DIFFERENCES IN ACADEMIC, AFFECT, COMPETENCE, AND SOCIAL SELF-CONCEPTS IN HOMOGENEOUSLY AND HETEROGENEOUSLY GROUPED GIFTED STUDENTS

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ABSTRACT

DIFFERENCES IN ACADEMIC, AFFECT, COMPETENCE, AND SOCIAL SELF-CONCEPTS IN HOMOGENEOUSLY AND HETEROGENEOUSLY GROUPED GIFTED STUDENTS

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The purpose of this study was to compare domains of self-concept in gifted high school students based on their academic setting (homogenous grouping or heterogeneous grouping). Specifically, the domains of academic, competence, and social self-concept were compared between the two groups. Gifted students collapsed across academic setting were compared to the non-gifted normative sample on affect self-concept. Participants included 43 gifted students (28 students of which were grouped homogeneously, 15 heterogeneously). The *Multidimensional Self Concept Scale* (MSCS, Bracken, 1992) was group administered to students who volunteered to participate in the study. Participants completed a demographics form designed to gather information to describe each group. A One-Way Multivariate Analysis of Variance (MANOVA) was conducted to compare the differences in academic, competence, and social self-concepts based on academic grouping. It was hypothesized that the homogeneously grouped students would score higher on the domains of social and competence self-concepts compared to the heterogeneously grouped students. Heterogeneously grouped students were expected to score higher on academic self-concept than the homogeneously grouped

students. It was hypothesized that there would be no difference between the scores of the sampled gifted students (collapsed across groups) and the normative sample on the affect self-concept domain, which was tested via T-test. Analysis showed that there was no significance difference between the groups in academic, competence, and social self-concepts. In addition, the gifted students sampled showed significantly higher affect self-concept scores than the normative sample. Limitations and suggestions for future research are discussed.

INTRODUCTION

A central problem to the study of gifted education is the lack of a standardized definition or criteria for recognizing which students are 'gifted'. According to the Elementary and Secondary Education Act (ESEA) which was last reauthorized under the No Child Left Behind Act (NCLB, 2002), gifted children are:

> Students, children, or youth who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services and activities not ordinarily provided by the school in order to fully develop those capabilities. (NCLB, 2002)

Studies on gifted education were rare prior to the last quarter of the 20th century, with a dramatic increase of literature during the 1980s. The spike of interest in the education of America's precocious youth was sparked by the country's involvement in the Cold War (Gallagher, 1997). The heated competition between America and the Soviet Union encouraged America's educational system to ensure that their "best and brightest" students would develop to their potential for the betterment of the United States as a whole. Gallagher contends that Americans' opinions that their "best and brightest students [are] not the equal of similar students" in other countries remains a factor in the popularity of programs for the gifted (p. 154).

There are no federal mandates that require gifted programs to adopt specific criteria for qualifying students as gifted, so individual states and local educational agencies generally decide on the definition they use. Currently, many programs are

shifting from using traditional IQ scores as the only criteria towards a more liberal definition similar to the one provided by the ESEA. Identifying gifted students by scores on a cognitive abilities assessment (i.e., IQ test) commonly uses the 90^{th} or 95^{th} percentile rank (IQ score of approximately 125 and 130 respectively) as a criterion for admission to gifted programs. The shift from using percentile rank criteria to using more liberal definitions of giftedness helps include children who are gifted in creative and artistic areas, as well as gifted children from culturally and linguistically diverse populations. The liberal definitions of giftedness also allow educators to avoid the assumption that intelligence is normally distributed, and that gifted students only occupy the top 5 to 10% of the population. The flexibility to recognize more types of gifted children than those who score high on IQ measures has helped slightly to decrease minority under-representation in gifted programs (Maker, 1996). The under-representation of gifted students refers to the trend in America's educational system where minorities are found in lower percentages within gifted programs than in the school systems as a whole. (U.S. Department of Education, 1991). However, despite the changes in definitions of who is defined as gifted, under-representation is still considered a serious problem in the field of education.

The prevalence rate of giftedness amongst the student population is hard to estimate. According to Bélanger and Gagné (2006), this is partly due to the lack of standardized criterion for giftedness. The field of gifted education needs to become more unified in its selection criterion to allow solid estimates of prevalence. However, Bélanger and Gagné derived an equation to estimate the prevalence of students who may be identified as gifted based on a range of several variables.

Based upon their proposed equation, Bélanger and Gagné (2006) obtained an estimated range of the prevalence of giftedness. Assuming that a school district will implement a common 5% cutoff rate, and a high correlation between scores is present, the prevalence of students who can qualify as gifted is between 8.0 and 18.5%. While the lack of standardization for identifying gifted students makes estimating the prevalence of gifted students difficult, categorizing the structure of common programs for the gifted is an easier task.

There are a few grouping structures education agencies can select from when designing programs for the gifted. Part-time pullout programs remove gifted students from a heterogeneously grouped classroom of gifted and general education students for part of the day to provide extra instruction. These programs can range from removal for a small segment of the day (e.g., attending a single "gifted" or advanced placement class while completing all other content classes and elective classes with non-gifted peers) to removal for most of the academic day (e.g., attending Advanced Placement classes for all content classes while completing elective courses with non-gifted peers). Programs that implement homogenous grouping often involve attending a separate school designed for gifted students, such as a regional magnet school. Programs of heterogeneous and homogeneous groupings of gifted students are both common and may include the International Baccalaureate (IB) program.

The IB program encourages students (ages 16-19) to think critically, to develop an identity, to have increased cultural awareness, and to excel in communication. (International Baccalaureate Organization, 2008). Students do not need to be classified as gifted to enter these programs, but need to exhibit high academic potential. As a result,

gifted students are often the only students found in the IB programs. These students typically take several IB courses throughout the day with homogeneously grouped peers in the program.

Other homogeneous groupings can be seen outside of IB programs through one of several typical methods, including 'tracking' students. The practice of tracking students places them in one of at least two programs with certain curricula and intended outcomes, like vocational and preparatory tracks. For schools with multiple possible tracks, an advanced track is likely available for gifted students like Honors programs or Advanced Placement (AP) programs. Gifted students can also be removed from their 'home school' to attend magnet schools for the gifted, which can be composed of students from several districts, or just one. Magnet schools may focus on a specific area such as math or science, or provide a more "traditional" curriculum that is accelerated.

The current study will focus on students identified as gifted who are heterogeneously grouped within general education classrooms for at least part of the day, and gifted students homogeneously grouped in a magnet high school for gifted students. The following sections provide an overview of relevant research into these groupings and the possible impact of each type of grouping on students' self-perception (including specific domains of self-concept).

REVIEW OF RELATED LITERATURE

Gifted students have been a topic of academic interest in recent decades, with an expanding field of research examining the non-academic traits of these students. Individuals with high mental aptitude were originally seen as lonely social misfits (Schneider, 1987), which provided one of the original reasons for further research into the non-academic functioning of exceptional students. The study of gifted students' social, emotional, and psychological competence have provided interesting insights into the non-academic functioning of gifted students.

While the study of social-emotional functioning of gifted students has developed into an interesting and complex field in recent decades, academic achievement is often considered the central tenant of giftedness. High academic aptitude is a common central criterion for admittance into gifted programs, with the notable exception of underachieving gifted students.

Academic Implications for Gifted Students

The academic benefits of grouping students by abilities are well established in the extant research (e.g., Kulik & Kulik 1992; 1982). A meta-analysis was conducted to examine self-concept, academic achievement, critical thinking, and creativity as reported across previous studies (Vaughn, Feldhusen, & Asher, 1991). The meta-analysis included an examination of the outcomes and effect sizes of nine true experimental or quasi-experimental studies of gifted students. They found that gifted pullout programs did not affect self-concept, but positively correlated with academic achievement and critical thinking. The analysis included both studies on gifted students in part time pullout

programs, who spent part of their day heterogeneously grouped and part of their day homogeneously grouped with like-ability peers.

In another meta-analysis, academic benefits of gifted programs were examined based on five categories of grouping practices: multilevel classes, cross-grade grouping, within-class grouping, enriched classes, and accelerated classes (Kulik & Kulik, 1992). The meta-analysis included an examination of the outcomes and effect sizes of 126 total studies on gifted students. Of the studies used in the analysis, 56 of these studies examined multilevel classes, 14 examined cross-grade grouping, 11 examined within-class grouping, 25 examined enriched classes, and 23 examined accelerated classes. The results revealed that gifted students demonstrated the highest learning when they were allowed to deviate from the general curriculum and work at a more natural pace based on their ability. The magnitude of academic benefit varied across program categories, but was the greatest when gifted students were removed from the general education classroom and grouped homogeneously with like-ability peers. It was concluded that grouping with like-ability peers allows for greater deviation from the general curriculum and as a result, a better academic environment.

The results suggesting that the academic benefits are greater for gifted students homogenously grouped than for heterogeneously grouped students (Kulik & Kulik, 1992) provides a foundation for future research examining differences in these students based on grouping practice. Concerning academic functioning, gifted students heterogeneously grouped in general classrooms may place additional strain upon teachers (Vantassel-Baska & Stambaugh, 2005). These teachers often do not have the necessary subject knowledge, management skills, or the administrative support to provide adequate

education to their students of various abilities. Since these unprepared teachers are frequently unable to help gifted students achieve their potential, arguments have been made that this violates federally mandated Least Restrictive Environment legislation (Gallagher, 1997).

Psychosocial Implications for Gifted Students

Peer relationships are an important part of the psychosocial development of all children (Gifford-Smith & Brownell, 2003). Poor peer relations have been shown to increase reported loneliness in children, which in turn can negatively influence achievement (Guay, Boivin, & Hodges, 1999). A study of college students found that perceived attachment to peers or parents was positively correlated with academic performance and psychosocial competence (Fass & Tubman, 2002). This further emphasizes the importance of perceived social support in order for students to exhibit good social-emotional health in school.

Adolescents who reported low self-esteem tend to have poor strategies for achieving in school, such as avoiding tasks or not exerting much effort (Aunola, Stattin, & Nurmi, 2000). In turn, poor achievement strategies are related to poor school adjustment as well as externalizing and internalizing problems, including substance use. More specific to gifted students, it has been suggested that peer relationships are a mechanism through which gifted students deal with the anxiety inherent in their high-pressure academic situations (Holahan & Holahan, 1983). Gifted students with poor peer relationships in high-pressure academic environments are likely to develop depression, especially in residential gifted programs.

Self-Concept

According to Plucker & Stocking (2001), "[s]elf-concept is, at the most simplistic level, an idea or set of ideas one has about oneself" (p. 536). This definition of self-concept is quite simplistic, but provides a necessary starting point for a discussion of self-concept. William James (1890) provided one of the earliest definitions of self-esteem. James' view of self-esteem as a fundamental human trait to feel good about oneself laid the groundwork for what was to become the study of self-concept (James, 1890; Bracken, 1992). A review of literature on self-concept reveals the need for clear definition of the terms 'self-concept' and 'self-esteem'. For the purposes of this paper, the term "self-concept" (when used as a global construct) is interchangeable with the term "self-esteem," unless otherwise noted. Other variations frequently found in literature include "self-perceptions" (Harter, 1988) and "self-worth." (This is not to say there are not subtle differences between the above terms, but differentiating these terms on the nuances that separate them is beyond the purview of this study.)

Self-concept was considered a unidimensional construct at the beginning of the 20th century. As research on the construct progressed through the 20th century, there was a shift away from the study of self-concept as a unidimensional construct towards a multidimensional model. Currently, self-concept is commonly studied as a global construct, comprised of several distinct but related domains. Bracken (1992) considers six domains central to the measurement of self-concept: *affect*, *physical*, *family*, *social*, *competence*, and *academic*.

This multidimensional model was selected for this study, which includes six domains of self-concept and a measure of global self-concept. This model was selected

because it has a corresponding norm-referenced assessment tool, the *Multidimensional Self-Concept Scale* (MSCS; Bracken, 1992) and because the instrument is considered to have particularly robust psychometric properties relative to other measures of self-concept (Bear, Minke, Griffen, & Deemer, 1997). Global self-concept is a composite comprised of the six specific domains, and measures an individual's overall view of himself or herself. This study has adopted the domains of self-concept as provided by Bracken (1992). *Social* self-concept gauges the perceived ability to reach an objective through social interactions, and an individual's perception of how other people react to his or her presence. *Competence* self-concept is an individual's perceived ability to perform various activities in his or her environment. *Affect* self-concept measures perceptions about one's emotional response to the environment. *Academic* self-concept measures the satisfaction and fit within an individual's current school environment. *Family* self-concept measures an individual's feelings towards his or her home and family. *Physical* self-concept measures an individual's perceived satisfaction with his or her physical fitness and body image.

Global Self-Concept and Gifted Students

Previous research on the self-concept of gifted students has provided conflicting results regarding the global self-concept of gifted students. A meta-analysis of self - concept among gifted students found higher scores of global self-concept in students labeled as gifted when compared to their nongifted peers (Hoge & Renzulli, 1993). Gifted students also exhibit higher self-concept in specific domains when compared with their same-age peers. The strongest effect was found in academic self-concept, where gifted students had higher academic self-concepts than their nongifted peers. Another

meta-analysis of research found that pullout programs for the gifted did not result in increased global self-concept relative to nongifted peers (Vaughn, Feldhusen, & Asher, 1991). The inconsistencies among these meta-analyses illustrate the difficulty in generalizing studies of global self-concept in gifted students to the population of gifted students as a whole.

An acknowledged weakness of Hoge & Renzullie's (1993) analysis of available research concerns the lack of consistent gifted definitions as well as the variety of programs gifted students may enroll in. This is an inherent flaw for most meta-analyses of research in the field of gifted education. The results of research in gifted education should carefully describe the setting and design of their participants' program. Most research to date on self-concept can only be generalized to a specific subgroup of gifted students. The usage of various instruments to measure self-concept and their differing constructs only adds confusion to the generalizability of meta-analyses (Rudasill & Callahan, 2008).

While studies on the global self-concept of gifted students have yielded inconsistent findings, Hoge and Renzulli's (1993) analysis found statistically significant differences between gifted and nongifted peers in specific domains of self-concept. This supports the view that self-concept "is composed of a set of relatively independent dimensions" (p. 458). The findings in this meta-analysis are especially useful due to the authors' statistical control for the varying instrument used and grade level of students who participated in the individual studies included in the analysis. Neither the instrument used nor student grade level had a significant effect on gifted student global self-concept.

Although research has examined differences in global self-concept of gifted students based on grouping practices, the current study will not examine global self-concept. According to Van Boxtel and Mönks (1992), the global measure of self-concept in gifted students is not reliable due to the natural difference in abilities and types of gifted students. The global self-concept in gifted students tends to be much more dynamic than a global score would reliably measures, therefore self-concept is best represented as the different facets in which an individual defines himself or herself. An inherent flaw of many studies comparing students' self-concept is the tendency to focus on a measure of global self-concept (Pyryt & Mendaglio, 1994). The conflicting conclusions reached by the above analyses (Hoge & Renzullie, 1993; Vaughn, Feldhusen, & Asher, 1991) of gifted students' global self-concept illustrates the importance for providing data on specific measures of self-concepts rather than a global measure. In order to study program effects on gifted students, specific domains of self-concept should be examined. The literature reviewed below reveals differences in domains of gifted students' self-concept and type of grouping (heterogeneous or homogeneous) their program utilizes.

Academic Self-Concept of Gifted Students

As defined by Bracken (1992), academic self-concept measures perceived academic abilities. In both gifted and nongifted high school students, self-reported grade point average (GPA) was positively correlated with academic self-concept (McCoach & Siegle, 2002). The participants in this study were taken from 28 separate school districts, though the researchers did not specify what grouping paradigm the gifted programs in this study utilized. Previous research has demonstrated that nongifted students' self-concept is causally linked to academic achievement (Marsh & Alexander, 1997). More

specifically, when previous self-concept and academic achievement in a population of adolescents is controlled for, academic self-concept positively influences academic achievement. Marsh and Alexander (1997) gauged students' academic achievement by gathering school grades as well as teacher ratings of students for three years. Data was gathered for three subject areas, and compared to students' reported academic self-concept. The researchers concluded that the baseline academic self-concept had a greater effect upon academic achievement than previous achievement in nongifted students.

Research investigating academic achievement and academic self-concept of gifted students will be the focus of the rest of this section. Typically, gifted students attain high levels of academic achievement. However, a high level of achievement does not necessarily correspond to elevated academic self-concept in gifted students (Plucker & Stocking, 2001). Marsh (1986) asserted that students' self-concept is influenced by internal or external social referencing. An external reference occurs when a student compares his or her ability in an area to other students around him or her, while an internal, or ipsative comparison is between a student's strength (i.e., math) and an area he or she may not perform as well in (i.e., verbal). For instance, a student especially gifted in math may have verbal abilities that are not as strong as his or her math ability. This may lead to a deflated self-concept in verbal abilities, due to an ipsative (internal) comparison against the student's high math ability.

Marsh's (1986) study was based on results provided by homogeneously grouped gifted students from a summer program for academically precocious youth. The results indicated that when considering the development of gifted adolescents, both internal and

external referencing can influence academic self-concept, especially in homogeneous gifted groups.

Both internal and external references as conceptualized by Marsh (1986) have been found to mediate an increase in students' academic self-concept (Plucker & Stocking, 2001). When gifted students are grouped homogeneously by ability, they compare their achievement to other gifted individuals. This mediates the elevated academic self-concept that is normally correlated with high academic achievement in a general education setting. Gifted students who are exposed to their nongifted peers for all or part of their school day (heterogeneously grouped), compare their own abilities and achievement to those typically in the average range, which is an external reference that results in an increased academic self-concept.

The grouping and program environment of gifted students affects the academic self-concept of gifted students in a manner contradictory to the research on academic self-concept and achievement in the general population of students. This is due to inherent differences between the grouping of gifted and nongifted students. External referencing (Marsh, 1986) helps explain this discrepancy. Gifted students grouped full-time with like-ability peers only have their peers of similar academic achievement and ability to compare their own accomplishments and achievement to. Since the gifted students do not have average or below average ability peers to compare themselves to, they do not exhibit an elevated academic self-concept (Chan, 1988; Plucker & Stocking, 2001). This is referred to as the *Big Fish Little Pond Effect* [(BFLPE), Marsh, Chessor, Craven, & Roche, 1995; Zeidner & Schleyer, 1998], and is based on the social referencing of students in heterogeneous and homogeneous groups.

Though the BFLPE may lower the academic self-concept of gifted students when they move from a heterogeneous population to a homogeneous group of like-ability peers, the change is a gradual one (Marsh, Chessor, Craven, & Roche, 1995). When gifted students in the study moved to a homogeneous program, their scholastic self-concept did not decrease significantly compared to their academic self-concept as measured prior to program entry (Wright & Leroux, 1997). The normalization of academic self-concept in homogeneously grouped gifted students appears to be a slow deflation rather than a sudden drop. In this study, 25 gifted adolescents were followed for a year after admission to a gifted ninth grade homogeneous program. The authors concluded that the movement of the students to a homogeneous program resulted in a more realistic self-perception as opposed to their previous idealized self-perception. The scholastic perceptions these students had of themselves did decrease through the year in both females and males, but were not significantly different from their baseline levels prior to program entry. Gifted students' academic self-concept may begin to drop upon entry to a homogenous program, but is not a statistically significant difference within the first year, so the deflation of this domain must continue past the first year of program entry.

Hoge and Renzulli's (1993) meta-analysis of available research found no social comparison effect when gifted students were moved to a homogeneous group. This could be due to several design problems and confounding variables acknowledged by the authors, including change in students' actual achievement levels, applying the label of giftedness, and no control for the students' previous grouping. As previously stated, the

lack of standardized definitions and practices in gifted education make studies in this field difficult to generalize.

The research on gifted students' academic self-concept shows a tendency for heterogeneously grouped gifted students to score higher in this domain. This is the result of gifted students comparing their abilities to those of their nongifted peers (external referencing). In contrast, homogenously grouped gifted students' only comparison group is other gifted students, which negates the increase in academic self-concept normally correlated with high academic achievement. However, the research in this area is somewhat limited and often confounded by problems with methodology.

Competence Self-Concept in Gifted Students

As defined by Bracken (1992), the competence domain of self-concept measures one's perceived ability to succeed in various environments at various different tasks. Gifted students in homogeneously grouped classes rate themselves as more competent and intrinsically motivated than their average ability peers (Vallerand, Gagne, Senecal & Pelletier, 1994). The homogeneous grouping of gifted students in this study is significant to the study of self-concept, since these programs typically provide more opportunities for students to explore topics of interest, and work at a pace more natural to them than a general education classroom. In short, competence and intrinsic motivation may be cultivated in these students through homogeneous grouping.

Gifted children report higher levels of self-competence and mastery than their nongifted peers (Davis & Connell, 1985). The researchers also found an important link between competence and underachievers among the gifted and nongifted groups. Underachieving gifted and nongifted students acknowledged a lack of effort on their part,

which may be a result of never wanting to set themselves up to endure a possible failure and suffer "'humiliation' that could reverberate throughout the self-system" (p. 135).

Compared to their nongifted peers, gifted students rate themselves as more competent in cognitive and self-worth areas (Chan, 1988). In this study, 378 students enrolled in a general education program, heterogeneously grouped gifted students and homogenously grouped gifted students were included. The homogenously grouped gifted students scored lower on physical and cognitive competence than the heterogeneously grouped students in the seventh grade, but not in the fifth and sixth grade groups. Results also showed that both heterogeneously and homogeneously gifted students reported higher competence than their nongifted peers.

Research into the competence self-concept of gifted students is currently not a well-established field. This may be partly due to the conceptualization that academic students are generally competent based on their achievement levels and/or cognitive abilities. Further research is necessary on the construct of competence self-concept as it relates to gifted education.

Social Self-Concept of Gifted Students

Bracken's (1992) social self-concept scale measures perceived peer acceptance and social skills. Social acceptance is crucial for the development and well being of all children (Gifford-Smith & Brownell, 2003). Negative peer relations can increase the amount of loneliness felt by children, which negatively affects academic achievement (Guay, Boivin, & Hodges, 1999).

Gifted students' advanced cognitive abilities may help them gain social favor at a young age (grade five) compared to their nongifted peers, but their social ratings among

peers normalize as they enter adolescence (Schneider, Clegg, Byrne, Ledingham, & Crombie, 1989). While this study found a social advantage of being intellectually gifted in fifth grade, other studies have demonstrated the negative social stigma associated with high cognitive ability in high school students. In a study examining the social stigma adolescents attribute to high intellectual ability, a majority of the high school students who responded to a request for essays on preference for intellectual, athletic, and aesthetic qualities (about 54% of the 3,514 essays collected) wrote that they would rather be “most intelligent” than “most athletic” or “best looking” (Schroeder-Davis,1999). However, 22% of the students’ essays acknowledged that a social stigma against intellectually gifted students exists. While there is evidence to support the value students place on intelligence, there is also an awareness of the social stigma attached to students who exhibit high intelligence, which may cast them in an unfavorable light in the eyes of their peers.

Studies of heterogeneously grouped gifted students have found that gifted students employ various techniques to socially ‘cope’ with their high-ability status (e.g., Faust, Rudasill, & Callahan, 2006; Swiatek, 1995; 2001). Swiatek (1995) developed the *Social Coping Questionairre* (SCQ) to determine what tendencies gifted students may use to minimize the social stigma they are subjected to. The resulting five ways of ‘coping’ with giftedness used by students were denying their giftedness, conforming to the peer group and gaining social popularity, becoming accepted by peers, increasing their activity level, and fear of failure. These techniques serve as a coping strategy but may also preserve elements of social self-concept by allowing the students to feel more similar to peers.

Swiatek's research (1995; 2001) illustrates the awareness of adolescent gifted students in a heterogeneously grouped environment concerning their stigmatized status in a school's social environment. While young students rate cognitively gifted students more favorably (Schneider, Clegg, Byrne, Ledingham, & Crombie, 1989), children entering adolescence have a natural inclination to conform to social norms of their peer group (Swiatek, 1995). The perceived necessity of gifted students to engage in coping strategies can lead the students to experience a degree of stress related to this social coping in heterogeneous populations, including mood and anxiety problems (Chan, 2004).

In addition to the acknowledgement of the social stigma related to being a gifted student, gifted students report seeing their giftedness as a social handicap in their home school (Coleman & Cross 1988). Participants included 99 high school students attending a summer gifted program. Results revealed that gifted students report feeling different from their peers, and felt their giftedness was a social handicap. The researchers also noted that the type of school students attended may have affected how the students experience their giftedness, but did not elaborate on what specific type of programs may influence this trend.

While the academic benefits of ability grouping is agreed upon by gifted students, the effects that grouping may have on students' psychosocial success is less clear. Gifted students were unable to agree upon whether homogeneous grouping confers any social advantages (Adams-Byers, Whitsell, & Moon, 2004). The study found that forty-four adolescents in a summer program for the gifted generally agreed that academic grouping is beneficial, but the results were less clear about how well homogeneous grouping

served their social needs. The study found that one-third of the students expressed the desire to remain with their nongifted peers they had established relationships with. Many students in the study acknowledged the intellectual ability discrepancies between themselves and their peers, but reported that it did not interfere with their friendships. On the other hand, two thirds of the participants reported a preference for the company of like-ability students since they find them easier to relate to. The summer program participants were from a wide range of heterogeneous and homogeneous programs, which provides insight into the overall view of social aspects of ability grouping from students in both grouping styles.

In a clinical case study that studied the function of peers in the lives of gifted students, it was concluded that exposure to like-ability peers provides social benefits for gifted students (Lee, 2002). Peers provide "pivotal roles of competitor, supporter, motivator, and a role model in adolescents' talent development" (p. 26). The researcher observed a gifted adolescent in several settings, and used the constant comparative method (Hutchinson, 1990) to form categories and find patterns of the qualitative data. While it is not prudent to generalize a case study to cover gifted students as a whole, this study provides important insight into the critical roles gifted peers may fill in each other's lives. Gifted peers help provide social scaffolding to increase skills through being role models, competitors, supporters, and motivators for one another.

When studying the psychosocial functioning of homogeneously grouped gifted students, summer programs are a common target (e.g., Adams-Byers, Whitsell, & Moon, 2004; Coleman & Cross, 1988; Cornell et al., 1990; McHugh, 2006; Plucker & Stocking, 2001; Rudasill & Callahan, 2008; VanTassel-Baska, Landau, & Olszewski, 1984). One of

the first studies to focus on the benefits of a summer program for gifted students found impressive social benefits among the students (VanTassel-Baska, Landau, & Olszewski, 1984). Six months after students completed the summer program, 97% of the 117 responding parents of gifted students reported that their child had formed new friendships because of the program. Over half of the children in these friendships stayed in touch with their new friends for the six months between the program's end and the administration of the parent questionnaires. The exposure to like-ability peers appears to have resulted in strong relationships and students maintaining their new relationships despite a lack of regular contact in a setting such as their school.

Summer programs for the gifted also provide academic and emotional growth, as well as providing important social opportunities derived from exposure to like-ability peers (McHugh, 2006). The social benefits of attending a homogeneously gifted summer program have since been well established in literature; as demonstrated by this review of related research conducted by McHugh (2006). Students in a gifted summer program also report an increase in opposite-sex peer relations and same-sex peer relations (Rinn, 2006). These results were obtained in a study with 140 gifted students who were surveyed during a homogeneous summer program. The short time-span of this summer program (approximately two and a half weeks) makes these results especially noteworthy. The researcher hypothesized that this rapid rise in social self-concept among gifted students could result from the sudden adjustment necessary when immersed within a population of like-ability peers in a residential setting. Students live with one another, eat with one another, and go to class with one another. The researcher also asserted that

the students are forced to socially adjust to their new environment through increasing their social abilities.

While there is a preponderance of research on summer programs for the gifted, year-round schools with homogeneous grouping of students should also be examined. When gifted students are grouped with like-ability peers, they exhibit improved social self-concept, including higher self-reported romantic appeal and self-reported close friendships (Wright & Leroux, 1997). This study included a cohort of 25 gifted students and measured their social self-concepts at the beginning and end of their first year in a homogeneously gifted program. The grouping of gifted students with like-ability peers improved social self-concept, including higher self-reported romantic appeal and self-reported close friendships. Both of these factors help increase overall social self-concept significantly. While these students were aware of being labeled 'different' from their nongifted age-mates, qualitative interviews with students revealed they enjoyed the exposure to their like-ability peers.

There is a lack of research examining the social functioning of gifted adolescents attending year-round homogeneous gifted schools. This study has reviewed research on the summer programs in the hope that the results will generalize to a program similar in grouping style and intentions.

Affect Self-Concept and Gifted Students

According to Bracken (1992), affect self-concept measures overall perceived emotional adjustment and emotional health. According to popular misconceptions, gifted students are frequently emotionally maladjusted (Schneider, 1987), with a higher incidence of psychopathology than the general population (Gallucci, 1988).

Gallucci (1988) examined the general public's view that gifted students are pathological deviants, and was one of the first researchers to refute this view with empirical evidence that gifted youth are no more maladjusted than their nongifted peers. This has not only been supported in more recent research (e.g., Nail & Evans, 1997; Reis & Renzulli, 2004), but some assert that gifted children have even better emotional adjustment than their nongifted peers (Gallagher, 1990; Parker, 1996). The commonly-held view of gifted children as emotionally unstable students has not only been dismissed in research, but there is some evidence which indicates that gifted students may be better adjusted than their general education peers.

Nail and Evans (1997) studied 115 gifted and 97 nongifted high school students and their scores of emotional adjustment. The emotional scores obtained by students showed that gifted children obtained lower T-scores than their nongifted peers in emotional adjustment as measured by the Emotional Symptoms Index on the Behavior Assessment System for Children. The lower scores of gifted students suggested better overall psychological adjustment among the gifted group.

The importance of positive affect is well established in research (e.g., Lyubomirsky, King, & Diener, 2005). This meta-analysis included 225 studies, with several different (experimental, longitudinal, and cross-sectional) designs concerning the importance of positive affect in gifted students. The analysis claimed a causal relationship between positive affect and level of success. If poor affect was common in gifted populations, then logic suggests there would not be typically high levels of success attained by gifted students. Through this reasoning, gifted students are, at worst, not suffering from poor affect. It is important to note that this variable may help to explain

the phenomenon of underachievement in gifted populations, though this is outside the purview of this paper.

Another popular conception of gifted students is their perceived likelihood of developing depression and suicidal behaviors. In reality, gifted children are no more likely to develop depression or attempt suicide than their nongifted peers (Cross, Cassady, & Miller, 2006; Baker, 1995; Neihart, 2002), though there may be an exception amongst visual arts and writing-oriented gifted students (Neihart & Olenchak, 2002).

Accelerated students who have skipped a grade or entered school early are often seen as at risk for maladjustment due to their young age compared to their classmates, but this has not been supported in research. (Sayler & Brookshire, 1993). In fact, a random sample of accelerated students reported better emotional health than average-ability peers, and similar emotional health compared to their chronologically older gifted classmates.

Gifted students in an International Baccalaureate (IB) program for high-ability students reported lower levels of externalizing problems and similar levels of internalizing behaviors when compared to their non-gifted peers (Shanessy, Suldo, Hardesty, & Shaffer, 2006). The IB program contained high-achieving gifted students as well as students not classified as gifted, who reported results similar to that of the gifted students'. This suggests that these students' psychological adjustment could be the result of achievement typically seen in students enrolled in IB programs, rather than the program's structure itself. The high-achieving students exhibited less externalizing behaviors because they acknowledge they are responsible for their academic success, thus internalizing many processes.

Reis and Renzulli (2004) agreed that gifted students are no more maladjusted than their nongifted peers, but point out some risk factors specific to gifted students that can negatively affect social-emotional health. A poor match between educational potential and education level can lead to unmotivated students. Poor peer interactions in heterogeneous programs can lead to pressures to conform and underachieve. Gifted students also may suffer from emotional maladjustment due to environments that do not support their potential.

Despite empirical evidence that gifted children are just as, if not more so, psychologically well-adjusted as their general education peers, misperceptions of gifted students' affective maladjustment persist (Bain, Choate, & Bliss, 2006). In this study, 285 university students completed a questionnaire intending to measure several attitudes concerning gifted students. The results showed a tendency for the students to embrace common misconceptions that gifted students are unusually prone to emotional disturbances. Results revealed that 69% of the participants responded that gifted students are more likely than the general population to develop emotional problems.

Despite evidence that gifted students are no more maladjusted than their peers (e.g., Nail & Evans, 1997; Reis & Renzulli, 2004), perceptions that gifted students are more prone to emotional problems than the general population persist (Bain, Choate, & Bliss, 2006). While gifted students are generally not more emotionally maladjusted than the general population, Reis and Renzulli (2004) assert there are several risk factors specific to gifted populations for producing possible emotional difficulties.

STATEMENT OF PROBLEM

The academic benefits of grouping students based on ability are well established in literature (e.g., Kulik & Kulik, 1992, 1982). Different program designs confer different specific advantages to students. Research indicates that programs which encourage gifted students to perform at their academic level and allow frequent exposure to like-ability peers provide the best environments for gifted students to actualize their potential through interactions or by design (e.g., Lee, 2002; Kulik & Kulik 1992).

While students' academic self-concept has been correlated with academic achievement (Marsh & Alexander, 1997; McCoach & Siegle, 2002), internal and external social referencing of homogeneously grouped gifted students can moderate an increase in academic self-concept in gifted students (Chan, 1988; Marsh, 1986; Marsh, Chessor, Craven, & Roche, 1995; Plucker & Stocking, 2001; Wright & Leroux, 1997; Zeidner & Schleyer, 1998). A realistic view of an individual's abilities may be possible through external referencing to peers of similar ability, which ultimately could have an impact on academic self-concept.

Homogeneously grouped gifted students' ratings of competence and intrinsic motivation are higher than their nongifted peers (Vallerand, Gagne, Senecal, & Pelletier, 1994). The homogeneous grouping of gifted students allows more chances to explore topics and to work at a pace natural to them, which fosters feelings of self-efficacy and intrinsic motivation. The exact program design of heterogeneously grouped programs is an important consideration when examining the reported competence of students. Some programs which use heterogeneous grouping of gifted students may provide chances for students to independently explore topics (thus fostering self-efficacy). But not all

heterogeneous programs have an emphasis on independent topic exploration, which may impact self-efficacy. This possible variation between programs contributes to the lack of previous research when comparing these groups and level of perceived competence.

The social self-concept of gifted students is a topic of particular interest in this study. Prior to adolescence, gifted students are held in high social esteem by their classmates, but this rating normalizes as the students enter adolescence (Schneider, Clegg, Byrne, Ledingham, & Crombie, 1989). Adolescence is an important stage in social development as adolescents form more peer bonds and develop critical social skills. Social groupings with peers of like ability and interests provide many social benefits to gifted students (Lee, 2002; Wright & Leroux, 1997). This is especially true in residential summer programs, which provide meaningful peer relationships for gifted students (VanTassel-Baska, Landau, & Olszewski, 1984; McHugh, 2006; Rinn, 2006). A year-round homogenous high school for the gifted may logically be just as socially beneficially. A lack of these important relationships can result in loneliness, depression, and even suicide (Kaiser & Berndt, 1985).

While gifted students are traditionally seen as emotionally maladjusted, prone to depression and suicide, and socially isolated, this is not the case (Cross, Cassady, & Miller, 2006; Galluci, 1988; Nail & Evans, 1997; Parker, 1996; Reis & Renzulli, 2004), except for a possible link to suicide in visual and writing-oriented gifted students (Neihart & Olenchak, 2002). This area is not intended to be a comparison between homogeneous and heterogeneous grouping's effect on affect, but to demonstrate gifted children are no more maladjusted regardless of program when compared to nongifted peers.

Although previous research has examined the academic, competence, affect, and social self-concept of gifted students, there is little research comparing homogeneously grouped gifted students to heterogeneously grouped gifted students on these domains. The existing research is lacking in the field of competence self-concept exhibited by gifted students in any program, and while affective characteristics and emotional health of gifted students has been examined, affect self-concept has not been thoroughly studied.

The purpose of this study is to examine differences in Academic, Competence and Social self-concept between homogeneously and heterogeneously grouped gifted students. This study improves on previous designs by including homogeneously grouped gifted students that attend a year-round school and by using a widely accepted assessment tool for looking at specific domains of self-concept. The study also adds to the research comparing gifted students with nongifted peers by comparing performance on the Affect Self-Concept scale with the normative sample.

The following hypotheses were tested in this study:

1) Academic self-concept in students in the homogeneously grouped gifted students will be lower than that of the heterogeneously grouped gifted students in accordance with the BFLPE.
2) Competence self-concept will be higher in the homogeneously grouped gifted students than those reported by heterogeneously grouped gifted students.
3) Social self-concept will be higher among homogeneously grouped gifted students than heterogeneously grouped gifted students.
4) Affective self-concept will be within the Average range in both groups and will not differ from mean scores in the normative sample.

METHOD

Participants

Participants included 43 gifted students in grades 10 through 12 in two different academic groupings (14 male, 29 female, mean age = 16.58 years). 28 students were enrolled in a magnet school for the gifted located in the Southeastern United States and 15 gifted students were enrolled in traditional 9-12th grade high schools in the Southeastern United States. The mean age of the homogeneous group was 16.68 years (SD = .612) and 67.9% were female (n = 19) leaving 32.1% males (n = 9). The heterogeneous mean age was 16.40 (SD = .828), 66.7% were female (n = 10) and 33.3% were male (n = 5).

The combined samples included 5 sophomores, 16 juniors, and 17 seniors. In the homogeneous sample, there were no reported sophomores; 10 were juniors and 14 were seniors. The heterogeneous sample included 5 sophomores, 6 juniors, and 3 seniors. When considering student-reported race, the samples showed a majority were white (n = 29), 8 reported "Black," 3 reported Asian, 1 Hispanic, and 2 responded "other." The homogeneous sample included 16 students who responded White, 7 responded Black, 1 endorsed Hispanic, 3 Asian, and 1 "other." The heterogeneous sample included 13 students who responded White, 1 Black, and 1 "other."

When student race is examined, 48.3% of the homogeneous sample reported being of non-white minorities. Although the racial composition of the school as a whole is not known, this percentage of minority students seems high.

When examining attained parental education, no students in either sample reported that both parents did not receive a high school or equivalent diploma. The

highest of the two parents' education was the determining variable, regardless if it was mother or father. In the homogeneous sample, 92.9% of students reported having a parent who had a college degree or higher (i.e., Masters or Doctorate). 7.1% reported having a parent with a high school diploma or equivalent. In the heterogeneous sample, 86.7% of the students reported having parents with college degree or higher education, and 13.3% had parents who earned a high school diploma or equivalent.

Materials

The present study included two measures. A Demographics Questionnaire was designed to assess ethnicity, parent education, and sex. A multidimensional measure of self-concept examined academic, competence, affect, and social self-concepts. The following subsections will discuss each in more detail.

Demographics form. A Demographics Form (See Appendix A) was completed by all participants. The form gathered information about age, sex, and parent(s) attained education. This information was gathered with the intention of controlling for Socioeconomic variables.

Multidimensional Self-Concept Scale. The *Multidimensional Self-concept Scale* (MSCS; Bracken, 1992) contains 150 items, divided into six domains of 25 items each. The domains measured include Family, Physical, Social, Competence, Academic, and Affect self-concepts. In this study, the Academic, Affect, Competence, and Social domains were assessed. These domains will be described in further detail in subsequent paragraphs.

Family Self Concept measures satisfaction with family interactions and home environment. Sample items in this domain include "My home is warm and caring" and

"My parents love me just as I am." *Physical Self Concept* measures perceived image of one's body and physical self-image. Sample items include "My clothes look good on me" and "I am in poor shape." *Social Self Concept* measures perceived peer acceptance and perceived social aptitude. Sample items in this domain include "I have a lot of friends" and "Most of the time I feel ignored." *Competence Self Concept* measures perceived ability to succeed at various tasks in various environments. Sample items include "I lack common sense" and "I don't seem to have any control over my life." *Academic Self Concept* measures perceived academic abilities and functioning. Sample items include "I have poor study habits" and "I am proud of my school work." *Affect Self Concept* measures positive affect and perceived emotional health. Sample items include "I am not as happy as I appear" and "I feel secure." The MSCS also provides a measure of *Total Self Concept*, which is an average of the six self-concept domains and is designed to provide an overall view of self-concept.

The MSCS is a self-report measure based on a Likert scale with responses that range from "Strongly Agree" to "Strongly Disagree." To increase validity, some items are reverse scored to make sure that a respondent is reading each item carefully. The global scale and each of the six domains provide standard scores with a mean of 100 and a standard deviation of 15.

According to Bracken (1992), the MSCS scales all have internal consistency of .87 or higher. The MSCS also exhibits strong concurrent validity with the *Coopersmith Self-Esteem Inventory* (coefficient of .73) and the *Piers-Harris Children's Self Concept Scale* (coefficient of .85). The MSCS was standardized on 2,501 children ranging in age from 9 to 19 years old. The Alpha Coefficients of the domains of self-concept assessed

by the MSCS are as follows: Social (.90), Competence (.87), Affect (.93), Academic (.91), Family (.97), and Physical (.92). Test-retest reliability coefficients on the self-concept facets range from .73 to .81.

Design and Procedure

The research procedure was reviewed and approved by the Institutional Review Board at Western Carolina University. Participation in this project was voluntary. Gifted students in the magnet school were solicited to participate over the course of two academic years in the class of an individual teacher. Students who returned the forms at the magnet schools completed the surveys during their scheduled class time in small groups. This occurred during the 2008-09 and 2009-10 school years in the classroom of one teacher who volunteered time for the project with the approval of school administration. The pool of potential students for both years in the class was approximately 30 students. A pool of approximately 60 participants were available between the school years. The teacher agreed to lend time for the surveys for students who had agreed to participate, so surveys were administered in small groups throughout the school day as students changed classes.

The heterogeneously grouped students were invited to participate if they were in the 10^{th}, 11^{th}, or 12^{th} grades. Parental consent and student assent forms (see Appendix B and C respectively) were sent home with all the gifted students in the identified grades. A pool of approximately 140 students between two schools were invited to participate. The consent and assent forms were again required for students to participate. At one school, only one consent/assent form was returned despite a week of elapsed time between sending the forms home and scheduled survey administration. At the other high school,

fourteen students were available to participate and had returned surveys by the day scheduled for survey administration. Since individual teachers were not solicited to volunteer time for survey administration, the surveys at the high school were administered in the high schools' media center en masse.

In order to monitor socioeconomic variables, parental education level was obtained via the demographics questionnaire. Three categories of SES were defined similar to the classification employed by Wohlfarth, Winkel, Ybema, and Brink (2001). Low SES status was counted as less than a high school/equivalency diploma, middle SES status was coded as a high school/equivalency diploma, and high SES was coded as any postsecondary education. Based on this division, 90.7% of participants' fell within the high SES category (n = 39) and 4 fell within the Middle SES category. No Low SES cases were reported.

Ideally, SES is a multifaceted measurement composed of values such as parental education level, family income, and occupation (Sirin, 2005). This was not done in this sample as a matter of pragmatics. After demographics forms were examined, it was discovered that not all students knew their parents' job titles, and family income was excluded because students were not expected to consistently know their family's income level.

RESULTS

A one-way between-groups multivariate analysis of variance (MANOVA) was performed to investigate potential differences in academic, competence, and social self-concept between the two groups of gifted students. The dependent variables were the standardized scores of the three domains of self-concept (academic, competence, and social). The independent variable was grouping (homogeneous or heterogeneous).

The assumptions for running a MANOVA were satisfied, including univariate and multivariate normality, linearity, as well as homogeneity of variance-covariance matrices and multicollinearity. One outlier was noted in the data for the competence self-concept domain, though excluding the outer 5% of the data (including this point) would only change the mean by 0.12 points. Two outliers were noted in the academic self-concept data, but excluding the outer 5% of the data would only change the mean by 0.38. No outliers were present on the social self-concept scores. Due to the small perceived impact of the outliers, they were not removed from their respective datasets.

There was no statistically significant difference on the combined dependent variables between the heterogeneous and homogeneous groups of gifted students: $F(3, 39) = .349$, $p = 0.79$. Because there was no difference on the dependent variables collapsed across self-concept domain, individual scale differences could not be examined between groups for each domain of self-concept. Table1 shows the descriptive statistics for the self-concept domains in each group.

Exploratory Analysis

A one-sample T-Test was conducted to compare the mean Affect Self-Concept score collapsed across gifted students to the normative sample's mean of 100. The

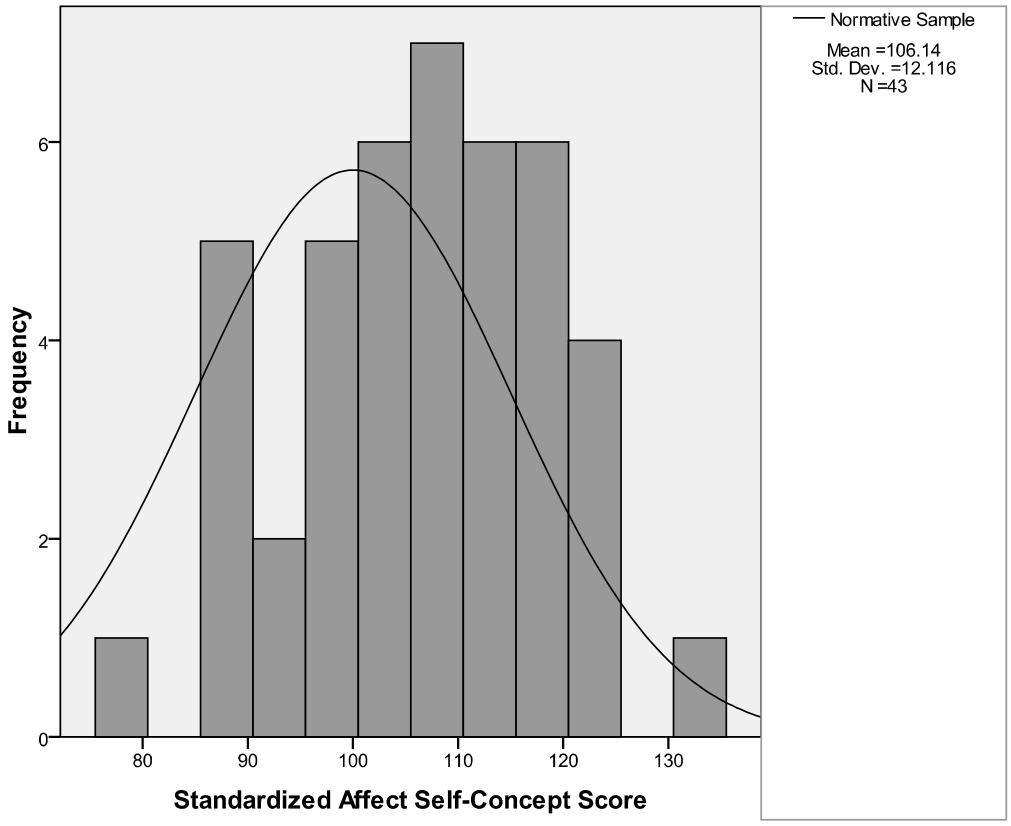
Table1: Descriptive Statistics for Students' Self-Concept Domain Scores.

	Group	Mean	Std. Deviation	N
Social	Homogeneous	107.11	10.692	28
	Heterogeneous	107.47	9.187	15
	Total	107.23	10.083	43
Competence	Homogeneous	107.25	14.196	28
	Heterogeneous	104.93	8.066	15
	Total	106.44	12.349	43
Academic	Homogeneous	110.46	10.892	28
	Heterogeneous	107.33	8.715	15
	Total	109.37	10.191	43

results showed a statistically significant difference between the two means, $T(42) = 3.32$, $p = .002$. When comparing the distribution of scores obtained by gifted students to the normal curve of the normative sample (as illustrated in Figure 1), the mean of the gifted students' affect self-concept (106.14) is higher than the normative sample's mean of 100. The gifted students' affect scores satisfied the univariate tests of normality.

The variable of SES was not used in the analysis due to a lack of statistical significant between the groups of gifted students. Its purpose was to help control for differences between the groups, and the rudimentary SES variable of parental education was fairly uniform in both groups. 90.7% of the students surveyed fell within the high SES category (n = 39) and 9.3% were in the Middle SES category (n = 4). There were no students who reported being in the low category.

Figure 1: Distribution of Affect Self-Concept Scores Collapsed Across Gifted Students Overlaid with Normal Curve of Normative Sample.



DISCUSSION

There are many different grouping paradigms used by gifted education programs. Gifted students who attend homogeneously grouped programs may, through an external comparison, show lower academic self-concept than heterogeneously grouped gifted students who compare themselves to nongifted classmates (e.g., Marsh, 1986; , Chessor, Craven, & Roche, 1995). Homogeneously grouped gifted students also show higher self-concept in areas of competence and motivation (Vallerand, Gagne, Senecal, & Pelletier, 1994), which may be because of the opportunity to work independently at a pace more natural for them.

Gifted students grouped together, especially those in summer programs, have provided documented social benefits for gifted students, including lasting peer relationships (Lee, 2002; McHugh, 2006; Rinn, 2006; VanTassel-Baska, Landau, & Olszewski, 1984; Wright & Leroux, 1997). Logic dictates that a homogeneously grouped magnet school for the gifted would provide these important peer relationships as well. When examining the affect and emotionality of gifted students, research has shown that gifted students are no less maladjusted than their nongifted peers contrary to common conceptions that they are (Cross, Cassady, & Miller, 2006; Galluci, 1988; Nail & Evans, 1997; Parker, 1996; Reis & Renzulli, 2004).

The current study applied the above research to two populations of students: students at a magnet school homogeneously grouped, and students heterogeneously grouped in two typical high schools. When domains of self-concept were examined, homogeneously gifted students were hypothesized to score higher on social and competence self-concept. Heterogeneously grouped gifted students were predicted to

score higher on academic self-concept based on an external comparison to nongifted peers. When collapsed across groups, affect self-concept was expected to not differ from the average of the instrument's standardization sample.

The findings of this study are perhaps most useful when examined as a case study description of the programs. The results of this study suggest some strengths in the design of the homogeneous and heterogeneous programs in regards to fostering positive domains of self-concept. The means of the academic, competence, social, and affect self-concept were all at least as high as the normative sample's means. These scores suggest that both the programs the students enrolled in provide opportunities for the students to experience success and exhibit at least an average amount of positive feelings towards their academic, social, and self-efficacy abilities.

In addition to the lack of low self-concept scores in all domains of the sampled students, the homogeneously grouped magnet school may have an enrollment process that address the underrepresentation of minority students. This is illustrated by the fact that over 48% of the students in the magnet school sample reported being races other than white.

Hypothesis Testing

The hypothesis that heterogeneously grouped gifted students would show higher academic self-concepts based on an external comparison (i.e., Marsh, 1986) than their gifted counterparts that were homogeneously grouped was not supported by this sample of students. Not only was there a lack of statistical significant, but the directionality of the difference in academic self-concept was contrary to the predicted direction. The mean

academic self-concept score in the sampled heterogeneous population (107.33) was lower than the homogeneously grouped students' mean (110.46).

A potential explanation for the unforeseen direction and difference in academic self-concept between groups may lie within an overall problem of gifted research mentioned. Generalization of programs for the gifted is a continuing problem in educational research, and unforeseen differences in exact program effects is evident in these data.

The mean competence self-concept score of homogeneously grouped gifted students was higher than the heterogeneously grouped gifted students', though the difference was not statistically significant. The directionality of the results lend some support that the sampled populations may differ in competence self-concept, but the limited sample sizes available cast doubt on the robustness of these findings.

The hypothesis that homogeneously grouped students would show higher social self-concept than their heterogeneously grouped counterparts was not supported. In fact, the difference between the two groups' means of standardized scores was only 0.36 points.

Despite research such as that conducted by Coleman & Cross (1988), the sampled gifted students in a heterogeneously grouped program do not seem to show lowered social self-concepts as a result of a "social handicap." Lee (2002) concluded that gifted peers confer some positive social benefits, and it is possible that the heterogeneously grouped gifted students have provided these relationships for one another in common-classes, despite being enrolled in classes with nongifted peers.

An alternative explanation to the lack of difference in social self-concept scores may be seen in Swiatek's research (1995) where gifted students employ coping strategies to enhance their social acceptance. The sampled students may use these social coping strategies such as denying their giftedness around others to the effect of normative social self-concept.

When the gifted students' affect self-concept scores were collapsed across groups and compared to the normative sample's mean, the gifted students' scores were significantly higher. Previous research suggested that gifted students' were no more emotionally maladjusted than their peers (i.e., Reis & Renzulli, 2004) despite common conceptions that they are (Bain, Choate, & Bliss, 2006). The students sampled in this study support research that gifted students are not more emotionally troubled than their peers. In fact, the significantly higher affect self-concept scores seen in this gifted sample show significantly better perceived emotionality than the normative samples'.

Limitations

There are several limitations of the conclusions in this research project. Most notably, the small sample size indicates that the statistical results are not robust. However, the assumptions for running the data analyses such as the MANOVA (homogeneity, linearity, etc.) were satisfied by the dataset.

A self-selection bias may also be present in the sampled students. Though the data aims to sample all gifted students in these programs, only students who took home the consent/assent forms, had them signed, and returned them were allowed to participate. The types of students likely to complete these steps on a voluntary basis may have narrowed the characteristics of students seen in the sample.

The current study was not able to compare scholastic achievement between the groups of gifted students. Although students reported SAT or PSAT scores, a comparison between groups would have questionable validity due to differences between years and the fact that some students did not know their scores. Both these problems may have been especially exaggerated in the small sample sizes.

As with all studies in gifted education, a major limitation is the generalizability of these results. As covered in the review of literature, there are numerous specific program designs for gifted students, each conferring unique benefits to students. When combined with the small sample size of the surveyed groups in this project, the generalization of the current data is extremely limited.

Directions for Future Research

Future research in the field of gifted education may help increase the understanding of program structures and self-concept in gifted students – as well as other aspects of mental health. As mentioned earlier, the lack of generalization in studies such as this one is extremely limited. A study across different homogeneous and heterogeneous grouping programs with substantial sample sizes would help increase the relevance of self-concept trends in gifted students.

Another variable that could add important information to studies such as this one would be qualitative data from the students themselves. This would help address such limitations as self-selection bias for students enrolled in gifted programs, as well as provide new information that cannot be gathered by anonymous surveys.

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Appendix A

Demographics Questionnaire

Age: _____

Sex (circle one): Male Female

Race (circle one) Black White Hispanic Asian Other

Please circle the highest level of education obtained by your mother:

Some High School High School Diploma/GED Some College

College Degree Advanced Degree (Masters, Doctorate) Don't Know

Please circle the highest level of education obtained by your father:

Some High School High School Graduate/GED Some College

College Degree Advanced Degree (Masters, Doctorate) Don't Know

Is your mother currently employed? (circle one) Yes No

If so, what job: _____

Is your father currently employed? (circle one) Yes No

If so, what job: _____

Have you taken the PSAT or SAT? Yes No

If so, what was your total score (rounding if you do not remember is acceptable)?_____

Appendix B

Parental Consent Form

Purpose of Study:

Your child is invited to participate with no obligation in a research study which intends to examine how gifted high school students view their own abilities in various areas. This includes how they perform academically, whether they show more positive or negative emotions/affect, how they view their social abilities, and how competent they feel in different parts of their life. This project will evaluate how gifted high school students in magnet schools view their own abilities compared to gifted high school students who have at least some classes with their nongifted peers.

Description of Participation:

If you choose to allow your child to participate in this research study, they will complete a multiple-choice scale to determine their views of their own abilities and a brief demographic questionnaire. This process should take approximately 20-30 minutes.

Confidentiality:

In the interest of confidentiality, your child will not place their name on the questionnaires, and no identifying information will be collected. Questionnaires will be kept confidential by the experimenter, and destroyed at the conclusion of the project.

Voluntary Participation:

Your child's participation is strictly voluntary. If they decide not to participate, or you chose not to allow them, there will be no penalties or negative consequences. The students may choose to withdraw from the study at any time and the Principal Investigator (Christopher Hamm) may choose to cancel their participation at any time to prevent participant discomfort or damage to the project. If your child chooses to withdraw, all their surveys and questionnaires will be destroyed.

Do you have any questions? (Circle one) NO YES

If you circled YES, please contact the Principal Investigator, Mr. Christopher Hamm at 804-920-5556 or email him at cjhamm1@catamount.wcu.edu before signing this form. If you have questions or concerns regarding your child's rights as a research participant, you may also contact the chair of the WCU Institutional Review Board at 828-227-3177. Do not sign this form until these questions have been answered to your satisfaction.
If you have any concerns about how you were treated during the experiment, you may contact the office of the IRB, a committee that oversees the ethical dimensions of the research process. The IRB office can be contacted at 227-3177. This research project has been approved by the IRB.

YOU ARE MAKING A DECISION WHETHER OR NOT TO ALLOW THE PRINCIPAL INVESTIGATOR TO USE THE QUESTIONNAIRE RESPONSES PROVIDED BY YOUR CHILD FOR RESEARCH AND PRESENTATION PURPOSES ONLY.

I AGREE DO NOT AGREE (Circle one) for your child to participate

Participant's name (please print) _____ Date: _____

Parent Signature: _____ Date: _____

Note: Student must read and sign the attached Assent form as well.

Results of Study

If you would like to learn the results of the study after its conclusion, please write your email address (preferred), physical address, or phone number below. This will only be used for sharing the results of the study with you.

Contact me at: _____

Appendix C

Student Assent Form

Purpose of Study:

You are invited to participate with no obligation in a research study which intends to examine how you view your abilities in different areas. These areas include how your academic performance, positive or negative emotions/affect, your social skills, and how competent you feel you are in various situations. This study will compare your views in these areas to gifted students in regional magnet schools for gifted students

.

Description of Participation:

If you choose to participate in this research study, you will complete a multiple-choice scale to determine your views of your own abilities and a brief demographic questionnaire. This process should take approximately 20-30 minutes.

Confidentiality:

To protect your confidentiality, you will not place your name on the questionnaires, and no identifying information will be collected. Questionnaires will be kept confidential by the experimenter, and destroyed at the conclusion of the project.

Voluntary Participation:

Your participation is strictly voluntary. If you decide not to participate, there will be no penalties or negative consequences. You may choose to withdraw from the study at any time and the Principal Investigator (Christopher Hamm) may choose to cancel your participation at any time. If you choose to withdraw, all your surveys and questionnaires will be destroyed.

Do you have any questions? (Circle one) NO YES

If you circled YES, please contact the Principal Investigator, Mr. Christopher Hamm at 804-920-5556 or email him at cjhamm1@catamount.wcu.edu before signing this form. If you have questions or concerns regarding your rights as a research participant, you may also contact the chair of the WCU Institutional Review Board at 828-227-3177. Do not sign this form until these questions have been answered to your satisfaction

If you have any concerns about how you were treated during the experiment, you may contact the office of the IRB, a committee that oversees the ethical dimensions of the research process. The IRB office can be contacted at 227-3177. This research project has been approved by the IRB.

YOU ARE MAKING A DECISION WHETHER OR NOT TO ALLOW THE PRINCIPAL INVESTIGATOR TO USE THE QUESTIONNAIRE RESPONSES FOR RESEARCH AND PRESENTATION PURPOSES ONLY.

I AGREE DO NOT AGREE (Circle one) to participate in this research study.

Participant's name (please print) _____ Date:_____

Participant's Signature: _____

Results of Study

If you would like to learn the results of the study after its conclusion, please write your email address (preferred), physical address, or phone number below. This will only be used for sharing the results of the study with you.

Contact me at: _____