PSYCHOSOCIAL DEVELOPMENT PATTERNS IN ATHLETICALLY GIFTED AND ACADEMICALLY GIFTED POST-SECONDARY STUDENTS

By

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(Under the Direction of Bonnie L. Cramond)

ABSTRACT

This study compared the psychosocial development of 258 undergraduate honors students and 222 undergraduate student-athletes at a mid-size regional university using the Student Development Task and Lifestyle Assessment (SDTLA). Students in the same academic year in the two groups did not differ significantly from each other on any measure of psychosocial development assessed by the SDTLA. Comparing participants with the national norm values for each academic year, the student-athletes scored above the national norm in establishing their sense of autonomy and in establishing and maintaining a healthy lifestyle and did not score below the national norm on any aspect of psychosocial development measured by the SDTLA. The honors students scored above the national norm in establishing emotional autonomy and establishing and maintaining a healthy lifestyle and scored below the national norm in establishing their personal sense of purpose in life.

The students in both groups exhibited very similar patterns of psychosocial development from their freshmen to senior years compared to the national norms. Students in both groups began university below the national norm on most aspects of psychosocial development as freshmen, equated with the national norms as sophomores, fell behind as juniors, and then surged

ahead as seniors. Members of both groups lagged behind the national norm in cultural participation throughout their undergraduate years.

INDEX WORDS: Psychosocial Development, Gifted Education, Honors, Student-Athlete, Post-Secondary Gifted.

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DEDICATION

This dissertation is dedicated to the gifted students who participated in my study, without whom this would simple not have been possible, and to Sam Baker and Martha Abell who welcomed academic research of the student-athlete and honors programs for which they were responsible.

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As a preemptive caveat, I shall overlook people without whom I could not have reached this place in my life. This is not intentional, I am simple indebted to so many people that I cannot remember nor list them all. Please forgive me.

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CHAPTER 1

INTRODUCTION

Background

Human development, and the development of university students in particular, was a subject with which I became fascinated while sitting in James Marcia's class on adolescent psychology at Simon Fraser University. His course had a profound affect upon my life, triggering an intense self-evaluation, and ultimately setting the direction of my subsequent academic career. The ubiquitous dinner table discussions of Freudian psychoanalytic theory throughout my childhood that were just part of growing up as the child of a Freudian psychoanalyst took on a practical use for me by providing the foundations of my understanding of Eriksonian psychosocial development and Marcia's model of identity development in adolescence. This fascination in the human individuation process led to an interest in the extra-curricular driven personality development of university students and the related work of Arthur Chickering and ultimately inspired me to pursue a degree in student affairs at The University of Georgia under Roger Winston and Ted Miller.

Through the course of my degree in student affairs it became apparent to me that the extra-curricular activities at a university are far more purposeful than I had ever imagined and that they are designed to facilitate the primary purpose of the institution, the academic or cognitive development of students. With my interest in the relationship between psychosocial development and academic development piqued, I delved into the area of educational psychology where I was exposed to this previously unknown concept of gifted education.

I was surprised and intrigued when I first learned as a graduate student that gifted education was a publicly funded activity in the United States of America. Growing up and attending primary and secondary schools in England and South Africa, specialized education for gifted students was a concept to which I had not been exposed. Government funded education was differentiated in both countries, but only into the broad university bound versus non-university bound categories. Additionally in the case of South Africa, schools were differentiated based upon the race of the students and language of instruction. Any overt special adjustment for particularly able students in either country was purely on a case-by-case basis, depending primarily upon the actions of individual teachers. In my opinion at the time, the concept of specialized education for gifted students smacked of elitism, which clashed with my sense of equality of academic opportunity. Over time, and through interactions with the faculty and students in the department of gifted and creative education, I came to reevaluate my initial opinions on the appropriateness of gifted education in a democratic society and fairly soon become an ardent defender of the need for such programs within publicly funded education.

I had come to appreciate how the education of gifted students was akin to the education of students with special needs, both groups of students deserving of an educational curriculum suited to their strengths and abilities, and delivered in the environment that best facilitated their overall education and development. This pedagogical model was one with which I was familiar from special education courses and one I embraced as being wholly appropriate for both the students and society. With the new positive role for gifted education assimilated into my schema of education, I began to consider the long term educational implications of being a participant in gifted programs—what happened to these students as they progressed through their formal

education, how did the experience change them, and what impact did it have upon their development?

This interest was in part rooted in my own pre-university education, which had been far from ideal. I began in a government school in England where my dyslexia, an affliction that plagues me to this day, went undetected and untreated for an extended period of time, making school a daily torture. Returning to South Africa, my learning difficulties were compounded with the added pressures of mastering a second language in a curriculum that demanded bilingual language achievement for year-to-year promotion and graduation. For the last five years of my formal schooling, I attended a private multi-racial school, modeled after the Summerhill School in England. The school stressed the personal development of students and encouraged what I would later come to know as identity exploration. While this experience undoubtedly facilitated my own psychosocial development, with hindsight I believe that academic rigor was not sufficiently stressed. Indeed, my primary and secondary school experiences left me with long standing doubts regarding my academic ability. It was not until decades later that my score on a Raven Progressive Matrices assessment led me to accept my own cognitive potential. This uncertainty about my suitability for formal education in my own development perhaps ultimately motivated me to study the global learning experiences of other students.

Typically, when one thinks of gifted children, one's image is of grade-school children who amaze parents and teachers alike with the speed with which they grasp new concepts and master skills, often thought to be far beyond the ability of children of their age. However, as one marvels at these children, one cannot help but wonder what happens to them as they progress through school, or attend university, or once they are out on their own in the world? This is not

simply a question of academic growth; it is a question of human development—the holistic development of gifted individuals.

Human development is concerned not only with the academic education of individuals; it includes their physical, social, and emotional development as well as their intellectual or academic development. Similarly, the concept of giftedness is not limited to academic or even intellectual ability; gifted students include those who excel in music, the arts, or athletics, or in any area of human activity. Education is a process of challenging students by setting tasks just beyond their ability and then providing instruction and support to facilitate the students' achieving each task. Gifted students can be differentiated from the regular students as those students who require specialized curriculum in order to be challenged in particular domains. Perhaps more importantly, they require a curriculum in their domain of giftedness that would not be suitable for the regular students at the same academic level because it progresses too rapidly or begins at a level that is too far advanced.

Human development is not uniform. There are periods of rapid growth and development in particular areas, and there are differences between individuals in the speed and timing of development. A period of significant changes is the one that bridges childhood and adulthood, that of adolescence.

Adolescence is a time of crucial psychosocial development. Adolescence itself is a socially constructed period that begins at roughly the same time as the biological onset of puberty in the early teenage years. In western cultures, adolescence is not fully concluded until the early or middle twenties. It is a period of significant psychological growth and development (Buescher, 1985). Havinghurst (1972) viewed adolescence as that time in a person's life when one is free to try on a variety of roles and personae while searching for the one that one will

commit to. The goal of adolescence is to separate from one's family of origin and establish oneself as an individual (Blos, 1979; Erikson, 1980; Marcia, 1966). This process involves differentiation from one's family of origin and their values and beliefs, and integration into one's environment, adopting one's own values and beliefs, to stand as an individual in one's own right (Elkin, 1984; Manaster & Powell, 1983).

As individuals who already perceive themselves as being different from others, adolescence is especially difficult for gifted individuals, a period during which most individuals feel that they do not comfortably fit into their social environment (Manaster & Powell, 1983). Tannenbaum (1962) observed that their peers viewed high school students who were either academically gifted or athletically gifted as being different. In his study of 615 New York and 32 Connecticut students, he found the athletically gifted students were admired, while the academically gifted students were not.

Gifted high school students typically go on to college. The most gifted high school students are frequently offered a variety of college scholarships, each in an effort to entice then to attend particular schools. For students in this group, it is the student who chooses the college rather than the college that chooses the student. Once in college, the college administration, their professors, and their peers will treat these students differently. Some will be featured in the school newspaper before they arrive on campus; for others their choice of college may even be national news.

What is the impact of being celebrities as college freshmen? How do students develop psychosocially in an environment where people they have never met before recognize their faces and know their names? Does it make a difference in one's psychosocial development whether one is known as the player that will put the team over the top to win the championship, or as the

university's next Rhodes scholar, and if it does, what is the difference? How do these students adjust from being the best students in their classes, or the best athletes at their schools when they enroll as university freshmen, and discover themselves in an academic honors program with scholars who are their equals, or even their superiors, or on an athletic team where they may not even play every game?

Theoretical Frameworks

Psychosocial Development

In a sense, the concept of psychosocial development was born the moment someone gave the common sense answer to the question of whether nature or nurture gave rise to some characteristic exhibited in human behavior or personality, asserting that the question does not require that only one or the other is responsible, but rather that both nature and nurture contributed. In most educational and psychological development both the internal psychological and biological make up of a person, or nature, and the external environment in which the person lives, or nurture, jointly influence development. Psychosocial development is expressly concerned with both aspects. It is concerned with the psychological development of individuals as social beings, given their existing psychological make up and predisposition, and their social environment and interactions (Erikson, 1980). The process of psychosocial development is complex and dynamic, with the potential for each internal psychological change in an individual impacting each subsequent social interaction. Psychosocial development theories are concerned primarily with what it is that changes during development, i.e. the content rather than the process (Rogers, 1980).

Erikson's Model of Psychosocial Development

Erikson, a psychoanalyst and colleague of Freud's, introduced the concept of psychosocial development as a model to explain non-pathological development of personality and identity (Erikson, 1980). While modeled after Freud's biologically based psychosexual theory of personality development, Erikson's psychosocial model includes both an internal, intrapersonal, psychobiological element, and an external, interpersonal or environmental, social element. Additionally, Erikson's model extends from birth to old age, and was established based upon adaptive positive personality development, as opposed to Freud's model, which focuses primarily on the first five years of life and was based upon pathological personality development (Widick, Parker, & Knefelkamp, 1978).

Erikson's psychosocial model comprises eight stages—trust, autonomy, initiative, industry, identity, intimacy, generativity, and integrity—each with its own psychosocial conflict, or crisis, that must be experienced and successfully resolved in order to progress to the next stage. According to Erikson, the sequence of psychosocial development is an invariant, orderly, and hierarchical process based upon a series of cognitive and emotional changes. In the human life cycle, these eight stages correspond with infancy, early childhood, play age, school age, adolescence, young adulthood, adulthood, and mature age, respectively. The conflicting poles of each stage in turn are: a sense of trust versus mistrust, a sense of autonomy versus shame, a sense of initiative versus guilt, a sense of industry versus inferiority, a sense of identity versus identity diffusion, a sense of intimacy versus isolation, a sense of generativity versus self-absorption, and a sense of integrity versus despair and disgust. Erikson intentionally worded these conflicting poles from the perspective of personal perception. The resolution of each stage requires the successful synthesis of the two competing alternatives (Erikson, 1980).

At each stage, the action of resolving the crisis triggers a reevaluation, and amendment if necessary, and reintegration of all previous and future stage tasks into the internal sense of self. While each task is age and sequence specific, each task is also addressed along with the resolution of each other task, so when the identity task is being resolved during adolescence, the previous four tasks of trust, autonomy, initiative, and industry are reevaluated in light of the resolution of identity. Further, the tasks yet to be formally resolved are viewed in a new light given the process of resolving the identity crisis. Once the resolution and reevaluations are complete the individual then integrates these to yield a qualitatively new sense of self. Erikson termed these changes in personality at each stage "epigenetic" in that they represent a culmination of the outcomes of all of the stages at each stage (Erikson, 1980; Marcia, 1993a).

For the adolescent and young adult of college age, the primary psychosocial task is that of identity, which requires differentiating oneself from one's parents and the initial integration of one's own sense of self. Developing a sense of identity involves three activities: (a) an increased confidence that one's inner continuity and sameness is matched by one's sense of the continuity and sameness in others, (b) achieving successful personal values, sex roles, and vocational goals that are suited to one's abilities and needs, and (c) a diverse set of social roles that are available to be adopted as required in the future (Erikson, 1980). Issues that can be expected to surface during these actions and the resolution of this stage are those of ideological commitment, value restructuring, role experimentation, leadership ability, self-certainty and altruism (Erikson, 1980). Jensen (1985) has set these issues out as: establishing a definite sense of self-definition or self-concept; a commitment to goals, values, and beliefs; the adoption of activities directed towards implementing these commitments; a meaningful consideration of identity alternatives;

the development of self-acceptance; a sense of personal uniqueness; and confidence in one's future.

Successful resolution of Erikson's identity task requires a synthesis of both identity and identity diffusion. It is necessary to understand and appreciate the negative aspects of this ego development stage in order to fully appreciate the positive ones. Equally important, it is through experiencing identity dissonance that one develops the drive to seek out new identity alternatives (Hamachek, 1988). It is only through understanding what one is dissatisfied with that one is motivated to seek out that with which one will be satisfied.

During these phases of seeking out alternatives, an adolescent may endure periods of moratorium in which commitment to any one outcome is delayed while others are considered, in a sense, electing to remain in the maelstrom of the identity crisis (Erikson, 1980). If adolescents cannot merge interpersonal with intrapersonal roles and values, they will enter a stage of identity diffusion. Here an adolescent may fail to tolerate difference, doubt sexual or cultural self-identity, or loosely adopt social and vocational roles that are incongruent with self-roles. The individual has simply refused to address the subtasks associated with the development of identity, having neither entered the identity crisis nor committed to any consistent identity (Erikson, 1980). An adolescent who bypasses the exploration phase associated with the identity crisis, and adopts wholeheartedly the identity in place preceding adolescence, is considered as identity foreclosed. This person simply accepts the values, roles and ideologies absorbed during childhood as his or her own without investigating or questioning them. Without meaningful differentiation, such an individual has integrated beliefs given in childhood as his or her own (Erikson, 1980).

The stage following identity is that of intimacy. Erikson's (1980) notion of intimacy is characterized by a depth and consistency of relationship more commonly associated with life partners, rather than sexual partners per se. These attributes of depth and consistency could also be found in platonic relationships. Hamachek (1990) suggests that during this stage people experience an internal need and external pressure to fuse the identity developed in the preceding stage with the identity of another to create partnerships. Erikson (1980) warns that it is only after one has come to truly know oneself through the resolution of the identity crisis that one can forge true intimacy with another. He goes on to observe that once one has established oneself as an individual, one is inevitably drawn to the threshold of establishing intimate relationships with others.

While Erikson (1980) initially theorized that the psychosocial developmental task associated with college-age individuals was that of identity alone, refinements of his theory have resulted in the inclusion of the intimacy task as well. Studies have suggested that for women in particular, these two developmental tasks merge, or that the resolution of the intimacy task may even necessarily precede the resolution of the identity task. An identity may be defined in part in terms of relationships with others, and the ability to develop and maintain intimate relationships may be a necessary precursor to committing to an identity (Josselson, Greenberger, & McConochie, 1977; Josselson, 1991; Marcia, 1980; Matteson, 1975; Orlofsky, 1977).

Chickering's Model of Identity Development.

Chickering (1969) utilized Erikson's psychosocial model to develop his own model of identity development from an educational perspective. More specifically, Chickering was interested in the impact that the post-secondary educational process had upon psychosocial

development in general, and identity development in particular. His model was developed from research conducted on students 17 to 25 years old, from 13 liberal arts colleges. The revised Chickering model of identity development includes seven vectors: developing competence, managing emotions, moving through autonomy towards interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity (Chickering & Reisser, 1993). These vectors are presented in the order Chickering suggested they ought to be resolved, but he observed that individuals may work on several vectors simultaneously and that they were not strictly hierarchical. Identity can be successfully achieved without necessarily resolving the vectors in order. Chickering selected vectors rather than stages to symbolize both a direction and intensity in the psychosocial change experienced by the individuals as they worked on these tasks (Chickering & Reisser, 1993).

Each vector represents a portion of a complex psychosocial journey that is traveled by the individual, driven on by their internal desire for individuation, and with assistance from others in their environment. The desirable progression in each vector is as follows: Developing competence is a movement from low levels of competence and a lack of confidence in one's own abilities, to high levels of competence together with a sense of confidence in one's own competence. Managing emotions is moving from little control over disruptive emotions, little awareness of the impact of one's feelings, and an inability to integrate feelings with actions, to flexible and appropriate control of emotional expression, awareness and acceptance of emotions, and the ability to integrate feelings with responsible actions. Moving through autonomy towards interdependence is a movement from emotional dependence, little self-direction, lacking the confidence to be mobile or independent from others, to freedom from the need for continuous external reassurance, instrumental independence, and recognition of the importance of

interdependence. Developing mature interpersonal relationships involves moving from a lack of awareness and an intolerance of differences, and unhealthy intimate relationships, to tolerance and appreciation of differences, and the capacity for enduring intimacy. Establishing identity is a movement from a discomfort with one's body, appearance, gender or sexual orientation, a lack of clarity about cultural or social roots of identity, confusion over one's place in the world, an unwillingness to experiment with different roles and lifestyles, an inability to understand others' evaluation of self, an unstable or fragmented personality, and an overall dissatisfaction with one's sense of self, to comfort and acceptance of one's body, appearance, gender and sexual orientation, a sense of self within a social, cultural or historical context, clarification of self with respect to roles in society and lifestyle, an understanding of self in response to feedback from others, self-acceptance and self-esteem, and a stable integrated personality. Developing purpose is the movement from unclear vocational goals, scattered and transient personal interests, and limited meaningful interpersonal commitments, to clear vocational goals, sustained, focused and rewarding activities, and strong interpersonal commitments. Developing integrity is the progression from dualistic thinking, untested personal values and beliefs, being driven by self-interest, and discrepancies between values and actions, to humanizing values, personalizing one's beliefs and values while respecting the beliefs and values of others, social responsibility, and congruence and authenticity between actions and values. Once all these tasks have been accomplished the individual will have achieved his or her integrated adult identity (Chickering & Reisser, 1993).

Clearly not all college students will begin their college career at the lowest level on each of the vectors, nor will they all reach the highest level of each vector by college graduation. Chickering's belief was that colleges ought to facilitate movement along these vectors, thus

allowing students to realize their own identity. Ultimately, Chickering was interested in designing the college co-curriculum to augment the academic curriculum that they may together facilitate psychosocial development (Chickering & Reisser, 1993).

The Problem

The academically gifted students entering college have experienced school as a place where they could excel academically but were viewed as being different by their peers, were often not accepted socially, and may even have been disliked by some of their peers because of their ability. The athletically gifted students entering college have also experienced school as a place where they were different from their peers, but it is more likely that they were sought out and admired by their classmates, even if teachers have been less impressed with their academic achievements. These students will now join other students each seeking out their own identities while at college.

The psychosocial development of gifted students has often been overlooked, especially during the college years (Swiatek, 1993). Despite numerous studies on the psychosocial development of college students and on the emotional and social development of gifted grade school students, very little is known of the psychosocial development of gifted post-secondary students. Even less is known of the psychosocial development of post-secondary students whose giftedness is other than academic.

Purpose of the Study

The purpose of this study was to investigate the psychosocial development of post-secondary students who were identified by the college as either academically gifted or

athletically gifted, compared to the psychosocial development of those students who were not so identified. More accurately, the study compared the psychosocial development of these gifted students to the national psychosocial development norm values for students. For the purpose of this study, academically gifted students were defined as those students accepted into the honors program at a mid-sized, public university in the southeastern United States, and the athletically gifted students were defined as those students who participated in National Collegiate Athletic Association (NCAA) sanctioned intercollegiate athletic events representing the same university. In both groups, the members were typically students who stood out at their high school because of their giftedness and who selected the university from several schools that recruited them.

Research Questions

Given the dearth of prior research in this area, it was unclear whether the psychosocial development of students in two gifted groups would differ from the development of students not included in the two gifted groups. In keeping with the exploratory nature of this study, the primary research question was:

I. Does the level of psychosocial development attained by gifted post-secondary students differ from the level of psychosocial development attained by the students who were used to establish the national norms for post-secondary students?

Ancillary questions were whether the psychosocial development of academically gifted students differs from that of athletically gifted students, and whether the psychosocial development of each group independently differed from the national norms. The two gifted groups, athletically gifted and academically gifted, were individually compared to each other and to the national norms to address the following questions:

A. Does the level of psychosocial development attained by athletically gifted post-secondary students differ from the level attained by academically gifted students and,
B. Does the level of psychosocial development attained by athletically gifted students differ from the level of psychosocial development attained by students used to establish the national norms for post-secondary students and,
C. Does the level of psychosocial development attained by academically gifted students differ from the level of psychosocial development attained by students used to establish the national norms for post-secondary students?

If any differences were found, they were explored as to the direction, magnitude, and significance.

A separate set of questions pertained to the pattern of psychosocial development experienced by gifted students at college:

II. Is there a difference in the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for students in the gifted groups compared to the national norms?

Once again, the potential differences between the gifted groups and the national norm were be teased out with the following questions:

A. Is the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for academically gifted students different from the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for athletically gifted students, and

B. Is the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for academically gifted students different from the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for students in the national norm, and
C. Is the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for athletically gifted students different from the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for students in the national norm?

As little prior research has been conducted in these areas, the directionality of differences could not be established apriori.

While these two sets of questions may seem separate, the existence of an interaction between the levels of psychosocial development attained by athletically or academically gifted students relative to each other and relative to the national norm and their academic year was also investigated.

CHAPTER 2

REVIEW OF THE LITERATURE

The review of the literature pertaining to the psychosocial development of college age gifted individuals began with a review of the literature pertaining to the psychosocial development of individuals in general. Erikson is generally considered as the founder of the study of psychosocial development and is credited with coining the phrase “psychosocial development” for the theoretical construct that describes the changes that individuals go through as a result of psychological maturation within a social context (Marcia, 1980). It is resolution of Erikson’s fourth stage of psychosocial development, that of identity achievement versus identity diffusion, that typically confronts traditionally aged college students.

Psychosocial development is different from say, physical development, in that as a theoretical construct, changes in psychosocial development are not readily visible or directly measurable. Psychosocial development is therefore assessed using instruments that facilitate proxy measures, where changes in observable behaviors indicate underlying changes in the level of psychosocial development. A common group of such behaviors are verbal and written responses to questions. Given the manner in which changes in psychosocial development are assessed, perhaps the best place to begin a review of the research into psychosocial development during Erikson’s fourth stage is with an overview of the history, development, and use of the instruments commonly used to assess this stage.

Measuring Psychosocial Development

Seeking to develop a measure of ego identity status, Marcia (1964) created his Identity Status Interview (ISI). In so doing, he operationalized the exploration and commitment components associated with Erikson's fourth stage in psychosocial development, the task of identity verses identity diffusion. In Marcia's model, identity formation comprised two domains, the ideological—religion, politics, occupation, and philosophical lifestyle—and the interpersonal—friendship, recreation, dating, and sex-role. In each of these domains, the individual ideally engaged in the exploration of alternatives in each area and then committed to one of these alternatives. The four possible outcomes, or statuses, under Marcia's model were Identity Achievement (where the individual committed to an alternative after exploration of the options), Moratorium (where the individual engaged in exploration, but failed to commit to any of the alternatives), Identity Foreclosure (where the individual committed to the alternative that was in place at the beginning of adolescence, without any exploration) and Identity Diffusion (where the individual failed to engage in any exploration and did not commit to any alternatives). When using the ISI, each area in each domain was investigated individually, and the person's identity status was determined as an aggregate of exploration and commitment status across all areas. Occasionally, the investigator was interested in a particular area, and so the results may have been reported by area or by domain (Marcia, 1993b).

While Marcia initially theorized that Identity Achievement was the desired status outcome of the stage, subsequent research suggested that both Moratorium and Foreclosure could be successful resolutions under certain circumstances (Josselson, 1991; & Marcia, Waterman, Matteson, Archer, & Orlofsky, 1993). More recently, studies have suggested that it

may be desirable for individuals to oscillate in MAMA cycles between stages of Moratorium and Identity Achievement, in synchrony with changes in life circumstances (Marcia, 1993b).

The ISI has been used extensively in psychological and educational research since it was developed. This may, in part, be due to the decision by James Marcia to publish the instrument and scoring guide for use without permission or charge. Given the difficulty in establishing causality between psychological traits that are typically in flux during adolescence, the vast majority of the ISI studies have investigated the correlation between identity and other psychological traits. Research to date utilizing the ISI has found greater ego-identity development was negatively correlated with anxiety (Marcia, 1966, 1967; Marcia & Friedman, 1970; Schenkel & Marcia, 1972). This is of importance in the assessment of students in gifted post-secondary programs given the increased anxiety associated with the move from high school to university and the added pressure of being selected for a specialized gifted program. ISI studies have also found greater ego-identity development correlated positively with a more internal locus of control (Marcia, 1966; Orlofsky, Marcia & Lesser, 1973; Rotter, 1966; Waterman, Buebel, & Waterman, 1970; Waterman & Waterman, 1972), suggesting that gifted programs for university students that encourage an internalized sense of control may in term facilitate identity development. Greater ego-identity development was generally found to correlate positively with self-esteem (Hauser, 1976; Marcia, 1967; Romano, 1975); however, females who were identity foreclosed demonstrated higher self-esteem than females who were identity achieved (Marcia & Friedman, 1970; Schenkel, 1975; Toder & Marcia, 1973). This relationship between self-esteem and identity development suggests that gifted programs for adolescents that are designed to foster a healthy sense of self would be advantageous for identity development. Additional studies found that greater ego-identity development was positively

correlated with grades achieved in college (Cross & Allen, 1970; Marcia, 1966; Waterman & Waterman, 1974), which suggests a direct link between academic achievement and identity development. For academically gifted university students this creates an interesting situation; on the one hand they may well achieve academically at level above the general student population, but on the other hand university may be the first time they encounter peers who achieve at academic levels that exceed their own. Studies have found that greater ego-identity development was positively correlated with moral reasoning (Leiper, 1981; Rowe & Marcia, 1980), suggesting that programs that encourage development in moral reasoning would also facilitate identity development. Bernard (1981) found that greater ego-identity was positively correlated with overall psychological adjustment. This would imply that post-secondary gifted programs that include the psychological development of students will facilitate identity development.

Building upon Orlofsky's (1977) study, Schiedel & Marcia (1985), in a study of 40 male and 40 female college students, similarly found androgynous individuals demonstrated greater identity development and intimacy development—Erikson's fourth and fifth stages in psychosocial development respectively—than non-androgynous individuals, regardless of sex. These findings are interesting in that they suggest that social gender role identity rather than biological sex may be a larger influence on psychosocial development.

In a study of 99 junior and senior males enrolled in upper division psychology classes at a Canadian university, identity achieved and moratorium individuals demonstrated more complex integration in cognitive domains than individuals in the other statuses (Slugoski, Marcia, & Koopman, 1984). This study was problematic however, in that the sample comprised only males, who were paid to participate, and who were enrolled in psychology courses.

In an earlier study of 30 Canadian college students (15 males and 15 females) and 27 working youth (10 males and 17 females) all between the ages of 18 and 21, Munro and Adams (1977) found that between groups of individuals of the same age, those who were attending college were more likely to be in the identity diffused, identity foreclosed, or moratorium statuses than working youth, i.e. working youth were more likely to be identity achieved than college youth. Possible explanations offered by the authors for this finding were that working youth simply did not have the luxury of an extended period of exploration, and as soon as acceptable alternatives were found, the individual committed to them, or that college actively encouraged students to explore alternatives and delay commitment (Munro & Adams, 1977). The delayed commitment would have resulted in moratorium, provided the students could withstand the emotional turmoil associated with the extended periods of exploration, or they may have stepped out of the prolonged exploration and committed before they were fully satisfied that all options have been considered, resulting in a feeling of identity foreclosure. The identity diffused college students may have enjoyed the option of not committing, yet have been, at the time, unprepared for the exploration phase.

Podd (1972), in a study of 134 white middle class male college students in their junior or senior year, found their moral development significantly correlated with their identity development status. This study was problematic with respect to the sample's ethnic and gender bias, in that the moral development of only white males was studied, making generalization to females or students from other ethnic groups problematic. In a study of a group of 52 male and 51 female 13 and 14-year-old junior high school students, and a group of 49 male and 51 female 19 to 24 year old college students, Protinsky (1975) found a significant relationship between ego

identity development and age. He found no meaningful relationship between ego identity development and gender.

Overall the studies using the ISI have served to develop a body of research which supports the notion that several psychosocial constructs, including identity, moral reasoning, self-esteem, self-concept, internal locus of control and anxiety reduction, are all positively correlated with each other, and that overall, psychosocial development is positively correlated with age, cognitive development and academic achievement. Of particular interest to me was the apparent relationship found between the components of psychosocial development, such as identity formation, self-esteem, and self-concept, and those factors traditionally associated with strong academic performance and cognitive development. It is important to note that while it can be theoretically posited that causal relationships may exist between the various psychosocial and other developmental variables, these studies have demonstrated no more than correlations between the variables.

Working from Chickering's model of identity development for college students, Prince, Miller, and Winston (1973) developed the *Student Development Task Inventory* (SDTI) based in large part upon Prince's *Developmental Task Scales for College Students* (1973). Both projects sought to create self-report measures to assess college students' psychosocial development. A revised version of the SDTI, the SDTI-2, was published in 1979 (Winston, Miller, & Prince), and the *Student Development Task and Lifestyle Inventory* (SDTLI) was published in 1987 (Winston & Miller). The SDTLI was in turn expanded in 1999 to yield the *Student Development Task and Lifestyle Assessment* (SDTLA, Winston, Miller and Cooper), an updated version that took into account revisions to Chickering's underlying model (Chickering 1969; Chickering & Reisser, 1993). Specifically, the SDTLA included items related to intimacy as well as identity—

illustrating the importance that both identity formation and the development of intimate relationships play in the psychosocial development of university students, particularly for female students—an expansion beyond merely attaining autonomy to developing interdependence—reflecting the shift in society from competition to collaboration—and an expansion of items to overcome the cultural and sexual orientation limitations found in earlier versions through the rewording of questions to remove Eurocentric and heterosexual exclusive terminology and the addition of items designed to assess exposure to and comfort with non-Euro cultures and non-heterosexual individuals and their romantic relationships. The SDTLA is of particular importance to this study in that it was an instrument specifically designed to assess the psychosocial development of university students, with theoretical foundations that could be traced back to Erikson's original theory of psychosocial development.

The SDTLA comprised three developmental tasks with subtasks and two scales as outlined below:

I. Establishing and Clarifying Purpose Task

A. Educational Involvement Subtask: Students accomplishing this subtask had well-defined educational goals and plans, were knowledgeable about the resources available, and were actively involved in the academic life of the college.

B. Career Planning Subtask: An awareness of the world of work, an accurate understanding of one's abilities and limitations, a knowledge of the requirements for various occupations, and an understanding of the emotional and educational demands of different kinds of jobs evidenced the accomplishment of this subtask.

C. Lifestyle Planning Subtask: Achievement of this subtask included establishing a personal direction and orientation in one's life that took into account personal,

ethical, and religious values, future relationship or family plans, and vocational and educational objectives.

D. Cultural Participation Subtask: Students who had accomplished this subtask were actively involved in a wide variety of activities, including traditional cultural events such as attending plays, ballets, museums, art exhibits, and classical music concerts, as well as new forms of expression and ethnic celebration and performances.

II. Developing Autonomy Task

A. Emotional Autonomy Subtask: Students who had accomplished this subtask were free from the need for continuous reassurance and approval from others. Trusting their own ideas and feelings, they had the self-assurance to be confident decision-makers and to voice dissenting opinions in groups. They had confidence in their abilities and were prudent risk takers.

B. Interdependence Subtask: Students who had high scores on this subtask recognized the reciprocal nature of relationships between individuals and their community.

C. Academic Autonomy Subtask: Students who had accomplished this task had the capacity to deal well with ambiguity, and to monitor and control their behavior in ways that allow them to attain personal goals and fulfill responsibilities. High scorers devised and executed effective study plans and schedules; performed academically at levels with which they were satisfied and were consistent with their abilities; were self-disciplined; and required minimal amounts of direction from others.

D. Instrumental Autonomy Subtask: Students who had completed this subtask demonstrated an ability to structure their lives and to manipulate their environment in ways that allowed them to satisfy daily needs and meet responsibilities without extensive direction or support from others.

III. Mature Interpersonal Relationships Task

A. Peer Relationships Subtask: Having accomplished this subtask, students described their relationships with peers as shifting towards greater trust, interdependence, frankness, and individuality, and were feeling less need to conform to the standards of friends, or to conceal shortcomings or disagreements.

B. Tolerance Subtask: Respect for and acceptance of those of different backgrounds, beliefs, cultures, races, lifestyles, and appearances described students who had high achievement on this subtask.

IV. Salubrious Lifestyle Scale

This scale measured the degree to which a student's lifestyle was consistent with, or promoted, good health and wellness practices, including moderating or abstaining from consumption of alcohol, and abstaining from the use of tobacco products.

V. Response Bias Scale

A high score on this scale meant that the student was attempting to portray himself/herself in an unrealistically favorable way.

(Winston, Miller, & Cooper, 1999, pp. 11-12)

The SDTLA was designed to assess specific behaviors and attitudes that were theoretically grounded in, and had been empirically shown to coincide with, Chickering's model

for successful identity achievement and intimacy achievement among college students. The SDTLA " … represents a sample of behaviors and reports about feelings and attitudes that are indicative of students who have satisfactorily achieved certain developmental tasks common to young adult college students between the ages of 17 and 25" (Winston, Miller, & Cooper, 1999, p. 10). The SDTLA and its predecessors had originally been design for counseling purposes; however, its use as a research and program evaluation instrument has been empirically validated (Arbuckle & Gale, 1996; Cornelius, 1995; Taub & McEwen, 1991; Utterback, Spooner, Barbieri, & Fox, 1995).

Gifted Adolescents

Definition and Identification

The concept of giftedness is generally used to describe individuals who, in some way, display ability that is far superior to that attained by most of their peers. In the school setting, giftedness is more commonly associated with high intellectual or academic ability. Alternatively, gifted students might excel in fine or performing arts. Gardner's (1983) theory of "multiple intelligences" described at least seven different types of intelligence, suggesting that individuals may be gifted in a wide range of areas, many not included in the more narrow view of giftedness often adopted by schools. The provision of gifted education in the United States is an issue addressed at the state level; however, the definition of giftedness articulated by S. P. Marland, Jr., the U. S. Commissioner of Education, in his address to the United States Congress in 1972 has been adopted by most states in the drafting of their gifted education statutes:

> Gifted and talented children are those identified by professionally qualified persons, who by virtue of outstanding abilities are capable of high performance. These are children

> who require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society. Children capable of high performance include those with demonstrated achievement and/or potential in any of the following areas, singly or in combination: General intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual and performing arts, and/or psychomotor ability (Marland, 1972, p. 2).

Despite the inclusion of psychomotor ability in this definition, athletic giftedness was absent from the 1978 and 1990 federal definition applied to gifted and talented children, and intentionally excluded from all state regulations related to gifted education. The origins of these omissions were more financially than theoretically based. School boards and administrators pressured state legislators to maintain the separation of funding designated for the education of the gifted and funding designated for athletics programs. At the college level, especially at NCAA Division I schools where football and basketball programs can generate significant media revenue, the separation of academic and athletic funding has been just as carefully maintained. The current federal definition applicable to K-12 gifted and talented students is explicitly stated in PL 107-110 the *No Child Left Behind Act of 2001* as follows:

> The term “gifted and talented”, when used with respect to students, children, or youth, means 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 or activities not ordinarily provided by the school in order to fully develop those capabilities (United States Department of Education, 2002).

The State of Georgia Rule 160-4-2-.38, Sect. (1)(a) defines gifted K-12 students as follows:

> (a student who) demonstrates a high degree of intellectual and/or creative ability or abilities, exhibits an exceptionally high degree of motivation, and/or excels in specific academic fields, and who needs special instruction and/or ancillary services to achieve at levels commensurate with his or her abilities (Georgia Department of Education, 2000).

In order to assess eligibility for gifted and talented services in the state, a student must meet the following criteria: Achieving the standard for mental ability and one of the achievement standards or by meeting the standard in any three of the four areas—mental ability, achievement, creativity and motivation. The Georgia criteria are listed in Table 1.

Table 1. Criteria for Gifted Education Eligibility in Georgia

Area of Ability	Score to Qualify	Comments
Mental Ability	99th percentile (grades K-2), 96th percentile (grades 3-12), composite or full score	Scores must be less than 2 years old, and test norms less than 10 years old, and based on a national sample
Achievement	90th percentile on test, or a score of 90 or above on a 1-100 scale for a product or performance	National norms less than 10 years old, may be total battery, total reading, or total math scores
Creativity	90th percentile on test, or a score of 90 or above on a 1-100 scale for a product or performance, or a checklist	Creativity test must show specific evidence of validity
Motivation	90th percentile, or 2-year GPA in academic subjects above 3.5 on 4.0 scale (grades 3-12), or a checklist	Local districts may set higher GPA requirements, 3.5 is the minimum

(Georgia Department of Education, 2000, Rule 160-4-2-.38)

While the Georgia rules for eligibility and the state definition of giftedness only apply to K-12 students, these regulations provide a context for perceptions of giftedness within the state that this study took place.

Psychosocial Development in the Academically Gifted

The initial psychological and sociological studies of academically gifted individuals and academically gifted adolescents comprised primarily qualitative, retroactive case studies of eminent persons. Unfortunately an oft-cited case study of old was that of William James Sidis, a child prodigy mathematician whose life ended in shame and despair, leading to the popular belief that the intellectually gifted were apt to burn out early and were socially and psychologically doomed (Montour, 1977).

Terman's ground breaking study of high ability individuals found that intellectual ability and psychosocial adjustment were positively, rather than negatively, correlated, reversing the belief that academically superior students were inevitably psychosocially maladjusted (Terman & Oden, 1947). In her study of extremely gifted individuals, Hollingworth found her participants to be superior in both academic performance and social adjustment (1942).

It has long been observed that development in gifted children was asynchronous, in that cognitive, emotional, and social abilities developed at different rates. As a result, gifted children experienced uneven intellectual and emotional development (Erlich, 1982; Janos & Robinson, 1985; Kennedy, 1995; Kitano, 1990; Klein & Meckstroth, 1985; Lovecky, 1990, 1992; Roedell, 1984, 1988; Roeper, 1982; Silverman, 1983; Tolan, 1989; Webb, Meckstroth, & Tolan, 1982). Terrassier referred to this phenomenon as "developmental dyssynchrony" (1985). Practically all studies that have found a difference in developmental rates agreed with Clark and Dixon, (1997)

that the social skills of gifted children lagged behind their mental age. However, Gross (1989), Janos and Robinson (1985), and Tannenbaum (1983) reported social and emotional development in gifted individuals was more closely correlated with mental than chronological age. These findings were not necessarily contradictory in that while social and emotional development may have correlated better with mental than chronological age, there may still have been a relative lag between cognitive development and social and emotional development.

Aside from the social and emotional awkwardness of dyssynchrony, some researchers believed developmental dyssynchrony was a cause of psychopathology among the gifted (Peterson & Craighead, 1986). If nothing else, this suggestion served to stress the importance of considering the academically gifted students holistically rather than from a purely academic perspective. Unfortunately, all too often, teachers and counselors of the gifted concentrated on students' cognitive development, all but ignoring their social and emotional development (Elmore & Zenus, 1994; Howard-Hamilton & Franks, 1995; Kennedy, 1995). With the gifted adolescent in particular, given the emotional turmoil associated with the transition from child to adult, it has been suggested that it is essential to address the needs of the entire person, not just his or her academic development (Swiatek, 1993).

In a retroactive case study of 24 academically gifted students covering their time at school and university, Willings (1985) found a common sense of alienation while at the university, and dissatisfaction with relationships during and since university attendance. Another common theme in this study was that of being "short-changed" in terms of the rewards received for the amount of academic effort expended. Fully 16 of these students had seriously contemplated suicide and devised a plan to carry it out; 8 had actually attempted suicide. This study, while forceful in its findings, was seriously flawed. The participants were all clients of a

counseling center and so represented a segment of the population who sought assistance for psychological problems. It was certainly realistic to think that this sample would manifest more psychological problems than the larger population of gifted individuals.

Self-concept has been defined as a personally integrated view of how one sees oneself, and the development of self-concept has been assessed as fundamentally a cognitive task. It has been suggested that a healthy self-concept was essential for psychological growth and development (Bee & Mitchell, 1984; Weiner, 1982), but studies on self-concept and giftedness have yielded mixed results. The majority suggested that giftedness facilitated the development of a healthy self-concept (Ablard, 1997; Chan, 1988; Colangelo & Pfleger, 1978; Janos, Fung & Robinson, 1985; Milgram & Milgram, 1976), while some found no meaningful relationship between identified intellectual ability and self-concept (Bracken, 1980; Hoge & McSheffery, 1991; Maddux, Scheiber, & Bass, 1982; Tong & Yewchuk, 1996), and a small number found an inverse relationship between giftedness and self-concept in children (Coleman & Fults, 1982; Forsyth, 1987; Lea-Wood & Clunies-Ross, 1995). These discrepancies were explained in part by the relationship between academic placement and self-concept (Coleman & Fults, 1985; Karnes & Wherry, 1981; Kolloff, 1989; Maddux, Scheiber, & Bass, 1982; Vaughn, Feldhusen, & Asher, 1991), where most studies have demonstrated that students in full-time gifted placement programs experienced lower self-esteem than those in part-time placement programs (Chan, 1988; Coleman & Fults, 1985; Feldhusen, Sayler, Neilsen, & Kolloff, 1990; Kolloff, 1989; Karnes & Wherry, 1981). It was possible that full-time gifted programs highlighted just how different the participants were from their regular peers; or perhaps the students in the full-time programs found they were not so different from their gifted peers and experienced the “big fish

suddenly back in the big pond" syndrome after having previously been the "big fish in a small pond."

The majority of studies have suggested that intellectually gifted students have healthier self-concepts than their peers. Given the importance of healthy self-concept in psychosocial development, this suggests an advantage for the intellectually gifted students with respect to psychosocial development. It must be remembered, though, that psychosocial development comprises many components, and that the development of self-concept itself is primarily a cognitive task. Thus while gifted students achieved a healthy self-concept before their peers, this may have been a result of their superior cognitive abilities rather than a head start in psychosocial development.

Adolescence is a time during which obtaining acceptance from one's peers is of great importance (Erikson, 1980). Despite having higher general, academic, and social self-concepts than students of average ability, gifted adolescents considered themselves as less popular at school than their regular ability peers (Swiatek, 1993). Many gifted adolescents reported feeling different from their peers and of being outsiders (Buescher, 1985; Cross, Coleman, & Terharr-Yonkers, 1991; Hollingworth, 1942; Janos, Fung, & Robinson, 1985; Jenkins-Friedman, & Murphy, 1988; Robinson, 1989). The more different children felt from their peers, the greater their degree of difficulty in social adjustment (Cross, Coleman, & Stewart, 1995; Janos, Fung, & Robinson, 1985). Swiatek (1993) found the most highly gifted students were the most likely to hide their abilities in order to fit in with school peers. Interestingly, verbally gifted children viewed themselves as more different from, and less accepted by, their non-gifted peers (Dauber & Benbow, 1990; Swiatek, 1995).

In a study of 224 students in grades 4 through 10 who were enrolled in gifted programs in Toronto public schools, Brodenstein (1998) found that fitting in with their peers was the single most significant predictor of self-worth among gifted adolescents. He also found that those gifted students who felt different from their peers, and females, were at the greatest risk for psychosocial maladjustment. In a study of 1465 academically gifted adolescents who participated in the Tennessee Governor's Schools program, the students reported engaging in a number of techniques to mitigate the appearance of differences between themselves and other students in an effort to fit in (Cross, Coleman, & Stewart, 1995). Tannenbaum (1983) suggested that academically gifted adolescents may actually intentionally have underachieved at school in order not to stand out as different from their peers.

Thus, research into the psychosocial development of academically gifted adolescents has painted a picture of advantage and disadvantage. The gifted students were psychologically better prepared, yet they struggled with the social interactions so crucial to psychosocial development. It was not surprising, then, that some research into the psychosocial development of gifted individuals has suggested an increased level of psychosocial difficulties at higher levels of academic ability (Brody & Benbow, 1986; Dauber & Benbow, 1990; Gallagher, 1958; Gross, 1993; Janos, 1983; Janos, Fung, & Robinson, 1985; Leaverton & Herzog, 1979; Montour, 1976, 1977; Tannenbaum, 1983), while others have found a positive correlation between intellectual ability and psychosocial adjustment (Coleman & Fults, 1983, 1985; Colangelo & Zaffrann, 1974; Janos & Robinson, 1985; Freeman, 1979; Gallucci, 1988; Grossberg & Cornell, 1988; Howard-Hamilton & Franks, 1995; Karnes & Wherry, 1981; Kaufman, 1981; Nail & Evans, 1997; McCallister, Nash & Meckstroth, 1996; Olszewski-Kubilius, Kulieke & Krasney, 1988; Parker,

1996; Ramaseshan, 1957; Reynolds & Bradley, 1983; Scholwinski & Reynolds, 1985; Witty, 1951).

A possible explanation for the contradictory findings that were suggested was that there may have been a curvilinear relationship between academic ability and psychosocial adjustment in which the strength of the relationship between the two increased to a point and then decreased (Grossberg & Cornell, 1988). Indeed, while studies of academically highly gifted individuals yielded mixed results as to psychosocial adjustment, very few studies of moderately gifted individuals suggested anything other than superior psychosocial adjustment, compared to their non-gifted peers. Alternatively, it could have been that highly gifted individuals required educational programs that were difficult to find, and the psychosocial difficulties observed relate more to their inability to fit into the regular curriculum and their degree of difference from their peers, rather than their high ability per se (Baker, 1995; Dauber & Benbow, 1990; Gallucci, 1988; Gross, 1993; Hollingworth, 1942; Parker, 1996; Witty, 1955).

It has also been suggested that perhaps no meaningful relationship existed between academic ability and psychosocial adjustment, and that the apparent relationships uncovered were the result of confounding variables such as socio-economic status, social, and familial factors that influenced the individuals' psychosocial adjustment (Gallagher, 1990; Olszewski-Kubilius, Kulieke & Krasney, 1988; Swiatek, 1995). These issues were further obscured by the lack of a consistent operational definition of giftedness across studies (Hoge & Renzulli, 1993). However, in a well-designed study, Rost and Czeschlik (1994) found that a group of 50 German, gifted 10-year-old elementary-school children were more psychosocially mature than a group of 50 non-gifted counterparts, after gender and socio-economic status were controlled for by establishing matched pairs. While this was an ethnically limited study that focused on a very

narrow age band, it nevertheless suggested a positive relationship between intellectual giftedness and psychosocial development.

It has been proposed that giftedness provides individuals with the cognitive ability to understand themselves and others, and to integrate experiences which should have allowed them to facilitate psychosocial adjustment and development at a rate, and in a manner, that was superior to their non-gifted peers (Baker, 1995; Freeman, 1979; Grossberg & Cornell, 1988; Jacobs, 1971; Kaiser, Berndt, & Stanley, 1987; Kaufmann, 1981; McCallister, Nash & Meckstroth, 1996; Ramaheshan, 1957; Reynolds & Bradely, 1983; Scholwinski & Reynolds, 1985; Witty, 1955). Howard-Hamilton and Franks (1995) found superior ego identity development, moral reasoning development, and higher levels of androgyny in a sample of 167 ethnically diverse and gender equal (male = 82, female = 85) intellectually gifted high school seniors, compared to the national norms. In the case of moral reasoning, the group was functioning at the level typically achieved by college seniors, with no gender differences. In ego strength, the group was at the level associated with college juniors and seniors. Similarly, Barron (1969) found higher ego strength in creative individuals.

Oram, Cornell and Rutemiller, in a complex study of 151 second grade students in a gifted public school program, 264 gifted students from grades 5^{th} to 11^{th} enrolled in a university summer enrichment program, and 60 female early college entrants gifted students, found no meaningful relationship between giftedness and psychosocial adjustment (1995). Major problems with this study included the lack of a non-gifted control group, the limited range of scores on both the measures used to assess level of giftedness, and the measures used to assess psychosocial adjustment. At best, this study suggested that the gifted students in these three groups are homogeneous on levels of giftedness and psychosocial development. In a study of 74

highly and 163 moderately gifted 6th, 7th, and 8th graders enrolled in a summer enrichment university program, Norman, Ramsay, Martray, and Roberts (1999) found no significant difference in psychosocial adjustment between the highly and moderately gifted groups. They did find a significant positive correlation between grade level and psychosocial adjustment. Unfortunately, this study used past academic achievement to create the two groups rather than a direct measure of giftedness and so this study actually compared the students' psychosocial adjustment based upon their ability to achieve academically, which may or may not have equated directly to their level of giftedness.

Groth (1973) used a similar design in assessing the relationship between giftedness and autonomy, a significant psychological measure in that ego identity formation requires achieving a sense of autonomy. In a study of 87 high school students (35 male and 52 female) from a middle class background, Groth found that brighter adolescents achieve autonomy earlier than average ability adolescents. She defined her bright and normal groups based upon previous high school grades, rather than a direct measure of giftedness, which results in a comparison between levels of academic achievement and levels of autonomy, rather than the stated relationship between giftedness and autonomy. This study may also have limited generalizability in light of the narrow socioeconomic segment of society from which these students were drawn. However, Howard-Hamilton and Franks (1995) found that academically gifted high school students scored at the adult level on the Rasmussen Ego Identity Scale, and Rest's Defining Issues Test of moral reasoning. If the assumption that a sense of autonomy is a necessary component for ego development, this would support Groth's conclusions, notwithstanding the limitations of her research design. Howard-Hamilton and Franks did not find any significant difference between male and female students.

In a study of tenth graders, Carn-Watkins (1991) found that the gifted students were significantly more advanced than the non-gifted students on the ideological domain of ego-identity development (religion, politics, occupation, and philosophical lifestyle). The overall sample was small (n = 50), and the gifted group was ethnically biased (Asian-American 48%, white 42%) compared to the non-gifted control group. In a study of 97 honors program engineering students and 97 traditional engineering students, the gifted students demonstrated significantly more motivation and initiative, more empathy, and less comfort in social settings than the traditional group. The gifted group increased significantly from sophomore to senior year in self-control, discipline, and emotional health, while the traditional group demonstrated no change on these variables longitudinally (Chmiel, 1993). This last finding was in keeping with earlier findings of Marcia (1993b) who suggested engineering students as a whole were more likely to be identity foreclosed than the general college population and demonstrated little psychosocial change during their college careers. This study also supported the theory that gifted students were psychologically better prepared, but socially at a disadvantage, compared to their peers.

Using Marcia's (1966) ISI, Zuo (1990) undertook a review of the individuals in Terman's study to retroactively determine their identity statuses. When at college, the high ability individuals in Terman's study were more likely to be rated as identity achieved or in moratorium than members of the general population of the same age (Zuo, 1999). Individuals in these two identity statuses were considered to be more psychosocially developed than those in the identity foreclosure or identity diffusion statuses across a wide range of indicators including self-esteem and moral reasoning (Bernard, 1981; Bunt, 1968; Kroger, 1989; Marcia, 1966, 1993b; Orlofsky, Marcia, & Lesser, 1973; Podd, 1972). Likewise, in a study of 48 male and female college

students, those in the identity achieved and moratorium statuses displayed significantly better interpersonal and intrapersonal adjustment than those in the identity foreclosure and identity diffusion statuses (Neuber & Genthner, 1977).

While few studies have offered results broken down by sex, some have reported differences in psychosocial development between gifted adolescent males and gifted adolescent females. A study of 82 males enrolled in gifted programs found that gifted boys tended to be less socially and emotionally developed than gifted girls by the time they left high school (Kline & Short, 1991). Alvino (1991) suggested the uneven emotional and social development of gifted males and females may have been due in part to the feminization of schools, especially gifted programs, where the composition of both students and teachers was typically heavily biased towards females. Additionally, stereotypical masculine behaviors were discouraged at school from an early age, while stereotypical feminine behaviors were encouraged. Alvino (1991) asserted that this environment stifled masculine development. Tomlinson-Keasey and Smith-Winberry (1982) had earlier found that among college-age individuals, academically gifted women were better adjusted psychosocially than non-gifted women, but non-gifted men were better adjusted psychosocially than gifted men. These results were meaningful in that comfort in social settings was an area of concern with respect to difficulties experienced by gifted students in psychosocial development.

While not entirely consistent, the research on the psychosocial development of academically gifted adolescents had generally supported the notion that academically gifted adolescents were more psychosocially developed than their non-gifted peers. This higher functioning has been demonstrated by scoring higher on a wide variety of instruments associated with domains across psychosocial development. The underlying reason for these higher scores

appeared to rest with higher psychological readiness for development rather than more optimal social interactions.

Psychosocial Development in Athletically Gifted Adolescents

It has been noted that at least until 1990, the majority of research concerned with collegiate athletes has concentrated on their academic achievement rather than their personal development. More alarmingly, more research had been done on the fiscal aspects of intercollegiate athletics than on the athletes involved (Knight Foundation Commission on Intercollegiate Athletics, 1991). At the same time, Scott (1984) noted that student-athletes were unique on campus in their attraction of scrutiny by the media and administration. In addition to the pressures experienced by all college students, student-athletes are under the additional pressures associated with the time demands of practice, training, traveling and playing, as well as the physical and psychological pressures associated with athletic as well as academic performance (Rhatigan, 1984; Leach & Connors, 1984).

A review of research on student-athletes found that the vast majority of the studies fell into three categories: (a) those that focused on career plans and academic programs of study of student athletes, (b) those that focused on student-athlete involvement on campus and their satisfaction with their college experience, and (c) those that focused on the academic achievement of student-athletes. Additionally, it was noticed that the studies within each group were inconsistent in their conclusions.

Studies of Student-Athletes' Career Plans and Academic Programs

The typical findings of the first group were that student-athletes had less well-developed career plans and poorly structured academic programs of study (Blann, 1985; Sowa & Gressard, 1983). Despite fewer than 2% of the student-athletes on revenue producing collegiate teams being drafted to the professional leagues, the majority of student-athletes on these teams viewed their attendance at college primarily as a stepping-stone to a professional career. This attitude, and the resultant low concern for development outside their sport, often prevented realistic exploration of the vocation subtask associated with identity development (Adler & Adler, 1991; Edwards, 1982; Leonard & Reyman, 1988).

Studies of Student-Athletes' Involvement on Campus and Satisfaction with their College Experiences

Typical findings of the second group of studies were either that students-athletes were only meaningfully involved in college activities required for athletic participation, and in these activities alone they were significantly more involved in extracurricular activities than the regular students (Pace, 1984; Stone & Strange, 1989), or that student-athletes were significantly more involved in extracurricular activities across campus than regular students (Astin, 1984; Ryan, 1989). This difference can be explained by the way in which co-curricular activities were defined, with the latter studies including athletic activities in extracurricular activities in general while the former specifically removed athletic activities into a separate category. Other studies found that student-athletes tended to develop separate sub-cultures and were less well integrated into the collegiate environment than their regular peers (Parham, 1993; Prentice, 1997; Sedlacek & Adams-Gaston, 1992).

It was a widely espoused notion that because student-athletes spent less time involved in on-campus activities outside of activities directly related to their own sports, they were limited in their ability to develop and grow (Cantor & Prentice, 1996; Coser, 1974; Purdy, Eitzen, & Hufnagel, 1985; Goode, 1960; Stone & Strange, 1989). This premise was especially attributed to student-athletes who participated in revenue generating athletics programs (Leonard, 1985; Sack & Thiel, 1985). However, in empirical studies the general assertions were not always supported (Lance, 1987; Marks, 1977; Sack & Thiel, 1985; Richards & Aries, 1999), especially with student-athletes in non-revenue producing sports (Coakley, 1986).

In a study of seniors at an NCAA Division III school, a group of 73 student-athletes and 146 non-athletes were compared. Student-athletes experienced more difficulty than non-athletes in joining extracurricular groups, attending functions on and off campus, making new friends, and spending time with people outside their established group of friends. Professors and non-athlete students did not consider the student-athletes to be as serious about their academic studies, regardless of grade achievement (Richards & Aries, 1999). This study was significant in that it demonstrated that even student-athletes at NCAA Division III schools experience some of the difficulties more commonly associated with student-athletes in revenue producing sports at NCAA Division I schools.

The discrepancy in the findings of these studies regarding student-athletes' involvement may be due in part to the definitions applied to extracurricular activities, the type of student-athletes included in the studies, and their NCAA level of competition. Studies of student-athletes in revenue generating sports at large NCAA Division I schools tended to support the notions of limited involvement in activities outside of their sport, while student-athletes in non-revenue

producing sports, or at smaller non-NCAA Division I schools, tended to be more involved than regular students in activities, in and out of their sport.

Studies of Student-Athletes' Academic Achievement

The studies from group three were equally mixed, with both below average (Adler & Adler, 1985; Ervin, Saunders, Gillis & Hargrette, 1985; Gurney & Stuart, 1987; Purdey, Eitzen, & Hufnagel, 1982) and above average (Gurney, Robinson, & Fygetakis, 1983; McLaughlin, 1986; Stuart, 1985) academic achievement of student-athletes reported in different studies. In a related study, Prentice found that student-athletes in general rated themselves as being weaker academically than non-athletes (1997).

Once again, a pattern emerged with the revenue status of sports involved, and the NCAA level at which the college competed. Student-athletes participating in non-revenue sports, or at smaller non-NCAA Division I schools, did better academically than those on revenue producing teams, or at larger NCAA Division I schools. Additionally, in several of the studies that demonstrated higher achievement among student-athletes (Gurney, Robinson, & Fygetakis, 1983; McLaughlin, 1986; Stuart, 1985), the control group was constructed by matching the athletes with regular students of equal academic ability at the time of college entry. The methodology of the studies that found weaker student-athlete academic performance failed to take into account prior academic achievement, and the control group was often replaced with a simple comparison between the student-athletes and the overall college averages for non-athletes. This approach, while intended to correct for methodological errors in earlier studies, was itself seriously flawed in that frequently student-athletes remain in college for athletic reasons when their academic performance would cause a non-athlete to leave college. This

selective attrition skewed levels of academic performance in favor of non-athletes, as the weaker non-athletes withdrew from college and were therefore not included in the control group.

In the few studies of student-athletes related to psychosocial issues, Taylor (1995) found participation in collegiate sports positively related to levels of self-esteem. This study supported Ryan's (1989) study, in which student-athletes self-reported higher overall satisfaction with the collegiate experience and improved interpersonal and leadership skills as a result of athletic participation. However, Butt (1976) observed that student-athletes were not encouraged to act independently; indeed, their entire existence was reliant upon compliance with their coaches' and advisors' instructions and guidance. Additionally, student-athletes were primarily motivated by external rewards and admiration, rather than personal competence and self-determination (Hatfield & Sullivan, 1987; Ryan, 1977). Functioning at the highest level of performance, and being rewarded only for exemplary achievement, can lead to reliance upon these external rewards (Deci, 1980).

Student-athletes on an intercollegiate team have sometimes found themselves with social status on campus which made it difficult for them to interact with non-athletes as equals; this was more common when their team played a major role in the public image of the college. This difficulty could have hindered the student-athletes' psychosocial development, especially in the development of appropriate romantic relationships (Marsland, 1983). Lipsyte (1982) noticed that student-athletes who continually received special treatment from campus personnel eventually saw these accommodations as the norm and failed to function adequately in an environment without accommodations. He suggested that this false reality in which the student-athletes found themselves might have hindered their social and personal development. Problems related to this artificial lifestyle appeared to be accentuated among male athletes. In his study of 224 student-

athletes aged 18 to 31, Simpson (1999) found males scored significantly lower than females on life management skills. This may have related to the relatively higher prestige afforded male student-athletes on most campuses, especially those on revenue producing teams, and at NCAA Division I schools, which is where this study was conducted. The all-encompassing nature of intercollegiate athletics in the life of the student-athlete has been found to lead to identity foreclosure (Bissinger, 1990).

In a study of 278 male student-athletes in two academically prestigious schools, Petitpas (1981) found significantly greater psychosocial development in non-athlete seniors than athlete seniors. Most surprisingly, he found that while the level of psychosocial development for non-athlete seniors was significantly higher than the level for non-athlete freshman, the reverse was true for athletes; the student-athlete freshmen functioned at a significantly higher psychosocial level than the student-athlete seniors, suggesting that participation in intercollegiate athletics stunted or even reversed psychosocial development. It should be noted that his sample was disproportionately heavy in athletes from revenue generating sports, and that the schools in question, while classified as NCAA Division I, were better known for their academic reputations. These factors combined may explain this anomaly, in that the athletes may have been pressured to focus on athletics, while being in a school that ranked the importance of intercollegiate athletics at a level below that seen at most NCAA Division I schools. Additionally, the sample was disproportionately African-American in schools that were predominately white, which may have also impacted the overall college experience for these athletes.

Overall, the research on psychosocial development of athletes suggests a confusing picture with the outcome colored by type of sport played, the NCAA level of competition, and the campus climate with respect to such issues as the emphasis on university's athletic

achievements, the racial makeup of the student population and the sports teams, and attitude of the campus community towards special treatment for student-athletes. For the most part, the more different the student-athletes were from members of the general student body and the more different their experiences were as students on campus, the less successful the student-athletes appeared to be in psychosocial development.

In the one study that compared academically and athletically gifted adolescents, Luthar, Zigler, and Goldstein (1992) compared 51 academically gifted adolescents (12-15 years old) with three matched groups: one of age peers who were athletically talented, one of age peers who were not identified as either athletically talented or academically gifted, and one of college aged cognitive peers scores who had not identified as gifted in school. The age peers were matched on chronological age in months and years; the age peers who were also athletically talented were identified as such by their team coaches, and the cognitive peers were established by equating verbal and quantitative SAT scores on tests administered for the study. Across a wide range of psychosocial measures, members of the academically gifted group scored significantly higher than members of either of the two age peer groups. While still significant, the differences between the academically gifted group and athletically talented group of age peers were smaller than the difference between the academically gifted group and non-gifted group of age peers. The athletically talented group also scored significantly higher than the non-gifted group on most of the measures. This suggested that for the members of these two groups, the academically gifted and the athletically talented, being gifted contributed positively to psychosocial development, regardless of the area of giftedness. The researchers observed that the experiences of both academically and athletically talented students had similarities, and that these similarities may have outweighed the cognitive differences between them. The differences between the

academically gifted group and the cognitively equivalent group were not significant; however, there were significant differences between the athletically talented group and the group that was cognitively equivalent to the academically gifted group. These finding would suggest that members of the academically gifted were similar in psychosocial development to their older cognitive peers based upon their comparative intellectual abilities and were similar in psychosocial development to their athletically talented equivalent age peers based upon their comparative social experiences.

Conclusion

The concepts of psychosocial development and giftedness were developed generations ago and have been seriously researched for decades. Both have a body of research that is broad and deep, yet there is comparatively little research on the overlap between these two concepts.

It is only in the past few decades that studies involving gifted secondary school students have appeared with any regularity in general gifted research literature. The vast majority of educational and psychological research on the gifted remains focused on the younger child, with a noticeable decline in studies as one moves from kindergartener to high-school senior. Research of gifted post-secondary students is still in its infancy, having just moved past the case study stage. Very little research has been conducted on the topic of psychosocial development of gifted adolescents, with even less conducted on adolescents and young adults attending college. Research on the social and emotional aspects of the psychosocial development of gifted post-secondary students remains rare. With respect to area of giftedness, practically all the research done on the development of gifted adolescents has been conducted on academically gifted students.

While significant research has been conducted on the psychosocial development of college students, very little has focused on gifted college students, and even less has compared psychosocial development across areas of giftedness. Indeed, only one study could be found that compared the psychosocial development of academically gifted adolescents to athletically gifted adolescents.

Overall, the studies on the psychosocial development of gifted adolescents suggest a positive correlation between level of giftedness and level of psychosocial development for academically gifted students. However, this advantage appears to depend upon the level of giftedness, with the moderately gifted being the most advantaged. The studies on the psychosocial development of athletically gifted adolescents are too low in number and yield results that are too inconclusive to draw any conclusion as to the relationship between athletic giftedness and psychosocial development.

The common theme running through the psychosocial development of gifted students, academically or athletically, appears to be that the greater the level of giftedness, or perhaps more appropriately stated, the greater the magnitude of difference between the gifted and their peers, the more difficulty experienced in psychosocial development. From the theories of psychosocial development, one can deduce that this difficulty arises from the social interaction aspect of development with it being more strained for these individuals.

CHAPTER 3

RESEARCH METHODS

The Research Site

This research was conducted at a regional public university of over 15,000 students (13,354 undergraduate), located in a town of 24,000 residents in the southeastern United States. The enrolled students were drawn evenly from the surrounding rural counties and the large metropolitan areas of the state, with over 90% of the student body being from within the state. This university had become a university of choice for African-American students within the state and was the first choice of university among the majority of applicants. Increased competition within the state at the post-secondary level had resulted in improved academic standards for the entering freshman class. The credentials at this university had been steadily rising to the record levels achieved in Fall 2002, with average high school grade point average (GPA) of 3.03, SAT Verbal average of 517, and SAT Math average of 518, for a "combined" average SAT score of 1035. The cumulative university GPA for all undergraduate registered students at the end of the Fall 2002 semester was 2.65 on a 4.00 scale. At the time of the study (Fall, 2002), the undergraduate student body was 71% white, 24% African-American, with 5% other minorities; 47% were male and 53% female. (Student Information Reporting System, University System of Georgia, 2002 & 2003).

The honors program at the university had been an active recruiter of academically superior students for many years, drawing students from across the state and the nation. Honors program graduates had routinely entered graduate and professional programs of their choice,

often at some of the most prestigious schools in the country. The honors program featured small honors classes with high faculty to student ratios and an interdisciplinary teaching approach; classes were team-taught by two or more professors from a variety of academic disciplines. Honors classes employed active learning techniques, emphasized discussion and independent endeavors, and the program of study included freshman and sophomore seminars that met weekly for discussions of problem-oriented readings. Junior and senior honors student colloquia provided continuity of the atmosphere of the seminars while students were involved in their major programs of study. The honors program was governed by an honors council composed of ten faculty members and two honors program students, elected annually by their peers in the program. Among other activities, the honors council selected students for admission to the honors program.

Freshmen and sophomores took at least one honors class each semester in the core curriculum, and students were also required to complete 50 hours a year of campus or community service. Service opportunities included tutoring area school children, helping professors in research projects, volunteering at the university museum, botanical garden, or wild life education center, or assisting any one of the numerous local community social service agencies. Juniors and seniors took at least nine semester hours of honors classes and seminars during their final two years. Students were also required to work individually with a faculty member in their major field to complete a capstone experience, such as a thesis, performance, project, or exhibit. Additionally, honors students received significant financial assistance to offset the costs associated with attendance (National Collegiate Honors Council, 2002).

On the sports field, the university competed at the NCAA Division I AA level. During the preceding five years, the university's male and female teams had been national champions in

numerous sports, both revenue and non-revenue producing (National Collegiate Athletic Association, 2002). The university attracted student-athletes and coaching staff from across the nation and around the world. The NCAA rules limited the number of athletic scholarships that may be awarded, so not all student-athletes received funding. For the academic year immediately prior to this study, this university was one of only 45 Division I institutions nationally that were assessed in full compliance with the Title IX guidelines for the 2000/2001 academic year by providing a level of funding for female athletics that was proportional to the number of female athletes (Suggs, 2002).

Participants

All the members of the honors program during the Fall 2002 semester, and any students who represented the university in an NCAA sanctioned intercollegiate sport during the Fall 2002 semester or were expected to represent the university during the Spring 2003 semester in a sport that traditionally competed during the spring semester, were invited to participate. The total number of eligible honors students was 354 and the total number of eligible student-athletes was 293. There were six students who were both student-athletes and honors program students, and while these students were not excluded from the invitation, any data collected from them was excluded from the study as the research designed required mutually exclusive groups. Of the respondents, four scored above the recommended level on the Response Bias scale on the assessment instrument used in this study which measured the socially desirability bias of answers and were excluded from the study. Additionally, three respondents failed to complete all the items required and were excluded from the study. Of the students who could have provided useable data, responses from 258 honors students (72.9%) and 222 student-athletes (75.8%) were

included in this study. The salient characteristics of the study participants are illustrated in Table 2. It may be noted that the athletically gifted group was higher in female participants and in white participants. Both groups were biased towards lower division students, but the academically gifted group was noticeably lower in seniors. The high school academic credentials for members of the academically gifted group were higher than the credentials for the athletically gifted group on grade point average (GPA) and both verbal and math SAT scores. Similarly, the academically gifted group had a higher university cumulative GPA than the athletically gifted group. The high school academic credentials and the university cumulative GPA for the academically gifted group were higher than the high school credentials and university cumulative GPA for the undergraduate general student population at the university (HS GPA = 3.03, SAT V = 517, SAT M = 518, Cum GPA = 2.65). Interestingly, while the average SAT scores for the athletic group were lower than those of the general student population, the average high school GPA for the athletic group was practically identical to that of the general student population.

Table 2. Demographic and Academic Profiles of the Sample and the All Undergraduates

		Athletically Gifted (n = 222)	Academically Gifted (n = 258)	Gifted Sample Total (n = 480)	Undergraduate Total (n = 13,354)
Sex:	Male	46.8%	49.6%	48.3%	46.9%
	Female	53.2%	50.4%	51.7%	53.1%
Ethnicity:	African-American	22.1%	29.5%	26.0%	24.1%
	White	72.5%	66.3%	69.2%	71.1%
	Other Minority	5.4%	4.2%	4.8%	4.8%
Academic Year:	Freshman (Average Age)	28.8% (18.3 years)	28.7% (18.2 years)	28.8%	28.1% (18.8 years)
	Sophomore (Average Age)	27.9% (19.2 years)	27.9% (19.2 years)	27.9%	25.0% (20.9 years)
	Junior (Average Age)	23.0% (19.9 years)	24.8% (19.4 years)	24.0%	20.1% (23.8 years)
	Senior (Average Age)	20.3% (20.5 years)	18.6% (20.8 years)	19.4%	26.8% (27.8 years)
Academic Scores:	High School GPA	3.05	3.54	3.34	3.03
	SAT Verbal	491	599	550	517
	SAT Math	501	595	551	518
	SAT Combined	992	1194	1101	1035
	Cumulative GPA	2.56	3.54	3.08	2.65

Participant vs. Non-Participant Characteristics

In any study with less than 100% participation, the issue of how representative the sample was of the population from which it was drawn must be addressed. If the participants differ from the population from which they were drawn, one cannot generalize back to the population. Tables 3 and 4 displays key characteristics for participant and non-participant groups for the honors students and the student-athletes who were enrolled during the semester the data used in this study were collected.

The participants and non-participants were essentially the same with respect to entering academic scores, sex, ethnicity, and university cumulative GPA for both the honors and student athlete groups. Within each academic year, honors and student-athlete participants were of essentially the same age. Both groups were skewed with respect to academic years, with the participant groups being more heavily biased towards the lower academic years, while the non-participants were biased towards the higher academic years. This issue was not particularly meaningful in this study, as findings were assessed for each academic year. Of slightly greater importance was the issue of revenue versus non-revenue sports, with the participation group being biased ~ 5% in favor of the revenue producing sports—football and male and female basketball—compared to the non-participating group.

Table 3. Participant vs. Non-Participant Characteristics for Honors Students

Characteristic	Participant	Non-Participant
Number	258	96
SAT Verbal	599	596
SAT Math	595	599
High School GPA	3.54	3.56
Cumulative GPA	3.54	3.41
Females	50.4%	51.2%
African-American	29.5%	27.8%
Other Minority	4.4%	3.2%
Freshman	28.7%	23.5%
Sophomore	27.9%	24.3%
Junior	24.8%	27.1%
Senior	18.6%	25.1%

Table 4. Participant vs. Non-Participant Characteristics for Student-Athletes

Characteristic	Participant	Non-Participant
Number	222	71
SAT Verbal	491	481
SAT Math	501	501
High School GPA	3.05	2.93
Cumulative GPA	2.56	2.58
Females	53.2%	52.1%
African-American	22.1%	20.9%
Other Minority	5.4%	4.7%
Freshman	28.8%	27.1%
Sophomore	27.9%	25.8%
Junior	23.0%	26.3%
Senior	20.3%	20.8%
Revenue Sport [1]	40.5%	35.2%

[1] Football, or male or female basketball

Psychosocial Development Assessment

In selecting an appropriate measure to assess college students' psychosocial development, several issues were considered. Of paramount importance was the validity or appropriateness of the measure; specifically, the measure needed to assess the psychosocial developmental tasks associated with college students. While Erikson (1980) theorized the task to be identity alone, subsequent studies (Josselson, 1991) have suggested that for women in particular, intimacy often precedes identity, and thus the tasks of both stages may require successful resolution while in college. Thus, in order for any measure to be valid, it had to assess the participant's achievement of identity and intimacy. Further, the constructs labeled as identity and intimacy by the measure had to be grounded in theory and supported within a nomological network of research studies in order to be considered as truly valid (Cronbach & Meehl, 1955).

Equally important to the issue of validity was that of reliability. With few exceptions, the earlier measures developed to assess psychosocial development had sought to classify individuals as having successfully resolved the stage or not, with an emphasis on detecting pathology. These measures employed predominantly open-ended questions in either interview or questionnaire form and were designed for use by counseling professionals. Many required significant training on the part of the administrator and included a subjective element in the interpretation of results. Even with training and experience, inter-rater reliability remained an issue with this type of instrument.

More recently, the *Student Development Task and Lifestyle Assessment* (SDTLA, Winston, Miller and Cooper, 1991) was developed using Chickering's model of identity development for college students as the theoretical underpinning. The SDTLA was designed to assess specific behaviors and attitudes that are theoretically grounded in, and have subsequently

been empirically shown to coincide with, Chickering's model for successful identity achievement, and intimacy achievement, among college students.

The SDTLA is a pencil and paper self-report inventory with 153 items scored as either true or false, or Likert scale formats. The SDTLA comprises three developmental tasks—Establishing and Clarifying Purpose, Developing Autonomy, and Developing Mature Interpersonal Relationships—and two scales—Salubrious Lifestyle and Response Bias. Each task is broken down into subtasks. Altogether, the SDTLA yields 12 independent subtask or scale scores, and 3 composite task scores. The instrument allows for both individual and group administration. Typically, students require 25-35 minutes to complete the inventory. Following thousands of administrations, national norm tables have been developed to allow for comparative evaluation across academic class level by gender. Using the national norm means and standard deviations by academic class level and gender, each student's subtask or scale raw scores are transformed to t-scores ($\mu = 50$, $\sigma = 10$) for comparisons.

A variety of reliability indices were provided by the SDTLA authors. Test-retest reliability for the SDTLA ranged from .74 to .93 across the 12 subtasks and scales, all of which are significant ($p < 0.01$). Cronbach's Alpha for the same 12 subtasks and scales ranges from .62 to .88 for national norm data (Winston, Miller & Cooper, 1999). See Table 5 for the Cronbach's alpha reliability values for the national norm data. It should be noted that the level of difficulty of items was graded within the subtasks and scales, and thus the lower alpha levels were acceptable.

On measures of convergent validity, data collected on the scales and subtasks of the SDTLA while establishing the national norms, correlated significantly with external measures assessing similar aspects of psychosocial development of college students (Winston, Miller &

Cooper, 1999). Together these results demonstrate external validity. See Table 6-10 for external validation of the SDTLA tasks, subtasks and scales.

Table 5. SDTLA Internal Reliability for the National Norm

Tasks, Subtasks and Scales	Items	Cronbach's Alpha (n = 1822)
Establishing and Clarifying Purpose Task (PUR)	51	0.81
Career Planning Subtask (CP)	14	0.84
Lifestyle Planning Subtask (LP)	13	0.81
Educational Involvement Subtask (EI)	14	0.82
Cultural Participation Subtask (CUP)	10	0.76
Developing Autonomy Task (AUT)	51	0.88
Emotional Autonomy Subtask (EA)	17	0.71
Instrumental Autonomy Subtask (IA)	9	0.62
Academic Autonomy Subtask (AA)	11	0.77
Interdependence Subtask (IND)	14	0.76
Developing Mature Interpersonal Relationships (MIR)	24	0.76
Tolerance Subtask (TOL)	14	0.74
Peer Relationships Subtask (PR)	10	0.65
Salubrious Lifestyle Scale (SL)	17	0.71
Response Bias Scale (RB)	6	0.72

(Winston, Miller & Cooper, 1999)

Table 6. Establishing and Clarifying Purpose Task Validity Estimates

	SDTLA Task & Subtasks				
	PUR	CP	EI	LP	CUP
Scales					
CE	.53	.60		.41	
CL	.33		.28		
EWF	.44		.53		
LSDI	.45			.44	
AMT	.40				.55
PSDM	.47			.56	

Note: Conceptually related scales are reported above. CE = Career Exploration Scale from *Career Development Inventory* (1981) by Super, n = 34. CL = Classroom Learning Scale from *College Student Experiences* (1983) by Pace, n = 37. EWF = Experiences with Faculty Scale from *College Student Experiences* (1983) by Pace, n = 37.

LSDI = *Life Skills Development Inventory* (1991) by Pickleshimer, n = 36. AMT = Art, Music and Theatre Scale from *College Student Experiences* (1983) by Pace, n = 37. PSDM = Problem Solving and Decision Making Scale from *Life Skills Development Inventory* (1991) by Pickleshimer, n = 36 (Winston, Miller & Cooper, 1999).

Table 7. Developing Autonomy Task Validity Estimates

	SDTLA Task & Subtasks				
	AUT	AA	EA	IA	IND
Scales					
GA	.56	.27	.51	.21	.31
FI	.37	.32	.62	.36	.29
SH	.39	.67	.33	.45	.25

Note: Conceptually related scales are reported above. GA = *Georgia Autonomy Scale* (1997) by Winston, n = 56. FI = Family Independence Scale from the *College Student Questionnaire* (1968) by Peterson, n = 45. SH = Study Habits Scale from the *College Student Questionnaire* (1968) by Peterson, n = 52 (Winston, Miller & Cooper, 1999).

Table 8. Developing Mature Interpersonal Relationships Task Validity Estimates

	SDTLA Task & Subtasks		
	MIR	TOL	PR
Scales			
MGEIM	.58	.44	.54

Note: Conceptually related scales are reported above. MGEIM = *Multi-group Ethnic Identity Measure* (1992) by Phinney, n = 36 (Winston, Miller & Cooper, 1999).

Table 9. Salubrious Lifestyle Scale Validity Estimate

	SDTLA Scale
	SL
Scale	
WS	.54

Note: Conceptually related scales are reported above. WS = *Wellness Scale* (1999) by Baker & Cooper, n = 119 (Winston, Miller & Cooper, 1999).

Table 10. Response Bias Scale Validity Estimate

	SDTLA Scale
	RB
Scale	
SD	.83

Note: Conceptually related scales are reported above. SD = *Social Desirability Scale* (1960) by Crowne & Marlowe, n = 46 (Winston, Miller & Cooper, 1999).

The internal correlations across SDTLA scales and subtasks were moderate, with higher correlations between subtasks within the same task, which was as expected as all the scales and sub-scales ultimately contribute to a common construct (Winston, Miller & Cooper, 1999). Table 11 shows the correlation values between task, subtasks, and scales using the national norm data. Note that values were not provided for the correlations between the tasks and the sub-scales that made up the tasks.

As the SDTLA demonstrated validity and reliability, yielded interval level data, and was suitable for within group and between group comparisons, it was selected as the instrument to assess the level of psychosocial development for participants in this study.

Table 11. Correlations Between Tasks, Subtasks and Scales for the National Norm (n=1822)

	EA	IA	AA	IND	**PUR**	CP	LP	CUP	EI	**MIR**	TOL	PR	**SLS**
AUT	*	*	*	*	.71	.58	.63	.43	.66	.51	.39	.45	.44
EA		.43	.42	.46	.51	.41	.46	.33	.49	.55	.39	.53	.27
IA			.62	.42	.60	.51	.57	.28	.56	.30	.20	.31	.41
AA				.32	.42	.36	.42	.19	.38	.32	.20	.33	.38
IND					.64	.47	.48	.50	.59	.44	.44	.26	.26
PUR						*	*	*	*	.44	.38	.35	.31
CP							.72	.30	.73	.27	.19	.27	.26
LP								.29	.73	.27	.17	.29	.33
CUP									.42	.47	.52	.22	.16
EI										.32	.31	.32	.28
MIR											*	*	.17
TOL												.54	.10
PR													.19

* Correlations between Task and related Subtasks not reported. (Winston, Miller & Cooper, 1999).

Task, Subtask, and Scale abbreviations are on the following page.

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Sources of Data

All students registered at the university are assigned on-campus mailboxes that are used by the university offices for the distribution of official university mail pertaining to registration, financial aid, and grades. Students may also elect to use these mailboxes as their postal address. Invitations to participate were distributed via these mailboxes. The director of the honors program and the athletic director provided lists of names for honors program participants and student-athletes respectively, together with the students' on-campus mailbox addresses. The honors students were informed by the honors program director that they could claim two hours of on-campus community-service for participating in the study, while the student-athletes were informed by their study hall proctors that they were allowed to complete the study assessment instrument and study related paperwork during their assigned study-hall hours, without penalty.

Students who elected to participate were required to complete and return a consent form (see Appendix A). Once the signed consent form was received, a copy of the SDTLA with instructions (see Appendices B) was distributed via their on-campus mailbox, along with an entry form (see Appendix C) to be entered in a random drawing for one $50.00 university bookstore gift certificate and five two-ticket passes for the local movie theatre. Completed SDTLA booklets and entry forms for the prize drawings were returned via on-campus mail using pre-addressed envelopes provided. All of the SDTLA derived data used in this study were collected over a three-week period during the Fall 2002 semester. The SDTLA booklets were distributed during the second week of September 2002. This was the same week that the university held campus-wide events commemorating the September 11th terrorist attack. Completed SDTAL booklets were collected until October 18, 2002. The bookstore pass and

movie passes were drawn and distributed by an independent university administrator, based upon the entry forms received by October 18, 2002. All prizes were claimed.

As part of the consent form, the participants signed releases allowing the office of the registrar to release additional data regarding the participants' academic entrance credentials and end of semester cumulative university GPA and the athletics department to release sport affiliation information for the student athletes who participated in the study. General information regarding the university and the university's student athletes and honors program was obtained on-line from the University System of Georgia, the NCAA, and the National Collegiate Honors Programs websites, as well as the university's own web pages. Publicly available team rosters were obtained from the university's athletics department.

Research Design

Given the time constraints governing this research, a cross-sectional approach was used to assess the psychosocial development over time, comparing different students in different academic class levels at the same time, rather than tracking the same students as they progressed from class to class until graduation. The cross-sectional approach required comparisons of different individuals rather than repeated measures of the same individual. Using different individuals necessarily increased the variability within the groups being studied.

The cross-sectional approach also presented the problem of selective attrition. While very few of the students identified as academically gifted withdrew from the university before graduation, the same cannot be said for students who were identified as athletically gifted, nor for those who were used to derive the normative data. More problematic was that the rates of

attrition, and the reasons for attrition, cannot be assumed to have been uniform across groups. While these problems were acknowledged, the cross-sectional approach was still used.

The populations of interest in this study were not randomly selected, i.e. the academically and athletically gifted students were not randomly selected from all academically and athletically gifted post-secondary students in the nation respectively. As the research questions pertained to the populations of interest as a whole, as many members of the population as possible were encouraged to participate. The students who volunteered to participate in this study self-selected to do so and may not truly represent the populations from which they were drawn. Nevertheless, the characteristics of the participants were very similar to the characteristics of the non-participants for members of both the honors students and the student-athletes (see Tables 3 and 4). The instrument used to assess psychosocial development was self-report in style; however, it was determined to be the most appropriate instrument available, and thus the self-report nature of the instrument was considered acceptable.

Research Questions

For easy reference, the research questions from Chapter One are recapitulated:

Set one pertained to the differences in the level of psychosocial development, if any, attained by the members of the honors program and the student-athletes compared to the national norms. The primary research question was:

I. Does the level of psychosocial development attained by gifted post-secondary students differ from the level of psychosocial development attained by the students who were used to establish the national norms for post-secondary students?

Ancillary questions were whether the psychosocial development of academically gifted students differs from that of athletically gifted students, and whether the psychosocial development of each group independently differed from the national norms. The two gifted groups, athletically gifted and academically gifted, were individually compared to each other and to the national norms to address the following questions:

A. Does the level of psychosocial development attained by athletically gifted post-secondary students differ from the level attained by academically gifted students and,

B. Does the level of psychosocial development attained by athletically gifted students differ from the level of psychosocial development attained by students used to establish the national norms for post-secondary students and,

C. Does the level of psychosocial development attained by academically gifted students differ from the level of psychosocial development attained by students used to establish the national norms for post-secondary students?

If any differences were found, they were explored as to the direction, magnitude, and significance.

A separate set of questions pertained to the pattern of psychosocial development experienced by gifted students at college:

II. Is there a difference in the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for students in the gifted groups compared to the national norms?

Once again, the potential differences between the gifted groups and the national norm were to be teased out with the following questions:

A. Is the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for academically gifted students different from the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for athletically gifted students, and
B. Is the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for academically gifted students different from the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for students in the national norm, and
C. Is the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for athletically gifted students different from the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for students in the national norm?

As little prior research has been conducted in these areas, the directionality of differences could not be established apriori.

While these two sets of questions may seem separate, the existence of an interaction between the levels of psychosocial development attained by athletically or academically gifted students relative to each other and relative to the national norm and their academic year was also investigated.

The first set of research questions examined the differences in the level of psychosocial development attained by academically gifted and athletically gifted students compared to the

students used to develop the national norms. This was accomplished by (a) comparing the standardized scores obtained by participants in the two gifted groups to the national norms on each of the scales measured by the SDTLA using single sample t-tests, (b) comparing the standardized scores obtained by participants in each of the gifted groups independently to the national norms on each of the scales measured by the SDTLA using single sample t-tests.

To address the differences in the level of psychosocial development attained for athletically gifted students compared to academically gifted students, a multiple analysis of variance (MANOVA) was calculated with the area of giftedness (athletically gifted or academically gifted) as the fixed independent factor, and the standardized scores obtained on each of the subtasks and scales of the SDTLA as the dependent variables. Each subtask and scale on the SDTLA included in the MANOVA was independently investigated further using an analysis of variance (ANOVA).

The second set of research questions examined the patterns of psychosocial development for each of the gifted groups of interest, compared to each other and compared to the national norms. This was accomplished by assessing the manner in which the study participants as a whole, and then within each gifted group independently, developed compared to the national norms. For the comparisons to the national norms, single sample t-tests were again employed; for the comparisons between the two gifted groups, two sets of MANOVAs followed by ANOVAs were conducted, one each for the tasks comprising the SDTLA and for the subtasks comprising the SDTLA.

In each case, the MANOVAs used both area of giftedness and academic year as independent variables. Where the MANOVA interactions between these variables were significant, indicating a difference between the academically and athletically gifted students in

the full model, the interactions between the same two independent variables were investigated for each of the tasks, subtasks and scales, using independent ANOVAs. The ANOVA interactions determined more specifically the aspects of psychosocial development on which the participants from the two gifted groups differed from each other in term of the pattern of development. The results for the pattern related analyses were also graphed to facilitate interpretation.

Statistical Power, Sample Size, and Effect Size

There exists a complex relationship between effect size, the Type I error (α)—the likelihood of rejecting a true null hypothesis—and Type II error (β)—the likelihood of failing to reject a false null hypothesis—that one is willing to accept, the statistical power desired, and the sample size required to determine whether a difference may be inferred in the underlying population (Cohen, 1988). Power by definition is ($1-\beta$) or the probability of accepting an hypothesis as true when in fact it is. Clearly, the first manner in which power can be increased is to reduce Type II error, but Type I and Type II error rates are inversely related to each other, so as Type II error is reduced, Type I error is increased. In most cases, an increase in Type I error is an unacceptable trade-off for increased power. Type II error is set by tradition at $\beta = 0.20$ in social sciences, in much the same way Type I error is traditionally set at $\alpha = 0.05$ in social sciences. Both Type I and Type II error are inversely proportional to sample size, so an increase in sample size will reduce Type II error and increase power.

Type II error is also inversely proportional to the effect size difference in the population, so the larger the difference between two groups in reality, the less likely it is that one will commit a Type II error, i.e. reject a true hypothesis, and the greater the power of the analysis.

Unfortunately, the population effect size is not something one can manipulate directly, but one can amplify the difference between groups by reducing the variance within each group and reducing the total number of groups compared at a time. In a similar vein, one can consider first those differences that are likely to yield large population effect size differences before considering those with smaller anticipated population differences in effect size (Keren & Lewis, 1993). Unfortunately, opting for the independent group cross-sectional design, rather than the longitudinal repeated measures design, increased variability and decreased power in this study.

It is interesting to note that Fisher (1955) observed that manipulation of sample size, error rates, or design to boost power were, in his opinion, inappropriate if one's endeavor was scientific discovery and the gaining of knowledge. In his mind, these means to boost power were merely ways to use mathematical manipulation to find something that was ordinarily not there to be found. Fisher's concerns notwithstanding, I have sought to use measures and designs that yielded the greatest power, given the limitations I faced regarding sample sizes.

When interval data is available, one can use single sample t-tests to compare the mean from one group to a normative value, the independent t-test to compare the means of two groups, and a MANOVA to assess the simultaneous effect upon multiple interrelated dependent variables with one independent variable with two levels (Sheskin, 2000). Cohen (1988) observed that with standard Type I and power assumptions ($\alpha = 0.05$, Power = 0.80), one would require 26 participants per cell, or 52 participants overall, to detect a large effect size, and 64 participants per cell or 128 participants overall for a medium effect size difference in the population, using the independent t-test. Given the cell sizes in the comparisons performed in this study, only large or medium effects could be detected.

Cohen (1988) also observed that one would require 21 participants per group ($\alpha = 0.05$, Power = 0.80, $df = 2$) to detect a large effect size, 52 participants per group to detect a medium effect size, and 322 participants per group to detect a small effect size difference in the population using analysis of variance techniques. Once again, this study was limited to the detection of large and medium effect size differences between groups.

A potentially problematic issue in this study was that of non-exclusivity of participants. There were six individuals who were both student-athletes and honors program participants. For simplicity, any information pertaining to these students was discarded from the study. Additionally, the sample used to develop the national norm values to which the two gifted samples were compared was selected without concern for gifted inclusion, academic or athletic. Thus, the norm sample included a small percentage of individuals who were academically, or athletically, gifted or gifted in both. The number of such individuals was very low, certainly accounting for less than one percent of the students utilized in determining the norm values. As the input of these students in the overall values was so small, this element of non-exclusivity was ignored.

Data Entry and Recoding

The data generated by the SDTLA was in the form of yes/no, letter scored Likert scale items, letter scored multiple-choice items, and well as demographic information. The demographic information and all other responses were entered in their raw form into an SPSS data file. The SDTLA authors provided a scoring manual which allowed for the conversion of yes/no, Likert scale, and multiple-choice items to meaningful numeric values weighted by the response selected and the protocols for reversing any negatively scored items. SPSS was used to

transpose the negatively scored items. Once the transposition was completed, the higher the score obtained for each item, the higher the level of development assessed by the item. Individual items were summed to form subtask and scale scores using the SPSS calculation function. There were 4 participants who scored three out of five or above on the Response Bias scale items, and in accordance with the recommendations of the SDTLA authors, these participants were removed from the study (Winston, Miller & Cooper, 1999). These summed scores were then converted to standard scores using the national norm values and the SPSS calculation function, transposing the results to the Student's t-scale ($\mu = 50$, $\sigma = 10$). Different conversion values derived from the national norms were used based upon the academic year and sex of the participant, thus allowing for comparisons of participants across academic year and gender.

The additional data from the office of the registrar and the athletics department were added as they became available. These included the data required to compare the participants to the non-participants for each group, such as high school GPA and SAT scores, university cumulative GPAs, gender, ethnicity, academic year, and sports team for the student-athletes. As a matter of course, each entry in the data table, and all the calculations and transpositions, were checked at least once for consistency. Any discrepancies were re-checked until a common value was established. Frequency tables were run on the final table to check that all high and low values were between the highest and lowest values on the scale.

CHAPTER 4

RESULTS

The purpose of this chapter is to provide the results of a study of the psychosocial development of athletically gifted and academically gifted post-secondary students conducted at a mid-sized public university in the southeastern United States. An overview of the study is provided, along with the results of the research questions set apriori. Summary tables are presented for each analysis performed.

Overview

This study had two primary objectives: (a) to determine whether the level of psychosocial development attained by the post-secondary students identified as gifted differed from the level attained by post-secondary students in the general population, and whether the level attained by the athletically gifted students differed from the level attained by the academically gifted students, and (b) to determine whether the pattern of psychosocial development for the post-secondary students identified as gifted differed from the pattern of psychosocial development for post-secondary students in the general population, and whether the patterns for the athletically gifted students differed from the pattern for the academically gifted students. These objectives were achieved by inviting students from two groups of students at the university—honors program participants and intercollegiate student-athletes—to complete the *Student Development Task and Lifestyle Assessment* (SDTLA, Winston, Miller & Cooper, 1999), a self-report questionnaire designed to assess psychosocial development in post-secondary students. Eight

research questions were formulated to investigate the levels of psychosocial development attained by the two groups of gifted students and the patterns of psychosocial development for each group. Descriptive statistics are presented followed by the results related to each of the research questions posed. A summary of the responses to the SDTLA instrument is presented. Finally, the scores for the participants in each of the gifted groups on each of the tasks, subtasks on the SDTLA and the Salubrious Lifestyle Scale are presented graphically.

Descriptive Statistics

The internal reliability for the SDTLA was estimated using Cronbach's alpha values for the tasks, subtasks, and scales associated with the SDTLA, excluding the Response Bias scale. The values range from $\alpha = 0.588$ to $\alpha = 0.913$ for the sample data. The authors of the SDTLA specifically noted that the items in the subtasks were graded in order to reflect changes in the underlying aspects of the construct (Winston, Miller & Cooper, 1999). As the items comprising the subtasks were not equivalent, lower Cronbach's alpha values were expected. Thus, while the generally accepted cutoff value for Cronbach's alpha is 0.70, the results obtained suggest that the SDTLA demonstrated acceptable reliable across the items on the tasks, subtasks, and scales for the study group.

See Table 12 for individual task, subtask, and scale values. Note that potential participants with three or more socially desirable responses on the Response Bias scale were excluded from the study, and their data were not included in the reliability calculations.

The internal reliability, as measured by Cronbach's alpha, was higher for the study participants than the national norm group on the Establishing and Clarifying Purpose task, as well as the Career Planning and Cultural Participation subtasks associated with this tasks, but

lower on the Lifestyle Planning and Educational Involvement subtasks also associated with this tasks. The differences, however, were not very large. The study group also had a higher Cronbach alpha value for the Developing Autonomy task, along with the Instrumental Autonomy, Academic Autonomy, and Interdependence subtasks associated with this task. On the remaining subtask, Emotional Autonomy, the Cronbach alpha value for the national norm was higher. On the last task, Developing Mature Interpersonal Relationships, the national norm and the study group displayed comparative Cronbach's alpha values; however, the study group was noticeably lower for the Peer Relationship subtask. The study group had a higher reliability estimate for the Salubrious Lifestyle scale. As the internal reliability estimates of the SDTLA tasks, subtasks and scale obtained using the study group data were generally comparable to the estimates obtained by the instrument's authors when establishing the national norms, it was appropriate to use the national norm values obtained on the tasks, subtasks and scale of the SDTLA for comparisons with the values obtained by the study participants.

Table 12. SDTLA Internal Reliability for the Sample

Tasks, Subtasks and Scales	Items	Cronbach's Alpha (n=480)
Establishing and Clarifying Purpose Task (PUR)	51	0.913
Career Planning Subtask (CP)	14	0.873
Lifestyle Planning Subtask (LP)	13	0.764
Educational Involvement Subtask (EI)	14	0.775
Cultural Participation Subtask (CUP)	10	0.793
Developing Autonomy Task (AUT)	51	0.889
Emotional Autonomy Subtask (EA)	17	0.684
Instrumental Autonomy Subtask (IA)	9	0.678
Academic Autonomy Subtask (AA)	11	0.844
Interdependence Subtask (IND)	14	0.803
Developing Mature Interpersonal Relationships (MIR)	24	0.753
Tolerance Subtask (TOL)	14	0.729
Peer Relationships Subtask (PR)	10	0.588
Salubrious Lifestyle Scale (SL)	17	0.764
Response Bias Scale (RB) [1]	6	0.132

[1] Any participants with more than 3 socially favorable responses on this scale were removed from the study before these analyses were conducted.

Table 13 shows the correlations between the tasks, subtasks, and scales of the SDTLA using the study group data. The correlations between tasks and their subtasks range from $r = 0.89$ to $r = 0.73$ while the correlations between tasks and subtasks not associated with them ranged from $r = 0.71$ to $r = 0.21$. This indicates the relationship was stronger between tasks and subtasks that were theoretical similar than between those that were less theoretically similar. As all the tasks and subtasks evaluate aspects of the same underlying construct, it was expected that they would all be correlated to a significant level, and this was the case for the study participants. This was illustrated by correlations from $r = 0.73$ to $r = 0.38$ ($p < 0.001$) between the separate tasks.

The correlations between the tasks and the Salubrious Lifestyle scale ranged from $r = 0.45$ to $r = 0.26$ suggesting that a weaker relationship exists between the tasks and the scale than between the tasks themselves. Note that all the correlations were nevertheless significant at the $p < 0.01$ level, indicating that regardless of the strength of the individual relationship, the form of the relationships was consistent across the participants. These significant correlations between tasks, subtasks, and the scale were an important factor in selecting a multivariate analysis of variance (MANOVA) to compare the two groups, athletically gifted and academically gifted, across the tasks, subtasks and, scale. A MANOVA is most suitable when the dependent variables are significantly correlated with each other.

The correlation values between task, subtasks, and scale on the SDTLA for the study group were comparable to the correlations values obtained for the national norm (see Table 11 on page 65 for national norm values). While the values differed slightly, the trends were the same, suggesting that the relative strengths of the relationships between the tasks, subtasks, and scale were the same for the study participants and the students used to establish the national norm values.

Table 13. Correlations Between Tasks, Subtasks and Scales for the Sample

	EA	IA	AA	IND	PUR	CP	LP	CUP	EI	MIR	TOL	PR	SL
AUT	.70	.83	.84	.73	.68	.51	.57	.48	.58	.56	.47	.47	.45
EA		.47	.51	.21	.33	.24	.33	.21	.25	.57	.44	.53	.33
IA			.71	.50	.63	.52	.57	.37	.50	.38	.36	.26	.46
AA				.43	.41	.30	.38	.25	.37	.42	.29	.44	.44
IND					.71	.51	.49	.58	.64	.36	.35	.20	.22
PUR						.84	.81	.63	.86	.38	.42	.17	.26
CP							.66	.28	.64	.24	.26	.12	.21
LP								.30	.60	.21	.22	.11	.25
CUP									.41	.50	.56	.20	.18
EI										.26	.28	.11	.17
MIR											.89	.73	.35
TOL												.35	.23
PR													.37

N = 480

Note: All correlations were significant, $p < 0.01$ (2-tailed)

SDTLA Task, Subtask, and Scale abbreviations on listed on the following page.

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

The basic descriptive statistic for the standardized values obtained from the study group data on the tasks, subtasks, and scale on the SDTLA are shown in Table 14. The distribution was positively skewed for the Establishing and Clarifying Purpose task, and the Career Planning and Cultural Participation subtasks associated with this task, although the skewness was less than twice the standard error of skewness, suggesting that the deviation from the Student's t-distribution was not significant. All the other tasks, subtasks, and the scale were negatively skewed. The Developing Autonomy task, together with the Emotional Autonomy, Instrumental Autonomy, and the Academic Autonomy subtasks associated with this task, and the Developing Mature Interpersonal Relationships task, together with the Tolerance and the Peer Relationships subtasks associated with this task, and the Salubrious Lifestyle scale were all skewed by more than twice the standard error of skewness, suggesting there were some negative outliers.

The distribution was platykurtic for the Establishing and Clarifying Purpose task and two of the subtasks associated with this task and for the Developing Autonomy task and three of the subtasks associated with this task, as well as one of the subtasks associated with the Developing Mature Interpersonal Relationships task. The levels of platykurtic kurtosis were only significant, i.e. more than twice the standard error of kurtosis, for the Establishing and Clarifying Purpose task, the Career Planning and Cultural Participation subtasks associated with this task, and the Instrumental Autonomy and Interdependence subtasks associated with the Developing Autonomy task distributions. While the distribution for six tasks or subtasks and the Salubrious Lifestyle scale were leptokurtic, none were significantly so.

Table 14. Descriptive Statistics of Responses

Task, Subtask or Scale	Mean	Median	Std. Dev.	Skewness	S.E. of Skewness	Kurtosis	S.E. of Kurtosis
PUR	48.033	46.842	9.799	0.183	0.111	-0.679	0.222
CP	48.169	47.631	10.724	0.093	0.111	-0.734	0.222
LP	49.845	49.110	9.564	-0.074	0.111	0.045	0.222
EI	49.083	50.352	10.818	-0.173	0.111	0.237	0.222
CUP	47.744	47.497	10.919	0.149	0.111	-0.806	0.222
AUT	52.008	53.425	10.556	-0.436	0.111	-0.409	0.222
EA	51.950	53.049	9.873	-0.377	0.111	0.355	0.222
IA	51.376	52.074	10.265	-0.438	0.111	-0.701	0.222
AA	52.926	54.704	10.834	-0.529	0.111	-0.307	0.222
IND	49.885	49.296	11.112	-0.050	0.111	-0.656	0.222
MIR	51.386	53.366	10.504	-0.615	0.111	0.084	0.222
TOL	51.116	51.667	9.919	-0.419	0.111	-0.148	0.222
PR	51.595	52.239	10.257	-0.574	0.111	0.267	0.222
SL	53.440	53.300	10.744	-0.302	0.111	0.096	0.222

N = 480

Inferential Statistics Relating to Research Questions

Level of Psychosocial Development Attained

All Gifted Students Compared to the National Norm

The scores obtained by the study group were significantly different ($p < 0.05$) from the national norm scores on all three of the tasks, seven of the nine subtasks, and the Salubrious Lifestyle scale. The scores obtained by the study group were significantly higher than the national norm scores on the Salubrious Lifestyle scale ($t = 7.014$, $df = 479$, $p < 0.001$), the Academic Autonomy subtask ($t = 5.918$, $df = 479$, $p < 0.001$), the Emotional Autonomy subtask ($t = 4.326$, $df = 479$, $p < 0.001$), the Developing Autonomy task ($t = 4.167$, $df = 479$, $p < 0.001$), the Peer Relationship subtask ($t = 3.406$, $df = 479$, $p < 0.001$), the Instrumental Autonomy subtask ($t = 2.937$, $df = 479$, $p = 0.003$), the Developing Mature Interpersonal Relationships task ($t = 2.891$, $df = 479$, $p = 0.004$), and the Tolerance subtask ($t = 2.464$, $df = 479$, $p = 0.014$).

The scores obtained by the study group were significantly lower than the national norm scores on the Cultural Participation subtask ($t = -4.526$, $df = 479$, $p < 0.001$), the Establishing and Clarifying Purpose task ($t = -4.399$, $df = 479$, $p < 0.001$), and the Career Planning subtask ($t = -3.741$, $df = 479$, $p < 0.001$).

Even applying a very conservative Bonferroni type correction to the Type I error value for this set of t-tests ($\alpha = 0.05/14 = 0.004$) cited above, all but the Developing Mature Interpersonal Relationships task, and the Tolerance subtask comparisons were still significant. See Table 15 for full details of the t-tests. The results obtained suggest that on most aspects of psychosocial development, gifted students do differ from other postsecondary students in terms of the level of development attained. In the majority of areas, the gifted students exhibited a significantly higher level of psychosocial development than their peers.

Table 15. One Sample T-Tests, Combined Gifted Sample

	Single Sample T-Test $\mu = 50.000$					
Tasks, Subtasks & Scale	Mean	Std. Dev.	S.E.	T-Statistic	*df*	Significance
PUR Task	48.033	9.799	0.447	-4.399	479	0.000
CP Subtask	48.169	10.724	0.489	-3.741	479	0.000
LP Subtask	49.845	9.564	0.437	-0.356	479	0.722
EI Subtask	49.083	10.818	0.494	-1.858	479	0.064
CUP Subtask	47.744	10.919	0.498	-4.526	479	0.000
AUT Task	52.008	10.556	0.482	4.167	479	0.000
EA Subtask	51.950	9.873	0.451	4.326	479	0.000
IA Subtask	51.376	10.265	0.469	2.937	479	0.000
AA Subtask	52.926	10.834	0.494	5.918	479	0.000
IND Subtask	49.885	11.112	0.507	-0.227	479	0.821

Table 15. One Sample T-Tests, Combined Gifted Sample, continued

Tasks, Subtasks & Scale	Mean	Std. Dev.	S.E.	T-Statistic	*df*	Significance
MIR Task	51.386	10.504	0.479	2.891	479	0.004
TOL	51.116	9.919	0.453	2.464	479	0.014
Subtask						
PR Subtask	51.595	10.257	0.468	3.406	479	0.001
SL Scale	53.440	10.744	0.490	7.014	479	0.000

Std. Dev. = standard deviation, S.E. = standard error of the mean, *df* = degrees of freedom.

N = 480

Academically Gifted Students Compared to Athletically Gifted Students

Analysis of SDTLA tasks, and scale.

The scores obtained on the Establishing and Clarifying Purpose task, the Developing Autonomy task, the Developing Mature Interpersonal Relationships task, and the Salubrious Lifestyle scale by the academically gifted participants were compared to the scores obtained by the athletically gifted participants using a multivariate analysis of variance (MANOVA.) An intercept plus group model was used, with the type of giftedness as the independent fixed factor and the tasks and the scale as the dependent variables. Following the MANOVA, a one-way analysis of variance (ANOVA) was performed for each of the dependent variables, with the type of giftedness as the independent variable.

The MANOVA for the tasks and scale was not significant ($p = 0.431$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root). See Table 16. Box's test of equality of covariance matrices was significant ($p < 0.001$), suggesting that the covariance matrices were not equivalent. See Table 17. None of the individual dependent variable ANOVAs was significant either ($p = 0.095$ to $p = 0.606$).See Table 18. It was also noted that Levene's test for equality of variance was significant for the Developing Autonomy task ($p = 0.003$) and the Salubrious Lifestyle scale ($p < 0.001$), suggesting that the variance was not equivalent across the two groups on these measures. See Table 19.

Table 16. Multivariate Analysis for SDTLA Tasks and Salubrious Lifestyle Scale

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.978	5339.898	4	475	0.000	0.978
	WL	0.022	5339.898	4	475	0.000	0.978
	HT	44.968	5339.898	4	475	0.000	0.978
	RLR	44.968	5339.898	4	475	0.000	0.978
Group	PT	0.008	0.957	4	475	0.431	0.008
	WL	0.992	0.957	4	475	0.431	0.008
	HT	0.008	0.957	4	475	0.431	0.008
	RLR	0.008	0.957	4	475	0.431	0.008

Design: Intercept + Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 17. Test of Equality of Covariance Matrices

Box's M	37.694
F	3.735
df 1	10
df 2	1038584
Significance	0.000

df = degrees of freedom

Table 18. Between Groups Analysis of Variance for Tasks and Salubrious Lifestyle Scale

Source	Task, Subtasks or Scale	MS	*df*	F	Sig.	Part. Eta^2
Group	PUR Task	140.706	1	1.467	0.226	0.003
	AUT Task	232.626	1	2.092	0.149	0.004
	MIR Task	29.372	1	0.266	0.606	0.001
	SL Scale	322.111	1	2.801	0.095	0.006
Error	PUR Task	95.920	478			
	AUT Task	111.179	478			
	MIR Task	110.510	478			
	SL Scale	115.088	478			

Design: Intercept + Group

Table 19. Levene's Test of Equality of Variances

Tasks, Subtasks or Scale	F	*df* 1	*df* 2	Significance
PUR Task	0.174	1	478	0.677
AUT Task	8.941	1	478	0.003
MIR Task	0.088	1	478	0.767
SL Scale	12.297	1	478	0.000

Design: Intercept + Group

Analysis of SDTLA subtasks, and scale.

Breaking the tasks down to subtasks, The SDTLA tasks considered in the previous section were broken down into their subtasks. The scores obtained by the academically gifted participants on the Career Planning subtask, the Lifestyle Planning subtask, the Educational Involvement subtask, and the Cultural Participation subtask associated with the Establishing and Clarifying Purpose task; the Emotional Autonomy subtask, the Instrumental Autonomy subtask, the Academic Autonomy subscale, the Interdependence subtask associated with the Developing Autonomy task; and the Tolerance subtask and Peer Relationship subtask associated with the Developing Mature Interpersonal Relationships task; and the Salubrious Lifestyle scale were compared to the scores obtained by the athletically gifted participants on the same subtasks and scale using a multivariate analysis of variance (MANOVA.) An intercept plus group model was used, with the type of giftedness as the independent fixed factor and the subtasks and the scale as the dependent variables. Following the MANOVA, a one-way analysis of variance (ANOVA) was performed for each of the dependent variables, with the type of giftedness as the independent variable.

The MANOVA for the tasks and scale was not significant ($p = 0.095$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root.) See Table 20. Box's test of equality of covariance matrices was significant ($p < 0.001$), suggesting that the covariance matrices were not equivalent. See Table 21. The only individual dependent variable ANOVAs that was significant at the $\alpha = 0.05$ level was the one for the Academic Autonomy subtask ($p = 0.033$); however, given the multiple analyses involved, a Bonferroni correction to the Type I error rate ($\alpha = 0.05/11 = 0.005$) rendered the statistic no longer significant. The significance levels for the other subtasks and scale ranged from $p = 0.066$ for the Interdependence subtask to

$p = 0.579$ for the Peer Relationship subtask. These results indicate that the differences found in level of psychosocial development between gifted groups were not significant. See Table 22 for summary ANOVA data. Levene's test for equality of variance was significant for the Salubrious Lifestyle scale ($p < 0.001$), the Interdependence subtask ($p = 0.002$), the Academic Autonomy subtask ($p = 0.009$), and the Instrumental Autonomy subtask, suggesting that the variance was not equivalent across the two groups on these measures. See Table 23.

Table 20. Multivariate Analysis for Sub-Tasks and Salubrious Lifestyle Scale

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.984	2590.852	11	468	0.000	0.984
	WL	0.016	2590.852	11	468	0.000	0.984
	HT	60.896	2590.852	11	468	0.000	0.984
	RLR	60.896	2590.852	11	468	0.000	0.984
Group	PT	0.036	1.603	11	468	0.095	0.036
	WL	0.964	1.603	11	468	0.095	0.036
	HT	0.038	1.603	11	468	0.095	0.036
	RLR	0.038	1.603	11	468	0.095	0.036

Design: Intercept + Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 21. Test of Equality of Covariance Matrices

Box's M	145.649
F	2.153
df 1	66
df 2	696293.6
Significance	0.000

df = degrees of freedom

Table 22. Between Groups Analysis of Variance for Subtasks and Salubrious Lifestyle Scale

Source	Tasks, subtasks or Scale	MS	*df*	F	Sig.	Part. Eta^2
Group	PUR Task					
	CP Subtask	237.464	1	2.070	0.151	0.004
	LP Subtask	66.182	1	0.723	0.396	0.002
	EI Subtask	93.320	1	0.797	0.372	0.002
	CUP Subtask	66.052	1	0.554	0.457	0.001
	AUT Task					
	EA Subtask	93.355	1	0.958	0.328	0.002
	IA Subtask	131.366	1	1.247	0.265	0.003
	AA Subtask	530.842	1	4.557	0.033	0.009
	IND Subtask	417.692	1	3.400	0.066	0.007
	MIR Task					
	TOL Subtask	98.783	1	1.004	0.317	0.002
	PR Subtask	32.533	1	0.309	0.579	0.001
	SL Scale	322.111	1	2.801	0.095	0.006

Table 22. Between Groups Analysis of Variance for Subtasks and Salubrious Lifestyle Scale

Source	Tasks, subtasks or Scale	MS	*df*	F	Sig.	Part. Eta^2
Error	PUR Task					
	CP Subtask	114.738	478			
	LP Subtask	91.522	478			
	EI Subtask	117.075	478			
	CUP Subtask	119.332	478			
	AUT Task					
	EA Subtask	97.488	478			
	IA Subtask	105.309	478			
	AA Subtask	116.501	478			
	IND Subtask	122.853	478			
	MIR Task					
	TOL Subtask	98.378	478			
	PR Subtask	105.366	478			
	SL Scale	115.008	478			

Design: Intercept + Group

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Table 23. Levene's Test of Equality of Variances

Task, subtask or Scale	F	*df* 1	*df* 2	Significance
PUR Task				
CP Subtask	0.208	1	478	0.649
LP Subtask	0.568	1	478	0.452
EI Subtask	0.361	1	478	0.548
CUP Subtask	0.195	1	478	0.659
AUT Task				
EA Subtask	0.284	1	478	0.594
IA Subtask	6.299	1	478	0.012
AA Subtask	6.981	1	478	0.009
IND Subtask	9.834	1	478	0.002
MIR Task				
TOL Subtask	0.061	1	478	0.806
PR Subtask	0.005	1	478	0.941
SL Scale	12.297	1	478	0.000

Design: Intercept + Group

Athletically Gifted Students Compared to the National Norm

In order to assess the differences that existed between each of the gifted groups and the national norms, the scores obtained by the participants from each group were compared to the national norm independently using t-tests. The results for the 222 athletically gifted participants are shown in Tables 24. The athletically gifted participants were significantly different ($p < 0.05$) from the national norm scores on all three of the tasks, five of the nine subtasks, and the Salubrious Lifestyle scale. The scores obtained by the athletically gifted participants were significantly higher than the national norm scores on the Salubrious Lifestyle scale ($t = 7.129$, $df = 221$, $p < 0.001$), the Academic Autonomy subtask ($t = 6.142$, $df = 221$, $p < 0.001$), the Developing Autonomy task ($t = 4.324$, $df = 221$, $p < 0.000$), the Instrumental Autonomy subtask ($t = 2.997$, $df = 221$, $p = 0.003$), the Tolerance subtask ($t = 2.433$, $df = 221$, $p = 0.016$), and the Developing Mature Interpersonal Relationships task ($t = 2.341$, $df = 221$, $p = 0.020$).

The scores obtained by the athletically gifted participants were significantly lower than the national norm scores on the Cultural Participation subtask ($t = -2.525$, $df = 221$, $p = 0.012$) and the Establishing and Clarifying Purpose task ($t = -2.084$, $df = 221$, $p = 0.038$). If the same conservative Bonferroni correction were applied to the Type I error rate for this set of t-tests ($\alpha = 0.05/14 = 0.004$), only the Salubrious Lifestyle scale, the Academic Autonomy subtask, the Developing Autonomy task, and the Instrumental Autonomy subtask would be significant. In all these cases, the athletically gifted groups' scores were significantly above the national norm.

The results obtained suggest that in the areas of autonomy and healthy lifestyle, the athletically gifted students achieved a significantly higher level of psychosocial development than other post-secondary students, but that in all other areas the difference between athletically gifted students and their peers was not sufficiently large to be significant.

Table 24. One Sample T-Tests, Athletically Gifted Participants

	Test Value = 50.000					
Tasks, Subtasks & Scale	Mean	Std. Dev.	S.E.	T-Statistic	*df*	Significance
PUR Task	48.616	9.890	0.664	-2.084	221	0.038
CP	48.927	10.978	0.717	-1.497	221	0.136
LP	50.245	9.888	0.664	0.369	221	0.713
EI	49.558	10.211	0.685	-0.645	221	0.520
CUP	48.144	10.951	0.735	-2.525	221	0.012
AUT Task	52.758	9.506	0.638	4.324	221	0.000
EA	51.474	9.661	0.648	2.273	221	0.024
IA	51.940	9.645	0.647	2.997	221	0.003
AA	54.060	9.850	0.661	6.142	221	0.000
IND	50.891	9.846	0.661	1.348	221	0.179
MIR Task	51.653	10.518	0.706	2.341	221	0.020
TOL	51.605	9.827	0.660	2.433	221	0.016
PR	51.314	10.412	0.699	1.881	221	0.061
SL Scale	54.323	9.035	0.606	7.129	221	0.000

Std. Dev. = standard deviation, S.E. = standard error of the mean, *df* = degrees of freedom.

N = 222

SDTLA Task, Subtask, and Scale abbreviations are listed on the following page.

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Academically Gifted Students Compared to the National Norm

The results for the 258 academically gifted participants are shown in Tables 25. The academically gifted participants were significantly different ($p < 0.05$) from the national norm scores on one of the three tasks, five of the nine subtasks, and the Salubrious Lifestyle scale. The scores obtained by the academically gifted participants were significantly higher than the national norm scores on the Emotional Autonomy subtask ($t = 3.769$, $df = 257$, $p < 0.001$), the Salubrious Lifestyle scale ($t = 3.591$, $df = 257$, $p < 0.001$), the Peer Relationships subtask ($t = 2.910$, $df = 257$, $p = 0.004$), and the Academic Autonomy subtask ($t = 2.714$, $df = 257$, $p = 0.007$).

The scores obtained by the academically gifted participants were significantly lower than the national norm scores on the Establishing and Clarifying Purpose task ($t = -4.085$, $df = 257$, $p < 0.001$), the Cultural Participation subtask ($t = -3.831$, $df = 257$, $p < 0.001$), and the Career Planning subtask ($t = -3.0714$, $df = 257$, $p < 0.001$). If the same conservative Bonferroni correction were applied to the Type I error rate for this set of t-tests ($\alpha = 0.05/14 = 0.004$), only Emotional Autonomy subtask and the Salubrious Lifestyle scale would be significantly above the national norm for the academically gifted participants, and they would remain significantly below the norm on the Establishing and Clarifying Purpose task, the Cultural Participation subtask, and the Career Planning subtask.

The results obtained suggest that in the areas of establishing their personal purpose in life, the academically gifted students had achieved a significantly lower level of psychosocial development that other post-secondary students. The academically gifted students were more psychosocially developed emotionally and had adopted a healthier lifestyle than their peers, but

on balance it would appear as if the academically gifted students lagged behind their peers in psychosocial development.

Table 25. One Sample T-Tests, Academically Gifted Participants

	Test Value = 50.000					
Tasks, Subtasks & Scale	Mean	Std. Dev.	S.E.	T-Statistic	*df*	Significance
PUR Task	47.531	9.710	0.605	-4.085	257	0.000
CP	47.517	10.740	0.669	-3.714	257	0.000
LP	49.500	9.282	0.578	-0.865	257	0.388
EI	48.674	11.318	0.725	-1.882	257	0.061
CUP	47.400	10.900	0.679	-3.831	257	0.000
AUT Task	51.362	11.361	0.707	1.926	257	0.055
EA	52.359	10.053	0.626	3.769	257	0.000
IA	50.891	10.764	0.670	1.329	257	0.185
AA	51.951	11.544	0.719	2.714	257	0.007
IND	49.020	12.047	0.750	-1.307	257	0.192
MIR Task	51.156	10.508	0.654	1.768	257	0.078
TOL	50.695	9.997	0.622	1.116	257	0.265
PR	51.836	10.136	0.631	2.910	257	0.004
SL Scale	52.680	11.988	0.746	3.591	257	0.000

Std. Dev. = standard deviation, S.E. = standard error of the mean, *df* = degrees of freedom.

N = 257

SDTLA Task, Subtask, and Scale abbreviations are listed on the following page.

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Pattern of Psychosocial Development Attained

All Gifted Students Compared to the National Norm

The scores obtained by the study participants were compared to the national norms to investigate differences in the patterns of psychosocial development. The scores obtained for each task, subtask and the Salubrious Lifestyle scale were broken down by academic year—freshman, sophomore, junior, and senior—and compared independently to the national norms using single sample t-tests. See Table 26 for summary data and Table 27 for single sample t-test results.

A Bonferroni correction to the Type I error rate ($\alpha = 0.05/14 = 0.004$) was employed to establish the points at which the psychosocial development of gifted students who participated in the study differed significantly from the national norm. The freshmen study participants were significantly behind the national norm in psychosocial development in facets assessed by the Establishing and Clarifying Purpose task ($p < 0.001$), the Career Planning subtask ($p < 0.001$), the Lifestyle Planning subtask ($p = 0.002$), the Educational Involvement subtask ($p < 0.001$), and the Cultural Participation subtask ($p = 0.001$). The freshman study participants were significantly ahead of the national norm in psychosocial development in facets assessed by the Salubrious Lifestyle scale ($p < 0.001$).

The sophomore study participants were not significantly behind the national norm in psychosocial development in any facets assessed by the SDTLA. The sophomore study participants were significantly ahead of the national norm in psychosocial development in facets assessed by the Developing Autonomy task ($p < 0.001$), the Developing Mature Interpersonal Relationships task ($p = 0.003$), the Instrumental Autonomy subtask ($p < 0.001$), the Academic Autonomy subtask ($p < 0.001$), the Tolerance subtask ($p = 0.002$), and the Salubrious Lifestyle scale ($p < 0.001$).

The junior study participants were significantly ahead of the national norm in psychosocial development in the facets assessed by the Educational Involvement subtask ($p < 0.001$). The junior study participants were not significantly behind the national norm in any psychosocial development facets assessed by any SDTLA tasks, subtask, or scale.

The senior study participants were not significantly behind the national norm in psychosocial development in any facet assessed by the SDTLA. The senior study participants were significantly ahead of the national norm in psychosocial development in facets assessed by the Establishing and Clarifying Purpose task ($p < 0.001$), the Developing Autonomy task ($p < 0.001$), and the Developing Mature Interpersonal Relationships task ($p < 0.001$), as well as the Lifestyle Planning subtask ($p = 0.001$), the Educational Involvement subtask ($p < 0.001$), the Emotional Autonomy subtask ($p < 0.001$), and the Instrumental Autonomy subtask ($p < 0.001$), the Academic Autonomy subtask ($p < 0.001$), the Peer Relationship subtask ($p < 0.001$), and the Salubrious Lifestyle scale ($p < 0.001$).

These results suggest that the pattern of psychosocial development for gifted students does differ from the pattern of psychosocial development of their regular post-secondary peers; in most areas, gifted students lagged behind in psychosocial development but caught up and surpassed their regular peers by the sophomore year. By their senior year, the gifted students were ahead of their regular peers in psychosocial development.

Table 26. Pattern of Psychosocial Development for all Study Participants

	Standardized Mean Score			
Task, Subtask or Scale	Freshman N = 138	Sophomore N = 134	Junior N = 115	Senior N = 93
PUR Task	44.584	48.236	49.317	51.270
CP Subtask	44.270	47.969	49.503	52.595
LP Subtask	47.244	49.656	50.743	52.864
EI Subtask	41.877	48.933	55.524	52.026
CUP Subtask	46.890	49.479	49.002	44.958
AUT Task	48.898	53.683	50.255	56.376
EA Subtask	49.655	52.033	50.653	56.838
IA Subtask	49.024	54.331	48.580	54.065
AA Subtask	49.813	54.670	49.670	59.061
IND Subtask	48.066	51.123	51.315	49.122
MIR Subtask	48.920	52.599	50.742	54.094
TOL Subtask	49.114	52.768	50.951	51.909
PR Subtask	49.528	51.479	50.549	56.120
SL Scale	53.939	53.347	50.435	56.548

SDTLA Task, Subtask, and Scale abbreviations are listed on the following page.

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Table 27. Pattern of Psychosocial Development for all Study Participants

	Single Sample T-Test $\mu = 50.000$							
Task, Subtask or Scale	Freshman *df* = 137		Sophomore *df* = 133		Junior *df* = 114		Senior *df* = 92	
	t	Sig.	t	Sig.	t	Sig.	t	Sig.
PUR Task	-6.529	0.000	-2.338	0.021	-0.763	0.447	1.203	0.232
CP Subtask	-6.461	0.000	-2.243	0.027	-0.511	0.611	2.525	0.013
LP Subtask	-3.200	0.002	-0.385	0.701	0.955	0.341	3.473	0.001
EI Subtask	-9.016	0.000	-1.216	0.226	5.649	0.000	4.535	0.000
CUP Subtask	-3.308	0.001	-0.673	0.502	-0.990	0.324	-3.813	0.000
AUT Task	-1.326	0.187	4.397	0.000	0.214	0.831	8.128	0.000
EA Subtask	-0.455	0.650	2.734	0.007	0.657	0.512	6.344	0.000
IA Subtask	-1.205	0.230	5.959	0.000	-1.329	0.187	3.724	0.000
AA Subtask	-0.205	0.838	4.891	0.000	-0.319	0.750	13.641	0.000
IND Subtask	-2.142	0.034	1.242	0.216	1.060	0.291	-0.969	0.335
MIR Subtask	-1.279	0.230	2.993	0.003	0.652	0.516	4.471	0.000
TOL Subtask	-1.101	0.273	3.196	0.002	0.911	0.364	2.234	0.028
PR Subtask	-0.564	.0573	2.010	0.046	0.492	0.623	6.112	0.000
SL Scale	4.888	0.000	3.881	0.000	0.363	0.717	6.413	0.000

Athletically Gifted Participants Compared to the National Norm

The scores obtained by the athletically gifted participants were compared to the national norms to investigate differences in the patterns of psychosocial development. The scores obtained for each task, subtask and the Salubrious Lifestyle scale were broken down by academic year—freshman, sophomore, junior, and senior—and compared independently to the national norms using single sample t-tests. See Table 28 for summary data and Table 29 for t-test results.

A Bonferroni correction to the Type I error rate ($\alpha = 0.05/14 = 0.004$) was employed to establish the points at which the psychosocial development of athletically gifted students who participated in the study differed significantly from the national norm. The freshman athletically gifted participants were significantly behind the national norm in psychosocial development in facets assessed by the Establishing and Clarifying Purpose task ($p < 0.001$), the Career Planning subtask ($p < 0.001$), and the Educational Involvement subtask ($p < 0.001$). The freshman athletically gifted participants were significantly ahead of the national norm in psychosocial development in facet assessed by the Salubrious Lifestyle scale ($p < 0.001$.)

The sophomore athletically gifted participants were not significantly behind the national norm in any psychosocial development in facets assessed by any SDTLA tasks, subtask, or scale. The sophomore athletically gifted participants were significantly ahead of the national norm in psychosocial development in facets assessed by the Developing Autonomy task ($p < 0.001$), the Instrumental Autonomy subtask ($p < 0.001$), and the Academic Autonomy subtask ($p < 0.001$).

The junior athletically gifted participants were significantly ahead of the national norm in psychosocial development in facets assessed by the Educational Involvement subtask

($p < 0.001$), and the Salubrious Lifestyle scale ($p < 0.001$). The junior athletically gifted participants were not significantly behind the national norm in any psychosocial development facet assessed by any SDTLA tasks, subtask, or scale.

The senior athletically gifted participants were not significantly behind the national norm in psychosocial development in any facet assessed by the SDTLA. The senior athletically gifted participants were significantly ahead of the national norm in psychosocial development in facets assessed by the Developing Autonomy task ($p = 0.001$), as well as the Educational Involvement subtask ($p < 0.001$), the Academic Autonomy subtask ($p < 0.001$), and the Salubrious Lifestyle scale ($p = 0.002$).

As with the combined gifted group, the athletically gifted students appear to differ in their pattern of psychosocial development from their regular post-secondary peers. While the athletically gifted students lagged behind in establishing their personal sense of purpose in life as freshmen, they caught up to their regular peers in all areas by their sophomore year, and surged ahead in developing autonomy. By their senior year, the athletically gifted remained ahead in the autonomy related aspects of psychosocial development. These results suggest that the pattern of athletically gifted students does differ from the pattern exhibited by their post-secondary peers.

Table 28. Pattern of Psychosocial Development for Athletically Gifted Participants

	Standardized Mean Score			
Task, Subtask or Scale	Freshman N = 64	Sophomore N = 62	Junior N = 51	Senior N = 45
PUR Task	43.801	47.906	51.788	52.850
CP Subtask	44.359	48.409	51.895	52.775
LP Subtask	47.598	49.751	52.123	52.561
EI Subtask	42.738	48.716	56.605	52.431
CUP Subtask	46.239	49.638	50.868	45.708
AUT Task	49.740	54.497	53.285	54.059
EA Subtask	49.291	52.195	52.145	52.824
IA Subtask	49.759	55.390	50.656	51.744
AA Subtask	51.585	55.512	52.330	57.540
IND Subtask	48.478	51.625	53.951	49.841
MIR Subtask	50.064	53.091	51.783	51.783
TOL Subtask	50.474	53.020	51.687	51.170
PR Subtask	49.800	51.986	51.504	52.326
SL Scale	54.190	53.609	56.197	53.372

SDTLA Task, Subtask, and Scale abbreviations are listed on the following page.

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Table 29. Pattern of Psychosocial Development for Athletically Gifted Participants

	Single Sample T-Test $\mu = 50.000$							
Task, Subtask or Scale	Freshman *df* = 63		Sophomore *df* = 61		Junior *df* = 50		Senior *df* = 44	
	t	Sig.	t	Sig.	t	Sig.	t	Sig.
PUR Task	-4.848	0.000	-1.870	0.066	1.663	0.103	1.890	0.065
CP Subtask	-4.332	0.000	-1.134	0.261	1.613	0.113	1.757	0.086
LP Subtask	-1.852	0.069	-0.182	0.856	1.740	0.088	2.064	0.045
EI Subtask	-6.103	0.000	-0.973	0.335	5.370	0.000	3.485	0.001
CUP Subtask	-2.569	0.013	-0.344	0.732	0.580	0.564	-2.289	0.027
AUT Task	-0.220	0.826	4.085	0.000	2.086	0.042	3.530	0.001
EA Subtask	-0.614	0.541	2.112	0.039	1.323	0.192	1.979	0.054
IA Subtask	-0.196	0.845	5.266	0.000	0.448	0.656	1.237	0.222
AA Subtask	1.233	0.222	4.301	0.000	1.611	0.114	7.494	0.000
IND Subtask	-1.200	0.235	1.302	0.198	2.973	0.005	-0.117	0.907
MIR Subtask	0.053	0.958	2.332	0.023	0.987	0.328	1.385	0.173
TOL Subtask	0.429	0.669	2.321	0.024	1.034	0.306	0.946	0.349
PR Subtask	-0.153	0.879	1.790	0.078	0.842	0.404	1.618	0.113
SL Scale	3.780	0.000	2.950	0.004	4.367	0.000	3.323	0.002

Academically Gifted Participants Compared to the National Norm

The scores obtained by the academically gifted participants were compared to the national norms to investigate differences in the patterns of psychosocial development. The scores obtained for each task, subtask and the Salubrious Lifestyle scale were broken down by academic year—freshman, sophomore, junior, and senior—and compared independently to the national norms using single sample t-tests. See Table 30 for summary data and Table 31 for t-test results.

A Bonferroni correction to the Type I error rate ($\alpha = 0.05/14 = 0.004$) was employed to establish the points at which the psychosocial development of academically gifted students who participated in the study differed significantly from the national norm. The freshmen academically gifted participants were significantly behind the national norm in psychosocial development in facets assessed by the Establishing and Clarifying Purpose task ($p < 0.001$), the Career Planning subtask ($p < 0.001$), the Lifestyle Planning subtask ($p < 0.001$), and the Educational Involvement subtask ($p < 0.001$). The freshmen academically gifted participants were significantly ahead of the national norm in psychosocial development as assessed by the Salubrious Lifestyle scale ($p = 0.002$).

The sophomore academically gifted participants were not significantly behind the national norm in any psychosocial development in facets assessed by any SDTLA tasks, subtask, or scale. The sophomore academically gifted participants were significantly ahead of the national norm in psychosocial development in facets assessed by the Instrumental Autonomy subtask ($p = 0.001$).

The junior academically gifted participants were significantly ahead of the national norm in psychosocial development in facet the Educational Involvement subtask ($p = 0.002$). The

junior academically gifted participants were not significantly behind the national norm in any psychosocial development facet assessed by any SDTLA tasks, subtask, or scale.

The senior academically gifted participants were significantly behind the national norm in psychosocial development in facets assessed by the Cultural Participation subtask ($p = 0.004$). The senior academically gifted participants were significantly ahead of the national norm in psychosocial development in facets assessed by the Developing Autonomy task ($p < 0.001$), the Developing Mature Interpersonal Relationships task ($p < 0.001$), as well as the Emotional Autonomy subtask ($p < 0.001$), the Instrumental Autonomy subtask ($p < 0.001$), the Academic Autonomy subtask ($p < 0.001$), the Peer Relationship subtask ($p < 0.001$), and the Salubrious Lifestyle scale ($p < 0.001$).

Much like their athletic counterparts, the academically gifted students lagged behind their regular post-secondary peers in establishing a personal sense of purpose in life as freshmen, and while the academically gifted students caught up on their deficits in development by their sophomore year, it was not until their senior year that they surged ahead of their regular peers. These results suggest that the pattern of academically gifted students does differ from the pattern exhibited by their post-secondary peers.

Table 30. Pattern of Psychosocial Development for Academically Gifted Participants

	Standardized Mean Score			
Task, Subtask or Scale	Freshman N = 74	Sophomore N = 72	Junior N = 64	Senior N = 48
PUR Task	45.260	48.521	47.348	49.788
CP Subtask	44.193	47.589	47.596	52.425
LP Subtask	46.938	49.575	49.643	53.148
EI Subtask	41.133	49.119	54.662	51.647
CUP Subtask	47.453	49.341	47.514	44.256
AUT Task	48.169	52.983	47.841	58.549
EA Subtask	49.970	51.893	49.463	60.601
IA Subtask	48.389	53.419	46.926	56.241
AA Subtask	48.280	53.945	47.550	60.486
IND Subtask	47.597	50.691	49.215	48.447
MIR Subtask	47.930	52.175	49.913	56.261
TOL Subtask	47.938	52.550	50.364	52.602
PR Subtask	49.293	51.043	49.788	59.677
SL Scale	53.723	53.122	45.844	59.525

SDTLA Task, Subtask, and Scale abbreviations are listed on the following page.

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Table 31. Pattern of Psychosocial Development for Academically Gifted Participants

	Single Sample T-Test $\mu = 50.000$							
Task, Subtask or Scale	Freshman *df* = 73		Sophomore *df* = 71		Junior *df* = 63		Senior *df* = 47	
	t	Sig.	t	Sig.	t	Sig.	t	Sig.
PUR Task	-4.373	0.000	-1.441	0.154	-2.014	0.048	-0.145	0.885
CP Subtask	-4.763	0.000	-2.038	0.045	-1.666	0.101	1.801	0.078
LP Subtask	-2.648	0.000	-0.361	0.719	-0.361	0.720	2.846	0.007
EI Subtask	-6.669	0.000	-0.746	0.458	3.197	0.002	2.895	0.006
CUP Subtask	-2.090	0.040	-0.584	0.561	-1.846	0.070	-3.061	0.004
AUT Task	-1.566	0.122	2.408	0.019	-0.060	0.952	8.696	0.000
EA Subtask	-0.030	0.976	1.782	0.079	-0.439	0.662	7.504	0.000
IA Subtask	-1.496	0.139	3.351	0.001	-2.047	0.045	3.895	0.000
AA Subtask	-1.358	0.179	2.827	0.006	-1.735	0.088	12.576	0.000
IND Subtask	-1.777	0.080	0.531	0.597	-0.407	0.686	-1.271	0.210
MIR Subtask	-1.768	0.081	1.891	0.063	-0.060	0.952	5.078	0.000
TOL Subtask	-1.796	0.077	2.187	0.032	0.268	0.790	2.193	0.033
PR Subtask	-0.652	0.517	1.059	0.293	-0.149	0.882	8.086	0.000
SL Scale	3.199	0.002	2.562	0.013	-2.553	0.013	5.840	0.000

Pattern of Psychosocial Development for Academically Gifted Students Compared to the Pattern of Psychosocial Development for Athletically Gifted Students

Analysis by SDTLA tasks and scale.

The pattern of psychosocial development for academically gifted participants was compared to the pattern of psychosocial development for athletically gifted participants using a multivariate analysis of variance (MANOVA). An intercept plus group, academic year and group by academic year model was used, with the type of giftedness and academic year in school, i.e. freshman, sophomore, junior, or senior, as the independent fixed factors, and the SDTLA tasks and the scale as the dependent variables. The interaction between the type of giftedness and the academic year indicated a difference in the pattern of psychosocial development between the two groups as they progressed from year to year. As the interaction was significant ($p < 0.001$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root), the interactions for the related independent ANOVAs were investigated. See Table 32. Box's test of equality of covariance matrices was significant ($p < 0.001$), suggesting that the covariance matrices were not equivalent. See Table 33.

With a Bonferroni correction to the Type I error rate ($\alpha = 0.05/4 = 0.013$) employed, the follow up ANOVA group by class interactions were significant for the Salubrious Lifestyle scale ($p < 0.001$), and the Developing Autonomy task ($p = 0.006$), suggesting significantly different patterns of psychosocial development for the participants from each gifted group on these two aspects. See Table 34. Levene's test for equality of variance was significant for the Salubrious Lifestyle scale ($p < 0.001$), the Developing Autonomy task ($p < 0.001$), and the Developing Mature Interpersonal Relationships task ($p = 0.014$). See Table 35.

To facilitate interpretation, a matrix of the mean values for the academically gifted and the athletically gifted participants on each of the SDTLA tasks, subtask, and scale by academic year was prepared. See Table 36. To illustrate the differences in psychosocial development between the groups on these aspects of psychosocial development, graphs were constructed. See Figures 15 - 28 at the end of this chapter. The graphs and matrix indicated that while athletically gifted participants and academically gifted participants both increased sharply in Developing Autonomy-related activities between their freshman and sophomore years, the academically gifted students fell to below their freshman level as juniors before surging above their athletically gifted peers by their senior year. The athletically gifted participants maintained a relatively constant level, once the climb from freshman to sophomore level was accomplished.

On the Salubrious Lifestyle scale, a very similar pattern emerges, with the athletically gifted participants displaying essentially equivalent scores in their freshman, sophomore and senior years, with a small rise in their junior year. Conversely, the academically gifted participants mirrored the athletically gifted students in their freshman and sophomore years before falling sharply in their junior year only to surge dramatically in their senior year.

To separately investigate the initial MANOVA interaction on an academic year by academic year basis, individual MANOVAs were conducted for each academic year. For each MANOVA, an intercept plus group model was used, with the type of giftedness as the independent fixed factor and the SDTLA tasks and the scale as the dependent variables. Essentially these investigated whether the internal pattern of psychosocial development across the SDTLA tasks and scale was equivalent for the participants from the two gifted groups for each academic year. Significant academic year MANOVAs were followed up with a series of ANOVAs for the tasks and scale, with the type of giftedness as the independent variable.

The Freshman ($p = 0.182$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root) and Sophomore ($p = 0.639$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root) MANOVAs were not significant, but the Junior ($p < 0.001$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root) and Senior ($p = 0.002$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root) MANOVAs were. See Tables 37, 39, 41, and 43 respectively. These results suggest that in the first two years, the academically gifted and athletically gifted students followed essentially similar patterns of psychosocial development. Box's test of equality of covariance matrices was not significant for the Freshmen MANOVA ($p = 0.559$), suggesting that the covariance matrices were equivalent. See Table 38. Box's test of equality of covariance matrices was not significant for the Sophomore MANOVA ($p = 0.794$), suggesting that the covariance matrices were equivalent. See Table 40. Box's test of equality of covariance matrices was significant for the Junior MANOVA ($p = 0.012$), suggesting that the covariance matrices were not equivalent. See Table 42. Box's test of equality of covariance matrices was significant for the Senior MANOVA ($p < 0.001$), suggesting that the covariance matrices were not equivalent. See Table 44.

As the Junior and Senior MANOVAs were significant, they were followed up with separate ANOVAs for each year. With a Bonferroni correction to the Type I error rate ($\alpha = 0.05/4 = 0.013$) employed for each ANOVA, the junior year ANOVA demonstrated the academically gifted and athletically gifted participants differed significantly on the Salubious Lifestyle scale ($p < 0.001$, athletic mean = 56.197, academic mean = 45.844). See Table 45. Levene's test for equality of variance was significant for the Establishing and Clarifying Purpose task ($p < 0.009$), the Developing Autonomy task ($p = 0.047$), and the Salubrious Lifestyle scale ($p = 0.047$), suggesting that the variance for the athletically gifted participants and the

academically gifted participants who were enrolled as juniors was not equivalent for these tasks and scale. See Table 46. The senior year ANOVA demonstrated the academically gifted and athletically gifted participants differed significantly on the Salubious Lifestyle scale ($p = 0.002$, athletic mean = 53.372, academic mean = 59.525) and the Developing Autonomy task ($p = 0.004$, athletic mean = 54.059, academic mean = 58.549). See Table 47. Levene's test for equality of variance was significant for the Salubrious Lifestyle scale ($p < 0.001$), suggesting that the variance for the athletically gifted participants and the academically gifted participants who were enrolled as seniors was not equivalent for this scale. See Table 48.

The junior and senior ANOVA results demonstrate that by their junior year the athletically gifted participants had experienced greater psychosocial development in the area of establishing a healthy lifestyle than their academically gifted peers. Perhaps surprisingly, by their senior year, the academically gifted participants had more than made up the deficit in healthy lifestyle, rising to a level significantly above their athletically gifted peers. Additionally, they had significantly surpassed the athletically gifted participants in the area of establishing autonomy.

Together these analyses suggest that on average the patterns of psychosocial development for participants in each of the two gifted groups do not differ, as significant differences were only demonstrated on the Salubrious Life style scale year over year, and during only the junior and senior year as a full model across all the SDTLA tasks and scale. In the junior and senior years, further analysis found the differences between the two groups was significant in on only the Salubrious Lifestyle scale in the junior year, and on the same scale in the senior year, plus the Developing Autonomy task.

Table 32. Multivariate Analysis for SDTLA Tasks and Salubrious Lifestyle Scale, Group by Class

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.980	5667.58	4	469	0.000	0.980
	WL	0.020	5667.58	4	469	0.000	0.980
	HT	48.338	5667.58	4	469	0.000	0.980
	RLR	48.338	5667.58	4	469	0.000	0.980
Class	PT	0.143	5.875	12	1413	0.000	0.048
	WL	0.863	5.921	12	1241	0.000	0.048
	HT	0.152	5.932	12	1403	0.000	0.048
	RLR	0.083	9.828	4	471	0.000	0.077
Group	PT	0.008	0.982	4	469	0.417	0.008
	WL	0.992	0.982	4	469	0.417	0.008
	HT	0.008	0.982	4	469	0.417	0.008
	RLR	0.008	0.982	4	469	0.417	0.008
Class * Group	PT	0.121	4.962	12	1413	0.000	0.040
	WL	0.882	5.024	12	1241	0.000	0.041
	HT	0.130	5.060	12	1403	0.000	0.041
	RLR	0.085	9.961	4	471	0.000	0.078

Design: Intercept + Class+Group+Class*Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom. PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 33. Test of Equality of Covariance Matrices

Box's M	251.576
F	3.492
df 1	70
df 2	252436.0
Significance	0.000

df = degrees of freedom

Table 34. Analysis of Variance

Source	Variable	MS	*df*	F	Sig.	Eta^2
Class	PUR	985.8	3	10.996	0.000	0.065
	AUT	1208.9	3	11.871	0.000	0.070
	MIR	556.0	3	5.213	0.002	0.032
	SLS	511.3	3	4.886	0.002	0.030
Group	PUR	214.3	1	2.390	0.123	0.005
	AUT	118.7	1	1.166	0.281	0.002
	MIR	1.4	1	0.013	0.908	0.000
	SLS	193.3	1	1.848	0.175	0.004
Class *						
Group	PUR	242.8	3	2.709	0.045	0.017
	AUT	423.3	3	4.156	0.006	0.026
	MIR	242.0	3	2.269	0.080	0.014
	SLS	1218.6	3	11.646	0.000	0.069
Error	PUR	89.6	472			
	AUT	101.8	472			
	MIR	106.6	472			
	SLS	104.6	472			

Design: Intercept + Class+Group+Class*Group.

SDTLA Task, Subtask, and Scale abbreviations are listed on the following page.

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Table 35. Levene's Test of Equality of Variances

Tasks, Subtasks or Scale	F	*df* 1	*df* 2	Significance
PUR Task	1.200	7	472	0.301
AUT Task	6.594	7	472	0.000
MIR Task	2.536	7	472	0.014
SL Scale	4.502	7	472	0.000

Design: Intercept + Class+Group+Class*Group.

Table 36. Descriptive Matrix, SDTLA Tasks and Salubrious Lifestyle Scale, Group by Class

Task or Scale	Group	Freshman	Sophomore	Junior	Senior
PUR	Athlete	43.801	47.906	51.788	52.850
	Academic	45.260	48.521	47.348	49.788
AUT	Athlete	49.740	54.497	53.285	54.059
	Academic	48.169	52.983	47.841	58.549
MIR	Athlete	50.064	53.091	51.783	51.783
	Academic	47.930	52.175	49.913	56.261
SLS	Athlete	54.190	53.609	56.197	53.372
	Academic	53.723	53.122	45.844	59.525

Table 37. Freshman MANOVA

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.985	2179.100	4	133	0.000	0.985
	WL	0.015	2179.100	4	133	0.000	0.985
	HT	65.537	2179.100	4	133	0.000	0.985
	RLR	65.537	2179.100	4	133	0.000	0.985
Group	PT	0.046	1.586	4	133	0.182	0.046
	WL	0.954	1.586	4	133	0.182	0.046
	HT	0.048	1.586	4	133	0.182	0.046
	RLR	0.048	1.586	4	133	0.182	0.046

Design: Intercept + Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 38. Test of Equality of Covariance Matrices

Box's M	9.004
F	0.872
df 1	10
df 2	84270.405
Significance	0.559

df = degrees of freedom

Table 39. Sophomore MANOVA

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.982	1801.494	4	129	0.000	0.982
	WL	0.018	1801.494	4	129	0.000	0.982
	HT	55.860	1801.494	4	129	0.000	0.982
	RLR	55.860	1801.494	4	129	0.000	0.982
Group	PT	0.019	0.635	4	129	0.639	0.019
	WL	0.981	0.635	4	129	0.639	0.019
	HT	0.020	0.635	4	129	0.639	0.019
	RLR	0.020	0.635	4	129	0.639	0.019

Design: Intercept + Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 40. Test of Equality of Covariance Matrices

Box's M	6.456
F	0.624
df 1	10
df 2	79155.094
Significance	0.794

df = degrees of freedom

Table 41. Junior MANOVA

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.970	886.891	4	110	0.000	0.970
	WL	0.030	886.891	4	110	0.000	0.970
	HT	32.251	886.891	4	110	0.000	0.970
	RLR	32.251	886.891	4	110	0.000	0.970
Group	PT	0.192	6.542	4	110	0.000	0.192
	WL	0.808	6.542	4	110	0.000	0.192
	HT	0.238	6.542	4	110	0.000	0.192
	RLR	0.238	6.542	4	110	0.000	0.192

Design: Intercept + Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 42. Test of Equality of Covariance Matrices

Box's M	23.660
F	2.274
df 1	10
df 2	54392.095
Significance	0.012

df = degrees of freedom

Table 43. Senior MANOVA

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.989	1921.575	4	88	0.000	0.989
	WL	0.011	1921.575	4	88	0.000	0.989
	HT	87.344	1921.575	4	88	0.000	0.989
	RLR	87.344	1921.575	4	88	0.000	0.989
Group	PT	0.171	4.548	4	88	0.002	0.171
	WL	0.829	4.548	4	88	0.002	0.171
	HT	0.207	4.548	4	88	0.002	0.171
	RLR	0.270	4.548	4	88	0.002	0.171

Design: Intercept + Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 44. Test of Equality of Covariance Matrices

Box's M	47.493
F	4.523
df 1	10
df 2	39204.509
Significance	0.000

df = degrees of freedom

Table 45. Junior ANOVA

Source	Variable	MS	*df*	F	Sig.	Eta^2
Group	PUR	559.441	1	6.360	0.013	0.053
	AUT	841.044	1	5.323	0.023	0.045
	MIR	99.248	1	0.664	0.417	0.006
	SLS	3042.544	1	21.726	0.000	0.161
Error	PUR	87.969	113			
	AUT	158.014	113			
	MIR	149.506	113			
	SLS	140.043	113			

Design: Intercept+Group.

Table 46. Levene's Test of Equality of Variances

Tasks, Subtasks or Scale	F	*df* 1	*df* 2	Significance
PUR Task	7.054	1	113	0.009
AUT Task	4.048	1	113	0.047
MIR Task	0.589	1	113	0.444
SL Scale	4.035	1	113	0.047

Design: Intercept+Group.

Table 47. Senior ANOVA

Source	Variable	MS	*df*	F	Sig.	Eta^2
Group	PUR	217.714	1	2.128	0.148	0.023
	AUT	498.090	1	8.878	0.004	0.089
	MIR	465.859	1	6.320	0.014	0.065
	SLS	879.300	1	9.953	0.002	0.099
Error	PUR	102.303	91			
	AUT	52.725	91			
	MIR	73.710	91			
	SLS	88.346	91			

Design: Intercept+Group.

Table 48. Levene's Test of Equality of Variances

Tasks, Subtasks or Scale	F	*df* 1	*df* 2	Significance
PUR Task	0.051	1	91	0.822
AUT Task	0.329	1	91	0.568
MIR Task	0.236	1	91	0.628
SL Scale	15.009	1	91	0.000

Design: Intercept+Group.

SDTLA Task, Subtask, and Scale abbreviations are listed on the following page.

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Analysis by SDTLA subtasks and scale.

Breaking the tasks down to subtasks, the Career Planning subtask, the Lifestyle Planning subtask, the Educational Involvement subtask, and the Cultural Participation subtask associated with the Establishing and Clarifying Purpose task, the Emotional Autonomy subtask, the Instrumental Autonomy subtask, the Academic Autonomy subscale, the Interdependence subtask associated with the Developing Autonomy task, and the Tolerance subtask and Peer Relationship subtask associated with the Developing Mature Interpersonal Relationships task, and the Salubrious Lifestyle scale were used to assess the patterns of psychosocial development for participants from each of the two gifted groups to each other. The pattern of psychosocial development for academically gifted participants was again compared to the pattern of psychosocial development for athletically gifted participants using a multivariate analysis of variance (MANOVA), and once again, an intercept plus group, academic year and group by academic year model was used, with the type of giftedness and academic year in school, i.e. freshman, sophomore, junior, or senior, as the independent fixed factors, but with the SDTLA subtasks and the scale as the dependent variables. As the interaction was significant ($p < 0.001$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root), the interactions for the related independent ANOVAs were investigated. See Table 49. Box's test of equality of covariance matrices was significant ($p < 0.001$), suggesting that the covariance matrices were not equivalent. See Table 50.

With a Bonferroni correction to the Type I error rate ($\alpha = 0.05/11 = 0.005$) employed, the follow up ANOVA group by class interactions were significant for the Salubrious Lifestyle scale ($p < 0.001$), the Emotional Autonomy subtask ($p = 0.001$), and the Peer Relationship subtask ($p = 0.004$), suggesting significantly different patterns of psychosocial

development for the participants from each gifted on these aspects. See Table 51. Levene's test for equality of variance was significant for the Salubrious Lifestyle scale ($p < 0.001$), the Academic Autonomy subtask ($p < 0.001$), the Educational Involvement subtask ($p < 0.001$), the Interdependence subtask ($p < 0.001$), the Cultural Participation subtask ($p = 0.001$), the Instrumental Autonomy subtask ($p = 0.018$), the Peer Relationships subtask ($p = 0.027$), and the Lifestyle Planning subtask ($p = 0.033$), suggesting that the variance for the athletically gifted participants and the academically gifted participants who were enrolled as seniors was not equivalent for this scale. See Table 52.

To facilitate interpretation, a matrix of the mean values for the academically gifted and the athletically gifted participants on each of the SDTLA tasks, subtask, and scale by academic year were prepared. See Table 53. To illustrate the differences in psychosocial development between the groups on these aspects psychosocial developmental, graphs were constructed. See Figures 15 - 28 at the end of this chapter. The Salubrious Lifestyle graph was discussed in the previous section. The Emotional Autonomy subtask graph mirrors the Developing Autonomy task of which it is a subtask; the athletically and academically gifted participants achieved essentially equivalent levels in their freshmen and sophomore years on this aspect of psychosocial development, but while the athletically gifted participants maintained a relatively unchanged level of development from their sophomore to senior years, the academically gifted participants fell back to their freshmen level as juniors, before rising sharply to surpass their athletic counter-parts by their senior year. On the Peer Relationship subtask, the participants from the two gifted groups mirror each other for the first three years, with the academically gifted participants surging higher from their junior to senior years.

To separately investigate the initial MANOVA interactions on an academic year by academic year basis, individual MANOVAs were conducted for each academic year. For each MANOVA, an intercept plus group model was used, with the type of giftedness as the independent fixed factor, and the SDTLA subtasks and the scale as the dependent variables. Once again, these investigated whether the internal pattern of psychosocial development across the SDTLA subtasks and scale were equivalent for the participants from the two gifted groups for each academic year. Significant academic year MANOVAs were followed up with a series of ANOVAs for the tasks and scale, with the type of giftedness as the independent variable.

The Freshman ($p = 0.195$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root) and Sophomore ($p = 0.939$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root) MANOVAs were not significant, but the Junior ($p < 0.001$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root) and Senior ($p = 0.007$ for Pillai's Tace, Wilkes' Lambda, Hotelling's Trace and Roy's Largest Root) MANOVAs were. See Table 54, 56, 58, and 60. As was true at the task level of analysis, these results suggest that during the first two years at college the academically gifted and the athletically gifted participants followed essentially similar patterns of psychosocial development. Box's test of equality of covariance matrices was not significant for the Freshmen MANOVA ($p = 0.538$), suggesting that the covariance matrices were equivalent. See Table 55. Box's test of equality of covariance matrices was not significant for the Sophomore MANOVA ($p > 0.999$), suggesting that the covariance matrices were equivalent. See Table 57. Box's test of equality of covariance matrices was significant for the Junior MANOVA ($p < 0.001$), suggesting that the covariance matrices were not equivalent. See Table 59. Box's test of equality of covariance matrices was

significant for the Senior MANOVA ($p < 0.001$), suggesting that the covariance matrices were not equivalent. See Table 61.

With a Bonferroni correction to the Type I error rate ($\alpha = 0.05/11 = 0.005$) employed, the junior year ANOVA demonstrated the academically gifted and athletically gifted participants differed significantly on the Salubious Lifestyle scale ($p < 0.001$, athletic mean = 56.197, academic mean = 45.844). See Table 62. Levene's test for equality of variance was significant for the Career Planning subtask ($p = 0.042$), the Educational Involvement subtask ($p = 0.012$), the Instrumental Autonomy subtask ($p = 0.039$), the Interdependence subtask ($p < 0.001$), and the Salubrious Lifestyle scale ($p = 0.047$), suggesting that the variance for the athletically gifted participants and the academically gifted participants who were enrolled as seniors was not equivalent for these subtasks and scale. See Table 63.

The senior year ANOVA demonstrated the academically gifted and athletically gifted participants differed significantly on the Peer Relationships subtask ($p < 0.001$, athletic mean = 52.326, academic mean = 59.677), the Emotional Autonomy subtask ($p < 0.001$, athletic mean = 52.824, academic mean = 60.601), and the Salubious Lifestyle scale ($p = 0.002$, athletic mean = 53.372, academic mean = 59.525). See Table 64. Levene's test for equality of variance was significant for the Salubrious Lifestyle scale ($p < 0.001$), suggesting that the variance for the athletically gifted participants and the academically gifted participants who were enrolled as seniors was not equivalent for this scale. See Table 65.

As observed in the previous section, these results demonstrate that by their junior year the athletically gifted participants had experienced greater psychosocial development in the area of establishing a healthy lifestyle than their academically gifted peers, yet by their senior year, the academically gifted participants had more than made up the deficit in healthy lifestyle, rising to a

level significantly above their athletically gifted peers. Additionally, at the subtask level, the academically gifted participants had significantly surpassed the athletically gifted participants in the areas of their sense of autonomy at an emotional level an in their relationships with their peers.

Together these analyses suggest that on average the patterns of psychosocial development for participants in each of the two gifted groups do not differ, as significant differences were only demonstrated on the Salubrious Lifestyle scale, and the Emotional Autonomy and Peer Relationship subtasks year over year, and during only the junior and senior year as a full model across all the SDTLA subtasks and scale. In the junior and senior years, further analysis found the differences between the two groups was significant in on only the Salubrious Lifestyle scale in the junior year, and on the same scale in the senior year, plus the Emotional Autonomy and Peer Relationships subtasks.

Table 49. Multivariate Analysis for SDTLA Subtasks and Salubrious Lifestyle Scale, Group by Class

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.985	2814.888	11	462	0.000	0.985
	WL	0.015	2814.888	11	462	0.000	0.985
	HT	67.021	2814.888	11	462	0.000	0.985
	RLR	67.021	2814.888	11	462	0.000	0.985
Class	PT	0.603	10.616	33	1392	0.000	0.201
	WL	0.495	11.118	33	1361.8	0.000	0.201
	HT	0.830	11.588	33	1382	0.000	0.201
	RLR	0.517	21.816	33	464	0.000	0.201
Group	PT	0.040	1.738	33	11	0.063	0.040
	WL	0.960	1.738	33	11	0.063	0.040
	HT	0.041	1.738	33	11	0.063	0.040
	RLR	0.041	1.738	33	11	0.063	0.040

Table 49. Multivariate Analysis for SDTLA Subtasks and Salubrious Lifestyle Scale, Group by Class, continued.

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Class * Group	PT	0.144	2.133	33	1392	0.000	0.048
	WL	0.861	2.151	33	1361.8	0.000	0.049
	HT	0.155	2.168	33	1382	0.000	0.049
	RLR	0.100	4.225	11	464	0.000	0.091

Design: Intercept + Class+Group+Class*Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 50. Test of Equality of Covariance Matrices

Box's M	1696.511
F	3.389
df 1	462
df 2	211134.9
Significance	0.000

df = degrees of freedom

Table 51. Analysis of Variance.

Source	Variable	MS	*df*	F	Sig.	Eta^2
Class	CP	1396.140	3	13.074	0.000	0.077
	LP	626.405	3	7.084	0.000	0.043
	CUP	487.621	3	4.164	0.006	0.026
	EI	4233.151	3	46.363	0.000	0.228
	EA	998.531	3	11.242	0.000	0.067
	AA	2036.907	3	19.844	0.000	0.112
	IA	1113.704	3	11.451	0.000	0.068
	IND	353.099	3	2.902	0.035	0.018
	TOL	309.032	3	3.184	0.024	0.020
	PR	827.657	3	8.419	0.000	0.051
	SLS	511.255	3	4.886	0.002	0.030

Table 51. Analysis of Variance, continued.

Source	Variable	MS	*df*	F	Sig.	Eta^2
Group	CP	230.955	1	2.163	0.142	0.005
	LP	54.210	1	0.613	0.434	0.001
	CUP	110.084	1	0.940	0.333	0.002
	EI	112.352	1	1.231	0.268	0.003
	EA	217.714	1	2.451	0.118	0.005
	AA	327.150	1	3.187	0.075	0.007
	IA	48.180	1	0.495	0.482	0.001
	IND	459.429	1	3.776	0.053	0.008
	TOL	60.999	1	0.628	0.428	0.001
	PR	127.446	1	1.296	0.255	0.003
	SLS	193.341	1	1.848	0.175	0.004

Table 51. Analysis of Variance, continued.

Source	Variable	MS	*df*	F	Sig.	Eta^2
Class *						
Group	CP	109.114	3	1.022	0.383	0.006
	LP	45.841	3	0.518	0.670	0.003
	CUP	114.212	3	0.975	0.404	0.006
	EI	34.768	3	0.381	0.767	0.002
	EA	503.767	3	5.672	0.001	0.035
	AA	283.967	3	2.767	0.041	0.017
	IA	316.468	3	3.254	0.022	0.020
	IND	100.311	3	0.825	0.481	0.005
	TOL	76.448	3	0.788	0.501	0.005
	PR	444.063	3	4.517	0.004	0.028
	SLS	1218.574	3	11.646	0.000	0.069

Table 51. Analysis of Variance, continued.

Source	Variable	MS	*df*	F	Sig.	Eta^2
Error	CP	106.785	472			
	LP	88.425	472			
	CUP	117.114	472			
	EI	91.304	472			
	EA	88.818	472			
	AA	102.643	472			
	IA	97.259	472			
	IND	121.656	472			
	TOL	97.072	472			
	PR	98.303	472			
	SLS	104.633	472			

Design: Intercept + Class+Group+Class*Group.

SDTLA Task, Subtask, and Scale abbreviations are listed on the following page.

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Table 52. Test of Equality of Variances

Tasks, Subtasks or Scale	F	*df* 1	*df* 2	Significance
CP	0.930	7	472	0.483
LP	2.207	7	472	0.033
CUP	3.621	7	472	0.001
EI	11.248	7	472	0.000
EA	0.511	7	472	0.796
AA	5.343	7	472	0.000
IA	2.456	7	472	0.018
IND	6.997	7	472	0.000
TOL	1.685	7	472	0.110
PR	2.279	7	472	0.027
SLS	4.502	7	472	0.000

Design: Intercept + Class+Group+Class*Group.

Table 53. Descriptive Analysis, SDTLA Tasks and Salubrious Lifestyle Scale, Group by Class

Task or Scale	Group	Freshman	Sophomore	Junior	Senior
CP	Athlete	44.359	48.409	51.895	52.775
	Academic	44.193	47.589	47.596	52.425
LP	Athlete	47.598	49.751	52.123	52.561
	Academic	46.938	49.575	49.643	53.148
CUP	Athlete	46.239	49.638	50.868	45.708
	Academic	47.453	49.341	47.514	44.256
EI	Athlete	42.738	48.716	56.605	52.431
	Academic	41.133	49.119	54.662	51.647
EA	Athlete	49.291	52.195	52.145	52.824
	Academic	49.970	51.893	49.463	60.601
AA	Athlete	51.585	55.512	52.330	57.540
	Academic	48.280	53.945	47.550	60.486
IA	Athlete	49.759	55.390	50.656	51.744
	Academic	48.389	53.419	46.926	56.241
IND	Athlete	48.478	51.625	53.951	49.841
	Academic	47.597	50.691	49.215	48.447
TOL	Athlete	50.474	53.020	51.687	51.170
	Academic	47.938	52.550	50.364	52.602

Table 53. Descriptive Analysis, SDTLA Tasks and Salubrious Lifestyle Scale, Group by Class, continued.

Task or Scale	Group	Freshman	Sophomore	Junior	Senior
PR	Athlete	49.800	51.986	51.504	52.326
	Academic	49.293	51.043	49.788	59.677
SLS	Athlete	54.190	53.609	56.197	53.372
	Academic	53.723	53.122	45.844	59.525

Table 54. Freshman MANOVA

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.989	1010.190	11	126	0.000	0.989
	WL	0.011	1010.190	11	126	0.000	0.989
	HT	88.191	1010.190	11	126	0.000	0.989
	RLR	88.191	1010.190	11	126	0.000	0.989
Group	PT	0.107	1.370	11	126	0.195	0.107
	WL	0.893	1.370	11	126	0.195	0.107
	HT	0.120	1.370	11	126	0.195	0.107
	RLR	0.120	1.370	11	126	0.195	0.107

Design: Intercept + Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 55. Test of Equality of Covariance Matrices

Box's M	70.266
F	0.973
df 1	66
df 2	56482.725
Significance	0.538

df = degrees of freedom

Table 56. Sophomore MANOVA

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.989	1006.977	11	122	0.000	0.989
	WL	0.011	1006.977	11	122	0.000	0.989
	HT	90.793	1006.977	11	122	0.000	0.989
	RLR	90.793	1006.977	11	122	0.000	0.989
Group	PT	0.037	0.432	11	122	0.939	0.037
	WL	0.963	0.432	11	122	0.939	0.037
	HT	0.039	0.432	11	122	0.939	0.037
	RLR	0.039	0.432	11	122	0.939	0.037

Design: Intercept + Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 57. Test of Equality of Covariance Matrices

Box's M	30.062
F	0.415
df 1	66
df 2	53070.746
Significance	1.000

df = degrees of freedom

Table 58. Junior MANOVA

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.985	596.322	11	103	0.000	0.985
	WL	0.015	596.322	11	103	0.000	0.985
	HT	63.685	596.322	11	103	0.000	0.985
	RLR	63.685	596.322	11	103	0.000	0.985
Group	PT	0.349	5.025	11	103	0.000	0.349
	WL	0.651	5.025	11	103	0.000	0.349
	HT	0.537	5.025	11	103	0.000	0.349
	RLR	0.537	5.025	11	103	0.000	0.349

Design: Intercept + Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 59. Test of Equality of Covariance Matrices

Box's M	259.108
F	3.515
df 1	66
df 2	36699.096
Significance	0.000

df = degrees of freedom

Table 60. Senior MANOVA

Effect		Value	F	Hyp. *df*	Error *df*	Significance	Partial Eta^2
Intercept	PT	0.998	3068.946	11	81	0.000	0.998
	WL	0.002	3068.946	11	81	0.000	0.998
	HT	416.771	3068.946	11	81	0.000	0.998
	RLR	416.771	3068.946	11	81	0.000	0.998
Group	PT	0.261	2.599	11	81	0.007	0.261
	WL	0.739	2.599	11	81	0.007	0.261
	HT	0.353	2.599	11	81	0.007	0.261
	RLR	0.353	2.599	11	81	0.007	0.261

Design: Intercept + Group.

Hyp. *df* = Hypothesis degrees of freedom, Error *df* = error degrees of freedom.

PT = Pillai's Trace, WL = Wilkes' Lambda, HT = Hotelling's Trace, RLR = Roy's Largest Root.

Table 61. Test of Equality of Covariance Matrices

Box's M	266.146
F	3.516
df 1	66
df 2	26173.873
Significance	0.000

df = degrees of freedom

Table 62. Junior Analysis of Variance.

Source	Variable	MS	*df*	F	Sig.	Eta^2
Group	CP	524.339	1	4.973	0.028	0.042
	LP	174.535	1	2.545	0.113	0.022
	CUP	319.303	1	2.771	0.099	0.024
	EI	107.252	1	0.975	0.326	0.009
	EA	204.170	1	1.814	0.181	0.016
	AA	648.268	1	5.477	0.021	0.046
	IA	394.998	1	3.064	0.083	0.026
	IND	636.745	1	3.682	0.058	0.032
	TOL	49.625	1	0.394	0.531	0.003
	PR	83.575	1	0.581	0.447	0.005
	SLS	3042.544	1	21.726	0.000	0.161

Table 62. Junior Analysis of Variance, continued.

Source	Variable	MS	*df*	F	Sig.	Eta^2
Error	CP	105.443	113			
	LP	68.589	113			
	CUP	115.214	113			
	EI	109.993	113			
	EA	112.578	113			
	AA	118.352	113			
	IA	128.923	113			
	IND	172.944	113			
	TOL	125.946	113			
	PR	143.810	113			
	SLS	140.043	113			

Design: Intercept + Group.

Table 63. Test of Equality of Variances

Tasks, Subtasks or Scale	F	*df* 1	*df* 2	Significance
CP	4.215	1	113	0.042
LP	0.773	1	113	0.381
CUP	0.402	1	113	0.528
EI	6.533	1	113	0.012
EA	0.565	1	113	0.454
AA	0.988	1	113	0.322
IA	4.384	1	113	0.039
IND	19.697	1	113	0.000
TOL	0.679	1	113	0.412
PR	0.280	1	113	0.598
SLS	4.035	1	113	0.047

Design: Intercept + Group.

Table 64. Senior Analysis of Variance.

Source	Variable	MS	*df*	F	Sig.	Eta^2
Group	CP	2.838	1	0.029	0.866	0.000
	LP	7.999		0.125	0.724	0.001
	CUP	48.992		0.299	0.586	0.003
	EI	14.280		0.767	0.383	0.008
	EA	1404.441		14.971	0.000	0.141
	AA	201.622		5.135	0.026	0.053
	IA	469.802		4.397	0.039	0.046
	IND	45.127		0.588	0.445	0.006
	TOL	47.666		0.699	0.405	0.008
	PR	1255.141		15.594	0.000	0.146
	SLS	879.300		9.953	0.002	0.099

Table 63. Senior Analysis of Variance, continued.

Source	Variable	MS	*df*	F	Sig.	Eta^2
Error	CP	99.220	91			
	LP	63.840				
	CUP	163.832				
	EI	18.611				
	EA	93.812				
	AA	39.265				
	IA	106.842				
	IND	76.743				
	TOL	68.155				
	PR	80.489				
	SLS	88.346				

Design: Intercept + Group.

Table 65. Test of Equality of Variances

Tasks, Subtasks or Scale	F	*df* 1	*df* 2	Significance
CP	1.649	1	91	0.202
LP	0.020			0.888
CUP	0.291			0.591
EI	0.690			0.408
EA	0.041			0.841
AA	3.518			0.064
IA	0.325			0.570
IND	0.148			0.702
TOL	0.244			0.623
PR	0.195			0.660
SLS	15.009			0.000

Design: Intercept + Group.

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MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale

Data Plots for All Study Participants

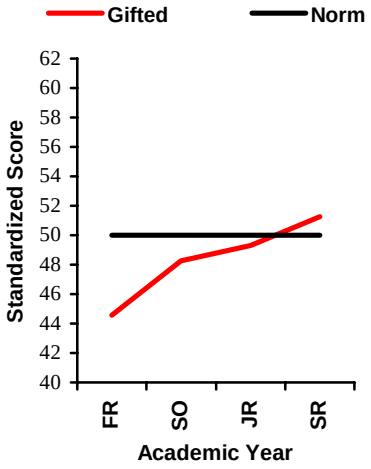

Figure 1. Establishing and Clarifying Purpose Task—Gifted

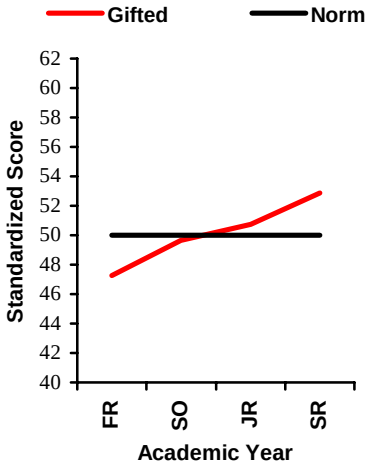

Figure 3. Lifestyle Planning Subtask—Gifted

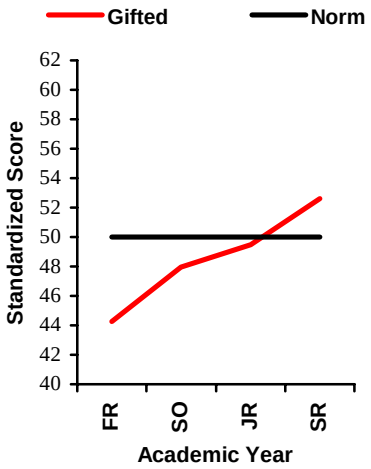

Figure 2. Career Planning Subtask—Gifted

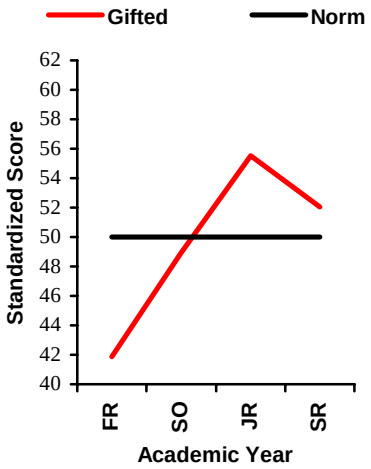

Figure 4. Educational Involvement Subtask—Gifted

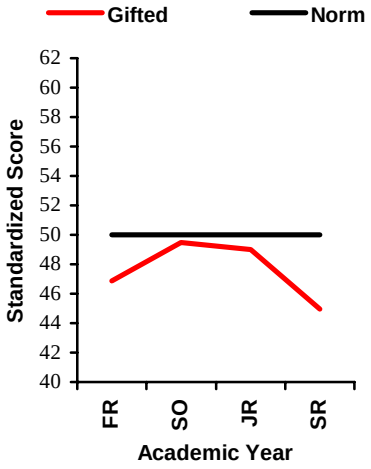

Figure 5. Cultural Participation Subtask—Gifted

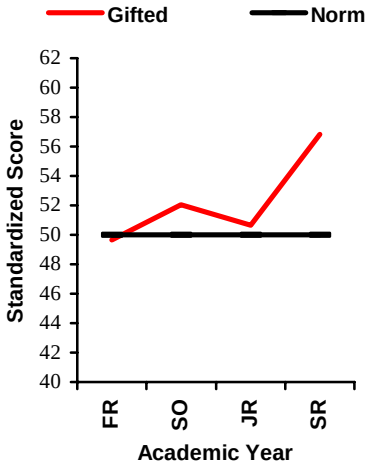

Figure 7. Emotional Autonomy Subtask—Gifted

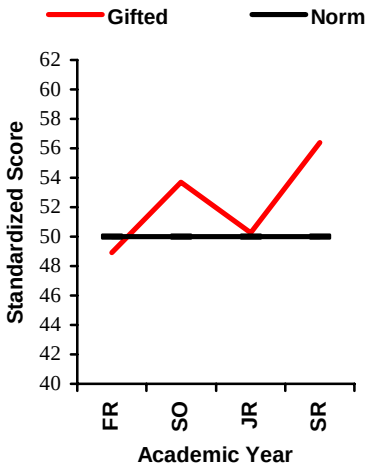

Figure 6. Developing Autonomy Task—Gifted

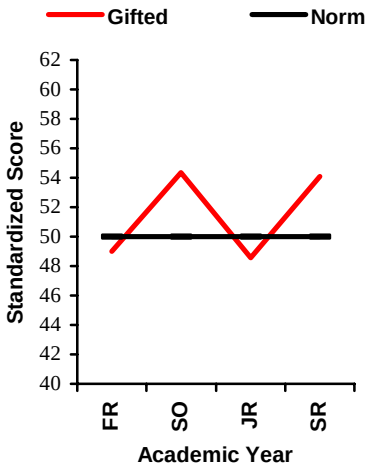

Figure 8. Instrumental Autonomy Subtask—Gifted

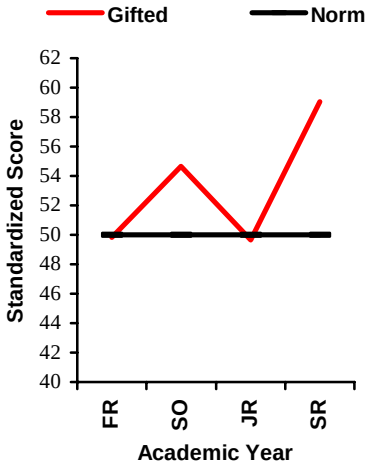

Figure 9. Academic Autonomy Subtask—Gifted

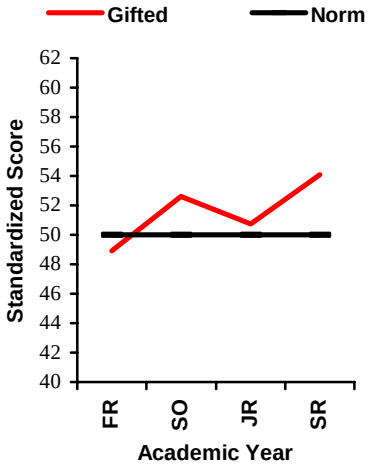

Figure 11. Developing Mature Interpersonal Relationships Task—Gifted

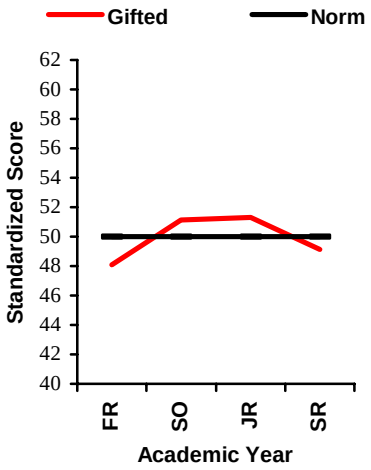

Figure 10. Interdependence Subtask—Gifted

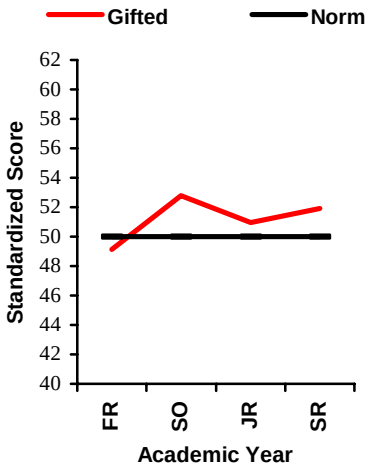

Figure 12. Tolerance Subtask—Gifted

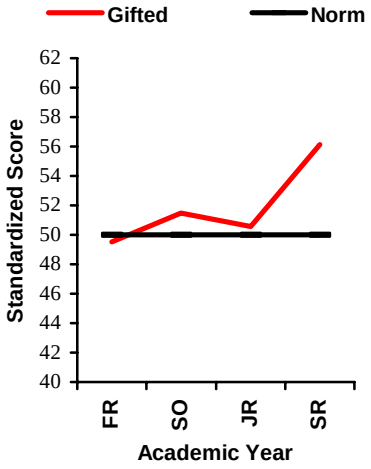

Figure 13. Peer Relationships Subtask—Gifted

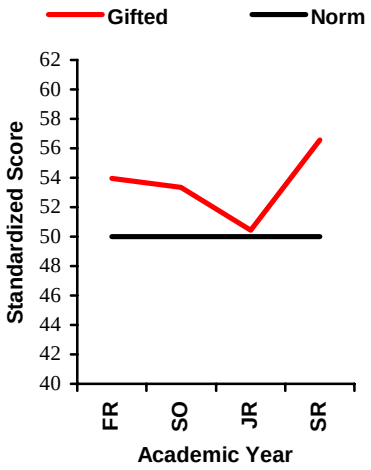

Figure 14. Salubrious Lifestyle Scale—Gifted

Data Plots Comparing Participant Group

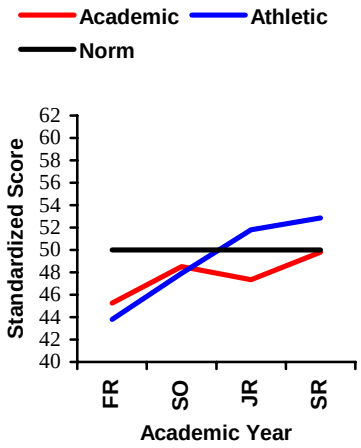

Figure 15. Establishing and Clarifying Purpose Task—Gifted Groups

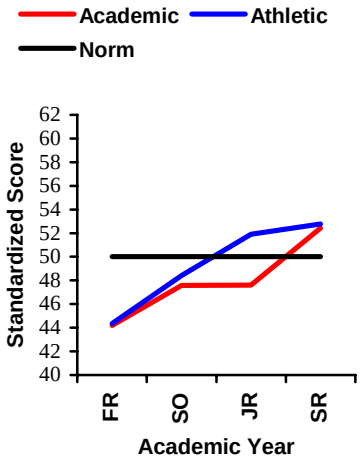

Figure 16. Career Planning Subtask—Gifted Groups

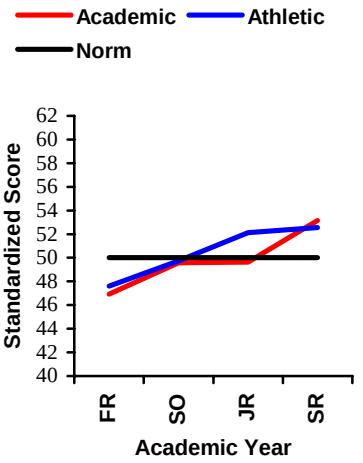

Figure 17. Lifestyle Planning Subtask—Gifted Groups

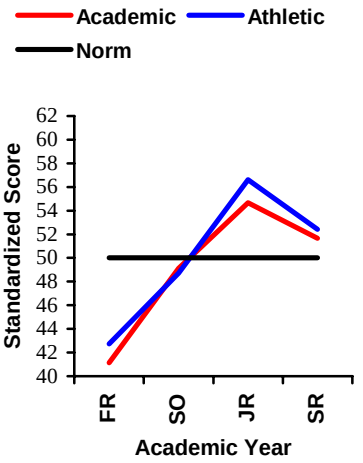

Figure 18. Educational Involvement Subtask—Gifted Groups

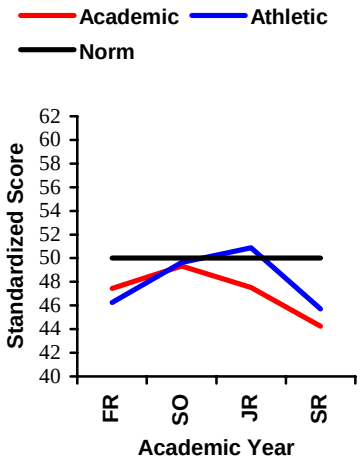

Figure 19. Cultural Participation Subtask—Gifted Groups

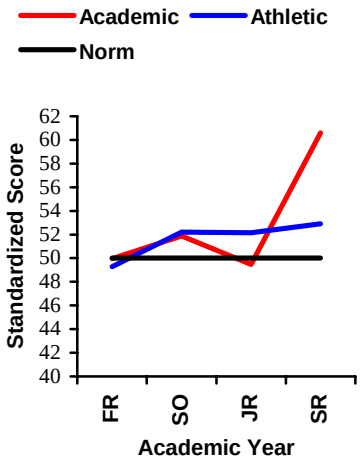

Figure 21. Emotional Autonomy Subtask—Gifted Groups

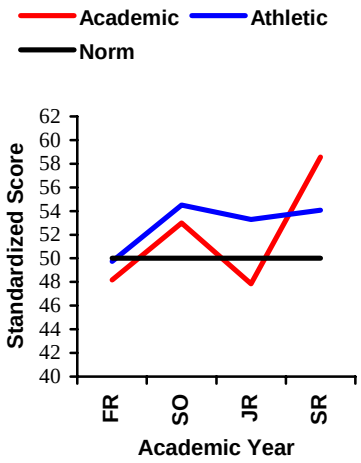

Figure 20. Developing Autonomy Task—Gifted Groups

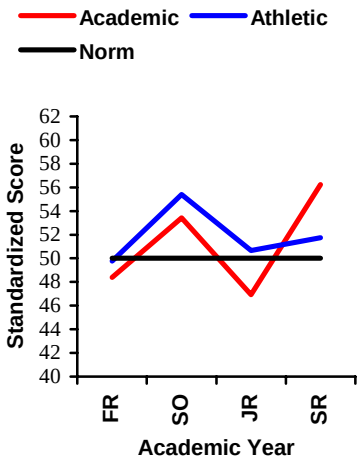

Figure 22. Instrumental Autonomy Subtask—Gifted Groups

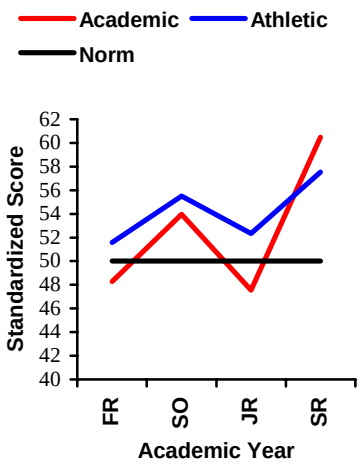

Figure 23. Academic Autonomy Subtask—Gifted Groups

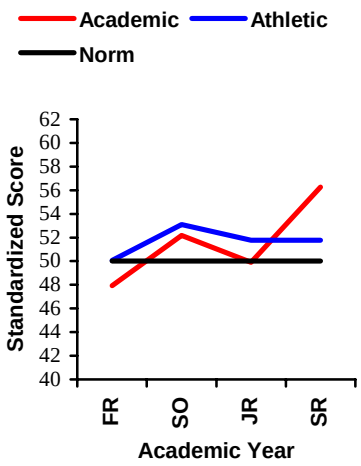

Figure 25. Developing Mature Interpersonal Relationships Task—Gifted Groups

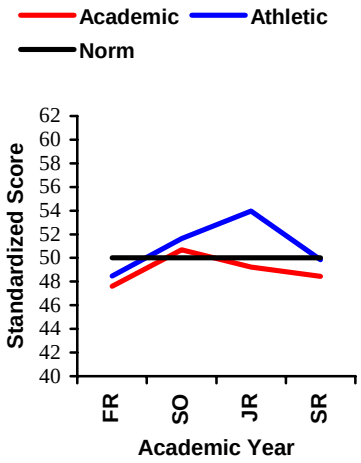

Figure 24. Interdependence Subtask—Gifted Groups

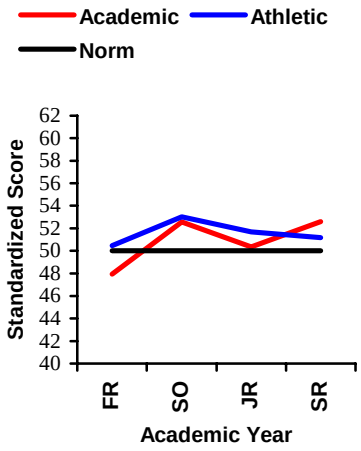

Figure 26. Tolerance Subtask—Gifted Groups

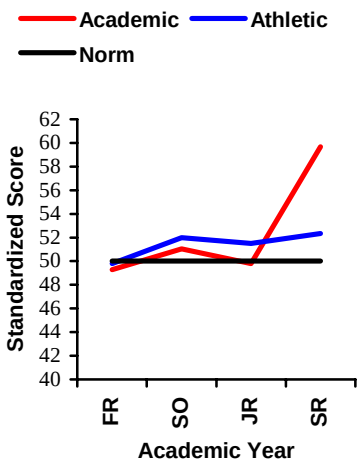

Figure 27. Peer Relationships Subtask—Gifted Groups

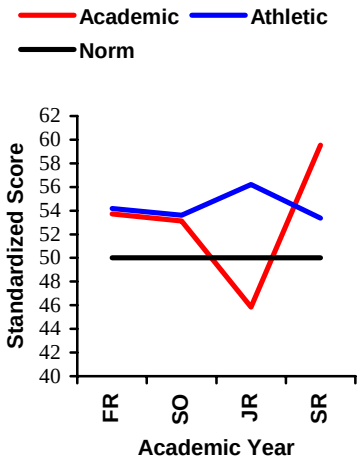

Figure 28. Salubrious Lifestyle Scale—Gifted Groups

CHAPTER 5

CONCLUSIONS AND IMPLICATIONS

Overview of Findings

This study was undertaken to investigate whether the level attained, and pattern of, psychosocial development of gifted post-secondary students was different from the level attained, and pattern of, psychosocial development generally seen in post-secondary students. Further, this study independently sought to determine whether the level and pattern for academically gifted students differed from the level and pattern for athletically gifted students. The overall findings were that students in both gifted groups did differ from the norms for post-secondary students in both pattern and level of attainment, but that the two gifted groups did not differ meaningfully from each other in either pattern or level of attainment. These findings suggest that the gifted post-secondary students were more homogeneous than they may appear given the stark differences in their areas of giftedness and their academic achievement at high school and university.

The larger implications have to do with the manner in which members of these two groups jointly differed from the norms, possibly highlighting pride, and areas of concern, in the impact that current education practices have upon the holistic education of gifted students across areas of giftedness. These findings are discussed in greater detail below, relating the results to the original research questions posited apriori, then considering the psychosocial development of the participants based upon the areas assessed by the Student Development Task and Lifestyle Assessment (SDTLA), the instrument used to collect psychosocial assessment data in this study,

and finally considering the implications these findings have for post-secondary programs for athletically or academically gifted students.

Questions Related to the Level of Psychosocial Development

The first set of research questions related to the level of psychosocial development achieved by the study participants. The levels were compared for the study participants as a whole, and for each gifted group independently, to the national norms. Additionally, the levels of psychosocial development attained by the members of each of the two gifted groups were compared to each other. Before comparing scores on the SDTLA, all participant scores were converted to the Student's t-scale to permit comparisons across academic years.

Research Question I: Does the Level of Psychosocial Development Attained by Gifted Post-Secondary Students Differ from the Levels of Psychosocial Development Attained by Students who were used to Establish the National Norms for Post-Secondary Students?

With respect to this first research question, the students in this study did differ from the national norm in their level of psychosocial development. Overall, they were higher than the national norm in the areas of establishing autonomy, interpersonal relationships, and a healthy lifestyle, but they were below the national norms in the area of establishing a sense of purpose in life. Given the nature of the collegiate experience for members of both gifted groups, these results were not surprising. Planning out their life after college is often given a lower priority by athletes, as this is secondary to their performance while at college, especially they if wish to be drafted to continue as professional athletes after college. For many academically gifted undergraduates in restricted academic programs, they have already decided to continue their

academic career beyond the undergraduate level, and so planning for life post college is an issue addressed later in their academic career than may be the case for many other students. Thus, for different reasons, it was not surprising that this aspect of psychosocial development was one on which the gifted students lag behind their post-secondary peers. See Table 66 for summary data.

Table 66. Combined Gifted Students' Scores on SDTLA Tasks and Scales

Tasks, Subtasks & Scale	Mean	T-Statistic	Significance
Establishing and Clarifying Purpose Task	48.033*	-4.399	0.000
Career Planning Subtask	48.169*	-3.741	0.000
Lifestyle Planning Subtask	49.845	-0.356	0.722
Educational Involvement Subtask	49.083	-1.858	0.064
Cultural Participation Subtask	47.744*	-4.526	0.000
Developing Autonomy Task	52.008*	4.167	0.000
Emotional Autonomy Subtask	51.950*	4.326	0.000
Instrumental Autonomy Subtask	51.376*	2.937	0.000
Academic Autonomy Subtask	52.926*	5.918	0.000
Interdependence Subtask	49.885	-0.227	0.821
Developing Mature Interpersonal Relationships Task	51.386	2.891	0.004
Tolerance Subtask	51.116	2.464	0.014
Peer Relationships Subtask	51.595*	3.406	0.001
Salubrious Lifestyle Scale	53.440*	7.014	0.000

* Significant difference from the norm at the family $\alpha = 0.05$ level after Bonferroni correction

Ancillary Research Question I A: Does the level of psychosocial development attained by athletically gifted post-secondary students differ from the level attained by academically gifted students?

This study found that the two groups of students did not differ significantly from each other on any measure of psychosocial development. This finding was particularly interesting in that it suggested that the two groups were more similar in psychosocial development than they were different, suggesting a commonality of collegiate experiences with respect to activities that facilitated, or hindered, psychosocial development. See Table 67 for summary data.

Table 67. Academically Gifted Students' Compared to Athletically Gifted Students' Overall Scores on SDTLA Tasks and Scales

Tasks, Subtasks & Scale	Academically Gifted Mean	Athletically Gifted Mean	Significance
Establishing and Clarifying Purpose Task	47.531	48.616	0.226
Career Planning Subtask	47.517	48.927	0.151
Lifestyle Planning Subtask	49.500	50.245	0.396
Educational Involvement Subtask	48.674	49.558	0.372
Cultural Participation Subtask	47.400	48.144	0.457
Developing Autonomy Task	51.362	52.758	0.149
Emotional Autonomy Subtask	52.359	51.474	0.328
Instrumental Autonomy Subtask	50.891	51.940	0.265
Academic Autonomy Subtask	51.951	54.060	0.033
Interdependence Subtask	49.020	50.891	0.066
Developing Mature Interpersonal Relationships Task	51.156	51.653	0.606
Tolerance Subtask	50.695	51.605	0.317
Peer Relationships Subtask	51.836	51.314	0.579
Salubrious Lifestyle Scale	52.680	54.323	0.095

* Significant difference in means at the family $\alpha = 0.05$ level after Bonferroni correction

Ancillary Research Question I B: Does the level of psychosocial development attained by athletically gifted post-secondary students differ from the level of psychosocial development attained by students used to establish the national norms for post-secondary students?

The athletically gifted students in this study did differ from the national norm in several areas. They were above the norm in establishing their sense of autonomy and in establishing and maintaining a healthy lifestyle. They were not significantly below the national norm in any aspects of psychosocial development. While their achievement in the area of a healthy lifestyle was not unexpected, their superior achievement in the area of autonomy was. Given the previous research suggesting student-athletes typically experience a very set and structured athletic program at college, which hinges on compliance rather than self-reliance (Butt, 1976; Hatfield & Sullivan, 1987; Ryan, 1977), it was surprising that for the athletes in this study, their college experience had facilitated their development as autonomous individuals. See Table 68 for summary data.

Table 68. Athletically Gifted Students' Overall Scores on SDTLA Tasks and Scales

Tasks, Subtasks & Scale	Mean	T-Statistic	Significance
Establishing and Clarifying Purpose Task	48.616	-2.084	0.038
Career Planning Subtask	48.927	-1.497	0.136
Lifestyle Planning Subtask	50.245	0.369	0.713
Educational Involvement Subtask	49.558	-0.645	0.520
Cultural Participation Subtask	48.144	-2.525	0.012
Developing Autonomy Task	52.758*	4.324	0.000
Emotional Autonomy Subtask	51.474	2.273	0.024
Instrumental Autonomy Subtask	51.940*	2.997	0.003
Academic Autonomy Subtask	54.060*	6.142	0.000
Interdependence Subtask	50.891	1.348	0.179
Developing Mature Interpersonal Relationships Task	51.653	2.341	0.020
Tolerance Subtask	51.605	2.433	0.016
Peer Relationships Subtask	51.314	1.881	0.061
Salubrious Lifestyle Scale	54.323*	7.129	0.000

* Significant difference from the norm at the family $\alpha = 0.05$ level after Bonferroni correction

Ancillary Research Question I C: Does the level of psychosocial development attained by academically gifted post-secondary students differ from the level of psychosocial development attained by students used to establish the national norms for post-secondary students?

This study found that the levels attained by the academically gifted students did differ, but only in the areas of emotional autonomy and healthy living, in which they exceeded the national norm, and in the aspects of psychosocial development related to establishing their personal sense of purpose in life, in which they were below the national norm. These results were surprising in that the academically gifted are not necessarily associated with physical activity and as having a healthy lifestyle, but as stated above, the university where this research was conducted may have encouraged such activities by all students. What was more surprising was that this group did not demonstrate superior psychosocial development in more areas, and that they lagged behind in the area of establishing their sense of purpose in life. Again, as stated above, this may relate, in part, to a delay on the part of the academically gifted students in addressing these tasks until their academic career is closer to completion. See Table 69 for summary data.

Table 69. Academically Gifted Students' Overall Scores on SDTLA Tasks and Scales

Tasks, Subtasks & Scale	Mean	T-Statistic	Significance
Establishing and Clarifying Purpose Task	47.531*	-4.085	0.000
Career Planning Subtask	47.517*	-3.714	0.000
Lifestyle Planning Subtask	49.500	-0.865	0.388
Educational Involvement Subtask	48.674	-1.882	0.061
Cultural Participation Subtask	47.400*	-3.831	0.000
Developing Autonomy Task	51.362	1.926	0.055
Emotional Autonomy Subtask	52.359*	3.769	0.000
Instrumental Autonomy Subtask	50.891	1.329	0.185
Academic Autonomy Subtask	51.951	2.714	0.007
Interdependence Subtask	49.020	-1.307	0.192
Developing Mature Interpersonal Relationships Task	51.156	1.768	0.078
Tolerance Subtask	50.695	1.116	0.265
Peer Relationships Subtask	51.836	2.910	0.004
Salubrious Lifestyle Scale	52.680*	3.591	0.000

* Significant difference from the norm at the family $\alpha = 0.05$ level after Bonferroni correction

Questions Related to the Pattern of Psychosocial Development

The second set of research questions related to the pattern of psychosocial development exhibited by the study participants. The patterns were compared for the study participants as a whole, and for each gifted group independently, to the national norms. Additionally, the patterns of psychosocial development attained by the members of each of the two gifted groups were compared to each other. As the scores had all been converted to the Student's t-scale, comparisons were made by assessing the degree to which the scores of the participants were above or below the national norm values for each of the academic years. The two gifted groups were compared directly to each other using the standardized scores.

Research Question II: Is there a Difference in the Pattern of Psychosocial Development as they Progress from Freshman to Sophomore to Junior to Senior Academic Years for Students in the Gifted Groups Compared to the National Norms?

Overall, the pattern of psychosocial development exhibited by gifted post-secondary students in this study did differ from the pattern in the national norm. Specifically, the gifted students lagged behind the national norm in the areas of establishing their personal purposes in life but were superior in their healthy lifestyles as freshmen; they made up their deficit in establishing purpose, were more autonomous, had more developed interpersonal relationships, and maintained their relative advantage in healthy living as sophomores; fell back to the national norm level on all measures except for demonstrating a greater level of involvement in their education as juniors, to finally surge ahead of the national norms for almost all areas as seniors. It would seem that the gifted students made up for their freshman lag in psychosocial

development very quickly but then stalled until they advanced again into their last undergraduate year. See Table 70 for summary data.

Table 70. Combined Gifted Students' Pattern of Psychosocial Development

SDTLA Task, Subtask or Scale	Freshman N = 138	Sophomore N = 134	Junior N = 115	Senior N = 93
Establishing and Clarifying Purpose Task	44.584*	48.236	49.317	51.270
Career Planning Subtask	44.270*	47.969	49.503	52.595
Lifestyle Planning Subtask	47.244*	49.656	50.743	52.864*
Educational Involvement Subtask	41.877*	48.933	55.524*	52.026*
Cultural Participation Subtask	46.890*	49.479	49.002	44.958*
Developing Autonomy Task	48.898	53.683*	50.255	56.376*
Emotional Autonomy Subtask	49.655	52.033	50.653	56.838*
Instrumental Autonomy Subtask	49.024	54.331*	48.580	54.065*
Academic Autonomy Subtask	49.813	54.670*	49.670	59.061*
Interdependence Subtask	48.066	51.123	51.315	49.122
Developing Mature Interpersonal Relationships Task	48.920	52.599*	50.742	54.094*
Tolerance Subtask	49.114	52.768*	50.951	51.909
Peer Relationships Subtask	49.528	51.479	50.549	56.120*
Salubrious Lifestyle Scale	53.939*	53.347*	50.435	56.548*

* Significant difference from the norm at the family $\alpha = 0.05$ level after Bonferroni correction

Ancillary Research Question II A: Is the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for academically gifted students different from the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for athletically gifted students?

Given the similarity in the patterns exhibited by both gifted groups, it was not surprising that the two groups differed little in their patterns of development; however, differences did exist. The primary differences related to the junior and senior years, where the academically gifted students fell below the athletically gifted students in the areas of healthy lifestyle as juniors, only to surpass them on the same measure as seniors and to exhibit greater psychosocial development than their athletically gifted colleagues in areas related to their emotional autonomy and in relationships with peers. See Table 71 for summary data and Figures 29 – 32.

Table 71. Patterns of Psychosocial Development for Academically Gifted Students and Athletically Gifted Students in the Junior and Senior Years

	Academically Gifted		Athletically Gifted	
SDTLA Task, Subtask or Scale	Junior N = 64	Senior N = 48	Junior N = 51	Senior N = 45
Establishing and Clarifying Purpose Task	47.348	49.788	51.788	52.850
Career Planning Subtask	47.596	52.425	51.895	52.775
Lifestyle Planning Subtask	49.643	53.148	52.123	52.561
Educational Involvement Subtask	54.662	51.647	56.605	52.431
Cultural Participation Subtask	47.514	44.256	50.868	45.708
Developing Autonomy Task	47.841	58.549*	53.285	54.059*
Emotional Autonomy Subtask	49.463	60.601*	52.145	52.824*
Instrumental Autonomy Subtask	46.926	56.241	50.656	51.744
Academic Autonomy Subtask	47.550	60.486	52.330	57.540
Interdependence Subtask	49.215	48.447	53.951	49.841
Developing Mature Interpersonal Relationships Task	49.913	56.261	51.783	51.783
Tolerance Subtask	50.364	52.602	51.687	51.170
Peer Relationships Subtask	49.788	59.677*	51.504	52.326*
Salubrious Lifestyle Scale	45.844*	59.525*	56.197*	53.372*

* Significant difference between academically gifted and athletically gifted means for the year at the family $\alpha = 0.05$ level after Bonferroni correction.

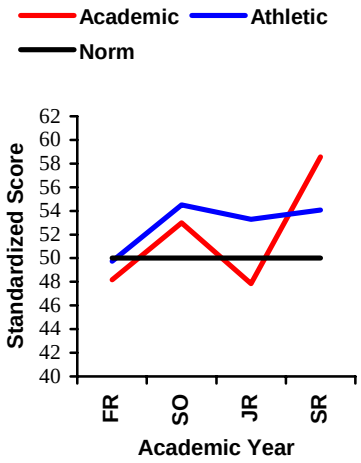

Figure 29. Developing Autonomy Task

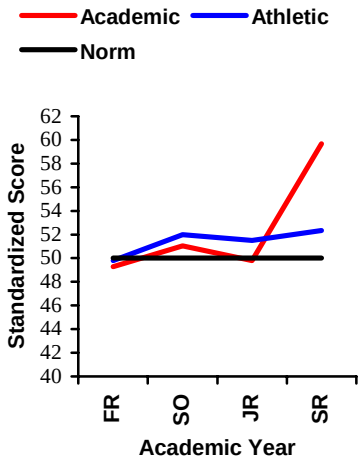

Figure 31. Peer Relationships Subtask

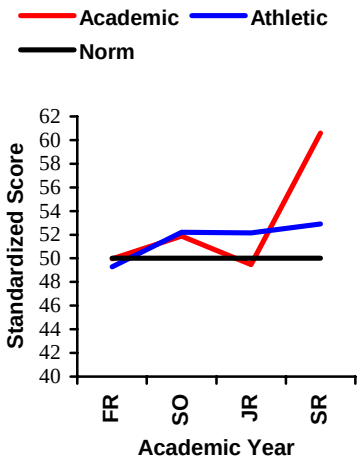

Figure 30. Emotional Autonomy Subtask

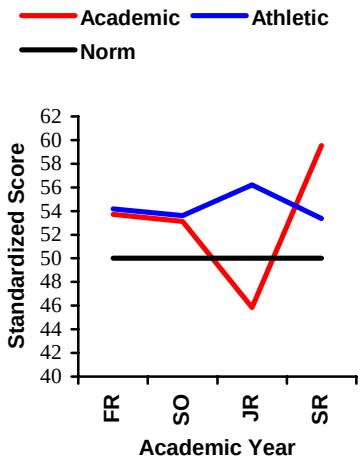

Figure 32. Salubrious Lifestyle Scale

Ancillary Research Question II B: Is the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for academically gifted students different from the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for students in the national norm?

Overall, the pattern of psychosocial development exhibited by the academically gifted post-secondary students in this study did differ from the national norm in fundamentally the same manner as the pattern established by all the gifted participants. They lagged behind as freshmen in the area of establishing purpose but reversed the deficit as sophomores and ended higher as seniors. Unlike their athletically gifted counterparts, the academically gifted students exceeded the national norm as seniors on most of the aspects of psychosocial development, although, like the athletically gifted students, this was primarily due to a large change between their junior and senior years. See Table 72 for summary data.

Table 72. Academically Gifted Students' Pattern of Psychosocial Development

SDTLA Task, Subtask or Scale	Freshman N = 74	Sophomore N = 72	Junior N = 64	Senior N = 48
Establishing and Clarifying Purpose Task	45.260*	48.521	47.348	49.788
Career Planning Subtask	44.193*	47.589	47.596	52.425
Lifestyle Planning Subtask	46.938*	49.575	49.643	53.148
Educational Involvement Subtask	41.133*	49.119	54.662*	51.647
Cultural Participation Subtask	47.453	49.341	47.514	44.256
Developing Autonomy Task	48.169	52.983	47.841	58.549*
Emotional Autonomy Subtask	49.970	51.893	49.463	60.601*
Instrumental Autonomy Subtask	48.389	53.419*	46.926	56.241*
Academic Autonomy Subtask	48.280	53.945	47.550	60.486*
Interdependence Subtask	47.597	50.691	49.215	48.447
Developing Mature Interpersonal Relationships Task	47.930	52.175	49.913	56.261*
Tolerance Subtask	47.938	52.550	50.364	52.602
Peer Relationships Subtask	49.293	51.043	49.788	59.677*
Salubrious Lifestyle Scale	53.723*	53.122	45.844	59.525*

* Significant difference from the norm at the family $\alpha = 0.05$ level after Bonferroni correction

Ancillary Research Question II C: Is the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for athletically gifted students different from the pattern of psychosocial development as they progress from freshman to sophomore to junior to senior academic years for students in the national norm?

Once again, the overall the pattern of psychosocial development exhibited by the athletically gifted post-secondary students in this study did differ from the national norm in fundamentally the same manner as the pattern established by all the gifted participants. They lagged behind as freshmen in the area of establishing purpose but reversed the deficit as sophomores and ended higher as seniors. The major difference was that the athletically gifted students exceeded the level of psychosocial development attained by the national norm primarily in the areas of autonomy, educational involvement and healthy lifestyle. See Table 73 for summary data.

Table 73. Athletically Gifted Students' Pattern of Psychosocial Development

SDTLA Task, Subtask or Scale	Freshman N = 64	Sophomore N = 62	Junior N = 51	Senior N = 45
Establishing and Clarifying Purpose Task	43.801*	47.906	51.788	52.850
Career Planning Subtask	44.359*	48.409	51.895	52.775
Lifestyle Planning Subtask	47.598	49.751	52.123	52.561
Educational Involvement Subtask	42.738*	48.716	56.605*	52.431*
Cultural Participation Subtask	46.239	49.638	50.868	45.708
Developing Autonomy Task	49.740	54.497*	53.285	54.059*
Emotional Autonomy Subtask	49.291	52.195	52.145	52.824
Instrumental Autonomy Subtask	49.759	55.390*	50.656	51.744
Academic Autonomy Subtask	51.585	55.512*	52.330	57.540*
Interdependence Subtask	48.478	51.625	53.951	49.841
Developing Mature Interpersonal Relationships Task	50.064	53.091	51.783	51.783
Tolerance Subtask	50.474	53.020	51.687	51.170
Peer Relationships Subtask	49.800	51.986	51.504	52.326
Salubrious Lifestyle Scale	54.190*	53.609	56.197*	53.372*

* Significant difference from the norm at the family $\alpha = 0.05$ level after Bonferroni correction

Summary of Findings by Area of Psychosocial Development

In the areas of psychosocial development related to establishing a personal sense of purpose in life, as measured by the SDTLA: Establishing and Clarifying Purpose including Educational Involvement, Career Planning, Lifestyle Planning, and Cultural Participation, members of both gifted groups began college at a level of development that lagged behind, and it was not until their senior year that they climbed above the national norms. These areas of psychosocial development relate to an individual's ability to set realistic and appropriate plans and goals for their life and establish a consistent sense of their place in the world. A potentially troubling finding of this study is related to the area of Cultural Participation in which the gifted students entered college at a level below that of their regular colleagues and remained below the norm, with a senior level of attainment further below the norm than their level as freshmen. Given the wording of the questions on the SDTLA used to assess this aspect of psychosocial development, this suggests an overall decrease in participation in cultural activities from their freshman to senior academic years for the gifted students in this study *vis-à-vis* the national norm value for each academic year. This is particularly surprising for the academically gifted group, who are required to participate in cultural activities as a regular part of their program of study. The conclusion is that students in the national norm participate in more cultural events on their own than the honors program requires of the academically gifted students in this study, and that the gifted students in this study chose not to participate in a sufficient number of cultural activities on their own to reach parity in participation level with their regular peers. On the positive side, both groups, on average, exited college with a more established sense of purpose than that with which they entered college, both in absolute terms and relative to other students.

This would imply that their experience at college facilitated their growth in this area, albeit that they lagged behind their post-secondary peers for most of their undergraduate careers.

In the areas of psychosocial development related to establishing a sense of autonomy, as measured by the SDTLA: Developing Autonomy including Emotional Autonomy, Instrumental Autonomy, Academic Autonomy, and Interdependence, members of both gifted groups began college at a level of development equivalent to the national norms as freshman but quickly climbed above the norms by their sophomore years and as seniors were far above the norms. This final rise between junior and senior year was accentuated for the academically gifted students, who had lagged slightly behind their athletically gifted peers until the senior year. These areas of psychosocial development relate to an individual's ability to act independently in a manner that meets his or her needs, and a lessening of a need for external reassurance, guidance, and support. This lag for the academically gifted students coincided with a significant shift in the time demands placed upon them in their honors program of study. In their junior year, they began their capstone experience, which required them to work individually with faculty members on a thesis, performance, project, or exhibit they completed before graduation. The expectation was that this two-year experience would challenge the students and deepen their appreciation for learning in their selected fields.

A potentially troubling finding of this study regarding the facets of psychosocial development related to autonomy, was that the gifted students entered college at the same level as their regular colleagues, suggesting that upon graduating from high school, gifted students were no different from their peers in their level of autonomy. Additionally, for the academically gifted students in particular, there was not the same climb above the norm in the area of Interdependence—their ability to see their place in their community and appreciate the reciprocal

nature of their relationship with others in their community. On the positive side, both groups, on average, exited college at higher levels of autonomy than when they entered college, both in absolute terms and relative to other students. This would imply that their experience at college facilitated their growth in this area at a rate faster than that exhibited by other students.

In the areas of psychosocial development related to establishing meaningful and appropriate interpersonal relationships with peers and others, as measured by the SDTLA: Mature Interpersonal relationship including Peer Relationships and Tolerance, the members of both gifted groups followed a very similar pattern to each other, differing little from each other or the national norm values until their senior year, when the academically gifted students surged ahead in development compared to their athletically gifted peers and the national norms. This late rally was especially true in the area of relationships with peers. Overall, the college experiences for the members of the gifted groups appears to have facilitated development in these areas, but not much more so than for the students in the national norm. For academically gifted students, their development did rise sharply towards the end of their undergraduate career, at a time when they were engaged in deeper relationships with professors and gifted colleagues while completing their capstone research projects.

The one measure of psychosocial development related to the establishment of a healthy lifestyle included in the SDTLA is the Salubrious Lifestyle scale. In this area, members of both gifted groups had very similar levels of achievement for the first two years, but very different patterns of change in the last two years of college. Both began college at levels above the national norm, which they maintained through their sophomore years. In the junior year, the academically gifted group fell to a level well below their previous level and well below the national norm level, while the athletically gifted group climbed above their sophomore level,

increasing their distance from the national norm. In their senior years, the trend reversed with the academically gifted group surging to new highs above their athletically gifted peers and the national norm, while the athletically gifted group experienced a slight decline but remained above the national norm. Given the athletic tradition of the university where this study was conducted, and the recent increase in fitness and recreation facilities on campus, it is not surprising that the students in this study exhibited levels of physical involvement and a lifestyle that was healthier than the one exhibited by the national norm. The drop in activity or concern for the related aspects of healthy living by the junior level academically gifted students may have been related to their program of study. As discussed earlier in this section, during the junior year the honors program became far more intense academically, and required far more of their time. This assumed explanation might be borne out by the subsequent rise in physical activity and concern for their health in their senior year, once they had adapted to the increased academic pace.

Implications for Post-Secondary Programs of Study for Gifted Students

Throughout this discussion, it must be borne in mind that the scores upon which this study was based were collected during the fall semester. Thus, the findings indicate the level of psychosocial development for the students in each academic year close to the beginning of the year and are more likely to reflect the impact of their experiences up to the end of the preceding academic year.

The academically gifted and the athletically gifted students in this study were very similar with respect to psychosocial characteristics, even though they differed from each other in academic achievement. The academic achievement at university was superior for the

academically gifted students compared to the general student body, while the academic achievement at university for the athletically gifted students was lower than that achieved by the general student body. This was certainly a favorable finding for the academically gifted group, but it must be noted that the members of this group entered university with higher levels of academic achievement than the general student population, and thus their higher academic achievement at university cannot be attributed to their university programs alone. Similarly, the student-athletes entered university with generally lower levels of academic achievement than the general student population.

The gifted students who were freshmen in this study scored below the national norms in most areas of psychosocial development. The gifted students in this study who were seniors scored above the national norm in all areas of psychosocial development with the exceptions of cultural participation and interdependence. These deficits were more pronounced for the academically gifted seniors than the athletically gifted seniors. This suggests that as the students in the current programs for academically and athletically gifted students progress through university, they develop in most areas of psychosocial development at a far greater rate than the students used to derive the national norms, suggesting that the current programs generally facilitate psychosocial development of gifted students in a favorable manner. However, in the areas related to cultural participation and interdependence, the gifted students scored below the national norms as freshmen and seniors. More curiously, in both of these areas, the gifted students approximated the national norm levels of development as sophomores and juniors, only to fall behind as seniors. This suggests that the current programs are inconsistent in the facilitation of development in these areas, and that after an initial importance place on these areas

during the freshman year, these areas are insufficiently stressed during the sophomore and junior years.

Looking at the programs for academically and athletically gifted students separately, it would appear that the honors program needs to increase the stress placed upon activities related to healthy lifestyle during the freshman year; cultural participation, emotional autonomy, instrumental autonomy, academic autonomy, interdependence, tolerance, peer relationships, and healthy lifestyle during the sophomore year, and educational involvement, cultural participation, and interdependence during the junior year. Similarly, the program for student-athletes needs to increase the stress placed upon activities related to healthy lifestyle during the freshman year; instrumental autonomy, academic autonomy, tolerance, and peer relationships during the sophomore year, and educational involvement, cultural participation, interdependence, and healthy lifestyle during the junior year.

Notwithstanding the impact that a few months of attending a university for the first time undoubtedly had upon the gifted freshmen in this study, it is clear that these honors students and student-athletes were less developed psychosocially than their regular peers when they arrived at university. This is meaningful for honors students in particular, as they are often thought to be more developed psychosocially than their peers, and this erroneous assumption may make the transition from high school to university all the more difficult for these students. Additionally, the reduction in relative advantage over their regular peers that members of both gifted groups saw in healthy lifestyle from the freshman to sophomore years suggests that honors students and student-athletes are even more susceptible to the less healthy choices that confront students during their freshman year.

Study Limitations

This study investigated a relatively new area to the field of gifted education or to the area of psychosocial development, and while quantitative in nature, the study should be viewed as exploratory in nature rather than confirmatory. This is particularly true given the nature of the study participants; a convenience sample was used, drawn from just one university. Comparing the findings of such a study to national norm values can result in spurious findings related more to the unique nature of the university than to the real differences between gifted post-secondary students and those used to establish the national norms.

A related problem relates to the size of the sample, especially the athletically gifted sample. Previous research in the area has suggested that psychosocial development of student-athletes is dependent in part upon the type of sport played, specifically revenue producing verses non-revenue producing. This study did not have sufficient athletes in either group to be able to conduct separate analyses.

Additionally, given the time constraints associated with dissertation research, this study did not track the psychosocial change in a group of individuals as the progressed from one year to the next; rather it assessed the level of psychosocial development for different students enrolled in different academic years at the same point in time. Once again, the result found may be the result of inherent differences in psychosocial development for the students enrolled in different years rather than a difference in psychosocial development related to progression through college.

Historical, political and economic events may have also impacted the findings of this study. The data for the national norms were collected over a four-year period from 1995 to 1999 (Winston, Miller, &, Cooper, 1999), while the data for this study were collected in the Fall of

2002. By the time that the study data were collected the United States economy had experienced a significant slow down, resulting in an increased number of students enrolling in college and universities across the nation. Additionally, the national political leadership had changed from Democrat to Republican. These changes in social and environmental factors may have influenced the results in this study.

In the Fall of 2001, just one year before this study was conducted, a set of significant terror attacks occurred on September 11 on United States soil, greatly impacting the sense of safety and their place in the world as experienced by Americans. The instrument used to assess the psychosocial of the students in this study was distributed during the same week that the university they attended held events and memorial services that commemorated these attacks. It was during the weeks following these first anniversary events that the study participants completed the instrument. The atmosphere on campus during this time may well have influenced their perceptions of personal safety and belonging, and the role social interactions played in their lives. Given the nature of this research, these factors must be considered when interpreting the findings for this study, especially when comparing this study's results with the national norms that were collected before the September 11th attacks occurred.

Recommendations

Further research needs to be conducted in this area before any findings from this study can be responsibly generalized to the larger population of gifted post-secondary students. It is essential that research be conducted using a wider variety of participants, drawn from more post-secondary institutions. Additionally, it would be desirable to assess students who are gifted in

areas other than academic and athletic, including especially artistically and musically gifted students.

In terms of research design, as psychosocial development is necessarily a characteristic that needs to be assessed over time to establish that changes have occurred with in an individual, future studies should adopt a longitudinal design to track the same individuals as they progress through college. Another design change for future studies should be the inclusion of a local comparison group. Differences between post-secondary institutions and differences from national norms prevent reliable comparisons of the gifted group to a group not identified as gifted.

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APPENDIX A

CONSENT FORM

GIFTED POST-SECONDARY STUDENT CONSENT FORM

I, _____ agree to take part in the research titled "PSYCHOSOCIAL DEVELOPMENT AMONG GIFTED POST-SECONDARY STUDENTS" conducted by Mr. Julian C. Smit from the Department of Educational Psychology at The University of Georgia. I understand that I do not have to take part if I do not want to. I can stop taking part without giving any reason, and without penalty. I can ask to have all of the information about me returned to me, removed from the research records, or destroyed.

The reason for this study is to investigate the psychosocial development of athletically or academically gifted university students.

If I volunteer to take part in this study, I will be asked to do the following thing:

(1) Complete the Student Development Task & Lifestyle Assessment.

In return for my participation I will be invited to enter my name in *a drawing* for a Grand Prize of one (1) gift certificate for fifty dollars ($50) that can be redeemed at the Georgia Southern University bookstore and five (5) consolation prizes each containing two (2) movie ticket passes redeemable at Carmike Cinema in Statesboro, Georgia. Each participant may enter only once, and may win only one prize.

The benefit for me by participating in this study may be an increased understanding of the psychosocial development of gifted students at university. The information generated from this study will add to the overall knowledge related to the psychosocial development of athletically and academically gifted students at university and may result in beneficial changes in the education of such students enrolled at colleges and universities in the future. Additionally I may elect to receive my results on the Student Development Task & Lifestyle Assessment.

(To obtain your score on the Student Development Task & Lifestyle Assessment e-mail the Investigator at jsmit@coe.uga.edu)

No risk, discomfort or stress is anticipated as a result of participation.

No information about me, or provided by me during the research, will be shared with others without my written permission, except if it is necessary to protect my welfare or if required by law. I will be assigned an identifying number and this number will be used on all of the questionnaires I fill out.

The investigator will answer any further questions about the research, now or during the course of the project (912-681-0116).

Only currently enrolled students of Georgia Southern University who are at least 18 years old may participate in this study.
I am currently registered as a student at Georgia Southern University. ---------- Circle one: YES /NO Initial _____.
I am currently at least 18 years old. ---------- Circle one: YES /NO Initial _____.

I understand that by signing this Consent Form I give the Office of the Registrar at Georgia Southern University explicit permission to release my admissions and current academic records to the Investigator, Julian C. Smit, for use in this research project.
Initial _____.

I understand that I am agreeing by my signature on this form to take part in this research project and understand that I will receive a signed copy of this consent form for my records.

_____/_____ _____/_____
Signature of Investigator / Date Signature of Participant / Date

Questions or problems regarding your rights as a participant should be addressed to Human Subjects Office; Institutional Review Board; Office of V.P. for Research; The University of Georgia; 606A Graduate Studies Research Center; Athens, GA 30602-7411; Telephone 706-542-6514.

APPENDIX B

STUDENT DEVELOPMENTAL TASK AND LIFESTYLE ASSESSMENT

STUDENT DEVELOPMENTAL TASK AND LIFESTYLE ASSESSMENT

Roger B. Winston, Jr.
Theodore K. Miller
Diane L. Cooper

The Student Developmental Task and Lifestyle Assessment is composed of statements shown to be typical of some students and is designed to collect information concerning college students' activities, feelings, attitudes, aspirations, and relationships. The Assessment is designed to help students learn more about themselves and for colleges to learn how to assist students more effectively***. The SDTLA's usefulness depends entirely on the honesty, candor, and care with which students answer the questions.***

It will require only about 25 – 35 minutes for you to complete this questionnaire.

DIRECTIONS

For each question choose the ***one response*** that most closely reflects your beliefs, feelings, attitudes, experiences, or interests***. Mark all your responses directly in this booklet by clearly circling only the number or letter next to the statement you wish to select.***

- If you choose to change an answer, be sure to completely erase your first response.
- Consider each statement carefully, but do not spend a great deal of time deliberating on a single statement. Work quickly, but carefully.
- In this questionnaire "college" means any college or university.
- If you have no parents, substitute guardian or parent equivalent when responding to items about parent(s).

DEMOGRAPHIC QUESTIONS: A-G

Mark your response by circling the appropriate number. It is crucial that you provide this information.

A What is your sex?
1 Male
2 Female

B What was your age at your last birthday?
_____ years

C What is your racial or cultural background? ***(Select the one best response.)***
1 Black or African American
2 Hispanic, Latino or Mexican-American
3 Asian American or Pacific Islander
4 Native American
5 White or Caucasian/European
6 Bi-racial or multiracial
7 Other

D What is your current relationship status? ***(Select the one response that best describes you.)***
1 Not currently in a relationship
2 In a relationship
3 In a committed relationship
4 In a life-long committed relationship

E What is your academic class standing? ***(Select only one.)***
1 Freshman [1st year]
2 Sophomore [2nd year]
3 Junior [3rd year]
4 Senior [4th year]
5 Other

F Where do you presently live? ***(Select the one best response.)***

1 In on-campus residence hall
2 At home with parent(s)
3 At home with spouse/spouse equivalent
4 On-campus apartment/trailer/house (not with parent or spouse)
5 Off-campus apartment/trailer/house (not with parents or spouse)
6 Fraternity/Sorority house

G Are you an international student? ***(Select one.)***

1 No
2 Yes

PART 1: Questions 1-21
Mark your respond by circling the appropriate letter.

1 I never regret anything I have done.

A True
B False

2 I am currently involved in one or more activities that I have identified as being of help in determining what I will do with the rest of my life.

A True
B False

3 I followed a systematic plan in making an important decision in the past thirty days.

A True
B False

4 I have personal habits that are potentially dangerous for my health.

A True
B False

5 I like everyone I know.

A True
B False

6 It's important to me that I be liked by everyone.

A True
B False

7 I would prefer not to room with someone who is from a culture or race different from mine.

A True
B False

8 I never get angry.

A True
B False

9 Within the past six months, I have experienced unfamiliar artistic media or performances.

A True
B False

10 During the past twelve months, I have acquired a better understanding of what it feels like to be a member of another race.

A True
B False

11 Since beginning college, my friends have become more frequent sources of support than my parents.

A True
B False

12 I only attend parties where there are plenty of alcoholic beverages available.
A True
B False

13 I never say things I shouldn't.
A True
B False

14 Within the past six months, I have learned about or experienced a culture different from my own through artistic expression.
A True
B False

15 I never lie.
A True
B False

16 I always take precautions (or abstain) to assure that I will not contract a sexually transmitted disease (STD).
A True
B False

17 Within the past twelve months, I have undertaken an activity intended to improve my understanding of culturally/racially different people.
A True
B False

18 I never get sad.
A True
B False

19 Within the past twelve months, I had a conversation or discussion about the arts outside of class.
A True
B False

20 I avoid discussing religion with people who challenge my beliefs, because there is nothing that can change my mind about my beliefs.
A True
B False

21 Within the past twelve months, I have undertaken an activity intended to improve my understanding of people with disabilities.
A True
B False

PART 2: Questions 22-68
Mark your response by circling the appropriate letter.

22 I satisfactorily accomplish all important daily tasks (e.g. class assignments, test preparation, room/apartment cleaning, eating, and sleeping).
A Never (almost never) true of me
B Seldom true of me
C Usually true of me
D Always (almost always) true of me

23 I seek out opportunities to learn about cultural/artistic forms that are new to me.
A Never (almost never) true of me
B Seldom true of me
C Usually true of me
D Always (almost always) true of me

24 It bothers me if my friends don't share the same leisure interests as I have.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

25 I'm annoyed when I hear people speaking in a language I don't understand.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

26 I have made conscious efforts to make this college a better place to attend.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

27 I have a difficult time in courses when the instructor doesn't regularly check up on the completion of assignments.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

28 I pay careful attention to the nutritional value of the foods I eat.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

29 I feel comfortable socializing with people who have physical, emotional, sensory, or learning disabilities.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

30 I plan my activities to make sure that I have adequate time for sleep.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

31 I seek to broaden my understanding of culture (e.g. art, music, or literature).
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

32 When I wish to be alone, I have a difficult time communicating my desire to others in a way that doesn't hurt their feelings.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

33 I avoid groups where I would be of the minority race.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

34 My classmates can depend on me to help them master class materials.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

35 I don't perform as well in class as I could because I fall short on requirements.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

36 I limit the quantity of fats in my diet.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

37 Because of my friends' urgings, I get involved in things that are not in my best interest.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

38 A person's sexual orientation is a crucial factor in determining whether I will attempt to develop a friendship with her/him.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

39 It's more important for me to make my own decisions than to have my parents' approval.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

40 I conceal some of my talents or skills so I will not be asked to contribute to the group effort.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

41 I have plenty of energy.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

42 It's more important to me that my friends approve of what I do than it is for me to do what I want.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

43 It's hard for me to work intensely on assignments for more than a short time.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

44 I am satisfied with my physical appearance.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

45 I feel uncomfortable when I'm around persons whose sexual orientation is different from mine.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

46 When in groups, I present my ideas and views in a way that it's clear I have given them serious thought.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

47 It's very important to me that I am successful both inside and outside the classroom.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

48 My weight is maintained at a level appropriate for my height and frame.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

49 My personal habits (e.g. procrastination, time management, assertiveness) get in the way of accomplishing my goals or meeting my responsibilities.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

50 I try to avoid people who act in unconventional ways.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

51 I accept criticism from friends without getting upset.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

52 I get bored and quit studying after working on an assignment for a short time.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

53 I eat well-balanced, nutritious meals daily.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

54 I find it difficult to accept some of the ways my close friends have changed over the past year.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

55 I have difficulty following through with decisions I have made when I discover others (e.g. parents or friends) disagree with these decisions.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

56 I have difficulty disciplining myself to study when I should.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

57 I exercise for thirty minutes or more at least three times a week.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

58 I don't socialize with people of whom my friends don't approve.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

59 My study time seems rushed because I fail to realistically estimate the amount of time required.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

60 I plan my week to make sure that I have sufficient time for physical exercise.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

61 I feel confident in my ability to accomplish my goals.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

62 I am annoyed when I have to make an accommodation for a person with a disability.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

63 I become inebriated (drunk) from the use of alcohol on weekends.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

64 I try to dress so that I fit in with my friends.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

65 It's essential that those important to me approve of everything I do.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

66 Even when I'm not particularly interested in a subject, I'm able to complete the course requirements satisfactorily.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

67 It's important to me that I achieve to the limits of my abilities.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

68 I use library materials, resources, and facilities effectively.
- **A** Never (almost never) true of me
- **B** Seldom true of me
- **C** Usually true of me
- **D** Always (almost always) true of me

PART 3: Questions 69-73
Mark your response by circling the appropriate letter.

69 I have arranged my living quarters in a way that makes it easy for me to study, sleep, and relax.
- **A** Strongly Agree
- **B** Agree
- **C** Disagree
- **D** Strongly Disagree

70 I have become more culturally sophisticated since beginning college.
- **A** Strongly Agree
- **B** Agree
- **C** Disagree
- **D** Strongly Disagree

71 Learning to live with students from cultural or racial backgrounds different from mine is an important part of a college education.
- **A** Strongly Agree
- **B** Agree
- **C** Disagree
- **D** Strongly Disagree

72 Society has a responsibility to assist people who cannot sustain themselves.
- **A** Strongly Agree
- **B** Agree
- **C** Disagree
- **D** Strongly Disagree

73 As a citizen, I have the responsibility to keep myself well-informed about current issues.
- **A** Strongly Agree
- **B** Agree
- **C** Disagree
- **D** Strongly Disagree

PART 4: Questions 74-86
Mark your response by circling the appropriate letter.

74 I wonder what my friends say about me behind my back.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

75 I dislike working in groups when there are a significant number of people who are from a race or culture that is different from mine.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

76 Within the past year, I have participated in activities that directly benefit my fellow students.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

77 Within the past three months, I engaged in activities that were dangerous or could be risky to my health.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

78 I have used my time in college to experiment with different ways of living or looking at the world.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

79 I am confident in my ability to make good decisions on my own.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

80 I participate in community service activities.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

81 I trust the validity of my values and opinions, even when they aren't shared by my parent(s).
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

82 I express my disapproval when I hear others use racial or ethnic slurs or put-downs.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

83 I have an inner sense of direction that keeps me on track, even when I am criticized.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

84 In the past six months, I have gone out of my way to meet students who are culturally or racially different from me because I thought there were things I could learn from them.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

85 I feel anxious when confronted with making decisions or taking actions for which I am responsible.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

86 I meet my responsibilities to my parent(s) as well as I should.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

PART 5: Questions 87-153
Mark your response by circling the appropriate letter.
Select only one response per question.

87 Within the past twelve months, I have taken a public stand on issues or beliefs when many friends and acquaintances didn't agree.
- **A** Never
- **B** Seldom
- **C** Sometimes
- **D** Often

88 After a friend and I have a heated argument I will:
- **A** Never (almost never) speak to him/her
- **B** Seldom speak to him/her
- **C** Usually speak to him/her
- **D** Always speak to him/her
- **E** I never have disagreements with my friends.

89 In terms of an academic major or concentration:
- **A** I am uncertain about possible majors and am a long way from a decision
- **B** I have thought about several majors, but haven't done anything about it yet
- **C** I have made a tentative decision about what I will major in
- **D** I have made a firm decision about a major, but I still have doubts about whether I have made the right decision
- **E** I have made a firm decision about a major in which I am confident that I will be successful.

90 Thinking about employment after college:
- **A** I do not know how to find out about prospects for employment in a variety of fields.
- **B** I have a vague idea about how to find out about future employment prospects in a variety of fields.
- **C** I know one source that could provide information about future employment prospects in a variety of fields.
- **D** I know several sources that can provide information about future employment prospects in a variety of fields.

91 When thinking about the kind of life I want five years after college, I have:

A Not come up with a very clear picture.
B A vague picture, but have been unable to identify the specific steps I need to take now.
C A clear enough picture that I can identify the steps that are necessary for me to take now in order to realize my dream, even though I haven't done very much about it yet.
D A clear enough picture and identified steps.

92 During this academic year,

A I have organized my time well enough for me to get everything completed.
B I sometimes had difficulty organizing my time well enough to get everything done.
C I often had difficulty organizing my time well enough to get everything done.
D I seldom seemed able to organize my time well enough to do everything.

93 I participate in the arts (e.g. draw, write, play a musical instrument, or sing) just for my own enjoyment.

A I never (almost never) do this.
B I seldom do this.
C I occasionally do this.
D I frequently do this.

94 When faced with important decisions this year, I have:

A Relied on others—such as parent(s), friend(s), or teacher(s)—to tell me what to do.
B Sought information and opinions, but made the final decision on my own.
C Relied on myself alone in making the decisions.
D Attempted to avoid making decisions as much as possible.

95 I have identified, and can list, at least three ways I can be an asset to the community.

A No, I haven't thought about that much.
B No, I don't know what I can contribute.
C No, that's not important to me.
D Yes.

96 During this academic year:

A I have tended to put off most school work, and assignments to the last minute and, as a result, don't do as well as I could.
B I have often forgotten about assignments or put them off so long that I was unable to turn them in on time.
C I have established a study routine that has enabled me to get most school work and assignments completed on time and to my own satisfaction.
D I have established a study routine that has enabled me to get all work and assignments completed on time and to my own satisfaction.

97 When I have experienced stress or tension this term:

A I have most often sought relief by listening to music, reading or visiting friends.
B I have most often had a few drinks or beers to relax.
C I have most often exercised, worked out, or played sport.
D I have kept going and ignored the stress.
E I have had occasions when it became too much to handle and I had to take a few days off to relax or rest and sleep.

98 In terms of the array of possible academic majors at this college, I have:

A Not spent much time investigating the possibilities.
B Talked to some students about their majors, but not done any systematic investigation.
C Read the catalog and talked to some students and/or faculty/staff members about possible majors.
D Made a systematic effort to learn about possible majors and what they will entail.
E Made a systematic effort to learn about possible majors and have carefully looked at my abilities and interests and how they fit different majors.

99 Within the past six months:

A I haven't seriously thought about possible post-college jobs or careers.
B I have thought about possible post-college jobs or careers, but haven't done much about exploring the possibilities.
C I have asked relatives, faculty members, or others to describe positions in the fields in which they are working.
D I have taken definite steps to decide about a career, such as visiting a counselor, placement center, or persons who hold the kinds of positions in which I am interested.

100 If something were to prevent me from realizing my present educational plans, I have:

A No idea what else I might pursue.
B A vague notion about acceptable alternatives.
C Several acceptable alternatives in mind, but I haven't explored them very much.
D Several acceptable alternatives in mind, which I have explored in some detail.

101 When I have a heated disagreement with friends about matters such as religion, politics, or philosophy I:

A Am likely to terminate the friendship.
B Am bothered by their failure to see my point of view, but hide my feelings.
C Will express my disagreement, but will not discuss the issue.
D Will express my disagreement and am willing to discuss the issue.
E Don't talk about controversial matters.

102 I have made a positive contribution to my community (residence hall, campus, neighborhood, or hometown) within the past three months.

A No, that isn't important to me.
B No, I don't know what I could do to make a positive contribution.
C No, but I have tried to find ways.
D Yes.

103 In terms of an academic major/concentration, I have:

A Determined what all the requirements are and the deadlines by which things must be done, for the major I have chosen.
B Investigated the basic requirements for graduating with a degree in my academic major.
C A general idea about the courses and other requirements needed in my major.
D Not paid much attention to the requirements for my major; I depend on my advisor or others to tell me what to take.
E Yet to decide on an academic major.

104 I have decided the place (if any) that marriage has in my future.

A No, I will just wait to see what develops.
B No, I don't think about it.
C No, but I know what I would like to have happen.
D Yes, I have made a definite decision.

105 I am familiar with sources of help on campus (e.g. tutoring, counseling, academic information, library research tools and procedures, and computers).

A I really don't know much about these things.
B I know about a few.
C I know about most of them.
D I know about all of them.

106 When I don't agree with someone in authority (e.g. professor, administrator), I:

A Never express my opinion.
B Express my opinion only when I am angry.
C Express my opinion when asked.
D Express my opinion if given the chance.
E Avoid dealing with persons in positions of authority if possible.

107 Within the past three months, I have taken an active part in a recycling activity/program.

A No, recycling is too much trouble.
B No, I don't know where to dispose of materials.
C Yes, I have participated occasionally.
D Yes, I have participated regularly.
E Yes, I have participated and promoted recycling activities to others.

108 I use tobacco products (smoke, chew, or dip).

A Never.
B Once a week or less.
C Several time as week.
D Most days.
E Everyday.

109 In terms of the labor market demand for people with a degree in my major, in the career area in which I am most interested:

A I have yet to decide on a career area and/or academic major.
B I don't have much of an idea of what I will face upon graduation.
C I have a general, though somewhat vague, picture of what I will face upon graduation.
D I have investigated things enough to be pretty clear about what I will face upon graduation.

110 I can clearly state my plan for achieving the goals I have established for the next ten years.

A No, because I have no specific goals for the next ten years.
B No, because I don't like making detailed plans for long-range goals.
C No, because I haven't worked out my plan completely.
D Yes.

111 Within the past month:

A I took the initiative to bring several people together to resolve a mutual problem.
B I joined with several people to resolve a mutual problem.
C I have not encountered a problem that needed a group effort to solve.
D I have avoided situations that require me to work with other people in solving problems.

112 Within the last twelve months, I have attended a play or classical music concert when not required for a class.

A Yes.
B No, I don't like those kinds of things.
C No, I just haven't gotten around to it.
D No, there aren't such things available here.

113 If I thought my friends would disapprove of a decision I made, I would most likely:

A Try to keep them from finding out (keep it secret).
B Tell them and pretend I didn't care what they thought.
C Tell them and explain my reasons for this decision.
D Make up something to mislead them from knowing the truth.

114 In the past twelve months, I have taken an active part in activities and projects designed to improve the community, such as charity drive, clean up campaign, or blood drive.

A Never.
B Once.
C Twice.
D Three times
E Four or more times.

115 I have more than one drink (i.e. 1.5 ounces of liquor, 5 ounces of wine, or 12 ounces of beer).

A Never.
B Once a week or less.
C Two or three times a week.
D Most days.
E Everyday.

116 Over the past twelve months at this college, I have:

A Taken the initiative to set up conferences with an academic advisor.
B Kept appointments with an academic advisor when she/he scheduled them.
C Avoided dealing with my academic advisor.
D Not investigated how to obtain academic advising.
E Not been at this college long enough to get involved in academic advising.

117 In the past year:

A I have discussed my career goals with at least two professionals in the field that interests me most.
B I have had minimal exposure to people in the career field that interests me most.
C I know several professionals in the career field in which I am most interested, but I haven't talked to them about entering the field.
D I have yet to decide on a career area.

118 My plans for the future are consistent with my personal values (for example, importance of service to others, religious beliefs, importance of luxuries, desire for public recognition).

A No, my future plans are unclear and I am undecided about my personal values.
B No, my future plans are clear, but I am undecided about my personal values.
C No, my future plans are unclear, but I am clear about my personal values.
D Yes, I have recently begun to think about how my values will shape my future.
E Yes, I thought about this a lot and have a clear plan.

119 Each day:

A I depend on my memory to make sure that I get done what needs to be done, and that works for me.
B I keep a calendar or make a "to do" list of what needs to be done each day and that works for me.
C I dislike planning what I need to do; I just let things happen and that works for me.
D I don't make detailed plans about what I need to do each day, and as a result I forgot important things.

120 Within the past twelve months, I have visited a museum or an art exhibit when not required for a class.

A Yes.
B No, I don't like those kind of things.
C No, I just haven't gotten around to it.
D No, there aren't such things available here.

121 In regards to social issues, (e.g. homelessness, environmental pollution, or AIDS):

A I don't think much about them.
B I am concerned, but haven't taken any specific actions.
C I contribute money to organizations that address the issue(s).
D I am actively involved in organizations that address the issue(s).

122 I have a mature working relationship with one or more members of the academic community (faculty member, student affairs/services staff member, administrator).

A Yes.
B No, I don't like dealing with them.
C No, I have tried to form relationships, but haven't been successful yet.
D No, I don't know any.
E No, I don't have time for that kind of thing.

123 When thinking about occupations I am considering entering:

A I don't know what is required in order to be competitive for a job.
B I haven't decided which occupations interest me most.
C I have a general idea of what is required.
D I can list at least five requirements.

124 I have developed strategies to maximize my strengths and to minimize my weaknesses in order to accomplish my goals in life.

A No, I don't know myself that well.
B No, I haven't figured out how to do that.
C No, I don't have a clear picture of my life goals.
D Yes, I have done this, but I'm not very confident about my strategies.
E Yes, I have done this, and I am confident that my strategies will be effective.

125 I have one or more goals that I am committed to accomplish and have been working on for over a year.

A No, I don't like making definite goals.
B No, I have tried, but have been unable to follow through.
C No, I have difficulty making realistic long-range plans.
D Yes.

126 Over the past year I have frequently participated in cultural activities.

A No, that isn't something that I enjoy or consider important.
B No, there haven't been any cultural activities available in which I could participate.
C I have attended when others have encouraged or invited me.
D Yes, I have taken advantage of as many opportunities as I could manage.
E Yes, only when required by the college.

127 Within the past twelve months, I contributed my time to a worthy cause in my community (campus or town/city).

A No.
B 1 – 10 hours.
C 11 – 20 hours.
D 21 – 30 hours.
E 31 or more hours.

128 Within the past twelve months:

A I haven't attended any non-required lectures, programs, or activities dealing with serious intellectual subjects.
B I have attended one or two non-required lectures or programs dealing with serious intellectual subjects.
C I have attended three or four lectures or programs dealing with serious intellectual subjects that were not required for any of my courses.
D I have attended five or more lectures or programs dealing with serious intellectual subjects which were not required for any of my courses.

129 In terms of practical experience in the career area I plan to pursue after college, I have:

A Yet to decide on a post-college career area.
B Had no experience.
C Had very little experience.
D Had some experience.
E Had a great deal of experience.

130 I am involved in hobbies or leisure activities today that I see myself continuing to pursue 10 years from now.

A Yes.
B No.
C I don't know.

131 In addition to my academic studies:

A I spend much of my free time involved in organizing activities on campus or in the community.
B I spend most of my free time 'goofing off' or watching TV.
C I spend most of my free time with friends doing things we enjoy.
D I spend most of my free time working to support myself and/or caring for my family.

132 In regards to college organizations specifically related to my chosen occupational field, I have.

A Yet to decide on a post-college occupational field.
B Investigated joining one or more, but have not actually joined.
C Joined one or more, but I'm not very involved.
D Joined one or more and I'm actively involved.

133 I have investigated what I must do in order to satisfy my need or desire for material goods, such as cars, clothes, and a home once I complete my education.

A No, I'm unsure about how important material goods are to me.
B No, I haven't thought much about what I will need to do.
C No, I have given some thought to this, but things are still unclear.
D Yes, I'm somewhat sure that I will be able to satisfy my needs/desires.
E Yes, my current plans are likely to meet my needs or desires.

134 I have formed a personal relationship (friendly acquaintanceship) with one or more professors.

A Yes, but I find it difficult to talk to him/her (them).
B Yes, we often enjoy interacting with each other.
C No, I would like to but haven't taken any action.
D No, I would like to and have tried unsuccessfully.
E No, because that isn't important to me.

135 Considering beginning-level positions in business, industry, government, or education for which I would be eligible when I complete my education, I:

A Can name three or more.
B Can name only two.
C Can name only one.
D Cannot name any.
E Haven't made a decision about my academic major/concentration; therefore, I don't know for what I might be qualified.

136 I have considered the kinds of tradeoffs (in areas such as family time, leisure time, job status, income, or time with friends) I will need to make in order to have the kind of lifestyle I want to have five years after completing my education.

A I haven't thought about this at all.
B I have thought about this in general.
C I have a fairly clear idea of the tradeoffs required.
D I have a very clear idea of the tradeoffs required.

137 I have been actively engaged in a student organization or college committee in the past 6 months.

A Yes.
B No, I don't have the time because of my job(s) and or family responsibilities.
C No, I am not interested.
D No, I haven't been in college long enough.
E No, but I plan to do so soon.

138 When thinking about narrowing the number of career areas I wish to explore:

A I have identified specific personal abilities and limitations which I can use to guide my thinking.
B I have some general ideas about what I would be successful in.
C I have only a vague sense of where I can best use my skills or minimize my shortcomings.
D I have never thought about careers in this way.

139 I am purposely developing intellectual skills and personal habits that will assure that I continue to learn after completing my formal education.

A I haven't thought about this.
B I rely completely on course requirements to do this.
C I think about this some times.
D I do this systematically.

140 Within the past three months, I have had a serious discussion with a faculty member concerning something of importance to me.

A No, I don't like talking to faculty members.
B No, I have tried, but was unsuccessful.
C No, I haven't found one who seems willing to interact in that way.
D Yes, I initiated such a discussion.
E Yes, I responded to a faculty member's initiative.

141 Within the past three months:

A I haven't seriously thought about my career.
B I have read about a career I am considering.
C I have been involved in activities directly related to my future career.
D I have thought about my career, but things are still too unsettled for me to take any action yet.

142 I have weighed the relative importance of establishing a family in relation to other life goals.

A No, my desire to establish a family is too uncertain.
B No, my life goals are too uncertain.
C Yes, but my priorities tend to change.
D Yes, my priorities about these goals are clear.

143 While in college I have acquired practical experience directly related to my educational goals through an internship, part-time work, summer job, or similar employment.

A No, I haven't been enrolled long enough.
B No, I haven't thought about it very much.
C No, I have yet to establish any specific educational goals.
D Yes, I did it to satisfy program requirements.
E Yes, I did it on my own initiative.

144 I have established a specific plan for gaining practical experience in the career area I plan to pursue after college.

A No, I have yet to decide on a career area.
B No, but this is something I should be doing.
C No, that isn't something I want to do.
D Yes, but I haven't actually acted on my plan.
E Yes, and I have begun implementing my plan.

145 I have considered how my present course of study will impact my goals for the future.
- **A** No, I haven't thought about this at all.
- **B** Yes, I have thought about this, but it's unclear how my studies will shape my future.
- **C** Yes, I have a fairly clear idea about how my studies will shape my future.
- **D** Yes, I have a very clear picture of how my studies will shape my future.

146 I have developed a financial plan for achieving my educational goals.
- **A** No, my parent(s) are taking care of it.
- **B** Yes, I have a plan which depends on the continuation of the present level of funding.
- **C** No, I haven't thought much beyond the current term.

147 I have carefully investigated the intellectual abilities and necessary academic background needed to be successful in my chosen academic major.
- **A** No, I have yet to make a definite decision about an academic major/concentration.
- **B** No, I chose my academic major/concentration solely on the basis of what I enjoyed most.
- **C** No, I have narrowed the choices down to a few areas, but I haven't really investigated majors in that way.
- **D** No, I never thought about it in that way.
- **E** Yes.

148 I am acquainted with at least one person who has a disability.
- **A** Yes.
- **B** No, I have not met anyone with a disability.
- **C** No, I am not interested in knowing anyone with a disability.

149 Within the past three months I have read a non-required publication related to my major field of study.
- **A** No, I have yet to decide on an academic major/field of study.
- **B** No, I don't have time to read such things.
- **C** No, that would be too boring.
- **D** Yes.

150 I am acquainted with at least three persons who are actively involved in the kind of work I visualize for myself in the future.
- **A** Yes.
- **B** No, I haven't met many people doing the work I visualize for myself.
- **C** No, I have yet to decide on a post-college occupational area.
- **D** No, I don't think that is very important.

151 I often have trouble visualizing day-to-day work in the career area I have selected.
- **A** Yes, because I have yet to decide on a career area.
- **B** Yes, because I don't know what routine work in my career area is really like.
- **C** Yes, because I don't like to think about that.
- **D** No, I can visualize work in that area, but I'm not sure that it's realistic.
- **E** No, I have a clear and realistic picture of work in my career area.

152 Within the past twelve months I have had a serious conversation about my long-term educational objectives with an academic advisor or other college official.
- **A** No, I don't know to whom to talk.
- **B** No, I have tried but no one will help me.
- **C** No, but I want to do that.
- **D** No, I don't want my options limited.
- **E** Yes.

153 While in college, I have visited a career center or library to obtain information about a chosen career.
- **A** No, but I will do that when I find time.
- **B** No, I don't need career information.
- **C** No, there is no place or person that deals with careers on my campus.
- **D** Yes.

APPENDIX C

ENTRY FORM FOR GRAND PRIZE AND CONSOLATION PRIZES

ENTRY FORM FOR GRAND PRIZE AND CONSOLATION PRIZES

Name: _____

Telephone Number: _____

E-Mail: _____

I wish to be entered for the drawing of the Grand Prize (one prize, a $50.00 Gift Certificate redeemable at the Georgia Southern Bookstore) and the Consolation Prizes (five prizes, each containing two movie ticket passes redeemable at the Statesboro, Georgia Carmike Theatres).

I understand that I can only win one prize. The odds of winning depend upon the number of participants.

APPENDIX D

ABBREVIATIONS

SDTLA Task, Subtask, and Scale Abbreviations

AUT = Developing Autonomy Task

EA = Emotional Autonomy Subtask

IA = Instrumental Autonomy Subtask

AA = Academic Autonomy Subtask

IND = Interdependence Subtask

PUR = Establishing and Clarifying Purpose Task

CP = Career Planning Subtask

LP = Lifestyle Planning Subtask

CUP = Cultural Participation Subtask

EI = Educational Involvement Subtask

MIR = Developing Mature Interpersonal Relationships Task

TOL = Tolerance Subtask

PR = Peer Relationships Subtask

SLS = Salubrious Lifestyle Scale