting ASP $t(85) = -9.904, p < .05$. Also, as for the Governor's School girls, for the GV factor, there was no significant difference in means between the two school settings. Effect sizes were within the moderate range for ATS and MOT/S-R and within the large range for ASP. The effect size for ATT approached the large range. These results are

presented below and in Table 20. Due to the small sample size for the district high schools ($n = 56$), a similar analysis was not conducted by gender for the district high school students.

Table 20

Paired-Sample *t* Test Results for the SAAS-R for the Male Governor's School Students

Subscale	Governor's School		District High School		<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ASP	5.67	0.938	6.47	0.543	.000	-1.07
ATT	5.86	1.140	4.94	1.093	.000	.79
ATS	6.13	1.192	4.74	1.674	.000	.67
GV	6.58	0.752	6.50	0.881	.135	--
MOT/S-R	5.36	1.087	4.84	1.216	.000	.72

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers and classes; ATS = attitudes toward school; GV = goal valuation; MOT/S-R = motivation/self-regulation. $N = 86$.

Correlation analyses by gender.

For the total sample, significant positive associations were found for the males and females between the P-H 2 Total mean *T* - scores and the SAAS-R subscale high school scores, with the exception that no significant correlation was found for Goal Valuation (GV) for the girls. For the females, the correlation sizes were within the small range. For the males, the five SAAS-R factor correlations were positive and within the moderate range (ASP $r = .30$, $r^2 = .09$; ATT $r = .33$, $r^2 = .11$; ATS $r = .39$, $r^2 = .15$; GV $r = .33$, $r^2 = .11$; MOT/S-R $r = .48$, $r^2 = .23$).

For the Governor's Schools, the boys attained a significant positive moderate level correlation for the Total P-H 2 with MOT/S-R ($r = .37, r^2 = .14$), and weak level positive correlations for Total P-H 2 with ASP, ATT and GV. A significant correlation was not obtained for ATS. The female students achieved moderate level positive correlations for Total P-H 2 with ASP ($r = .42, r^2 = .18$), ATT ($r = .40, r^2 = .16$), and ATS ($r = .37, r^2 = .14$), but no significant correlations for GV or MOT/S-R.

Additional Findings: Correlations with Self-Reported Grade Point Averages (GPA)

Student reports of grade ranges on the SAAS-R protocols allowed for analyses examining the relationship between Total P-H 2 mean *T* - scores and self-reported grade point average ranges, as well as the relationships between ASP and ATS subscales and student identified grade point averages. The ASP and ATS subscales were selected as they relate directly to two key factors in the current study - school satisfaction and specific academic self-concept.

Within the Governor's School setting, higher self-reported grade point average (GPA) ranges were positively and significantly related to ASP and ATS - ASP $r(210) = .464, p < .01, r^2 = .22$; ATS - $r(210) = .213, p < .01, r^2 = .05$. The correlation size for ASP was within the moderate range, and the correlation for ATS was within the small range. These results provide support for the positive relationship between self-concept and academic achievement found in other studies (El-Anzi, 2005; Marsh et al., 2005), and modest support to previous findings linking school satisfaction and success (Davis & Lease, 2007; McCoach & Siegle, 2003a).

Within the district high school setting, higher reported grades were associated with higher academic self-perception (ASP) mean scores for both the district high school students and the Governor's School students. This was a moderate range correlation for the Governor's School students ($r = .43, r^2 = .18$) and a large range correlation for the district high school students ($r = .51, r^2 = .26$). For the district high school students only, the Total P-H 2 mean T -scores were also positively associated with higher grades; correlation strength was within the moderate range ($r = .43, r^2 = .18$). These results provide support for the positive relationship between self-concept and academic achievement found in other studies (El-Anzi, 2005; Marsh et al., 2005).

Within the district high school setting, the Attitudes toward School (ATS) mean scores were not significantly associated with GPA, but they were positively and significantly related to Total P-H 2 mean scores for both groups of students. District high school student correlation size for Total P-H 2 and ATS was within the moderate range ($r = .40, r^2 = .16$). The Governor's School student correlation strength for Total P-H 2 and ATS in the district high school setting was low ($r = .28, r^2 = .08$).

Summary

As measured by the total and domain self-concept scores of the Piers-Harris 2 (P-H 2), the total samples' overall psychological well-being appears to be similar to that of the P-H 2 standardization sample (Piers & Herzberg, 2002), with the exception that the older students in the sample (ages 17-19) achieved significantly stronger mean T -scores for the domains of Freedom from Anxiety (FRE) and Popularity (POP). For Total self-

concept and the remaining four P-H 2 domains [Intellectual and School Status (INT), Physical Appearance and Attributes (PHY), Behavioral Adjustment (BEH), and Happiness and Satisfaction (HAP)], no significant differences in mean *T* - scores were obtained.

Approximately 77% of the 280 students in the current sample obtained Total P-H 2 *T* - scores within the Average or higher ranges. The two main comparison groups of the study, Governor's School students and district high school students, attained P-H 2 *T* - score ranges with similar frequencies, with the Governor's school students' revealing slightly higher perceptions of psychological strength. However, no statistically significant differences in P-H 2 mean Total and domain *T*- scores were found between these two groups of students. Approximately 75% of the district high school students achieved Total P-H 2 *T* - scores within the Average Range or above, while this was true for 78% of the Governor's school students. While approximately 14.3% of the district high school students attained Very Low to Low Range scores, this percentage was approximately 13.6% for the Governor's School students. A significant P-H 2 gender difference for the total sample was noted for only one dimension, the FRE domain, with females displaying a lower mean *T* - score than the males.

Although the Freedom From Anxiety (FRE) P-H 2 domain mean scores for the sample were strong, P-H 2 item analyses of frequencies for worry and nervousness indicated that approximately 58% of the total sample indicated significant worry, 29% confirmed nervousness, and 45% were worried by academic testing. About 25% of the total sample agreed that they were nervous when called on in class. For the district high

school students, 75% of the girls noted being worried in general, while this figure was 65% for the Governor's School females. Approximately 42% of the district high school boys endorsed substantial worry, while 41% of the Governor's School males confirmed worry. Approximately 13% of the Governor's School females indicated frequent fear, while this figure was 11% for the district high school girls and boys. Approximately 5% of the Governor's School males endorsed frequent fear. About 18% of the Governor's School girls indicated frequent sadness, while this figure was 11% for the high school females and males, and approximately 10% for the Governor's School males.

Approximately 26% of the district high school males indicated feeling left out, while this figure was 32% for the Governor's School boys. For the girls, about 31% of the high school and 36% of the Governor's School students indicated feeling left out of things. Feeling picked on or made fun of did not exceed 17% for the girls, but 26% of the district high school boys and 22% for the Governor's School males indicated that they were made fun of by classmates.

School attitudes and satisfaction were measured with the School Attitude Assessment Survey – Revised (SAAS-R). When compared with the SAAS-R gifted achiever group (McCoach & Siegle, 2003b), for the total mean score and the mean scores for the three subscales of Attitudes toward Teachers (ATT), Attitudes toward School (ATS), and Motivation and Self-Regulation (MOT/S-R), significant differences were observed, with the scores for the current sample for the district high school setting significantly lower than those of the achiever's group. For the Academic Perceptions (ASP) subscale, the

sample achieved a significantly higher mean score than did the gifted achiever group. For the Goal Validation (GV) subscale, no significant differences were found. These differences were influenced by the larger number of Governor's School students than district high school students in the total sample.

When rating their attitudes toward the Governor's School, Governor's School students achieved significantly higher SAAS-R mean subscale scores for four of the five sub-scales than the district high school students obtained for their home high schools. However, for ASP, the Governor's School mean scores were not significantly different from those of the district high school students

When attitudes of the Governor's School students toward the district high schools were compared with those of the district high school students, the Governor's School students obtained a significantly higher ASP mean score, but a significantly lower ATT mean sub-scale score than the district high school students. This suggests that the Governor's School students feel competent in their district high school classes, but don't feel they have a good educational fit with these classes. Although they have lower ASP in the Governor's School, and may experience the BFLPE there, they may feel their classes there more adequately meet their needs. Significant differences were not found for the ATS, GV, and MOT/S-R subscales.

When Academic Self-Perception (ASP) scores are compared between the two high school groups, it is interesting to note that the Governor's School students' mean score for the district high schools was the highest attained score (6.41), while their ASP

score for the Governor's Schools was the lowest (5.60). The district high school students' mean for their home high schools were second lowest at 5.70. This suggests that the district high school students may experience the BFLPE in their classes, while the majority of the Governor's School students may experience the BFLPE only in their Governor's Schools.

When the Governor's School students' attitudes toward the Governor Schools were compared with their attitudes toward their district high schools, these students had significantly higher scores for ASP for their district high school than for the Governor's Schools. Their scores for ATT, ATS, and MOT/S-R were significantly higher for the Governor's School than for their district high schools. Only the GV subscale revealed no significant difference in mean scores. Their lowered ASP mean score in the Governor's School setting provides further evidence that the BFLPE may be operating in this setting for the Governor's School students.

When the SAAS-R district high school scores of the total male and female samples were compared, no significant differences were found for the ATT and ATS SAAS-R mean scores. However, the males displayed a significantly higher score for ASP than did the females, while the girls had significantly higher mean scores for GV and MOT/S-R.

The Governor's School girls had significantly higher mean scores for GV and MOT/S-R in the Governor's School setting than did the male Governor's School students, but no other significant differences were found. Due to the smaller sample size for

students attending district high schools only, a similar analysis was not conducted by gender for the district schools. The Governor's School females and males had higher mean SAAS-R scores for the Governor's Schools for ATT, ATS, and MOT/S-R as compared to their mean scores for their high schools, and significantly lower ASP mean scores. GV did not differ significantly between the two school settings.

For the total sample, significant positive correlations were found for the total P-H 2 mean *T* - scores and all five SAAS-R high school dimensional mean scores. For P-H 2 domains, there were significant positive correlations with SAAS-R high school subscale mean scores except for FRE and POP with GV and MOT/S-R, and HAP with ASP. FRE was also significantly related to HAP and also to POP. When the total sample was analyzed by gender, significant positive correlations were found for the P-H 2 Total mean *T* - scores and all SAAS-R high school subscale mean scores with the exception of the relationship of P-H 2 Total scores with GV for the girls.

For the district high school students, the Total P-H 2 mean *T* - score and the SAAS-R subscale mean scores were positively related for all subscales except GV. For the Governor's School students, significant positive correlations were found for the Total P-H 2 mean *T* - score and for all Governor's School SAAS-R subscale mean scores for both the Governor's School and district high school settings.

Relationships between P-H 2 domains and district high school SAAS-R subscales were also analyzed for the two major student groups, as were relationships between P-H 2 domain mean *T* - scores and Governor's School SAAS-R subscale mean scores, with

positive associations found for several factors. In general, the results suggested somewhat stronger positive correlations for the district high school students than for the Governor's School pupils, when district high school SAAS-R mean sub-scale scores were analyzed for the two groups of students in relation to the P-H 2 domain mean *T*-scores.

Student reports of grade point ranges allowed for additional analyses examining the relationship between total P-H 2 mean *T*-scores and reported grades, as well as the relationships between the SAAS-R subscales of ASP, ATT, and ATS and student perceptions of grade point averages. For both the district high school students and the Governor's school students, higher grades were associated with higher SAAS-R ASP mean scores within the district high school setting. For the district students, higher total P-H 2 *T*-scores were also associated with higher grades. Within the Governor's School setting, higher grades were also significantly related to ATS and ASP. However, GPA was not significantly associated with the Total PH-2 mean score.

Chapter Five presents interpretation of the study results presented in Chapter Four including relationships to previous research, as well as implications for practice and for future research.

CHAPTER FIVE

Discussion, Conclusions, and Implications

The current study is built around the conceptual framework of Neihart (1999), that proposes that giftedness has an impact on the psychological well-being of students, and that the level of psychological well-being is determined not only by the type and degree of talent, but also by the interplay and relationships between giftedness types and levels, the goodness of fit within the educational placement, and individual psychological attributes.

For this study, the type of giftedness or talent was academic, which was held roughly constant across the two student groups. The participants attended public high schools within a southern state in the United States. The comparison groups were partial-day Governor's School students and full-time district high school students enrolled in at least one AP, IB, or dual enrollment classes. The study compared psychological well-being and school attitude and satisfaction assessment results between these two groups of students on global and dimensional levels. In addition, in line with the Neihart model (1999) the investigator explored the relationships between personal characteristics such as school attitudes, educational fit (as approximated by school satisfaction estimates), and self-perception dimensions. The relationships between these factors and feelings of overall well-being were also analyzed.

The overall purpose of the study was to increase knowledge about perceptions of global psychological well-being and school satisfaction, and the relationships between these factors for male and female teenagers enrolled in partial-day gifted programs and advanced courses in district high schools. A secondary goal was to examine the possible relationships between these factors and perceived grade point average (GPA).

Participants were 280 students in grades 10 through 12. Fifty-six of these pupils comprised the comparison group and attended only district high school advanced classes (AP or IB), and 224 students attended one of four participating Governor's Schools half-day and one of a total of at least 43 district high schools for the remainder of the school day. [Forty-one Governor's School students did not identify their home district high schools.]

For the total sample of 280 students, 57% were female and 38% were male. Eighty-eight male and 124 female participants attended the four involved Governor's Schools, while 19 boys and 36 girls attended the four participating district high schools only. A total of 13 students did not disclose gender. The four participating district high schools were within three of the involved Governor's School districts. Chapter Five presents a concluding summary and discussion of the research study. Five sections are included in the chapter: (a) discussion of findings, (b) conclusions, (c) implications for practice, (d) implications for research, and (e) final summary.

Discussion of Findings

Psychological well-being of advanced students.

Global self-concept and self-esteem.

Supporting the conclusions of several other researchers (Colangelo & Pflieger, 1978; Karnes & Wherry, 1981; Kelly & Colangelo, 1984; Neihart, 1999; Piers & Herzberg, 2002), the results of the current study suggest that overall self-concept and self-esteem appraisals of gifted or advanced high school students equal those of typical students, and may be somewhat stronger than is typical in a few areas. The Piers-Harris 2 (P-H 2) Total score was used to estimate overall feelings of psychological well-being, along with the P-H 2 Happiness and Satisfaction (HAP) domain score. Goal Valuation (GV) and Motivation/Self-Regulation (MOT-S-R), two subscales of the School Attitude Assessment Survey – Revised (SAAS-R), were also included as two additional components of overall psychological well-being.

The P-H 2 provides a total score (*T*-score) as well as six dimension or domain scores: Behavioral Adjustment (BEH), Intellectual and School Status (INT), Physical Appearance and Attributes (PHY), Freedom From Anxiety (FRE), Popularity (POP), Happiness and Satisfaction (HAP). The results indicate that total self-esteem as well as the dimensions of self-concept for the total sample were similar to those of the P-H 2 standardization group for students aged 15 and 16. For ages 17 and 18, FRE and POP domain mean scores significantly exceeded those of the standardization sample, suggesting growth in self-concept for the oldest high school students. However, Piers

and Herzberg (2002) indicate that for older students 17 and 18 years of age, the POP domain results should be interpreted with caution due to weaker internal consistency for the 2002 restandardization (Piers & Herzberg, 2002, p 49.)

Overall, the Governor's School students and the district high school students did not differ significantly in Total P-H 2 scores or domain mean scores. In addition, a focused indicator of overall psychological adjustment and life satisfaction, the P-H 2 Happiness and Satisfaction (HAP) domain scores, displayed similar adequate to strong results for the two comparison groups, and in comparison with the P-H 2 standardization groups. These results are consistent with the results of Jin and Moon (2006) that suggested that psychological well-being may not be higher overall in special school settings. The findings also suggest that placement in the partial-day academic Governor's Schools did not negatively affect overall self-perceptions of psychological well-being, nor the dimensions of self-concept measured by the P-H 2.

In contrast to the current investigation, the high school in the Jin and Moon (2006) study was a residential school in Korea, not a partial day school, where one may expect a greater influence from the special school and increased bonding between the participants, as they are present for the entire school day as well as for most of their free time. This finding was in contrast with the researchers' original expectations. The investigators had conjectured that the community setting, appropriate educational fit, and support available in a special residential school for the gifted would lead to improved psychological well-being as compared to that of advanced students in more

typical comprehensive high schools. However, it should be noted that Jin and Moon (2006) questioned in the discussion of their findings the applicability of the particular instrument used in their study, which may not have been appropriate for an adolescent student sample and for short-term evaluation, and recommended use of a more appropriate measure of well-being.

Regarding the interpretive ranges for the P-H 2 (Piers & Herzberg, 2002), the current study's total group attained range frequencies that suggest the similarity of these students to the students in the P-H 2 normative sample. Approximately 43% of the student scores were within the Average Range and 34% within the High Average to High ranges.

Approximately 23% of the scores were within the Low Average, Low, or Very Low ranges. As noted earlier, approximately 26% of adults 18 years and older in the United States experience diagnosable psychological difficulties (National Institute of Mental Health, 2008). It is interesting to observe that this figure of 26% is similar to the percentage of scores for the total current sample who had lower than Average Range self-concept totals (approximately 23%), a fact that is not incongruent with the hypothesis that self-concept is a major factor in psychological well-being (Craven and Marsh, 2008).

Overall psychological well-being of both comparison groups in the current study also seemed reasonably similar, as measured by the P-H 2 mean Total score; the two comparison groups had very similar results. Approximately 75% of the district high

school students had scores within the Average or above ranges, while this figure was 78% for the Governor's School students. Therefore, neither of the two educational settings (Governor's Schools and district high schools) appeared to negatively affect overall psychological perceptions of well-being and domain mean scores. This is a finding consistent with the estimates of perceptions of psychological well-being obtained for advanced students using a different measure by Jin and Moon (2006).

Goal valuation and motivation/self-regulation.

Other indicators of psychological strength that support superior academic outcomes are the valuing of academic goals, motivation, and self-regulation skills (McCoach & Siegle, 2003a). Life purpose and autonomy are two of six dimensions of psychological well-being according to Ryff (1989). These personal characteristics are related. For example, goals affect motivation, which in turn has an impact on self-regulatory skills. Those with strong skills in these areas function autonomously and actively engage in learning and academic goal attainment (McCoach & Siegle, 2003b).

Results of the SAAS-R for the current total sample for the academic goal valuation (GV) subscale within the district high school setting did not differ significantly from a group of SAAS-R achieving gifted students in one study (McCoach & Siegle, 2003b). This finding suggested a reasonable level of psychological strength in this particular area for the district high school students, based on evidence that the gifted achievers in this past study were competent, goal-oriented, and successful in school, and are assumed by this researcher to have been psychologically healthy overall. The finding also confirmed that giftedness or high achievement did not negatively affect goal

valuation in the current sample. However, motivation/self-regulation within the district high school settings was significantly lower for the total sample than for the gifted achiever sample, although the effect size was within the small range. This raises the question that this school setting may have negatively affected this personal factor in the current study. However, once again, the greater size of the Governor's School sample compared to the district high school sample probably significantly influenced these results for the total sample, as the findings suggested that the Governor's School students on average revealed relatively lower motivation/self-regulation mean scores within their district high schools than the gifted achievers in the McCoach and Siegle (2003b) study. In addition, when they contemplated their regular high schools, they saw themselves as significantly less motivated than when they were in the Governor's Schools. However, the results of paired *t*-tests suggested that the Governor's School students equally valued academic achievement in the Governor's Schools and high school settings. The district high school students, on the other hand, revealed relatively equal motivation/self-regulation and academic goal valuation to the gifted achievers (McCoach & Siegle, 2003b).

For the Governor's School group within the Governor's School setting, mean subscale scores were significantly higher than for the gifted achiever comparison group for both academic goal valuation and motivation/self-regulation. These described results suggest a self-image of psychological strength in these two areas of well-being for the district high school students and for Governor's School students when they were

in the Governor's School setting. However, the lowered motivation of Governor's School students within their district high schools is one area of concern.

Popularity and social development.

Some researchers see overall strengths in social development of academically advanced students (Sayler & Brookshire, 1993). However, as with most other individual characteristics, there is much diversity among the gifted population. Peer relationships have been shown to cause difficulties for some gifted students. Some have weak social skills, some view their talents as a social stigma or handicap, and some are bullied for their differences (Coleman & Cross, 1988; Cross et al., 1991; Cross & Coleman, 1993; Hoogeveen et al., 2009 Janos et al., 1985; Swiatek, 1995). In the current study, overall, the total sample was very positive about their social relationships. However, there were some areas of social stress expressed by some of the students.

As mentioned earlier, the Popularity (POP) domain mean scores of the P-H 2 display no area of concern for the total sample, and were significantly stronger for the 17 to 18 year old age group than for the Piers-Harris 2 standardization group. In addition, the POP domain mean scores for the Governor's School and district high school students were similar and did not reveal overall difficulties for these students. A frequency analysis for two of the assessment items that are a part of the POP domain was also conducted. These were Items #1 ("People pick on me.") and #47 ("My classmates make fun of me."). Sixteen percent of the total sample endorsed Item #1, and 17% endorsed Item #47. These results did not appear to indicate an extensive degree of concern for the total sample, although some students faced difficulties that

should be addressed. However, concerns may be raised by the results of an analysis by school type and gender, as summarized in the Gender Similarities and Differences section below.

Intellectual and academic self-perceptions.

Results for the Intellectual and School Status (INT) domain of the P-H 2 suggest overall strength in this area of self-concept, which encompasses belief in one's intellectual capacity not only in school but in other areas of life, as well. The mean INT score for the total sample by age group did not differ from that of the standardization groups for 15 to 16 year olds and the 17 to 18 year olds.

However, when one looks at academic self-perception specifically, utilizing the Academic Self-Perception (ASP) subscale of the SAAS-R, some interesting patterns emerge. For the total sample for district high school ASP mean scores, a significant difference was found in comparison with the gifted achiever mean score found by McCoach and Siegle (2003b), with the current sample achieving a significantly higher mean ASP subscale score.

However, the Governor's School students had a significantly lower ASP mean score for the Governor's School setting than did the McCoach and Siegle (2003b) gifted achievers for their regular high school settings. However, this Governor's School ASP mean score was statistically similar to the mean ASP score for the district high school students. In addition, the Governor's School students achieved a significantly lower

mean ASP score for their Governor's Schools than for their district high schools (effect size $-.93$ – large range). The mean ASP score for their district high schools was also significantly higher than the McCoach and Siegle (2003b) gifted achiever mean ASP score, and also significantly higher than that of the district high school students (with a large effect size of $-.82$).

In contrast, the district high school students achieved a significantly lower mean ASP score than did the gifted achiever group of McCoach and Siegle (2003b). For the current study, in short, in one setting (the district high school) one group of advanced learners felt diminished in academic ability and the other group (the Governor's School students) felt significantly more confident. These district high school achievers were even less confident of their abilities than were the gifted high school students in a national sample. This leads to contemplation of endogenous and/or exogenous factors within the schools or elsewhere that may have contributed to their lowered academic self-concept.

The Big Fish Little Pond Effect (BFLPE), which postulates heightened academic self-concept in less demanding classes serving more typical students, and lowered academic self-perception in challenging school settings with advanced peers, is based on reference group and social comparison theory (Zeider & Schleyer, 2002). Some investigators have found lowered ASP to be associated with selection of less challenging high school courses, lowered grades, and less challenging aspirations (Marsh, 1991).

The current results suggest that lowered academic self-concept, the foundation of the BFLPE proposed by Marsh (Marsh & Parker, 1984), may be operative for Governor's School students in these special off-site educational settings (the Governor's Schools), and for district high school students within their advanced classes in their home high schools. These findings are supportive of the results of a number of previous studies, particularly those involving high school students (Coleman & Fults, 1985; Gibbons et al., 1994; Marsh, 1991; Marsh, 1993; Marsh & Hau, 2003; Marsh & Parker, 1984; Wright & Leroux, 1997; Zeidner & Schleyer, 1999).

It is of particular interest that the Governor's School students experienced academic self-concept mean scores in the district high school setting, but that this self-evaluation of strong academic capabilities did not generalize from this educational context to the Governor's School setting. Academic self-perception appeared strongly dependent on the context of the specific educational setting. This outcome supports previous evidence that educational placement has a direct effect on the personal factor of perceived academic competence (Marsh, 1993; Marsh & Hau, 2003). Likewise, the district high school students experienced the BFLPE within their advanced courses, in that, on average, they experienced lowered academic self-perception. This aspect of the BFLPE perhaps should be denoted the Little Fish Big Pond Effect. In support of social comparison theory, these students, who remained full-time in the district high schools, may have unrealistically reduced their academic self-confidence by comparing themselves to the Governor's School students and/or to other highly advanced peers in these home high school advanced classes.

It is especially noteworthy that academic self-concept appears to be changeable between two educational contexts within any given school day. Although the Governor's School students had the highest mean ASP scores of the total sample (when in the district high school setting), they also had the lowest ASP mean for the study, which was in the Governor's School setting. However, it may also be important to observe that even though their academic self-esteem was undermined in the Governor's Schools, the Governor's School students' school satisfaction (as measured by the SAAS-R attitudes toward teachers (ATT) and attitudes toward school (ATS) mean scores) indicated a preference for the Governor's School setting over the district high school setting.

Anxiety and dysphoria.

Some researchers and practitioners are concerned about lowered self-esteem and reduced academic self-concept due to their possible link to depression, and other maladaptive behaviors (Bénony et al., 2007). Although the current sample achieved a Freedom From Anxiety (FRE) domain mean score significantly higher than that achieved by the P-H 2 standardization sample for ages 17 and 18, and the 15 to 16 year olds achieved a mean FRE score similar to that of the standardization group, there are some concerns raised by possible signs of anxiety expressed in the sample's responses to individual P-H 2 items within the FRE domain.

The FRE domain measures not only possible indicators of anxiety but also signs of unhappiness or dysphoric mood. While 15% of the total sample indicated frequent sadness, and 8% endorsed unhappiness, 25% indicated nervousness when called on in class, 45% responded that they are worried about tests, and, of greatest concern, 29%

of the students indicated overall nervousness and 58% indicated that they experience substantial worry, in general. These are indicators that possibly a large number of advanced students experience psychological stressors that could eventually contribute to anxiety or mood disorders. In addition, there is evidence that significant worry can be associated with reduced cognitive functioning (Malpass et al., 1999).

Although, overall, the current sample appears confident of their emotional competence, as indicated by their strong FRE domain mean score, the finding that substantial worry is experienced by a number of subjects is consistent with the findings of two Canadian studies that indicated increased anxiety in the gifted, particularly for females (Forsyth, 1987), and in teenaged advanced students (Tong and & Yewchuk, 1996).

School attitudes and satisfaction of advanced students.

School and class work satisfaction is associated with academic engagement and success (Csikszentmihalyi et al., 1997; Davis & Lease, 2007; Elmore & Huebner, 2010; McCoach & Siegle, 2003a). Compared with the gifted achievers (McCoach & Siegle, 2003b), the current district high school students achieved similar Attitudes toward Teachers (ATT) and Attitudes toward School (ATS) mean scores when considering their district high schools, suggesting similar educational fit for these two groups.

However, the findings suggest that the Governor's School students were significantly more satisfied with the Governor's Schools than the McCoach and Siegle (2003b) gifted achievers were with their educational settings (as reflected by their ATT

and ATS subscale mean scores), and significantly less satisfied with their district high schools than the gifted achievers were with their high schools. Furthermore, the current results suggest that Governor's School students were significantly more satisfied with the Governor's Schools and the courses in these settings than they were with their home high schools and the classes there. They were also significantly more satisfied with the Governor's Schools classes and teachers than the district high school students were with their courses, although overall, approximately equal satisfaction with the district high schools was revealed between these two groups of students. These findings suggest that the special classes in the Governor's Schools may be more satisfying for some advanced learners than classes in regular district high schools.

Relationships between self-concept and school attitudes.

Statistically significant positive relationships were confirmed in the current study between the global estimate of self-worth for the total sample (the P-H 2 total mean score) and all five of the SAAS-R subscale scores for the district high school setting, ASP, ATT, ATS, GV, and MOT/S-R. These findings suggest positive associations between global self-concept and academic self-perception, between global self-worth and motivation/self-regulation, and between global self-worth and academic goal valuation. They also indicate that for this sample there was a positive relationship between total self-concept and school satisfaction (as estimated by attitudes toward teachers and classes as well as attitudes toward school).

For P-H 2 mean domain scores, and district high school mean scores, several moderate level positive relationships were found. Moderate associations between INT

and ASP, GV, and MOT-S-R were uncovered, as well as moderate positive associations between BEH and ATT, GV, and MOT-SR. These findings reveal that an advanced high school student's belief in her or his own overall intelligence may be related to motivation and academic value strength, and that attitude toward teachers and courses may be associated with a student's perceptions of one's "good" and "bad" behaviors.

When the relationships between the Total P-H 2 mean scores and the SAAS-R subscale mean scores for the two comparison groups were analyzed, some differences between the district high school participants' and the Governor's School students' views of their home high schools emerged, suggesting that school setting or educational fit influence the associations between self-esteem, attitudes toward school, and personal characteristics such as motivation and goal valuation for advanced high school students. Large positive correlations were found for the district high school sample between the global self-worth P-H 2 Total mean score and ASP ($r = .57$), ATT ($r = .57$), and MOT/S-R ($r = .50$). There was also a moderate strength correlation for ATS ($r = .40$). These results suggest that global self-concept is strongly related not only to academic self-perception and motivation/self-regulation, but to satisfaction with teachers and classes for these students who remain in their home high schools. However, for the Governor's School students, these positive relationships with the overall self-concept P-H 2 Total mean score were found to be of small strength ($r < .30$) in the district high school setting.

In contrast, within the Governor's Schools, ASP ($r = .37$), ATT ($r = .36$), and ATS ($r = .34$) were moderately related to Total P-H 2. The implication is that perception of

academic strength within the Governor's School setting had a moderate association (and perhaps influence on) overall feelings of self-worth, while academic self-concept within their district high school classes had a weak although still positive effect. Satisfaction with the Governor's School appeared to have a moderate association with total self-concept in that location, but a weak relationship with self-esteem for Governor's Students within their home high schools. One hypothesis is that strong connection to and satisfaction with the Governor's Schools may have strengthened these relationships between personal factors and self-esteem in this setting.

One could speculate that for many student participants, lowered academic self-concept may have affected overall self-esteem to some degree. ASP was lowered for the district high school students in their home high schools as well as for Governor's School students in the Governor's School setting. This may have emerged as the frequent symptoms of worry, nervousness, and stress revealed by the P-H 2 item analysis, even though overall self-concept appeared to be adequate for most participants.

When ATT and ATS (school satisfaction) mean scores were analyzed in relationship to the P-H 2 domain mean scores of particular interest in this study: FRE, POP, and overall HAP, differences were once again found between the district high school sample and the Governor's School students. For the district high school students, there were moderate strength positive relationships between ATT and FRE ($r = .37$) and ATT and POP ($r = .40$). There was also a moderate relationship between ATS and POP

($r = .46$). HAP and ATT also correlated to a positive but low level ($r = .28$). These findings suggest that school satisfaction was associated with the personal characteristics of anxiety level and mood, as well as with popularity for this population. It should also be noted that FRE was also significantly related to POP and to HAP.

For the Governor's School students in their district high school and Governor's School settings, no moderate strength or strong relationships were uncovered between these P-H 2 and SAAS-R factors. POP was related only to a small extent to ATT and ATS. Likewise, FRE was positively related to ATS, and HAP was positively related to ATT and ATS; however, only low level correlations were found. Once again, FRE was also significantly related to POP and to HAP.

Relationships between academic achievement (grade point average), global self-concept, and dimensions of self-perception.

Ninety-one percent of the total sample reported that they achieved GPAs of 3.25 or higher (more Bs than As to All As). Within the Governor's School setting, higher grades were positively and significantly related to ASP and to ATS. The relationship to ASP was in the moderate range, while the relationship to ATS was in the low range.

For the Governor's School students and the district high school samples within the high school setting, ASP was positively related to higher grades ($r = .51$ for the high school students, and $r = .43$ for the Governor's School students). Total P-H 2 was moderately related to GPA for the district high school students ($r = .43$), but unrelated to district high school GPA for the Governor's School students.

Gender similarities and differences.

Global self-concept as measured by Total P-H 2 mean scores were similar for boys and girls in the total sample, as were P-H 2 domain scores. However, females were significantly weaker for the FRE domain, suggesting higher levels of anxiety and/or concerns with mood. There were no significant differences for either gender between Total P-H 2 mean scores and those of the gender means for the P-H 2 standardization samples. For school satisfaction (ATT and ATS), males and females had similar district high school SAAS-R mean scores within the total sample. However, the GV and MOT/S-R mean scores were significantly higher for the female students, and their ASP mean score was significantly lower. In the Governor's School setting, male and female students had similar mean ASP, ATT, and ATS scores, but, once again, the girls' GV and MOT/S-R mean scores significantly exceeded those of the males.

In order to examine possible differences between the genders in feelings of being picked on, frequency counts were calculated for two P-H 2 items - # 1: "My classmates make fun of me," and # 47: "People pick on me." Twenty-six percent of the district high school boys and 22% of the Governor's School boys endorsed Item #1. These figures were 14% for the high school females, and 15% for the Governor's School girls. Twenty-one percent of the district high school boys endorsed Item #47. For Item # 47 this figure was 17% for the Governor's School males and the Governor's School girls, but only 6% for the high school girls.

Regarding generalized significant worry (Item #29), the girls expressed substantially greater frequency: 75% of the district high school girls and 65% of the

Governor's School girls endorsed this item. This figure was 42% for the high school boys and 41% for the Governor's School boys. Girls also had the highest percentages for worry when the called on by the teacher (Item #7): 25% for the high school girls and 30% for the Governor's School girls. These figures were 21% for the high school boys and 16% for the Governor's School boys. Worry about tests was quite high for both sexes: 26% for high school boys and 58% for the high school girls. These figures were 47% for Governor's School boys, with 44% for Governor's School girls.

General nervousness figures were relatively similar for boys and girls: 32% for high school boys, 33% for high school girls, 25% for Governor's school males, and 27% for Governor's School girls. Feelings of being left out were also roughly similar for these four groups (Item #32): 26% for high school boys, 31% for high school girls, 32% for Governors' School boys, and 36% for the Governor's School girls.

For the total sample of male students in the district high school setting, the Total P-H 2 mean score was positively and moderately related to ASP, ATT, ATS, GV, and MOT/S. In short, for the male students, all school attitude and satisfaction mean scores, as well as goal valuation and motivation/self-regulation scores, were shown to be moderately associated with global self-concept or an overall sense of well-being. For the females in the district high school setting, small range positive relationships were found between the P-H 2 Total and ASP, ATT, ATS, and MOT/S-R. Overall, total self-concept was positively related to school satisfaction but this was a weaker relationship for female participants.

For the Governor's Schools, boys achieved a positive moderate strength correlation between the P-H 2 Total for MOT/S-R, and small range associations between the P-H 2 Total mean score and ASP, ATT, and GV. The Governor's School females achieved moderate range positive correlations between total self-esteem and school satisfaction (ATT and ATS), as well as for total self-concept with ASP. However, analyses yielded no significant correlations for the P-H 2 Total mean score and goal valuation nor for the motivation/self-regulation mean score.

Conclusions

It is important to acknowledge the social-emotional strengths of gifted and advanced students. For the current total sample, self-report of overall psychological well-being and dimensions of self-concept indicated strengths which were similar to those of more typical high school students. There were no significant differences in mean scores between the two groups in this study, academically advanced students in half-day Governor's Schools and in district high schools. These findings lend some support to the view that advanced academic ability and educational placement in advanced classes have positive effects on the psychological well-being of advanced learners, or, at the minimum, do not seem to diminish global mental health at the high school level.

Another marker of student well-being, academic goal valuation, was adequate to strong for both comparison groups. Motivation/Self-Regulation was somewhat weaker for the Governor's School students in the district high school setting as compared to the Governor's School locations. In the Governor's School setting, GV and MOT/S-R were

significantly stronger than for a comparison group of gifted achievers (McCoach & Siegle, 2003b), and significantly stronger than for the current study's district high school students, suggesting the possible positive impact of the Governor's Schools on these variables.

These current findings are congruent with the findings of the majority of past studies of the self-concepts of gifted students, suggesting positive to strong psychological adjustment for gifted students. However, areas of concern were raised by the current results, within two of the P-H 2 domains, the FRE and INT domains.

Regarding the FRE domain P-H 2 scores, as noted above, overall strengths in lack of anxiety and dysphoria were noted for the total sample. However, this domain measures not only anxiety but also sadness, shyness, and self-acceptance. Endorsement of some individual P-H 2 items in several domains raised concerns about anxiety, stress, feeling different, and nervousness. Depending on school setting and gender, from 26% to 36% of the total sample indicated feeling left out; 87% indicated feeling different. Frequent general worry was noted by 42% of high school boys, 41% of Governor's School males, 75% of high school girls, and 65% of Governor's School female students.

In addition, there was some concern about feeling picked on at school, reported, in particular by the district high school males (21%), and also by about 17% of the Governor's School boys and girls, but by only 6% of the high school girls. Being made fun of by classmates seemed a greater concern of the males than the females, and was reported by 26% of the district high school boys and 22% of the Governor's School boys.

The possibility of bullying remains a concern, particularly as gifted students make up a unique student sub-population.

These results suggest that there may be an interaction between educational setting or fit and psychological well-being in the area of anxiety, and highlight the possibility that anxiety in the form of worry, nervousness, and stress may be high for academically advanced teenagers. However, the current study did not measure anxiety directly as a singular entity, and students were not queried about the source(s) of worry. The current investigator's hypotheses are tentative, and the findings are inconclusive.

The SAAS-R results suggest that the Governor's School students were significantly more satisfied with the Governor's Schools than the district high school students were with their home schools. The Governor's School students were also significantly more satisfied, on average, with the Governor's Schools than they were when rating the district high schools, and had significantly higher MOT/S-R mean scores for the Governor's School setting.

The findings demonstrated that in the high school setting for the total sample, overall self-concept (as measured by the Piers-Harris 2 Total score) was positively and significantly related to all five of the personal attitude factors measured by the SAAS-R, including ASP, GV, MOT/S-R, ATT, and ATS.

For the district high school students, larger positive correlations were found between global self-worth score and academic self-concept, motivation/self-regulation, and attitudes toward teachers and classes. A moderate positive association was found

for total self-concept with attitudes toward school. Goal valuation was not related to global self-esteem. For Governor's School students in their district high schools, on the other hand, these relationships were positive but in the small range, and included goal valuation.

In addition, for district high school students, school satisfaction (ATT and ATS) was positively associated with Popularity, as well, pointing to social relationships being important for school satisfaction. Also, ATT was positively related to FRE. For the Governor's School students, these associations were weaker for the home high school setting and well as for the Governor's School setting. Educational setting or fit appeared to influence the relationships between global self-concept, school attitudes, and personal characteristics, such as the valuing of academic goals and motivational levels.

There were some concerns about gender differences in responses in the current study. It should be noted that the four Governor's Schools in the current study focus on science, mathematics, and technology. Historically, as these are fields and courses in which females have been under-represented, school attitudes and self-concept may vary for the females in this study from those of advanced students in humanities-focused educational settings. In the Governor's Schools, female and male participants had similar mean ASP, ATT, and ATS scores. However, the girls demonstrated higher goal valuation and motivation/self-regulation school attitudes.

It appears that concerns raised by a number of researchers over the years about possible heightened anxiety levels for gifted females as compared to males were

partially confirmed by the current study. However, global self-concept means did not differ significantly for the current sample. For the total sample, it was found that the FRE mean score was significantly weaker for females, a finding consistent with predictions of Piers and Herzberg (2002).

Other P-H 2 domain mean scores did not differ significantly by gender. As noted earlier, there were concerns raised for some individual P-H 2 items. As noted earlier, of particular concern, it was found that 75% of the district high school girls and 65% of the Governor's School female students reported frequent worry, and 58% of the district high school girls reported worry about tests. The current results also raise concerns about the well-being of male students, as boys, as well, reported relatively high frequencies for these factors. Approximately 25% to over 30% of both the male and the female samples reported general nervousness. More boys than girls reported that their peers make fun of them. Motivation, self-regulation skills, and valuing of academic goals were found to be stronger for the girls than the boys in both educational settings.

For the total sample for district high school scores, for the males, positive relationships were found between global self-concept and attitudes toward school, as well as between global self-concept and motivation/self-regulation. There were also positive relationships between overall self-concept and academic self-concept, satisfaction with teachers and classes, and goal valuation. For the girls, academic self-concept and attitudes toward teachers and classes were found to be positively associated with global self-esteem. However, attitudes toward school and

motivation/self-regulation were found to have smaller positive correlations, and goal valuation did not yield a significant correlation.

For the Governor's Schools SAAS-R mean scores for males, positive correlations were found between total self-concept, academic self-concept, attitudes toward teachers and classes, and academic goal valuation. A positive correlation also emerged between total self-concept and motivation/self-regulation. For the girls in the Governor's Schools, positive associations were found between total self-esteem and three SAAS-R subscales: academic self-perception, attitudes toward teachers and classes, and attitudes toward school. Researchers and practitioners are wise to keep in mind concerns about anxiety indicators, as well as possible strong to moderate relationships between some personal factors, school satisfaction attitudes, and perceptions of overall psychological well-being for advanced students of both genders.

Additional analyses were conducted to examine the possible relationship between academic achievement (grades), well-being, and school satisfaction. In the Governors' School setting, higher self-reported GPA was associated positively with school satisfaction (ATS) and academic self-concept, but not significantly related to overall self-esteem. In the district high schools, academic self-concept was positively associated with GPA. For the district high school students only, GPA was also related to Total P-H 2. These results highlight the importance of the relationship between feelings of academic self-worth and confidence and grades at the high school level for advanced

students, and the possible relationship of overall self-esteem with self-reported GPA for teenagers who remain in regular high schools.

Overall, the current study lends support to the conceptual model proposed by Neihart (1999) that personal characteristics, educational fit, and giftedness type interact to influence the level of psychological well-being of advanced students. A discussion of the implications for practice and additional research follow.

Implications for Practice

Students appear more motivated toward academic talent development in schools where they feel the educators and staff appreciate and care about them, where they are challenged and not bored, and where they feel there is a good match with their abilities and interests. The current findings suggest school satisfaction can remain strong even in settings where academic self-concept drops and stress rises, such as Governor's Schools. However, it is important to acknowledge this common drop in self-concept and to discuss and address it with teachers, students, and parents.

Marsh (1991) suggests that academic aspirations are strongly affected by academic self-perceptions and is somewhat optimistic that academic self-concept of advanced students in homogeneous educational settings can be improved through interventions in schools, such as reducing the competitive nature of classrooms and classwork, employing cooperative learning strategies, and reminding students of their abilities in comparison with the broader population as well as their identification as highly able students.

Counseling programs that target specific aspects of self-concept can be effective according to a recent meta-analysis and multidimensional construct validation (O'Mara et al., 2006). Social self-concept and social skills of gifted students are also amenable to improvement (Rin, 2006). The National Association of School Psychologists has published research-based information on building optimistic attitudes in children. Cognitive strategies are available and appropriate for all students that can help change negative "self-talk" about school-related self-esteem and academic self-confidence, and that encourage more accurate self-perceptions of their own skills and overall competence (Molony & Henwood, 2010a).

Certainly, counseling should be provided to all advanced students and their families to help them understand giftedness, to help them adjust to their differentness from the more typical school population while accepting that their differences do not make them better or less worthy than others. Counseling is needed to help gifted students understand their intensity and sensitivities, and determine the causes of any extensive worry or anxiety, and, in some cases, dysphoric mood. They must cope with intense schedules and high-stakes testing, and benefit from appropriate stress and anxiety management techniques. In addition, advanced pupils need assistance in developing academic, career, and avocational goals – decisions that are made more complex by their high-level talents and intellectual gifts, and the common presence of multiple talents. Adults should also be mindful of the possibly strong correlations between freedom from anxiety and dysphoria, popularity, and happiness for advanced students, as quality of life as well as talent development may be affected.

Because the gifted have unique educational needs, and advanced students also often have unique psychological characteristics, counseling for the gifted must be conducted by professionals well-trained to work with this student population and their parents (Schuler, 2003). Gender differences in self-concept, anxiety or dysphoria, motivation, self-regulation, and goal valuation should be addressed with advanced students, educators and parents. Interventions to help bolster motivation and to address the pertinence and value of academics with the males, in particular, in all academic settings (e.g., district high schools) may be necessary for some individuals. Students may need assistance in realizing that they can act autonomously to improve their own learning. Counselors and teachers can help students discover and adopt strategies to enhance their own unique talents. They can also assist gifted adolescents to resolve existential depression (Webb et al., 2005).

The training programs for school counselors and teachers working with talented students should include strong elements addressing in the needs, characteristics, and unique issues of advanced students (Peterson, 2006). Minority gifted students need special attention, as do gifted females, who face societal pressures that create possible role conflicts, and who often navigate complex career and family paths. As affective support from peers is also related to academic motivation, task engagement, and life satisfaction (Shin et al., 2007), programs should include cooperative learning experiences and opportunities to build friendships.

One of several successful programs for counseling gifted adolescents is *Talk With Teens about Self and Stress* (Peterson, 1993). It is recommended for use by centers of gifted education and other educational and counseling organizations, in addition to public school counselors, social workers, and school psychologists. Fifty discussion topics are provided in the manual with explicit directions for conducting each session. Typically, the group leader is free to select and rearrange session topics based on the needs of the group. Another valuable publication that can serve as the foundation for parent and educator groups is *Peak Performance for Smart Kids – Strategies and Tips for Ensuring School Success* (Neihart, 2008). It focuses on techniques to challenge academically advanced children without overwhelming them, understanding and managing emotions, how to help gifted students meet the need all humans have for social belonging and connection, passion identification and goal setting, dealing productively with anxiety and stressful experiences, and learned optimism and perseverance.

It should be noted that this study also supported previous findings of the relationship between self-concept and academic achievement, as reflected in self-reported GPA. Administrators and policy makers are advised to examine the affective climates and the learning cultures found in various educational settings, and to continue their work to build communities of learners in which students of all ability levels feel a sense of belonging and pride in their accomplishments, and in which they can trust that their academic and basic socio-emotional needs will be met.

Implications for Research

This study is a preliminary exploration of the model presented by Neihart (1999) that suggests the level of psychological adjustment depends on interactions between psychological characteristics, educational fit, and level and type of giftedness. Although simple exploratory correlations were a part of the current study, additional research is needed on the interactions between these factors.

Research is also needed to that separates the anxiety factor more clearly from other aspects of self-concept, as the instrument used in the current study, the Piers-Harris 2 does includes others aspects of dysphoria such as sadness within this dimension. Separate instruments for anxiety could yield more definitive indications of this construct and the level of function or dysfunction. The question still remains as to whether anxiety is heightened for gifted teenagers as compared to more typical students. Anxiety may be heightened by the lowered academic self-concept of gifted students that appears quite prevalent in homogeneous educational settings. Academic self-concept was also found to be related to global self-concept. Research that specifically targets anxiety, worry, and nervousness and their possible relationships with academic self-perception and overall psychological well-being is recommended. Studies evaluating various interventions to reduce anxiety in intellectually-able adolescents would have practical applications.

The factors behind heightened satisfaction with courses and placement in Governor's School and lowered satisfaction for these same students with the district high school setting should be explored qualitatively through interviews with students,

educators, and parents. Qualitative studies are also recommended that attempt to identify the causes of substantial worry and stress identified in this study for students taking advanced classes in the regular high school and also for advanced students enrolled in special schools. Interviews and focus groups with gifted students and their educators and parents are needed to shed light on sources of heightened worry and to explore the possible relationships between worry, anxiety, and stress, and how these factors may affect academic and career aspirations. Home, community, economic, gender, and racial factors that may contribute to anxiety and lowered self-esteem, and school factors that may reduce academic motivation and academic self-esteem, require further research. Additional longitudinal studies are also necessary to look at development of self-concept and psychological adjustment in the gifted over the age span from early childhood to early adulthood.

The relationship between anxiety and reduced academic self-concept should be explored, as well. It is also important to discover the reasons behind reduced academic self-concepts of Governor's School students in that setting and of district high school students in advanced classes. The relationship between self-concept and self-efficacy needs further clarification through research, as well. Academic self-concept and self-efficacy are now viewed as multi-dimensional. There are various domains within academic self-concept, such as mathematics and writing skill self-concept. These dimensions should be examined in the gifted population in various educational placements. Another question was raised by the finding of no significant relationship for the Governor's School students between overall self-concept and self-reported grades.

This finding calls for further research with larger samples and additional special school settings.

It may be that some or many of the endogenous personal characteristics frequently seen in gifted individuals, such as perfectionism, intensity, over-excitabilities, internal conflicts about gender roles and multiple career choices, the imposter syndrome, and an augmented sense of social justice, have combined with environmental factors, such as heightened economic concerns, the ongoing war on terror, and economic pressures, to create heightened anxiety and worry. These possibilities and others deserve exploration, as they may significantly impact the well-being of gifted youth and the development of their talents. Their feelings of differentness, and their relatively frequent reports of being picked on or teased by others, need further investigation and point to the need for education about giftedness and counseling for the entire gifted population.

One difficulty with the current study was that use of a convenience sample of volunteers may have led to a self-selected sample that was not representative of the larger gifted or academically advanced population. The fact that the investigator administered the assessment instruments to a number of the district high school students may also have confounded the results. In addition, the small size of the district high school sample may have led to difficulties in determining the influence of type of school setting on psychological well-being. It may also be true that differences found between the two major groups in the current study can be attributed in the main to

inherent psychological differences between students who enroll in Governor's Schools and those who remain in their home high schools full time, rather than to differences in the settings. This is a limitation of causal comparative research. However, as life satisfaction has been shown to be related positively with self-concept (Huebner & Alderman, 1992; Leung & Leung, 1992), it is important for researchers to continue to address the psychological impact of educational fit in different settings, and the reasons behind school satisfaction and dissatisfaction. The interaction of multiple factors warrants further exploration.

One specific research area deserving more attention is the interaction of educational setting and school satisfaction with psychological types, as determined by the Myers-Briggs Type Indicator, that are more prevalent in gifted adolescents than in the general population. For example, introverted, perceiving, and intuitive types occurred with greater frequencies for gifted high school students in a study by Sak (2004). Smaller communities and calmer settings which feature flexible learning and assessment approaches may be found to be more satisfying for many high ability students.

Larger studies may better pinpoint specific differences in the impact of setting and placement on self-concept and school attitudes. Specific factors that lead to lowered academic self-concept in advanced classes need further exploration, as social comparison may be just one of several major influences within the classroom, and lowered academic ability self-perceptions may be associated with lowered aspirations

(Alwin & Alto, 1977; Marsh, 1991). Although the gifted appear in many ways to be healthier psychologically than more typical students, as Martin et al. (2010) point out, contemporary large scale studies are needed that address anxiety, depression, and other mental health conditions among gifted students and compare gifted with non-gifted youth.

From the standpoint of methodology, the score ranges for some of the SAAS-R and Piers-Harris 2 subscales were restricted in the current study, and significant negative skewness and leptokurtosis occurred for some scores. These factors have implications for future research. In spite of possible similar limitations in future research, the SAAS-R was designed for use with academically advanced adolescent students, is reliable and valid, and it can be used with confidence to measure attitudes toward teachers and the school, academic self-confidence, the valuing of academic goals, motivation and self-regulation skills in the gifted population.

There is also a need for more comprehensive assessment instruments that look specifically at factors of psychological well-being rather than focusing primarily on pathology. Assessment of strengths highlighted by positive psychology, such as courage and perseverance, creativity, and sound judgment would be helpful (Molony & Henwood, 2010b). In addition, it would be beneficial to have more comprehensive measures of educational fit.

Summary

It seems clear that psychological well-being is affected by educational fit and the personal characteristics of gifted students, as proposed by Neihart (1999). The findings of the current study support this conclusion. The results were also consistent with the conclusions of Neihart (1999) that when one considers overall psychological health across the elementary through high school grades, gifted students have definite cognitive and emotional strengths and appear to be at least as emotionally competent as more typical students, although some types and levels of giftedness may increase the risk for adjustment problems. In addition, anxiety and stress may be heightened by certain educational circumstances, gender, family, socio-economic, and other personal factors, as well as characteristics of giftedness.

The current study considered relationships between some personal characteristics such as school attitudes and satisfaction, and dimensions of self-concept, and how two types of school placement for academically advanced high school students may impact well-being. However, there are unique characteristics of the gifted that warrant study in relationship to educational fit and psychological well-being, as these factors are numerous and the interactions are complex.

The current study also supported earlier findings of positive connections between grades and academic self-concept, and in some cases between grades and overall self-esteem. These relationships are important as policy makers, educators, and parents work to develop the academic talents of our youth across the nation. The findings that school satisfaction is positively related to overall self-concept and/or to

intellectual self-concept, and that this relationship may be somewhat dependent on specific school settings, are important data for educators working to improve social-emotional components of their programs for academically able youth. The additional finding that academic self-concept is malleable and context-specific, and can vary for individual students between two concomitant educational settings, increases hope that researchers and practitioners can discover the causes for this variability and develop interventions to improve academic self-perception in situations in which it is lowered.

Happiness is important for optimal academic and life success (Diener, & Biswas-Diener, 2008; Huebner, 2010; Lyubomirsky, King, & Diener, 2005; Noddings, 2003), although it is not the only important component of psychological health, and it does not develop in a vacuum. Happiness and satisfaction develop as a result of successfully meeting life's challenges (Seligman, 2007). One should also acknowledge possible significant positive associations between freedom from anxiety, happiness, and popularity. Mastery of social skills and stress reduction strategies can improve happiness and satisfaction. It is the task of parents and educators of the gifted to provide rewarding challenges and to teach the skills necessary to attain mastery and success. The fostering of positive character traits including resiliency and optimism, positive growth experiences, and positive institutions is needed to improve talent development and to help the individual create a positive emotional existence (Seligman & Csikszentmihalyi, 2000).

An array of educational placement options for gifted students is necessary to meet the academic and social-emotional needs of this very diverse group of students. Financial limitations require creativity on the part of the community in meeting the needs of these future societal leaders. Partial-day special schools appear to offer a challenging yet nurturing environment for advanced teenagers that allows them the benefits of a community of gifted learners and experienced teachers of the gifted, yet also provides them with the daily opportunity to reap the benefits of interaction with students who have a variety of abilities, talent levels, and “gifts” within their home high schools.

There is a recent trend toward the identification on college campuses of greater numbers of students with serious psychological problems. According to the National Survey of Counseling Center Directors (Gallagher, 2009), almost 94% of counseling center directors reported that this trend is continuing. Substantial percentages of directors also reported increases in more moderate psychological, substance abuse, and sexual assault concerns (Gallagher, 2009). These issues not only decrease the quality of life but can also negatively affect academic success at the college level as well as career success later on. The problems of academically-oriented young adults usually have their roots earlier in the teen years or before, making it imperative for parents, counselors, and educational providers at all levels of schooling to concentrate on developing supports for psychological well-being.

Appendix A

Table of Specifications

Research Strand	Researchers	Key Findings
Psychological Well-Being	Gagné (1965)	Intrapersonal and environment catalysts are important in talent development.
	Diener (1984)	Psychological well-being includes levels of happiness, life satisfaction, and positive affect.
	Knuver and Brandsma (1993)	For classroom engagement, the student must be at least reasonably comfortable within him/herself and with the immediate environment.
	Huebner and Dew (1996) McCullough et al. (2000) Huebner (2010)	Subjective well-being in children and adolescents composed of inter-related factors: overall life satisfaction, and positive and negative affect. Happiness improves learning experiences.
	Cross (1997)	We should view gifted as children first. Competition in schools can spark perfectionism. Some gifted have negative self-perceptions.
	Neihart (1999)	Giftedness affects factors of psychological well-being: "synergy of type and level of giftedness, personal factors, and "educational fit."

	Renzulli and Park (2000)	18% to 25% of students dropping out of school are gifted.
	Olszewski-Kubilius (2000)	Creativity requires anxiety-coping mechanisms, and the ability to comfortably work alone. Creativity meets emotional needs.
	Plucker and Stocking (2001)	Gifted in summer program – healthy psychologically. No gender or grade differences. However, African-Americans and Hispanic students scored higher on worry and self-blame scales and on seeking spiritual support.
	Robinson et al. (2002)	Bright third graders who had been in Head Start were at the top of the class in adjustment. (From low-income backgrounds.)
	Isen (2004)	Positive emotions improve cognitive processes.
	Zins et al. (2004)	Science has linked social and emotional learning to school achievement.
	Lyubomirsky et al. (2005)	Meta-analysis of 225 studies. Happiness leads to success.
	Immordino-Yang and Damasio (2007)	Affect comes first, then learning.
	Craven and Marsh (2008)	Self-concept is a major factor in psychological well-being.
	National Institute of Mental Health (2008)	26.2% of Americans 18 and older estimated to have mental disorders. 6% have significant mental disorders.
	Peterson (2009)	There are positive and negative outcomes for giftedness. Overall,

		similar to typical children in mental health concerns. There is clinical evidence, however, of unique characteristics that could increase risk.
Psychopathology		
Anxiety	Milgram and Milgram (1976)	Gifted less anxious than control group – no gender differences.
	Dirkes (1983)	Many gifted have higher degree of affect or emotional awareness. Stress can “burden.”
	Tong and Yewchuk (1996)	Gifted high school students and females showed more anxiety than control group.[One of few studies of high school students.]
	Malpass et al. (1999)	High worry is associated with lowered cognitive performance in gifted for math achievement.
	Martin et al. (2010)	Lit. Review for past 25 years on psychopathology. Only 9 studies compared gifted and nongifted. Most studies had very small sample sizes. No recent large-scale comparison studies on anxiety, and none on depression, bipolar disorder, suicide ideation, or ADHD. Gifted may have lower depression and anxiety, but, at this point in the research history, we can't be sure.
Mood disorders	Piirto (2004)	The creatively gifted (writers and visual artists) have higher incidence of mood disorders such as depression.

	Bénony et al. (2007)	Total and academic self-esteem were lower for gifted than non-gifted, and numbers indicating depression were higher (small sample size)
Unique Characteristics and Stressors		
Sensitivity	Mendaglio (1995)	Many gifted are perceptive and fell empathy and passion. perceptive and empathetic. Feel passion.
Overexcitabilities	Dabrowski (1938)	The 5 Overexcitabilities: Intellectual, sensual, emotional, psychomotor, imaginal
	Mendaglio (2006)	Support for overexcitabilities in gifted.
	Tieso (2007)	Support for overexcitabilities in gifted.
Perfectionism	Hewitt et al. (1996)	Perfectionism can increase the risk for depression.
	Parker and Mills (1996)	Gifted did not differ from typical in incidence of perfectionism.
	Greene (2004)	Teachers see unhealthy perfectionism in gifted students, and see parents and teachers pressuring the students.
	Sak (2004)	Myers-Briggs Personality Type Indicator: gifted high school students higher in Introversion, Intuitive, Thinking, and Perceiving types.
Asynchronous Development	Silverman (1997)	Gifted have uneven development of skills, and emotional-social maturity may

		lag behind cognitive development.
Misdiagnosis and Twice- Exceptionality	Webb et al. (2005)	Some common behaviors and characteristics of the gifted can look like those of disorders. Some gifted truly have diagnosable disorders.
Significant Bullying	Cross (2001)	Rural gifted can feel a sense of community. Suburban gifted feel stereotyped and may feel ongoing "rage."
Multi-potentiality	Moon (2009)	Multipotentiality leads to time constraints and conflicts. Pressures can be overwhelming.
Extremely Gifted	Terman (1925)	Highly gifted may be better adjusted than non-gifted.
	Hollingworth (1942)	Gifted girls felt prejudices. Extremely gifted face social challenges.
	Grossberg and Cornell (1988)	In 7 to 11 year olds with IQ of 120 to 168. Intelligence was positively related to emotional health and adjustment.
	Dauber and Benbow (1990)	The modestly gifted were superior to the extremely gifted in popularity and athletic ability – as rated by peers.
Social Concerns	Austin and Draper (1981)	Gifted had strong social status, but friends are often older.
	Janos et al. (1985)	For gifted who feel different, peer relationships are more difficult.
	Schunk (1987)	Peers can have a significant positive or negative effect on

		behavior – through modeling.
	Coleman and Cross (1988) Cross et al. (1991)	Some gifted adolescents see giftedness as a social handicap and may try to hide the fact through “managing information.” Gifted use a variety of coping strategies to deal with “stigma.”
	Berndt and Keefe (1992)	Friends can have a strong influence on self-perception.
	Cross and Coleman (1993)	Gifted want “normal social interaction.” May see giftedness as a stigma and manipulate data about their giftedness to minimize it.
	Sayler and Brookshire (1993)	Gifted have better adjustment and some are very perceptive about social relationships. They have fewer behavioral problems.
	Swiatek (1995)	Gifted may cope by conforming, or denying giftedness, and may fear failure.
	Coleman (1996)	Gifted have higher sensitivity and fear rejection.
	McCallister et al. (1996)	Research shows strengths, but teachers “subjectively” see weaker social skills for gifted.
	Cross et al. (2003)	“Social milieu of school is backdrop for the meaning of experience” for elementary students in a magnet school.
	Hoogeveen et al. (2009)	High school students in the Netherlands – gifted had higher academic self-concepts but lower social self-concepts.

Self-Perceptions	Colangelo and Pflieger (1978)	Gifted adolescents were found to have higher self-concepts than non-gifted.
	Bracken (1980)	No differences were found in self-concept between gifted, typical, and French immersion students in Canada.
	Bandura (1986)	Self-efficacy is determined through modeling, verbal persuasion, physiological cues. Positive relationship with achievement.
	Bandura (1989)	The function of Human Agency within the Triadic Reciprocal Causation Model (behavior-environment-personal factors) – “cognitive, vicarious, self-reflective, and self-regulatory processes” play pivotal roles. Self-efficacy (belief in the self’s capacity to control events) is a central mechanism of human agency.
	Skaalvik and Hagtvet (1990)	Achievement and self-esteem were mediated by school-related self-concept. Studies showed a correlation of 0.4 – 0.6 between school achievement and ability self-concept. The correlation for achievement and self-esteem was 0.2 – 0.3.
	Csikszentmihalyi (1990)	Resilience and confidence can result from optimism.
	Hoge and Renzulli (1991)	Self-esteem of gifted seems similar to that of typical students. However, clinical information exists that gifted

		may have certain emotional and social difficulties.
	Hoge and Renzulli (1993)	Meta-analysis: The academic self-concepts of the gifted are stronger than for typical students, but research results vary a great deal.
	Lyon (1993)	Academic self-concept is a significant predicting factor for school achievement. As much as one third of the variance in academic achievement may be due to academic self-concept.
	Gibbons et al. (1994)	For some males, academic self-concept dropped in 3-week summer residential program for the gifted. However, it rose again after return to regular high school or original setting (200 subjects – 13 and 14 yr. olds)
	Hamachek (1995)	Self-concept and school achievement are associated and may be reciprocal.
	Harter (1999)	Self-concepts are “self judgments.” Self-concept is multi-dimensional.
	Byrne (1996)	Academic self-concept motivates subsequent academic achievement.
	Young (1997)	Self-concept has a strong significant effect on “ambitions and aspirations.”
	Marsh and Yeung (1997)	Academic self-concept predicted selection of challenging courses better than did grades achieved

		in courses ($n=246$).
	Csikszentmihalyi et al. (1997)	During work in talent area, those in the arts have higher self-esteem than those in the sciences.
	Davies and Brember (1999)	Many studies indicated a positive correlation between self-esteem and academic achievement.
	Bong and Clark (1999)	Self-efficacy leads to self-concept.
	Tieso (1999)	Culture, climate, and educational fit must meet the psychological needs of gifted students. Serious problems can arise if these needs are not met.
	Pajares and Schunk (2001)	Self-efficacy and self-concept at the same level of specificity predict achievement equally well – math self-concept and achievement were correlated at about .40 to .70. Self-efficacy (especially math) correlations were about .49 to .70.
	Pajares (2002)	Some schools have had unsuccessful programs to lift overall self-esteem through “feel good” programs, because it is skill improvement that improves self-efficacy. Correlation studies relating overall achievement with overall self-esteem have had equivocal results, because one needs to look at the dimensions of self-concept or self-efficacy and specific subject achievement rather than overall

		self-esteem to see relationships.
	Judge et al. (2002)	Self-esteem, locus of control, neuroticism, and general self-efficacy may be “markers” of the same construct.
	Bracken (2003)	Academic self-concept is also influenced by other aspects of life: family, social, and physical.
	Bong and Skaalvik (2003)	Self-efficacy is an “active precursor” of self-concept.
	Baumeister et al. (2003)	Elevated self-esteem is strongly associated with happiness. Low well-esteem is related to depression.
	El-Anzi (2005)	Optimism and self-esteem were both positively related to achievement. There was a significant negative correlation relating both anxiety and pessimism to achievement.
	Marsh et al. (2005)	Academic self-concept has a reciprocal relationship with school success.
	Marsh and Craven (2006)	Academic self-concept, but not global self-esteem, is strongly related to achievement.
	O’Mara et al. (2006)	Interventions addressing specific aspects of self-esteem have had positive results.
	Manning (2007)	Self-concept is a “consequence” of performance, rather than a cause. Self-concept is associated with success in life and school.
	Craven and Marsh (2008)	Self-concept is important for well-being and mediates level of

		educational success.
Theories of Intelligence	Dweck (2000)	Implicit theories of intelligence (entity or incremental) are more powerful predictors of “persistence and motivation” than is “confidence.”
	Ahmavaara and Houston (2007)	Educational “aspiration is directly predicted by gender, intelligence theory, and school type.” In selective schools incremental theory was related to higher aspiration (p. 613).
Effects of Educational Placement	Alwin and Otto (1977)	“School-Average Ability” was associated with aspirations for higher education and career.
	Karnes and Wherry (1981)	Gifted in different educational placements had strong self-concepts and self-esteem.
	Yadusky-Holahan and Holahan (1983)	Anxiety and depression were increased in a residential school for the gifted – 12 th graders. There was most likely a need for more social interaction.
	Marsh and Parker (1984)	Academic self-concept was shown to drop in congregated setting, due to social comparison theory -Big-Fish-Little Pond – Effect (BFLPE).
	Coleman and Fults (1985)	Gifted students have strong self-esteem, but in homogeneous classes self-concept may drop, particularly for mildly gifted.
	Field et al. (1998)	9 th graders in a program for the gifted had higher self-concept.
	Feldhusen and Saylor (1990)	Self-esteem is stronger in classes

		for gifted students.
	Feldhusen et al. (1990)	Enrichment programs have positive effect on social-emotional health of the gifted.
	Hoge and McSheffrey (1991)	Self-esteem for grades 5 through 8 for gifted was probably related to social acceptance in self-contained enrichment class.
	Marsh (1991)	Large longitudinal study (14,825 respondents) - Lowered academic self-concept was associated with higher average ability high schools. These students also had lowered grades and aspirations.
	Marsh (1993)	Similar results as in 1984 (Marsh and Parker)
	Wright and Leroux (1997)	Self-concept is a "powerful force" driving achievement for gifted teenagers in a special program. Females maintained self-scores, but males dropped and were in danger of lowering aspirations.
	Zelder and Schleyer (1999)	Gifted in segregated classes had lower self-concept than those in heterogeneous classes. They also had lower grades and higher test anxiety. (1,020 Israeli students)
	Marsh et al. (2000)	"Reflected Glory" effect of higher ability schools somewhat counterbalanced effects of lowered self-concept.
	Feldhusen and Boggess (2000)	9 residential secondary schools had more appropriate courses for the gifted and dynamic

		teachers appreciated by pupils.
	Larson (2000)	Academically able students are bored in class about 50% of the time, while regular students are bored about 1/3 of the time.
	Coleman (2001)	The peer culture in a public residential school for the gifted was found to be exceptionally positive and supportive.
	Hunter and Csikszentmihalyi (2003)	Boredom on a constant basis can lead to psychological problems in gifted students.
	Kolloff (2003)	There are several advantages to residential high schools for the talented and gifted.
	Marsh and Hau (2003)	103,558 respondents (26 countries) 15-year-olds. Results were consistent with BFLPE for academically selective schools.
	Cross et al. (2004)	Psychological development was similar for gifted teenagers in a residential program and typical. Those gifted with some problems improved over 2 years.
	Marsh (2005)	Academic self-concept was found in German students to be reciprocally related to achievement.
	Jin and Moon (2006)	Gifted students in a residential school in Korea had greater school satisfaction than gifted students in regular high schools, but not greater psychological well-being.
	Mathews and Kitchen (2007)	There is a need for a positive

		high school climate – that supports equity and the academic needs of the gifted.
	Foust et al. (2009)	AP and IB programs have advantages and disadvantages – negative feelings increased in direct relationship to increased workload.
	Olenchak (2009)	“Human beings naturally seek a place of well-being in their lives.” (p. 46). Feelings elicit cognitive processing and function in the brain.
Gender	Clance and Imes (1978)	“Imposter Syndrome” makes individuals (more women than men) feel like frauds and less competent than they really are.
	Loeb and Jay (1987)	In 9 to 12 year olds gifted girls had an advantage over gifted boys. Boys had lower self-satisfaction in physical strength and aggressiveness.
	Luftig and Nichols (1990)	Gifted boys more popular and gifted girls least popular (4 th through 8 th grade), unless the girls were physically attractive. Gifted females had lowest self-concept.
	Kline and Short (1991)	Primary school gifted girls had strong self-esteem which dropped as the girls grew older.
	Kwan (1992)	Some gifted girls are at risk for crises and anxiety. Boys are not “immune” to difficulties, though gifted.

	Kelly (1993)	Academic achievement was a stronger predictor of career self-efficacy than was gender in 9 th and 11 th graders.
	Silverman (1993)	Girls have strong social skills but may experience internal conflicts and loneliness. They can experience a conflict between social acceptance and talent development. Their self-esteem drops during adolescence. There is pressure to be physically attractive.
	Howard-Hamilton and Franks (1995)	Girls had as positive outcomes as boys for talented seniors. Girls supported androgynous roles.
	Reis (1995)	Continuing social dilemmas face gifted girls and women. The opinions of parents matter greatly to them.
	Lea-Wood and Clunies-Ross (1995)	Gifted adolescents had lower self-concept.
	Kline and Zehms (1996)	Gifted girls' self-concept dropped substantially grade 3 to 8 and grade 5 to 8.
	Callahan et al. (1996)	Gifted girls lack role models in non-traditional fields. They may feel extreme stress in high school, and pressure to succeed. They sometimes have to forego a social life.
	Reis (1998)	Girls and women face conflicts about care-giving and talent development. Women realize can't do it all at one time. Girls

		believe they can "do it all."
	Wilgenbusch and Merrell (1999)	Lit. Review: 22 studies and over 19,000 students. Most research indicated a drop in self-esteem, increasing depression, and negative body image beginning in early adolescence for girls.
	Norman et al. (1999)	In gifted adolescents, girls had higher anxiety. However, girls had more positive scores than boys in some dimensions.
	Ryan (1999)	Gifted girls need specialized counseling due to societal conflicts.
	Powell (2004)	Teenage girls have identity conflicts and low self-esteem.
	Ahmavaara and Houston (2007)	Males in general student population had higher self-esteem and greater confidence in intelligence. Popularity and sporting skills along with academic self-concept were associated with self-esteem.
	University of Wisconsin-Milwaukee (2008)	Parents and teachers help build self-concepts. Girls particularly see math and science as very difficult and they avoid taking more than the minimum required number of courses. Top barriers are test-anxiety and perceived difficulty of the class or subject.
	Rudasill et al. (2009)	Decline in self-concept for girls occurs over time, but academic self-concept remains relatively high over grades and gender.

	Rinn et al. (2010)	Females scored lower in self-concept beginning in early adolescence, especially in appearance and physical areas.
School Satisfaction	Okun et al. (1990)	25% of 431,330 1 st through 12 th graders in Arizona did not endorse any of the 3 "school satisfaction" items on the scale.
	Huebner and Alderman (1992)	Life satisfaction was positively correlated with self-esteem.
	Leung and Leung (1992)	Self-concept measures were correlated with life satisfaction.
	Csikszentmihalyi et al. (1997)	For talented music and art students there was greater engagement (greater flow). They felt personal control and skill, and they wanted challenges. Students reported much more favorably on their daily experiences than in science classes. In the arts, these were activities they were very interested in (p. 194). Allowing freedom increases motivation, but "flow" teachers should provide increasing challenge to students so their skills will improve and expand (p. 193).
	Hoekman et al. (1999)	Some anxiety can enhance motivation. Intrinsic motivation and quality of school life are correlated for the gifted.
	Huebner and McCullough (2000)	Life experiences and academic self-efficacy contribute to teenagers' school satisfaction.
	Shernoff et al. (2003)	There is an association between "flow" and engagement in

		academic work.
	McCoach and Siegle (2003a)	Gifted underachievement in adolescents was related to attitudes toward teachers and classes, attitudes toward school, goal valuation, and motivation/self-regulation, but not to academic self-perceptions. Social comparison theory affects self-concept.
	Shaunessy et al. (2006)	Many positive outcomes were associated with IB program, including increased academic self-efficacy, as compared to regular students.
	Taylor and Porath (2006)	There was an increase in career aspirations for gifted students in a vocational-technical high school.
	Davis and Lease (2007)	Liking of one's teacher is linked to school success and level of motivation.

Appendix B

District High Schools Attended by the Governor's School Participants

Gov. School ID	High School ID	Approx. High School Population (2009-10)	No. of Gov. School Participants	Approx. County/City Population (2009)	Community Setting	Approx. percentage of students eligible for reduced-price school lunch 2009-2010	
						District %	School %
GS-A							
	101	1,220	7	27,870	Metropolitan Area (MA)	49	42
	102	520	3	11,190	Rural (R)	59	52
	103	2,010	7	39,190	MA	32	25
	104	290	1	6,800	MA	66	55
	105	260	5	23,560	R	27	18
	106	640	6	16,230	MA	32	28
	107	450	3	11,230	R	59	48
	108	430	6	9,000	MA	32	26
	109	410	4	10,730	R	43	35
	110	440	3	13,000	R	51	44
	111	387	5	9,000	R	47	40
	112	230	1	17,690	R	68	58
	113	550	4	17,690	R	68	58
GS-B							
	103	2,010	3	39,190	MA	32	25
	114	1,920	1	144,240	MA	46	31
	115	1,740	1	144,240	MA	46	44
	116	1,910	1	144,240	MA	46	28
	117	1,280	5	35,880	MA	34	26
	118	520	2	35,880	MA	34	39
	119	1,520	1	193,170	MA	53	62
	120	1,940	1	193,170	MA	53	32
	121	1,740	2	193,170	MA	53	49
	122	2,100	1	193,170	MA	53	39
	123	870	3	11,800	MA	12	9
	124	1,232	1	63,740	MA	27	14
	125	1,130	1	63,740	MA	27	24
	126	1,290	6	61,140	MA	18	7

	127	1,260	10	61,140	MA	18	9
	128	1,089	2	61,140	MA	18	15
GS-C							
	129	260	2	44,400	MA	73	42
	130	1,610	1	44,400	MA	73	58
	131	1,210	15	54,890	Micropolitan Area (MI)	59	49
	132	1,000	14	54,890	MI	59	50
	133	790	15	14,640	MI	71	64
	134	1,000	7	18,640	R	54	46
	135	660	4	61,410	MA	49	40
	136	650	3	61,410	MA	49	50
	137	680	7	61,410	MA	49	47
	138	820	8	61,410	MA	49	31
GS-D							
	139	1,030	1	46,500	R	37	27
	140	1,210	1	46,500	R	37	32
	141	1,260	7	68,010	MA	22	17
	142	1,000	1	68,010	MA	22	11
	143	370	1	7,040	R	27	21
	Student Sub-Total:		183				
	Total, including 41 students with undisclosed high schools:		224				

Note. High School # 103 participates in two Governor's Schools, GS-A and GS-B. Sources: U.S. Census Bureau (2010); Virginia State Department of Education (2010a); Virginia State Department of Education (2010b).

Appendix C

Consent Form for Participation in a Research Study - Spring 2010

Investigator: Janice C. Robertson

Study Title: **Advanced Learner Perceptions of Psychological Well-Being and School Satisfaction in Two High School Settings**

PLEASE SIGN THIS FORM AND RETURN ONE COPY. KEEP ONE COPY FOR YOUR RECORDS.

1. Invitation to Participate in a Research Study

You are invited to participate in this confidential research project involving Governor's School students and academically advanced students in regular high schools.

2. Purpose of the Research Study

The purpose of this study is to examine the attitudes of academically advanced students toward academics and toward their high schools, and their perceptions of well-being. The Governor's School students are enrolled in partial-day academic-year Governor's Schools. The students in regular high schools attend high level academic classes.

3. Description of Procedures and Associated Risks

Participation in this study involves completing two brief survey forms during the school day. [Governor's School students will complete three forms.] There are no anticipated risks to participation. Participation will not affect course grades. You will be allowed to complete any missed class work, and you will be provided with any missed course instruction. The only inconvenience is the time required to complete the survey forms. This will require approximately 15 to 20 minutes total.

4. Benefits

The chief benefit of participation is contribution to research about understanding the perceptions of psychological well-being of advanced learners and their attitudes toward high school, and how these self-concepts and school attitudes may be related. Each student participant will receive a small token of appreciation (such as school supplies or a snack) from the investigator, whether or not all survey questions are answered. You may receive a summary of the study results by contacting the primary investigator.

5. Confidentiality

The survey forms that the student completes will be strictly confidential. Randomly assigned identification numbers rather than student names will be used on the survey forms. Names of students, parents, schools, school districts, teachers, and administrators will not be used in any reports or articles concerning this research study, or associated with any results of this study. Data will be aggregated. This will be done to protect your privacy and to ensure the confidentiality of your responses. Completed surveys and permission forms will be kept in a locked file box in a secure office for the duration of the study, and for an additional five years in case of potential need for verification. Only the investigator will have access to the file box key. You should also know that The College of William and Mary Institutional Review Board (IRB) may inspect study records. These reviews focus only on the researchers and the safety of participants, and not on your involvement in the study or your survey responses.

6. Voluntary Participation

Your participation in this study is completely voluntary, and you may withdraw from participation at any time and refuse to answer any question. There are no penalties or consequences if you decide not to participate.

7. Do You Have Any Questions?

We will be happy to answer any questions you have about this study. You may contact the investigator, Janice Robertson at 804-339-3450 (trobert804@aol.com). You may report dissatisfaction with any aspect of this study by contacting the Chair of the College of William and Mary Protection of Human Subjects Committee, Dr. Michael Deschenes at 757-221-2778.

PARTICIPANT (STUDENT) ASSENT:

I have read this form and I would like to participate in this study of **Advanced Learner Perceptions of Psychological Well-Being and School Satisfaction in Two High School Settings**. I understand that I am under no obligations to continue my participation after signing this form. I may change my mind at any time and withdraw from the study with no penalty or negative consequences. My signature signifies my voluntary participation in this research project and that I have received a copy of this consent form.

Signature of Student/Participant: _____

Date: _____

Signature of Primary Investigator: _____ Phone:

CONSENT (PARENT/GUARDIAN):

I have read this form and decided that my son/daughter may participate in this study of **Advanced Learner Perceptions of Psychological Well-Being and School Satisfaction in Two High School Settings**. Its general purposes, the methods, and the inconveniences have been explained to my satisfaction. My signature also indicates that I have received a copy of this consent.

Signature of Parent/Guardian: _____ Date:

Signature of Primary Investigator: _____ Phone:

Phone Number: _____ (In case we have any questions about this form)

Investigator Use Only (Please check as indicated):

____ Student has received the survey packet ____ Student has returned the completed survey packet

*Appendix D****The Way I Feel About Myself - The Piers-Harris 2 (Piers & Herzberg, 2002) Assessment Items***

1. My classmates make fun of me.
2. I am a happy person.
3. It is hard for me to make friends.
4. I am often sad.
5. I am smart.
6. I am shy.
7. I get nervous when the teacher calls on me.
8. My looks bother me.
9. I am a leader in games and sports.
10. I get worried when we have tests in school.
11. I am unpopular.
12. I am well behaved in school.
13. It is usually my fault when something goes wrong.
14. I cause trouble to my family.
15. I am strong.
16. I am an important member of my family.
17. I give up easily.
18. I am good in my schoolwork.
19. I do many bad things.
20. I behave badly at home.

21. I am slow in finishing my schoolwork.
22. I am an important member of my class.
23. I am nervous.
24. I can give a good report in front of the class.
25. In school I am a dreamer.
26. My friends like my ideas.
27. I often get into trouble.
28. I am lucky.
29. I worry a lot.
30. My parents expect too much of me.
31. I like being the way I am.
32. I feel left out of things.
33. I have nice hair.
34. I often volunteer in school.
35. I wish I were different.
36. I hate school.
37. I am among the last to be chosen for games and sports.
38. I am often mean to other people.
39. My classmates in school think I have good ideas.
40. I am unhappy.
41. I have many friends.
42. I am cheerful.
43. I am dumb about most things.
44. I am good-looking.
45. I get into a lot of fights.

46. I am popular with boys.
47. People pick on me.
48. My family is disappointed in me.
49. I have a pleasant face.
50. When I grow up, I will be an important person.
51. In games and sports, I watch instead of play.
52. I forget what I learn.
53. I am easy to get along with.
54. I am popular with girls.
55. I am a good reader.
56. I am often afraid.
57. I am different from other people.
58. I think bad thoughts.
59. I cry easily.
60. I am a good person.

*Appendix E****School Attitude Assessment Survey –Revised (SAAS-R)***

© D. B. McCoach, University of Connecticut, 2002

Rating Scale: 1 to 7 where (1) stands for “strongly disagree” and (7) stands for “strongly agree.”

Part I:

1. My classes are interesting.
2. I am intelligent.
3. I can learn new ideas quickly in school.
4. I check my assignments before I turn them in.
5. I am smart in school.
6. I am glad that I go to this school.
7. This is a good school.
8. I work hard at school.
9. I relate well to my teachers.
10. I am self-motivated to do my schoolwork.
11. I am good at learning new things in school.
12. This school is a good match for me.
13. School is easy for me.
14. I like my teachers.
15. I want to get good grades in school.
16. My teachers make learning interesting.
17. My teachers care about me.
18. Doing well in school is important for my future career goals.
19. I like this school.
20. I can grasp complex concepts in school.
21. Doing well in school is one of my goals.
22. I am capable of getting straight A's

23. I am proud of this school.
24. I complete my schoolwork regularly.
25. It's important to get good grades in school.
26. I am organized about my schoolwork.
27. I use a variety of strategies to learn new material.
28. I want to do my best in school.
29. It is important for me to do well in school.
30. I spend a lot of time on my schoolwork.
31. Most of the teachers at this school are good teachers.
32. I am a responsible student.
33. I put a lot of effort into my schoolwork.
34. I like my classes.
35. I concentrate on my schoolwork.

Part II:

1. What is your cumulative GPA? What are your average grades?

4.0 or higher (All A's)	2.5 to 2.99 (More B's than C's)
3.75 to 3.99 (Mostly A's)	2.0 to 2.49 (More C's than B's)
3.5 to 3.74 (More A's than B's)	1.5 to 1.99 (More C's than B's)
3.25 to 3.49 (More B's than A's)	1.0 to 1.49 (More D's than C's)
3.0 to 3.24 (Mostly B's, some A's and C's)	less than 1.0 (Mostly D's and F's)

2. On average, how much time per week do you spend doing homework?

Less than 1 hour	From 10 hours to less than 15 hours
From 1 hour to less than 3 hours	From 15 hours to less than 20 hours
From 3 hours to less than 5 hours	From 20 hours to less than 25 hours
From 5 hours to less than 10 hours	25 hours or more

One item added by the current examiner:

3. Have you ever been identified for a school gifted program Circle 1: YES NO

Appendix F

Administration Guidelines

Advanced Learner Perceptions of Psychological Well-Being and School Satisfaction in Two High School Settings

- *Before presenting the survey to the participants, please read these guidelines and review the two survey forms.**
- *This confidential voluntary survey may be administered to a group or individual students. Each participant must have returned a consent form signed by the parent/guardian and student. Each family will keep one copy of the consent form.**
- *Each survey packet contains two forms, the Piers-Harris Children's Self-Concept Scale – Second Edition (Piers-Harris 2) and the Student Attitude Assessment Survey – Revised (SAAS-R). [Note: Governor's School Students ONLY have two color-coded SAAS-R forms. They are to complete the blue survey form for the Governor's School and the green one for their home high school.]**
- *The survey should be administered at school in a quiet room, such as a classroom, with as few distractions as possible. Students should be seated comfortably at desks or tables. Each student should use a pen or a hard-tipped pencil to answer the survey.**
- *Although there is no set time limit, completion time should be approximately 15 to 20 minutes.**
- *Students not participating in the survey should be seated separately in the room and given individual seatwork, or be assigned to another appropriately supervised school activity outside the classroom.**
- *Each participant should receive one survey packet. Each packet and the surveys forms have identification numbers written on them. Randomly distribute the packets to all students who have returned a signed Consent Form. Give each student an appreciation gift packet. Ask the students to use the pens attached to the packets, if needed, to complete the survey forms. They should open the gift packets after the survey is completed.**
- *As you give a packet to each student, check off the box at the bottom of the consent form that indicates that a packet has been handed to that student.**

ADMINISTRATION SCRIPT*

Today you will be completing a confidential survey about how you feel about yourself and your school. This survey is part of a research project being conducted by a graduate student at the College of William and Mary. Please do not discuss the survey with other students during this session.

Please take the two forms out of your envelope. Now, please write the following demographic information on the Piers-Harris 2 form:

Today's Date

Age

Gender

Grade

School Name (Regular Home High School Name)

Race/Ethnicity

REMEMBER, DO NOT WRITE YOUR NAME ON ANY FORM.

Be sure to bear down relatively hard with your pen or pencil and do not separate the form sheets. This form takes about 10 to 15 minutes to complete. Complete both the front and back of the form.

Now, please silently read these directions from the Pier-Harris 2 front page as I read them aloud:

Here are some sentences that tell how some people feel about themselves. Read each sentence and decide whether it tells the way you feel about yourself. If it is true or mostly true for you, circle the word *yes* next to the statement. If it is false or mostly false for you, circle the word *no*. Answer every question, even if some are hard to decide. Do not circle both yes and no for the same sentence. If you want to change your answer, cross it out with an X and circle your new answer. Remember that there are no right or wrong answers. Only you can tell us how you feel about yourself, so we hope you will mark each sentence the way you really feel inside.

[If any students express reluctance to use the yes or no format, respond that one should answer each question to indicate how one "usually" feels, as everyone feels differently in different situations and at different times.]

Now, please look at the second survey form, the Student Attitude Assessment Survey – Revised. This form contains questions about your school and how you feel about your school experience. This form takes about 5 minutes to complete. Please circle one number only in response to each of the 35 questions. Complete both pages.

1 indicates “Strongly Disagree”

2 indicates “Disagree”

3 indicates “Slightly Disagree”

4 indicates “Neither Agree or Disagree”

5 indicates “Slightly Agree”

6 indicates “Agree”

7 indicates “Strongly Agree”

[NOTE: FOR GOVERNOR’S SCHOOL STUDENTS ONLY, ASK THEM TO COMPLETE THE TWO COLOR-CODED COPIES OF THE SAAS-R FORM. THE BLUE COPY IS FOR THE GOVERNOR’S SCHOOL AND THE GREEN COPY IS FOR THEIR REGULAR HIGH SCHOOL.]

IT IS IMPORTANT FOR YOU TO ANSWER EACH ITEM ON THE FORMS, OR THE RESEARCHER MAY NOT BE ABLE TO INCLUDE ANY OF YOUR RESPONSES. HOWEVER, YOUR PARTICIPATION IS COMPLETELY VOLUNTARY.

DO YOU HAVE ANY QUESTIONS?

*** Orally repeat any participant question at this time, and answer it before the entire group. Then ask the students to begin the survey.**

***Once the students begin the survey, please answer any additional student question privately with the student.**

***Once the survey is completed, collect all survey packets and check off on each consent form that the packet has been returned by the student. Place the consent forms in a separate envelope.**

*** Check each form to be sure that the student has answered all items. Encourage the student to complete any unanswered items, if applicable. However, if the student is unwilling to complete the survey, there is no penalty.**

***Hand each student a small appreciation gift provided by the investigator, whether or not she/he completed the survey. Return the completed survey packets and consent forms to the designated school representative who will keep them in a secure school location for collection by the investigator.**

***Should any questions arise, please call Janice Robertson, Ed.S., Primary Investigator at 804-339-3450, or email her at TRobert804@aol.com**

Thank You for Your Assistance!

***Based on administration guidelines provided for the Piers-Harris Children's Self-Concept Scale, Second Edition (Piers & Herzberg, 2002)**

Appendix G

Research Framework

Research Questions	Data Sources	Data Analysis
<p>Psychological well-being self-concept differences between Governor's School and regular high school gifted students</p> <p>Differences between self-concept of the participants and the normative sample of the Piers-Harris 2</p>	<p>Total and domain Piers-Harris 2 <i>T</i>-Scores Goal Valuation & Motivation/Self-Reliance Subscale Scores –SAAS-R</p> <p>Piers-Harris 2 Participant <i>T</i>-Scores</p> <p>Average Piers-Harris 2 normative sample <i>T</i>-scores by age group (15-16 and 17-18)</p> <p>Interpretive Ranges of the Piers-Harris 2</p>	<p>Independent <i>t</i>-tests</p> <p>One- sample <i>t</i>-tests</p> <p>Percentages of participants achieving scores within each of the Interpretive Ranges of the Piers-Harris 2</p>
<p>School satisfaction and attitude differences between Governor's School and regular high school gifted students</p> <p>Governor's School students' satisfaction and attitude differences between their two schools</p> <p>School attitude differences between study participants and the SAAS-R sample of achieving gifted students</p>	<p>SAAS-R Participant Scores</p> <p>SAAS-R Participant Scores</p> <p>SAAS-R Participant Scores and the SAAS-R Mean Scores</p>	<p>Independent <i>t</i>-tests</p> <p>Paired/Related Samples <i>t</i>-tests</p> <p>One-sample <i>t</i>- tests</p>
Relationships between self-concept and school satisfaction	Piers-Harris 2 and SAAS-R Participant Scores	Pearson Product-Moment Correlations
Gender differences	Piers-Harris 2 and SAAS-R Participant Scores	Independent <i>t</i> -tests
Item frequency analyses of Piers-Harris 2 selected items	Piers-Harris Protocols	Percentages of participants endorsing individual protocol items

Appendix H

P-H 2 Freedom From Anxiety (FRE) Assessment Items (Piers & Herzberg, 2002)

- 4. I am often sad.
 - 6. I am shy.
 - 7. I get nervous when the teacher calls on me.
 - 8. My looks bother me.
 - 10. I get worried when we have tests in school.
 - 17. I give up easily.
 - 23. I am nervous.
 - 29. I worry a lot.
 - 31. I like being the way I am.
 - 32. I feel left out of things.
 - 35. I wish I were different.
 - 40. I am unhappy.
 - 56. I am often afraid.
 - 59. I cry easily.
-

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