Motivation factors as indicators of academic achievement: A comparative study of student-athletes and non-athletes academic and social motivation

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MOTIVATION FACTORS AS INDICATORS OF ACADEMIC ACHIEVEMENT:
A COMPARATIVE STUDY OF STUDENT-ATHLETES AND NON-ATHLETES
ACADEMIC AND SOCIAL MOTIVATION

A Dissertation
Submitted
In Partial Fulfillment
Of the Requirement for the Degree
Doctor of Education

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May 2010
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MOTIVATION FACTORS AS INDICATORS OF ACADEMIC ACHIEVEMENT:
A COMPARATIVE STUDY OF STUDENT-ATHLETES’ AND NON-ATHLETES’
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ABSTRACT

The purpose of this study was to investigate non-cognitive motivational factors as indicators of academic achievement of male athletes and male non-athletes as measured by a secondary data analysis of the College Student Inventory (CSI) from Fall 2003 to Fall 2005. Deci and Ryan's (2000) self-determination theory provided the conceptual framework for this study.

The CSI was administered through a survey technique. Participants in the survey sample were selected from 142 first semester freshman male athletes and male non-athletes enrolled at a Midwestern University.

The data gathered from the CSI provided information on non-cognitive variables of academic and social motivation as indicators of academic achievement. This study compared the CSI motivational factor scores to the first semester and second semester grade point averages (GPA) of male athletes and male non-athletes. Four statistical tests were generated: (1) descriptive statistics, (2) t-tests, (3) correlation analysis (Pearson r), and (4) analysis of variance (ANOVA). Descriptive statistical analysis was used to determine the sample characteristics, frequencies, and percentages of male athletes and male non-athletes. The t-test was used to gather GPA basic data means for male athletes, male non-athletes, race, and sport. The independent t-test was used to test for a difference between the means of male athletes and male non-athletes. Comparisons for significance of first and second semester GPA, CSI motivational scores (academic motivation and social motivation), race, and sport were conducted using correlation analysis. The difference in motivational factor scores between UNI male student-athletes and male
non-athletes by race and sport was determined by the one-way analysis of variance (ANOVA).

The data analysis indicated that (1) The College Student Inventory (CSI) academic motivation and social motivation scales were not indicators of academic achievement/GPA, (2) There is a difference in motivation factor scores and GPA’s between male athletes and non-athletes, (3) The null hypothesis that motivation factor scores (academic motivation and social motivation) cannot indicate academic achievement/(GPA) is retained, (4) The null hypothesis that there is no difference in motivational factor scores between male student-athletes and male non-athletes at UNI by race and sport is rejected, (5) Male non-athletes are more likely to enjoy classroom discussions and feel comfortable with the high level of intellectual activity that often occurs in the college classroom than male athletes, (6) Caucasian males and Hispanic males have a more positive attitude towards educators than African American males and this may affect their academic achievement, (7) African American males have a greater capacity to make their own decisions and carry through with them than Caucasian males, (8) Male non-athletes are more likely to enjoy classroom discussions and feel comfortable with the high level of intellectual activity that often occurs in the college classroom than male football athletes, (9) Male non-athletes have a greater capacity to make their own decisions and carry through with them than male baseball athletes.

The results of this study indicate the need for academic and social support programs for male athletes and male non-athletes to ensure positive progression towards academic achievement.
CHAPTER 1
INTRODUCTION TO THE STUDY

Background of the Study

Academic reform in college athletics has been a major subject of debate for many years due to the overall low college completion rates of student-athletes. Many college presidents and sports activists believe that the National Collegiate Athletic Association (NCAA), colleges/universities, and athletic administrations must make academic success a part of student-athlete success. Chancellor Gordon Gee of Vanderbilt University decided to eliminate the school’s athletic department and place it within his office, the division of student life and university affairs. “Chancellor Gee perceives athletic departments as islands, answering to no one, spending ridiculous amounts of money and flaunting the standards of academia – not to mention decent society. Chancellor Gee feels the synergy created by having the school run athletics should benefit student-athletes. The most shocking thing about this move is that the Vanderbilt program is among the cleanest in the country. The school’s 14 varsity programs have never been on probation. This is a bold step, and President Gee hopes other schools will follow his lead” (Bechtel & Hersch, 2003).

A low graduation rate among athletes is a problem the NCAA is trying to address by instituting tougher academic standards. As a result, in 1983, it enacted Proposition 48. This landmark rule required new recruits to have a minimum grade point average of 2.0 in high school to participate in NCAA sports (Sailes, 1998). Then in 1989, the NCAA passed another landmark rule, Proposition 42. This rule required new recruits to have a
minimum high school grade point average of (2.0) and correlating SAT score to participate in NCAA teams (Sailes, 1998). However, this legislation may have limited opportunities for participation in collegiate athletics for many high school athletes, especially Black athletes. Harry Edwards (2004), professor of Sociology at the University of California-Berkeley, believes that the greatest consequence of Proposition 42 and similar regulations is to limit the opportunities – both educational and athletic – that would otherwise be available to Black youths (p.348). Edwards’ (2004) point is cogent: “In the first two years of Proposition 48 enforcement (1984 – 1986), 92 percent of all academically ineligible basketball players and 84 percent of academically ineligible football players were Black athletes. As late as 1996, the overwhelming majority of proposition 48 casualties were still Black student-athlete prospects. Despite attempts to the contrary, such horrifically disproportionate numbers cannot be justified on the grounds that ineligible athletes would not have graduated anyway. Richard Lapchick, Director of the Center for the Study of Sports in Society, reports that if Proposition 48 had been used in 1981, 69 percent of Black male scholarship athletes would have been ineligible to participate in sports as freshmen, but 54 percent of those athletes eventually graduated” (p.347-348).

Although, the first NCAA efforts were directed towards entering student-athletes, a special concern of college presidents, sports activists, and the media has been the low graduation rates of male student-athletes, especially Black male student-athletes in revenue generating sports. Men’s basketball, women’s basketball and football are the three Division I revenue generating college sports teams that get media attention.
Participation in these sports may appear to be dominated by Black athletes. The Journal of Black Issues in Higher Education ("College Sports," 2002) states, "At approximately 300 large universities with the best-known athletics programs that make up the NCAA Division I, 57 percent of the male basketball players, 42 percent of the football players, and 39 percent of the women's basketball players are Black" (p.37). Therefore, the dominance of Black participation in collegiate sports has focused attention on the graduation of NCAA student-athletes, especially Black student-athletes.

The graduation rate of black collegiate athletes who entered college in 1996 and participated in Division I college sports illustrates an interesting racial disparity. The NCAA News (2003) states, "Black student-athletes' graduation rate was 52 percent compared to a white graduation rate of 65 percent. The Black male student-athlete graduation rate was 48 percent compared to a white male student-athlete graduation rate of 59 percent. The Black female student-athlete graduation rate was 62 percent compared to a white female student-athlete graduation rate of 72 percent" (p. 4). (See Figure 1). According to Black Issues in Higher Education ("Iowa's Black Athletes," 2004), "The University of Northern Iowa reported that 33 percent of Black athletes graduated within six years, which falls below the national average of 49 percent" (p.18).

Is the education of collegiate athletes, particularly, Black athletes, a priority of colleges/universities in the United States? It would seem as if the NCAA is concerned with the academic achievement of all student athletes, but colleges and universities may have different motives for college athletics. University of Arizona President, Peter Linkins who is also chair of the Presidential Task Force on the Future of Intercollegiate
Comparison of graduation rates from entering classes of 1995 and 1996 for select sport groups

Comparison of graduation rates between student-athletes and student body for select groups in 1996 entering class

Comparison of graduation rates between student-athletes and student body for matched gender ethnicity groups in 1996 entering class

Proportion of African Americans in 1995 vs. 1996 freshman class for various sport groups

Figure 1: NCAA Graduation Rates 1995 – 1996
Athletics, states “The popularity of intercollegiate athletics and the media exposure it receives has steadily pushed the enterprise towards sports entertainment and away from the educational mission of colleges and universities” (NCAA News, 2005). Edwards (2004), discussing collegiate Black athletes’ academic achievement wrote: “Nonetheless, their talents were so critical to the success of revenue producing sports programs – most notably basketball and football – at major colleges and universities competing at the Division I level, that those athletes were typically recruited out of high school or junior college, notwithstanding their educational deficiencies, with the predictable result of widespread Black athlete academic underachievement and outright failure. It was this tragedy and the attention it generated from sports activists and the media from the late 1960s into the 1980s that ultimately prompted the most far-reaching reform efforts in modern collegiate sports history” (p.347).

**Theoretical Models**

There are two basic theories of motivation: behavior theories of motivation and cognitive theories of motivation. Hull (1943) and Skinner (1953) were behavioral theorists who believed actions were conditioned through the reinforcement process (Deci, 1980). Hull’s theory ignored intrinsic motivation and Skinner’s theory ignored motivational factors” (Deci, 1980). According to Deci (1980), “I contend that a theory of motivation must recognize the intrinsic need for competence and self-determination as a basic, innate motivational propensity and that the role of phenomenological variables such as choice and desire must be recognized as causal factors in behaviors so that the
important distinction between the first two categories of behavior can be made clearly” (p. 47).

Lewin (1938) and Tolman (1932) were cognitive theorists who studied animal and human behavior. Both theorists believed that organisms have beliefs, opinions, or expectations concerning the world around them (Vroom, 1964). In other words, actions of individuals are determined by the outcome one wants to have and the belief that their behavior will yield great benefits. According to Deci (1980), “cognitive theories represent an important break from behavioral theories in that they emphasize the role of choice in the determination of behavior. However they tend to have three major shortcomings. First, they tend to give little attention to the nature of human needs that underlie the choice process, focusing instead on the valences of outcomes without exploring the human needs out of which the valences derive. Second, cognitive theories fail to give proper consideration to the role of emotions in the motivational process, viewing them instead as interferences to motivational processes. Finally, cognitive theories of motivation overemphasize the role of choice, treating all behaviors as if they were chosen. They fail to acknowledge that some behaviors have become automatic or automatized, thereby short-circuiting the choice process” (p. 48). The key to motivation is choice. Behavioral theories ignore motivational factors, and cognitive theories ignore human needs and emotions that establish the foundation for the choice process. Athletes and non-athletes have a choice to pursue academic success.

Self-determination theory (SDT) according to Deci and Ryan (2000), “maintains that an understanding of human motivation requires a consideration of innate
Note: Informational inputs (stimulus) activate the formation of conscious motives. Goals are then selected that are expected to lead to satisfaction of the motives. Then the person behaves to attain the goals. When the goal is extrinsic, the person completes the behavior and gets the reward; when the goals are intrinsic, the goal is just the completion of the behaviors. Finally, when the goal is attained, the motive is satisfied (if the goal was properly selected) and the sequence terminates (Deci, 1980).

*Figure 2: Basic Structure of an Organismic Theory of Self-Determined Behavior*

Psychological needs for competence, autonomy, and relatedness. Specifically, according to self-determination theory, a critical issue in the effects of goal pursuit and attainment concerns the degree to which people are able to satisfy their basic psychological needs as they pursue and attain their valued outcomes” (p. 227). Autonomy refers to making a decision and with a full understanding of the consequences. Competence means mastering the things in one’s environment. Relatedness is the need to identify or belong to a group (Vallerand & Losier, 1999; See Figure 2). According to Ryan (1993), “Athletes are seeking certain goals through their sport involvement and these goals are fueled by psychological needs deemed necessary to facilitate growth and actualization of human potentiality” (p. 1-56). Self-determination theory (SDT) provides the theoretical framework for this study because (1) it recognizes motivational factors of students and
student athletes that are ignored or limited in behavioral and cognitive theories and (2)
SDT recognizes the role of choice in motivation factors.

Purpose of the Study

This study compares the motivation scores of male athletes and male non-athletes
towards academic achievement. The purpose of this study is:
1. To understand the relationship between motivation and academic achievement of male
   student-athletes and male non-athletes at the University of Northern Iowa (UNI) by
   race and sport.
2. To investigate non-cognitive motivational factors as related to academic achievement
   of male athletes and male non-athletes as measured by a secondary data analysis of the
   Noel-Levitz College Student Inventory (CSI) from Fall 2003 to Fall 2005.

According to Rabideau (2005), “Motivation can be defined as the driving force
behind all the actions of an individual. Motivation refers to the dynamics of our behavior,
which involves our needs, desires, and ambitions in life” (p.1). In other words, motivation
is why we do, what we do. “Motivation is an internal state that arouses, directs, and
sustains human behavior. It plays a fundamental role in learning. In order to effectively
foster student motivation, it is essential to understand why students strive for particular
goals, how intensely they strive, and what feelings and emotions characterize them in this
process” (Glynn, Aultman & Owens 2005, p. 150).

Problem

This study assesses motivational factors as related to the academic achievement of
male athletes and non-athletes by race and sport. The graduation rate of all National
Collegiate Athletic Association (NCAA) athletes has been a subject of debate for over 20 years. The NCAA has instituted standards to improve the graduation rate of student-athletes, but it has not been successful. The NCAA instituted the Academic Progress Rate (APR) in 2005. APR is a point system that measures the persistence of student-athletes towards graduation. This rule relates to team performance rather than individual achievement. The rule requires all NCAA teams to maintain a consistent rate of 925 and above and graduate one-half of its athletes. Teams with rates below 925 will lose a scholarship (Welch, 2005). Therefore, student-athletes must make positive academic progress towards graduation to remain eligible to participate in NCAA sports programs.

Persistence measures motivation towards academic achievement. It does not measure institutional outcomes, otherwise known as 'retention.' (See Figure 3). In other words, the NCAA is measuring persistence, and Higher Education is measuring retention. Therefore, the NCAA, university support services, and athletic administrations need to

Figure 3: Relationship between motivation and persistence.
understand academic achievement of male student-athletes, especially Black student-athletes, and the motivational factors that could be used to assist in helping them to attain the required APR by assessing the relationship between motivational factors and academic performance. According to Kevin McNutt (2002), "Some colleges cite the Black athlete's addictive focus towards a professional sports career and poor academic backgrounds that leave them ill-prepared to handle college coursework as the primary reasons for the poor graduation rates. While there is validity to these charges, the problem is far more complex. Perhaps a more prevalent, yet rarely discussed, explanation is the volatile combination of the big business of college athletics and the mind-boggling 'culture shock' experienced by Black athletes as they attempt to adjust to an entirely different academic, social, and racial environment. As Black athletes are lifted from their surroundings at age 17 and 18 and asked to assimilate to the high pressure atmosphere with its production mode mentality, and the social isolation of the college climate, many athletes simply find the experience overwhelming" (p.7). Therefore, academic and social factors may be indicators for academic achievement of student-athletes and especially, Black student-athletes.

Studies performed at the North Dakota University (Noel-Levitz, 2005) and the University of Arizona (Ousley & Cruz, 2005) measured student motivation by using the Noel-Levitz Retention Management Systems (RMS) College Student Inventory (CSI). Julie Schepp, Academic Affairs Associate and Director of Research for North Dakota University, used the CSI for help in measuring performance in the areas of student satisfaction and retention; because of declining student enrollment, it was more cost
effective to retain students than recruit new students. Schepp wanted to gather the appropriate data and be able to compare it to a national database (Noel-Levitz, White Papers). Ousley and Cruz (2005) conducted an investigation using the CSI to assess the effectiveness of the CSI with regard to predictability for minority and first-generation students. Ousley and Cruz (2005) state “according to Noel-Levitz (Stratil, 2001), the College Student Inventory is a psychometric instrument designed primarily to measure the motivational traits and social background factors related to student academic outcomes, and is especially salient to incoming first-year students as an assessment for early intervention” (p.2) The Noel Levitz CSI uses non-cognitive variables as motivational categories in measuring the academic success of students. The specific motivational categories in this inventory are academic motivation, social motivation, general coping skills, receptivity to support services, and initial impression. The factors utilized for this study are academic motivation and social motivation. The academic motivation scale measures non-cognitive factors such as study habits, intellectual interests, academic confidence, desire to finish college, and attitude towards educators. The social motivation scale measures non-cognitive factors such as self reliance, sociability, and leadership. The non-cognitive factors of the CSI academic motivation scale and social motivation scale could be used to indicate the academic performance of male student athletes and male non-athletes at UNI (See Figure 4).
Tracey and Sedlacek’s early example of non-cognitive variables (positive self-concept, realistic self-appraisal, understanding of and ability to deal with racism, preference for long term goals over more immediate, short term needs, availability of a strong support person, successful leadership experience, and demonstrated community service) was believed to influence goal selection/behavioral decision making (choice) process. The motivational factor scales (academic motivation & social motivation) of the College Student Inventory (CSI) is the instrument used to measure goal/motive attainment (academic achievement). Adapted from Deci and Ryan (1985, 1991) self-determination theory and Vallerand’s (1997) Hierarchical model of intrinsic and extrinsic motivation.

Figure 4: Proposed motivational sequence of goal attainment/academic achievement.

**Research Questions**

This study assesses the motivational factors as related to academic achievement of male student-athletes and male non-athletes as measured by the CSI. More specifically this study addressed the following questions:

1. Are motivational factors indicators of academic achievement/GPA?
2. Is there a difference in motivational factor scores and GPA’s between male athletes and male non-athletes?

It is hypothesized that:

1. Motivational factor scores cannot indicate academic achievement (GPA).
2. There is no difference in motivational factor scores between male student-athletes and male non-athletes at UNI by race and sport.

**Limitations of the Study**

Limitations of this study are primarily limited to the sample of the population.

First, the sample size of athletes and non-athletes is very small as it was limited to whom data is available.

Second, a secondary data analysis will be performed, therefore, the sample size is limited to those who completed the CSI survey upon entry to UNI from 2003 – 2005 while enrolled in Strategies for Academic Success.

**Delimitations of the Study**

First, this study will be delimited to male student-athletes and male non-athletes at the University of Northern Iowa (UNI).

Second, there were very few females who participated in the Jump Start Program and enrolled in Strategies for Academic Success.

Third, the comparison among female athletes and non-athletes was too small.

**Significance of the Study**

This study is important for several reasons. First, if the NCAA and college presidents are concerned about improving the academic achievement and graduation rate of all student-athletes, but particularly Black student-athletes, the NCAA, college/university presidents, and particularly the support services the institutions provide, should consider factors related to Black student-athletes’ underachievement.
Stratil (2001) wrote, “Our minds have an immense capacity for knowledge. But each of us learns in a different way. We focus attention on somewhat different dimensions of the world, we have somewhat different understandings of the world, and we strive for quite different kinds of personal growth. We can only achieve our full potential when these forces of individuality are meshed smoothly with the learning process” (p. 1). Everyone processes information in different ways and these differences should be considered in instituting all NCAA academic reforms. Early intervention will enable support services to assist student-athletes in achieving academic success.

Secondly, the academic success of college athletes is defined by the graduation rates of institutions of higher education. The graduation rate of University of Northern Iowa (UNI) student-athletes has exceeded the overall student undergraduate rate. UNI student-athlete four-year graduation rates in 2004 ranged from 63% to 71% compared to an overall student graduation rate range from 61% to 64% (Witosky, 2004). As previously stated, according to Black Issues in Higher Education (“Iowa’s Black Athletes,” 2004), the UNI Black student-athlete six-year graduation rate is 33% which is below the national Black student-athlete graduation rate of 49%. Institutions of higher education must explore better ways to ensure that student-athletes, especially Black athletes, achieve academic success (p.18). Since student-athletes are students first, information on indicators of student success could be used by athletic support staff to assist in the academic achievement of student-athletes. According to Gaston-Gayles (2004), “Much has been written on predictors of academic achievement for student-athletes, but, few studies have explored academic and athletic motivation as noncognitive
variables and their usefulness in predicting academic performance for student-athletes” (p.75). Motivation research can be understood as the study of how thoughts and beliefs are related to actions and behaviors (Griffin, 2006).

Definition of Terms

*Academic Achievement* - is defined by the Grade Point Average (GPA).

*Academic Progress Rate* - To calculate the rate, the NCAA evaluated each athlete in each term of the 2003-04 academic year. Players who surpassed the association’s requirements for progress toward a degree and remained enrolled for the next term earned two points for their teams. Those who met the requirements but left college earned one point. Those who flunked out earned nothing. The NCAA took the total points earned by each team’s athletes and divided it by the total possible number of points a team could earn. The result was multiplied by 1,000 to get the Academic Progress Rate (APR). Over time, teams with consistent rates of 925 and above will graduate at least half of their athletes, according to the association’s studies. Beginning next year, teams with rates below 925 will lose a scholarship whenever an athlete leaves college without passing enough classes to remain eligible. That said, the association plans an elaborate waiver process that will let teams off the hook if they have small numbers of athletes or are at institutions that serve “economically distressed segments of the population, ‘as the standards’ author, Walter Harrison, president of the University of Hartford, put it” (Welch, 2005).

*Motivation factors* are defined by the Noel-Levitz (CSI). As Low, (2001) wrote, “The heart of the CSI rests with the independent motivational scales constructed for each
of the categories. The main categories are as follows: (1) Academic Motivation (2) Social Motivation (3) General Coping Ability (4) Receptivity to Support Services and (5) Initial Impressions” (p.2). Motivational scales used in this study are Academic Motivation and Social Motivation. The motivational factors utilized for this study are study habits, intellectual interests, academic confidence, desire to finish college, attitude towards educators, self-reliance, sociability, and leadership.

*Student-Athlete* – A student-athlete is a student whose enrollment was solicited by a member of the athletics staff or other representative of athletics interests with a view toward the student’s ultimate participation in the intercollegiate athletics program (NCAA, 2006).

*Intellectual Interests* - This scale measures how much the student enjoys the actual learning process, not the extent to which the student is striving to attain high grades or to complete a degree. It measures the degree to which the student enjoys reading and discussing serious ideas. The survey questions pertaining to the intellectual interests subscale are as follows:

24. Books have never gotten me very excited.

55. I get a great deal of personal satisfaction from reading.

94. I seldom go to a bookstore or shop online for serious books.

112. Books have broadened my horizons and stimulated my imagination.

155. I get no enjoyment out of browsing for information in a library or online.

177. I like to spend some of my free time reading serious books and articles.
**Attitude Towards Educators** - This scale measures the student's attitude towards teachers and administrators in general, as acquired through his/her pre-college experiences. Students with poor academic achievement often express a general hostility toward teachers and this attitude often interferes with their work. The survey questions pertaining to the attitude towards educators subscale are as follows:

23. Most of my teachers have been very caring and dedicated.
33. My teachers did a very poor job of explaining the purpose of our studies.
61. I resent the large amount of power that teachers have always had over me.
78. My teachers were very interesting and engaging, and they made the learning process quite enjoyable.
93. Most teachers have a superior attitude that I find very annoying.
115. Most teachers do a very good job of explaining their objectives.
123. Although school administrators may pretend to have their students' interest at heart, they really don't.
134. The teachers I had in school were very fair and objective in assigning grades.
147. In my opinion, many teachers are more concerned about themselves than they are about their students.
162. I liked my teachers, and I feel they did a good job.

**Self-Reliance** - The purpose of this scale is to measure the students' capacity to make their own decisions and to carry through with them. It also assesses the degree to which an individual is able to develop opinions independently of social pressure. The survey questions pertaining to the self-reliance subscale are as follows:
31. I often rely on my own ideas when making a decision, and I'm prepared to make an unpopular decision if necessary.

45. I often get confused when trying to reach major decisions, and I seek a lot of help with them.

62. I have a lot of faith in my own reasoning, and I'm not discouraged when someone else disagrees with my conclusions.

83. On controversial issues, my opinions are often strongly influenced by what other people think.

92. I feel confident of my own opinions, and I'm willing to act on them.

104. I don't express unpopular opinions, even when something important is at stake.

120. I like to make my own decisions, and I have a lot of trust in my judgment.

132. I let my friends have too much influence on my life.

157. I often take the initiative in solving my own problems.

174. I often feel unsure of my opinions on important matters.

**Summary of Chapter 1**

This chapter included a discussion of past (prop 41 and prop 42) and current (APR) NCAA reforms created to increase academic achievement of student athletes, an introduction to the theoretical model self-determination theory (which will be explained in greater detail in the following chapter), the purpose, the problem, the research questions, and the instrument that will be used in guiding the study.

In conclusion, the purpose of this study is to investigate non-cognitive motivational factors as related to the academic achievement of male athletes and male
non-athletes as measured by a secondary data analysis of the CSI from Fall 2003 to Fall 2005. This study is important for the success of college athletes and athletic programs. The success of college athletics is dependent upon having the best skilled players (athletes) on the team. If the best athletes never make it to the playing field, athletic programs will suffer. It is advantageous for collegiate athletic programs and college/university administrations to ensure the academic success and eligibility of all collegiate athletes.

Currently, the APR has been instituted by the NCAA to assist athletic programs, coaches, and college/university administrations in the persistence (motivation) of athletes towards academic success. The APR has forced athletic programs, coaches, and college/university administrations to accept responsibility for the academic success of athletes. Knowledge of motivational research and studies could assist athletic programs, coaches, and college/university administrations in providing the necessary information needed to understand the support services needed to ensure athletic academic success.
CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

This chapter reviews related literature on both student-athletes and non-athletes. It will define the problem of male student-athlete/male non-athlete motivation and the framework for the proposed study. The chapter is presented in five sections: (1) discussion of NCAA academic standards/reforms that affect the academic achievement of athletes, (2) discussion of motivational theories that provide a framework for this study, (3) discussion of literature pertaining to Noel-Levitz College Student Inventory (CSI), (4) discussion of literature pertaining to student motivation and student-athlete motivation, and (5) summarization of the chapter. At the end of each sub-section a table will appear summarizing the theories of the authors cited in the literature review.

The purpose of this study is to investigate non-cognitive motivational factors as indicators of academic achievement of male athletes and male non-athletes as measured by a secondary data analysis of the College Student Inventory CSI from Fall 2003 to Fall 2005. Precisely, this study attempted to accomplish the following:

1. To understand the relationship between motivation and academic achievement of male student-athletes and male non-athletes at the University of Northern Iowa (UNI) by race and sport.

2. To investigate the viability of non-cognitive motivational factors of the Noel-Levitz College Student Inventory (CSI).
This study assesses the motivational factors as related to the academic achievement of male student-athletes and male non-athletes as measured by the CSI. More specifically this study addressed the following questions:

1. Are motivational factors indicators of academic achievement/GPA?

2. Is there a difference of motivational factor scores and GPA between male athletes and male non-athletes?

It is hypothesized that:

1. Motivational factor scores cannot indicate academic achievement (GPA).

2. There is no difference in motivational factor scores between male student-athletes and male non-athletes at UNI by race and sport.

**Student-Athlete Academic Standards/Reforms**

A low graduation rate among athletes is a problem the NCAA is trying to address by instituting tougher academic standards. As a result, in 1983, it enacted Proposition 48 and Proposition 42 in 1989. “In January of 1983, at its annual meeting, the National Collegiate Athletic Association (NCAA) enacted rule 5–1–(j), better known as Proposition 48. In an attempt to tighten admissions standards for incoming freshmen student athletes, the rule stipulated that, to participate in varsity competition at an NCAA-affiliated college or university, new recruits must graduate from high school with a minimum grade point average of 2.0 on a core curriculum of eleven courses, including three years of English, two years of social science, two years of mathematics, and two years of a natural or physical science. In addition, they had to score at least 700 points out of a possible 1600 on the Scholastic Aptitude Test (SAT) or a minimum of 15 points out
of a possible 39 of the American College Test (ACT). A supplemental proposition, Rule 49-b, stated that students who did not qualify could be admitted and attend classes but could not participate in either varsity practices or competitions. Nonqualifiers could compete as sophomores after demonstrating satisfactory academic progress, and they would receive four years of varsity eligibility if they continued to maintain satisfactory academic progress. That door was slammed shut in January, 1989. At its annual conference, the NCAA passed another rule called Proposition 42. This new rule denied first-year eligibility, an athletic scholarship and school financial aid of any kind to entering college freshmen student athletes not showing both the minimum grade point average and the minimum SAT/ACT score upon graduation from high school" (Sailes, 1998, p.134-135). However, this legislation may have limited opportunities for participation in collegiate athletics for many high school athletes, especially Black athletes. Harry Edwards (2004), professor of Sociology at the University of California-Berkeley, reports that the greatest consequence of Proposition 42 and similar regulations is to limit the opportunities – both educational and athletic – that would otherwise be available to Black youths (p.348).

The most recent NCAA rule, Academic Progress Rate (APR) was passed in 2005. This rule relates to team performance rather than individual achievement. This rule requires all NCAA teams to maintain a consistent rate of 925 and above and graduate one-half of its athletes (Welch, 2005). To calculate the rate, the NCAA evaluated each athlete in each term of the 2003-04 academic year. Players who surpassed the association’s requirements for progress toward a degree and remained enrolled for the
next term earned two points for their teams. Those who met the requirements but left college earned one point. Those who flunked out earned nothing. The NCAA took the total points earned by each team’s athletes and divided it by the total possible number of points a team could earn. The result was multiplied by 1,000 to get the Academic Progress Rate (APR). Over time teams with consistent rates of 925 and above will graduate at least half of their athletes, according to the association’s studies. Beginning next year, teams with rates below 925 will lose a scholarship whenever an athlete leaves college without passing enough classes to remain eligible. That said, the association plans an elaborate waiver process that will let teams off the hook if they have small numbers of athletes or are at institutions that serve “economically distressed segments of the population, ‘as the standards’ author, Walter Harrison, president of the University of Hartford, put it” (Welch, 2005).

**Motivational Theories**

Motivation research can be understood as the study of how thoughts and beliefs are related to actions and behaviors (Griffin, 2006). According to Glynn, Aultman, and Owens (2005), "Motivation is an internal state that arouses, directs, and sustains human behavior. It plays a fundamental role in learning. Today, more than ever, students’ motivation is an area of discussion and debate—an area constantly in need of innovation approaches because the societal factors that play a role in motivation are constantly changing. In order to effectively foster students’ motivation, it is essential to understand why students strive for particular goals, how intensively they strive, how long they strive, and what feelings and emotions characterize them in this process” (p. 150).
Behavioral Theories of Motivation

Hull (1943) and Skinner (1953) were behavioral theorists who believed actions were conditioned through the reinforcement process (Deci, 1980). Hull’s theory ignored intrinsic motivation and Skinner’s theory ignored motivational factors” (Deci, 1980). Deci (1980) states, “I contend that a theory of motivation must recognize the intrinsic need for competence and self-determination as a basic, innate motivational propensity and that the role of phenomenological variables such as choice and desire must be recognized as causal factors in behaviors so that the important distinction between the first two categories of behavior can be made clearly” (p. 47).

Cognitive Theories of Motivation

Vroom’s (1964) expectancy theory of motivation is based on the findings of the early advocates of cognitive theories of behavior Lewin (1938) and Tolman (1932). Tolman studied animal behavior and Lewin studied human behavior. Both theorists believed that organisms have beliefs, opinions, or expectations concerning the world around them (Vroom, 1964). According to Deci (1980), “The central assertion in this approach is that motivation to engage in a behavior is a multiplicative function of two variables: the valance (or psychological value of the outcomes which could follow the behavior) times the subjective probability or expectancy that the behavior will lead those outcomes” (p. 47). In other words, actions of individuals are determined by the outcome one wants to have and the belief that their behavior will yield great benefits. According to Deci (1980), “Cognitive theories represent an important break from behavioral theories in that they emphasize the role of choice in the determination of behavior. However they
tend to have three major shortcomings. First, they tend to give little attention to the nature of human needs that underlie the choice process, focusing instead on the valences of outcomes without exploring the human needs out of which the valences derive. Second, cognitive theories fail to give proper consideration to the role of emotions in the motivational process, viewing them instead as interferences to motivational processes. Finally, cognitive theories of motivation overemphasize the role of choice, treating all behaviors as if they were chosen. They fail to acknowledge that some behaviors have become automatic or automatized, thereby short-circuiting the choice process” (p. 48).

Self-Determination Theory

As previously stated, Deci’s (1980) self-determination theory (SDT) provides the theoretical framework for this study. According to Deci (1980), “Self-determined behavior involves people deciding how to behave based on their expectations about how to achieve satisfaction of their needs” (p.49). Deci and Ryan (2000) state, “Self-determination theory (SDT) maintains that an understanding of human motivation requires a consideration of innate psychological needs for competence, autonomy, and relatedness. Specifically, according to SDT, a critical issue in the effects of goal pursuit and attainment concerns the degree to which people are able to satisfy their basic psychological needs as they pursue and attain their valued outcomes” (p. 227).

(See Figure 5.)

Deci (1980) states, “Self determined behavior is characterized as an entire sequence that commences with informal inputs and terminates when its purpose has been achieved, (that is when the motive or motives at the heart of the sequence have been
Note: Informational inputs activate the formation of conscious motives. Goals are then selected that are expected to lead to satisfaction of the motives. Then the person behaves to attain the goals. When the goal is extrinsic, the person completes the behavior and gets the reward; when the goals are intrinsic, the goal is just the completion of the behaviors. Finally, when the goal is attained, the motive is satisfied (if the goal was properly selected) and the sequence terminates (Deci, 1980).

*Figure 5: Basic Structure of an Organismic Theory of Self-Determined Behavior*
satisfied). The first phase in a sequence of self-determination behavior is the receipt of stimulus inputs by the central processor. These inputs of information come from three sources: they may be sensations received from the environment through the sense receptors; they may be internal sensations from the tissues of the organism; or they may be bits of information accessed from memory storage” (p. 51).

The second phase is conscious motives. Deci (1980) writes, “Conscious motives are the standard for the operation of a TOTE (Test – Operate –Test – Exit) unit. The term (conscious) motive as used here is an awareness or cognition. The term is used by some people to refer to dispositions of the organism, for example, the achievement motive. I am not using it that way. These enduring dispositions are the things that I refer to as needs of the organism, such as the hunger need or the need for achievement. The reason for distinguishing motives from needs is to emphasize that self-determined behavior is a function of a conscious awareness” (p. 51, 52). TOTE unit refers to a term created by Miller, Galanter, and Pribram (1960; Deci, 1980). Deci (1980) writes, “Peoples’ behavior is purposive and aimed toward the attainment of some standard; periodically they Test their existing state against the standard; if there is a discrepancy, they Operate to reduce the discrepancy; again they Test; and if there is a match they Exit from the sequence” (p. 50). According to Deci (1980), “Once people have become aware of potential satisfaction, they select behaviors that they expect will lead to the desired satisfaction. They choose what to do or, as some theorists would say, they select a goal. One expects that the goal completion will produce the desired satisfaction; indeed the goal was selected because the person expected it to produce the satisfaction” (p. 52).
The third phase is goal selection. Deci (1980) wrote “Behavioral decision making (or goal selection), is the common element of the various cognitive theories of motivation. People decide what behaviors to undertake (the goal) in pursuit of satisfaction of their motives” (p. 53).

The fourth phase is goal achievement. According to Deci (1980) “Self-determined behavior is the purposive behavior aimed at achieving goals. As people behave, they will be comparing where they are to where they want to be (goal). Upon completion of the goal, the behavior will terminate” (p. 53).

The fifth phase is motive attainment. Deci (1980) wrote, “If the expectations that led to the goal selection were correct, the satisfaction will follow immediately from the goal completion; if not, satisfaction will not follow and a new goal may be selected that is expected to produce the desired satisfaction” (p. 54).

Griffin (2006) conducted a qualitative study examining the motivation of nine Black high-achieving undergraduate students (six females and three males) enrolled in an honors program at a large research university on the East coast that serves as the flagship of its state’s public university system. This study used a multidimensional framework of socio-cognitive theory, attribution theory, and self-determination theory. Results indicated that external forces and goals both directly and indirectly fed into students’ drive to achieve. In relation to socio-cognitive theory, students maintained a high level of self-efficacy and believed that despite obstacles they face, they can accomplish their goals with hard work and focus (Griffin, 2006, p. 369).
In relation to self-determination theory, students overwhelmingly connected their motivation to their internal drive and desire to be successful. However, there were multiple external factors that students felt encouraged that internal drive or influenced their motivation to succeed directly (Griffin, 2006, p. 395).

Vlachopoulos, Karageorghis, and Terry (2000), examined the link between motivation profiles among sports clubs participants, community members, and sports teams at two universities (590 participants and 555 participants) in west London, England. Cluster analysis, cronbach’s alpha and analyses of variance (ANOVAs) was used to assess seven forms of motivation for sport participation (consequences of enjoyment, effort, positive and negative affect, attitude toward sports participation, intention to continue sport participation, satisfaction, and frequency of attendance in sport) based on the tenets of self-determination theory using the Sport Motivation Scale (SMS). Results indicated that participants in the first cluster scored higher on all outcome variables.

Pelletier, Fortier, Vallerand, and Briere (2001) conducted a study assessing the influence of athletes’ perceptions of coaches’ interpersonal behaviors (autonomy support vs. control) on the different forms of regulation (intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation) of 174 male and 195 female competitive swimmers from 23 teams from the Province of Quebec and the combined impact of the perception of coaches’ interpersonal behaviors and the distinct types of regulation on persistence in the practice of that sport at the end of two competitive swimming seasons using self determination theory. Amotivation refers to
absence of intrinsic and extrinsic motivation. Two sets of analyses were carried out: structural equation modeling and the variance–covariance matrix of the observed variables using Assessment of Perceived Interpersonal Behaviors Inventory and Sport Motivation Scale (SMS). The first set focused on the differences between the dropout and persistence of athletes’ scores on the five motivational subscales and the perceptions of coaches’ interpersonal behaviors. The second set of analyses tested how perceptions of coaches’ interpersonal behaviors might affect athletes’ motivational orientation and how athletes’ motivation, in turn, might affect persistence in competitive swimming. Results indicated that greater levels of self-determined motivation occurred when relationships were experienced as autonomy supportive. Individuals who exhibited self-determined types of regulation showed more persistence. Individuals who were amotivated at had the highest rate of attrition. In other words, according to Vallerand and Losier (1999) “Results from a structural equation modeling analysis indicated that the coach’s behavior influenced athletes’ motivation which in turn determined their level of persistence. In line with predictions, it was found that amotivation and intrinsic motivation had respectively the most negative and positive impact on persistence. If motivation has a causal influence on persistence, then it should be possible to increase athletes’ motivation and in turn their persistence toward sport” (p. 160).

Amiot, Blanchard, and Gaudreau (2007) conducted a study aimed at understanding the role of both structural and flexible self variables in the process of adapting to change, and the consequences of this adaptation process on the basis of theoretical work on self-determination, coping and self. Using a three-wave design, 3,894 students from
introduction biology classes at a large East Ontarian university completed the Global Motivation Scale, Academic Motivation Scale, Measure of Psychological Well-being and identification as a university student, and the COPE Inventory. Results obtained through structural equation modeling involving true change procedures confirm the role played by global self-determination in predicting a greater use of task-oriented coping strategies and a lesser use of disengagement-oriented coping. Tests of mediation revealed that global self-determined, through its impact on coping strategies, predicted an increase in academic self-determination—a contextual-level motivation.

Kowal and Fortier (1999), conducted a study examining the relationships between different types of situational motivation and flow determinants (perceptions of autonomy, competence and relatedness) and the experience of flow (losing awareness while completely immersed in an activity). Autonomy Perceptions in Life Context Scale, Perceived Competence Scale for Children, Perceived Competence Scale for Children, Perceived Relatedness Scale, Situational Motivation Scale, and Flow State Scale were completed by 203 (105 men, 98 women) Canadian master’s level swimmers using the theoretical postulates of self-determination theory, past research on motivation and flow theory. Results obtained using correlation analysis and multiple t-tests indicated that situational self-determined forms of motivation (intrinsic motivation and self-determined extrinsic motivation) and perceptions of autonomy, competence, and relatedness were positively related to flow, whereas amotivation (the absence of intrinsic and extrinsic and extrinsic motivation) was negatively related to flow.
Mallet and Hanrahan (2004), investigated the motivational forces behind elite performance in sports based on self-determination theory, hierarchical model of motivation, and achievement goal theory employing a qualitative research approach. Participants were 5 male and 5 female elite track and field athletes from Australia who had finished in the top ten at a major championship in the last six years (i.e., 1996 & 2000 Olympic Games, 1995, 1997, 1999 World Championships). Qualitative data were collected using semi-structured interviews. Using inductive analyses results revealed several major themes associated with the motivational processes of elite athletes: (a) they were highly driven by personal goals and achievement, (b) they had strong self-belief, and (c) track and field was central to their lives. Self-determined forms of motivation characterized the elite athletes in this study and, consistent with social-cognitive theories of motivation, it suggested that goal accomplishment enhances perceptions of competence and consequently promotes self-determined forms of motivation.

(See Table 1.)

Table 1

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<td>Principles of Behavior: An Introduction to Behavior Theory</td>
<td>Behavior Theory</td>
</tr>
<tr>
<td>Vroom, V.H. (1964)</td>
<td>Work and Motivation</td>
<td>Expectancy Theory</td>
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Noel-Levitz College Student Inventory

This study utilized data that was previously collected from 2003-2005 using the Noel-Levitz College Student Inventory (CSI). Strati (2001) states, “The College Student Inventory is the foundation of the Retention Management System (RMS) and was designed especially for incoming first year students. In 1981, Strati, the author of the CSI, began research in the area of academic and social motivation with the goals of: (1) creating a coherent framework for understanding human motivation in general, (2) identifying the specific motivational variables that are most closely related to persistence and academic success in college, (3) developing a reliable and valid instrument for measuring these variables. As a result of his research, the original version of the CSI (titled the “Strati Counseling Inventory”) was published in 1984. The current versions of the College Student Inventory--Form A--was published in 1988.” (p. 2). Ousley and Cruz, (2005) state “According to Noel-Levitz (Strati, 2001), the College Student Inventory is a psychometric instrument designed primarily to measure the motivational traits and social background factors related to student academic outcomes, and is especially salient to incoming first-year students as an assessment for early intervention” (p.2). The Noel Levitz CSI uses non-cognitive variables as motivational categories in measuring the academic success of students. The specific motivational categories in this inventory are academic motivation, social motivation, general coping skills, receptivity to support services, and initial impression. The academic motivation scale measures non-cognitive factors such as study habits, intellectual interests, academic confidence, desire to finish college, and attitude towards educators. Morrison (1999) compiled empirical results of an
overview of CSI-A's theoretical and empirical background of the academic motivation scale. Richard and Sullivan (1994) found that the CSI-A’s Study Habits scale correlated more strongly with freshman GPA for at-risk students than did the SAT. Cote and Levine (1997) found that the motivation for intellectual growth was a significant factor in predicting GPA, but they also found that the college experience does not strengthen this motivation as one might expect. Richard and Sullivan (1994) found that the CSI-A Academic Confidence scale correlated more strongly with freshman GPA for at-risk students than did the SAT. Ethington (1990) found that academic self-confidence predicted college persistence. Allen (1999) found that the CSI-A’s Desire to Finish College scale predicted persistence among minority students in a causal model. Stratil (1988) has argued that the students’ general attitude toward educators may transfer to the educational process and facilitate or interfere with the learning process (Stratil, 2001, p. 28-29).

The social motivation scale measures non-cognitive factors such as self reliance, sociability, and leadership. Morrison (1999) complied empirical results of an overview of CSI-A’s theoretical and empirical background of the Social Motivation scale. Geiger and Cooper (1995) and Smith (1968) found that self-reliance was related to academic success. Stoecker, Pascarella, and Wolfe (1988) have argued that social integration promotes commitment to education and that commitment promotes persistence. Ting (2000) found that leadership skills were positively related to GPA among Asian American freshman. Tracey and Sedlacek (1985) and Sedlacek (1999) found that leadership success was related to student success in higher education (Stratil, 2001, p. 29).
There are several studies that investigated student motivation using the CSI. Allen (1999) conducted a study of first-time freshmen entering class at a medium-sized, public, four-year regional institution in the Southwest using the Noel-Levitz College Student Inventory (CSI) that investigated the role of pre-college background variables, motivation, and persistence behaviors among minority and nonminority students. Results indicated that motivation failed to impact academic performance for either racial subgroup, a significant motivational effect on persistence was found for minorities but not for non-minorities. Minority students with high levels of motivation tended to persist to their second year.

Harris (1999) conducted a study of 409 at-risk first time freshman students who were United States citizens and permanent residents at the University of North Texas using the Noel-Levitz College Student Inventory to determine the variance accounted for in predicting separate criterion variables of academic grade point average and persistence in the 2nd and 4th years. Results obtained using multiple regression, correlations, multi-discriminant analysis and bivariate correlations concluded “that overall, the CSI appears to be an acceptable instrument for more precise identification of at-risk students who may be in need of additional support services beyond the freshman year” (p. 85).

Odland (2001) conducted a study of 37 first semester college freshmen football players enrolled in transfer degree programs at a non-scholarship community college in the Midwest using the Noel-Levitz College Student Inventory (CSI) to determine whether the implementation of an Academic Success Plan would improve the academic success. It was hypothesized that the subjects from the 2000 school year would show improved
academic success and a greater rate of retention than similar subjects from the 1998 and 1999 school years. Results obtained using one-way analysis of variance (ANOVA) and the Newman-Keuls multiple comparison test indicated that the Academic Success Plan had no impact on improving the academic success of student athletes.

Browning (2000) followed a cohort of 474 college students for two years to determine if non-cognitive factors contributed to student persistence in college. Students completed the CSI in the fall semester of 1997 and were monitored again in the fall semester of 1999 to determine if they were still enrolled. Results obtained using descriptive statistics, comparisons and predictions found that students had, upon entering college, a high level of self-perceived leadership ability, a high level of self-perceived emotional support from their families to attend college, and a low sense of career planning capability. There were statistically significant differences among men and women in the areas of level of sociability, perception of emotional support from family, and openness. There were also significant differences based on the ethnicity of the students. The study found three significant predictors of retention. Level of emotional support from family while enrolled in college, miles from home while enrolled in college, and the ethnicity of the student were all found to predict student persistence.

Hudy (2006) conducted a study of 1,700 students from a mid-size regional state university that evaluated the degree to which motivation factors, as measured by the CSI, predict a student's grade point average (GPA) score and the number of semesters completed. In addition this study also investigated the degree to which variables such as high school percentile rank, SAT total score, age, sex, race, disability, and unmet
financial need predicted persistence and GPA scores. Participants attended a Fall Orientation Program in 2000 and 2001. Results obtained using descriptive statistics and regression analysis indicated that high school percentile rank predicted GPA scores from both demographic and CSI variables. The average GPA score for the first two semesters predicted the number of semesters completed and none of the CSI variables predicted persistence. Group differences indicated that females, Caucasian American students, and students without a disability had higher GPA scores. Students younger than age 20 had higher persistence rates. (See Table 2.)

Table 2

College Student Inventory

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<tr>
<th>Author</th>
<th>Title</th>
<th>Theory/Research</th>
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<tbody>
<tr>
<td>Harris, J. (1999)</td>
<td>Use of the College Student Inventory to Predict at-risk Student Success and Persistence at a Metropolitan University</td>
<td>Tinto's Revised Model of Retention and Attrition</td>
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<tr>
<td>Odland, B. (2001).</td>
<td>Programming and retention of community college student-athletes</td>
<td>College Student Inventory (CSI)</td>
</tr>
<tr>
<td>Smith, G. (1968)</td>
<td>Usefulness of Peer Rating of Personality In Educational Research</td>
<td>Peer Rating Model</td>
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**Student-Athlete Motivation**

Student-athlete academic success at institutions of higher education in the United States has been a major issue for colleges/universities and the National Collegiate Athletic Association (NCAA). As previously stated, academic success of college athletes is defined by the graduation rates of institutions of higher education. Graduation of every
student should be the goal of every college and university in the United States. College/University presidents and administrations measure academic achievement by retention, often defined as persistence of students towards graduation. Many university/college administrators, faculty, and staff fail to differentiate ‘retention’ and ‘persistence’ (Hagedorn, 2002). Retention measures institutional outcomes and persistence measures student motivation. Therefore institutions focus on retaining students and students persist towards academic achievement (Hagedorn, 2002). One study by DeBrock, Hendricks, and Koenker (1996), proposes that “It is unclear whether the absolute graduation rate or some relative measure of graduation rates is most appropriate to evaluate the academic success of an institution’s athletic program. Low graduation rates may be due to the athletes’ occupational choice and labor market demands”(p. 515). In other words, if the athlete decides to drop out of college to pursue professional employment in sports or any other area, it may not be the fault of the university. In athletics, all student-athletes, especially Black athletes, are recruited/selected for their physical ability, not academic abilities. His/Her goal may be to become the best athlete in a given sport. Therefore, it is the student-athlete’s decision to capitalize on his/her ability to pursue a professional athletic career, and not the fault of the institution.

According to DeBrok, Hendricks, and Koenker (1996), “To the extent that students, voluntarily, leave the university, using graduation rates as a signal of some failure is a mistaken approach. Strong empirical evidence is found that traditional labor market opportunities, unrelated to sports, are significant explanatory variables of the
persistence of athletes. This impact is stronger in sports with higher expected financial
returns from this form of nondegree employment. Students, rationally, self-select into
programs with a higher probability of persistence. In addition, universities tend to select
people who will do well. Considering the persistence issue as a rational economic
calculation implies a strong conclusion: it is a mistake to view those who fail to graduate
as primarily a failure on the part of the university. The decision to drop out of college is a
function of the student’s own abilities in combination with that student’s evaluation of
the return to continued participation” (p.513 – 540). Therefore, student athletes’
motivation for attending institutions of higher education must be considered in assessing
academic performance (success).

Sedlacek and Adams-Gaston (1992) conducted a quantitative study using the
Non-Cognitive Questionnaire (NCQ) of incoming freshmen athletes at a large eastern
university that compared the SAT scores and non-cognitive variables in their ability to
predict the academic success of student athletes. The findings indicated that noncognitive
variables were better predictors of grades than were SAT scores.

Gaston-Gayle (2004) conducted a quantitative study using the (SAMSAQ) among
211 college athletes at a Division 1 institution in the Midwest that measured academic
motivation (AM), student-athletic motivation (SAM), and career athletic motivation
(CAM). This study examined the utility of academic and athletic motivation as key
variables in predicting academic performance. The results indicated ACT scores,
ethnicity, and academic motivation were significant predictors of college GPA.
Simons, Van Rheenen, and Covington (1999) conducted a quantitative study of 361 Division 1 student athletes and examined the relationship of motivation orientation to academic performance and identification. Results indicated fear of failure and the relative commitment of athletics play important roles in the academic motivation of both revenue-generating and nonrevenue-generating student athletes. (See Table 3.)

Table 3

**Student-athlete Motivation**

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<td>Gaston-Gayle, J. (2004).</td>
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<td>Integration Model</td>
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<tr>
<td>Sedlacek, W. &amp; Adams-Gaston, J. (1992).</td>
<td>Predicting the Academic Success of Student Athletes Using SAT and Noncognitive Variables</td>
<td>Componential Intelligence Experimental Intelligence Contextual Intelligence</td>
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**Black Student-Athlete Motivation**

The Black athlete's single-minded pursuit of sports, fame, and fortune connect to the systematic channeling of Black males by American institutions of higher learning to university athletics. Low graduation rates and relentless pursuit by the media on the
troubles of some Black male student-athletes affirm the low expectations and limited categories of Black expression in society and access to diverse mainstream positions (Harrison, 2000). Young and Sowa (1992) conducted a study of 136 Black student-athletes at a Division 1 university using the (NCQ) that examined cognitive and non-cognitive variables as predictors of their academic success. Results indicated that cognitive variables alone failed to consistently predict GPA and amount of credits earned.

Synder (1996) conducted a study of 327 Anglo and Black male student-athletes selected from five campuses of a university system that measured academic motivation by examining post-graduate expectations of student-athletes and aspects of their social, cultural, and personal orientations. Results indicated that Black athletes placed increased importance on final exams relative to other evaluative tools; Black athletes were more attracted to the lure of professional sports; and Black athletes chose to live with other athletes more than white athletes.

Carr, Kangas, and Anderson (1992) examined the fourth semester persistence rates of Black male students and the effect of athlete academic support programs at San Jose City College (SJCC) and Evergreen Valley College (EVC), California. The data was collected using the California Community College Basketball Coaches Association Handbook 1987-1990. Results indicated that new full-time Black males had the highest 4th semester persistence rate of any group at SJCC. Also, the less the new full-time Black males are involved in the highly supportive basketball program (100% persistence) and the less they are involved in Athletics (67% persistence) or PE only (71% persistence), the less they are apt to succeed (33% for those in no PE or athletics). Carr, Kangas, and
Anderson (1992) state “There seems to be little doubt the important elements needed to help Black males persist are present in the athletic and academic support program” (p. 13).

Table 4

**Black Student-athlete Motivation**

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Theory/Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyatt, R. (2001)</td>
<td>Commitment to Degree Attainment Among American Intercollegiate Athletes</td>
<td>Student Integration Model, Student Attrition Model</td>
</tr>
<tr>
<td>Young, B.D. &amp; Sowa, C. J. (1992)</td>
<td>Predictors of Academic Success for Black Student-Athletes</td>
<td>Non-Cognitive Questionnaire</td>
</tr>
</tbody>
</table>

Hyatt (2001) examined the academic commitment and athletic commitment of African American athletes who participated in football and basketball at a large urban commuter type campus that sponsors Division I athletics using the student integration and student attrition theoretical models. Data was collected using in-depth oral interviews. Results indicated that athletes demonstrated a strong commitment toward extending their athletic careers and a low commitment to attaining a degree. Furthermore, the variables that were attributed to persistence were strict standards for academic eligibility and
academic progress imposed by the institution and NCAA and the subjects own high level of personal accountability and commitment to task completion. (See Table 4.)

**Student Motivation**

Scholars in the area of motivation have long made efforts to apply their work to the realm of education to determine how motivation impacts the learning, achievement, and self-esteem of students of all ages and across all educational contexts (Ames & Ames, 1984; Graham, 1994). Research assessing characteristics of college students have focused on (1) a search for accurate methods to identify students who are likely to experience problems in college, and (2) the search to develop valid and powerful means to predict dropout (Sherman, Giles & Williams-Green 1994). Sedlacek (1989) discussed the evidence for the use of non-cognitive variables in admission. He concluded that non-cognitive variables have been shown to have validity in predicting both undergraduate and post-graduate student success (p.6).

Hicks (2005) conducted a study of 430 college students at a 4-year public research and doctoral degree granting institution using the Life Attitude Profile-Revised (LAR-R) that investigated first-generation and non-first generation students’ goals and motivations for attending college. Results indicated that first-generation students seemed to be more academically motivated than the non-first generation students.

Zheng (2002) conducted a quantitative study of approximately 1,639 first-time full-time freshmen who attended the University’s Summer Orientation at a Midwestern land-grant university that investigated the efficacy of student background characteristics,
precollege student attitudinal traits, and environment as predictors of first-year academic performance, in addition to high school GPA using the Input-Environment-Outcome (I-E-O) model. The survey instrument, the Cooperative Institutional Research Program (CRIP) collected data on student demographic characteristics, experiences, educational aspirations, family, personal values, college expectations, and student political and social views. Results indicated that the factors of money and knowledge were students' most important reasons for attending college. (See Table 5.)

Table 5.

*Student Motivation*

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Theory/Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hicks, T. (2005)</td>
<td>A Profile of Choice/Responsibleness and Goal-Seeking Attitudes among First Generation and Non-First-Generation College Students</td>
<td>Life Attitude Profile-Revised (LAP-R)</td>
</tr>
<tr>
<td>Sedlacek, W. (1989)</td>
<td>Noncognitive Indicators of Student Success</td>
<td>Componential Intelligence Experimental Intelligence Contextual Intelligence</td>
</tr>
<tr>
<td>Sherman, T., Giles, M. &amp; Williams-Green (1994)</td>
<td>Assessment and Retention of Black Students in Higher Education.</td>
<td>Non-cognitive Variables</td>
</tr>
</tbody>
</table>
Summary of Literature Review

Gaston-Galyes (2004) states, “Few studies have explored academic and athletic motivation as non-cognitive variables and their usefulness in predicting academic performance for student athletes” (p.76). Results of the limited research on student-athlete academic achievement indicates that high school GPA and SAT/ACT scores are not accurate predictors of academic success. Young and Sowa (1992) found that cognitive variables (high school GPA and ACT/SAT scores) alone failed to consistently predict Black student-athletes’ academic potential. The non-cognitive variables of goal setting, understanding racism, and community service predicted academic success.

Sedlacek and Adams-Gaston (2004) concluded that student-athletes look more like other nontraditional students and may suffer from many of the problems and frustrations of a minority group. Rather than thinking of athletes as traditional students in nontraditional circumstances, it may be more meaningful to consider athletes as nontraditional students with their own culture and problems in relating to the larger system. This may assist college coaches, administrators, and faculty in providing services to student athletes to achieve academic success.

Motivation theory and research could be used to identify factors that contribute to student-athlete academic achievement. According to Griffin (2006), “although it is often argued that motivation is primarily one-dimensional and successful students rely on motivation stemming from internally generated sources, some Black students are motivated by internal and external forces” (p. 385). Motivation is the core of biological, cognitive, and social regulation that involves energy, direction, and
persistence. Self-determination theory investigates inherent growth tendencies and innate psychological needs that provide the basis for self-motivation, personality integration, and conditions that foster positive processes (Deci & Ryan, 2000). In other words, the motive of an individual determines the desired outcomes. In relation to student-athletes, their motive for entering institutions of higher education is an important indicator of academic achievement and success. This study reflects the need for more research in the area of student-athlete motivation in relation to academic achievement.
CHAPTER 3

METHODOLOGY

Introduction

The methods used to investigate the non-cognitive motivational factors as indicators of academic achievement of male athletes and male non-athletes as measured by a secondary data analysis of the College Student Inventory (CSI) from Fall 2003 to Fall 2005 are presented in this chapter. This chapter is presented in four sections: (1) introduction, (2) subjects, (3) instrumentation, (4) procedures, and (5) summary of Chapter 3.

Precisely, this study attempted to accomplish the following:

1. To understand the relationship between motivation and academic achievement of male student-athletes and male non-athletes at the University of Northern Iowa (UNI) by race and sport.

2. To investigate the viability of non-cognitive motivational factors of the Noel-Levitz College Student Inventory (CSI).

This study assesses the motivational factors as related to academic achievement of male student-athletes and male non-athletes as measured by the CSI. More specifically, this study addressed the following questions:

1. Are motivational factors indicators of academic achievement/GPA?

2. Is there a difference in motivational factor scores and GPA’s between male athletes and male non-athletes?
It is hypothesized that:

1. Motivational factor scores cannot indicate academic achievement (GPA).
2. There is no difference in motivational factor scores between male student-athletes and male non-athletes at UNI by race and sport.

Although, the NCAA is concerned with female student-athletes' academic achievement, none will be included in this study. First, there were very few females who participated in the Jump Start Program and enrolled in Strategies for Academic Success. Second, there were very few female athletes who participated in the Jump Start Program and enrolled in Strategies for Academic Success.

Subjects

Participants for this study were incoming UNI freshman male student-athletes and male non-athletes enrolled in the 5-day orientation program, Jump Start, prior to their first fall semester at UNI from 2003 - 2005. The UNI Jump Start Program is a two day orientation designed to acquaint new students from ethnically, culturally, and socioeconomically diverse backgrounds with campus life while meeting other Jump Start participants, UNI students, staff, and faculty. The main focus is to assist students in making a smooth transition to UNI that will increase their potential for success and graduation. Attendance at all sessions during the program is required. All Jump Start students also enroll in Strategies for Academic Success for their first fall semester. This course helps develop effective study techniques and comprehensive skills necessary for academic success. The focus is the development and use of effective learning and study strategies/skills necessary for independent learning and academic success. University
policies, procedures, and services are also addressed. This course is offered in the Fall and Spring semesters. Students enrolled in Strategies for Academic Success completed the CSI survey. The traditional and non-traditional students were newly enrolled freshmen and transfer athletes and non-athletes. The number of participants participating in this study was approximately 150. The UNI Men’s Varsity team sports represented were basketball, track, baseball, wrestling, and football.

**Instrumentation**

**Instrument**

This study utilized secondary data that was collected from 2003-2005 using the Noel-Levitz College Student Inventory (CSI). The CSI was used to obtain base data of motivational factors of male student-athletes and male non-athletes who participated in the Jump Start program at UNI. Stratil (2001) “The College Student Inventory is the foundation of the Retention Management System (RMS) and was designed especially for incoming first year students. In 1981, Stratil, the author of the CSI, began research in the area of academic and social motivation with the goals of: (1) creating a coherent framework for understanding human motivation in general, (2) identifying the specific motivational variables that are most closely related to persistence and academic success in college, (3) developing a reliable and valid instrument for measuring these variables. As a result of his research, the original version of the CSI (titled the “Stratil Counseling Inventory”) was published in 1984. The current versions of the College Student Inventory–Form A and Form B–were published in 1988 and 2000 respectively” (p. 2). Motivational factors were assessed by the Noel-Levitz College Student Inventory Form.
A, which is comprised of 194 items in 21 different scales. These scales are organized into five main categories: (1) academic motivation, (2) social motivation, (3) general coping skills, (4) receptivity to support services, and (5) initial impression. The Noel-Levitz College Student Inventory Form B is comprised of a 100-item inventory in 17 different scales. These scales are organized into four main categories: (1) academic motivation, (2) social motivation, (3) general coping skills, and (4) receptivity to support services.

According to Stratil (2001), "The Initial Impression Scale, included only in Form A, focuses on a student’s first impressions of the institution and is intended to identify predisposition toward the institution since these perceptions are highly correlated with dropout-proneness. The Internal Validity scale assesses a student’s carefulness in completing the inventory. This scale enables the institution to determine the care and attention the student gave to the test-taking" (p.4). The 1988 version Form-A was used in this study because the Initial Impression Scale assists in identifying dropout-proneness.

This study focused on two categories: academic motivation and social motivation. Academic motivation scale consists of (1) study habits, (2) intellectual interests (3) academic confidence, (4) desire to finish college, and (5) attitude towards educators. (See Table 6). “Academic motivation is related to the student’s capacity to develop and maintain long-term goals that provide broad self-direction to the student’s work, to obtain immediate gratifications from the learning process, and to maintain daily self-discipline in the pursuit of immediate academic success” (Stratil, 2001, p. 9). According to Stratil (2001), “All scores in this section are expressed in terms of stanines, which are
Table 6.

*College Student Inventory Motivation Scales* (Noel-Levitz, 2006, p.16-B – 18-B).

<table>
<thead>
<tr>
<th>Scales</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Study Habits</strong></td>
<td>This scale measures the students willingness to make the sacrifices needed to achieve academic success. It focuses on a student’s effort, rather than interest in intellectual matters or the desire for a degree.</td>
</tr>
<tr>
<td><strong>Intellectual Interests</strong></td>
<td>This scale measures how much the student enjoys the actual learning process, not the extent to which the student is striving to attain high grades or to complete a degree. It measures the degree to which the student enjoys reading and discussing serious ideas.</td>
</tr>
<tr>
<td><strong>Academic Confidence</strong></td>
<td>This scale measures the student’s perception of their ability to perform well in school, especially in testing situations. It is intended as an indicator of academic self-esteem and should not be used as a substitute for academic assessment.</td>
</tr>
<tr>
<td><strong>Desire to Finish College</strong></td>
<td>This scale measures the degree to which the student values a college education, the satisfaction of college life, and the long term benefits of graduation. It identifies students who possess a keen interest in persisting, regardless of their prior level of achievement.</td>
</tr>
<tr>
<td><strong>Attitude Towards Educators</strong></td>
<td>This scale measures the student’s attitudes towards teachers and administrators in general, as acquired through his/her pre-college experiences. Students with poor academics achievement often express a general hostility toward teachers and this attitude often interferes with their work.</td>
</tr>
<tr>
<td><strong>Self-Reliance</strong></td>
<td>The purpose of this scale is to measure the students’ capacity to make their own decisions and to carry through with them. It also assesses the degree to which an individual is able to develop opinions independently of social pressure.</td>
</tr>
<tr>
<td><strong>Sociability</strong></td>
<td>This scale measures the student’s general inclination to join in social activities. The relationship between sociability and academic outcomes can be complex. High sociability, for instance, can be a positive force for a person with strong study habits, but negative for a person with poor study habits.</td>
</tr>
<tr>
<td><strong>Leadership</strong></td>
<td>This is a measure of the student’s feelings of social acceptance, especially as a leader. This scale simply reflects the student’s feelings about how others perceive his or her leadership. It does not measure leadership ability or even potential.</td>
</tr>
</tbody>
</table>
normalized standard scores with a mean of five and a standard deviation of 1.96. The larger the stanine, the larger the corresponding raw score” (p.11-B).

Social motivation scales consist of (1) self-reliance, (2) sociability, and (3) leadership. (See Table 6.) “Social adjustment is widely believed to be an indication of the student’s capacity to obtain well socialized gratifications from campus life and, hence, to find the emotional reserves required for study and persistence; but strong social interest can compete excessively with studying and, hence impede academic achievement” (Stratil, 2001, p. 9). According to Stratil (2001), “The motivational scales are reported in two ways: as a percentile rank and as a point on a visual profile (graph)” (p. 4).

Reliability

“The CSI has been established as valid and reliable. According to Stratil (2001), “Throughout the CSI development, a central goal has been to maximize the homogeneity (internal consistency reliability) of each scale while keeping the inventory’s total length relatively short. To achieve that goal, the research design incorporated the following features:

- A large pool of preliminary items for each scale;
- Item testing with large samples;
- An item-selecting procedure that reduced content redundancy and maximized inter-item correlations;
- Pilot testing of scales that resulted in further refinements to the final inventory.

As a result of these procedures, CSI-A’s 21 major independent scales have an average
homogeneity coefficient (coefficient alpha and Spearman-Brown split-half reliability) of .80 despite an average length of only 7.8 items” (p. 6).

Procedures

Data Collection

Academic achievement was determined by student-athlete GPA’s at the end of the freshman year. The UNI Center for Academic Achievement has a data base of CSI and GPA scores. Kathleen M. Peters, Director of the Center for Academic Achievement and instructor for the Strategies for Academic Success course, administered the CSI during the second week of class to approximately 146 students enrolled in Strategies for Academic Success, course number (170:055). Students completed the College Student Inventory—Form A, Retention Management System (RMS) by computer during the first two weeks of class. The RMS results were immediately sent to Kathleen M. Peters in the form of RMS Advisor Reports, Student Reports, and RMS Summary and Planning Reports. The UNI student identification number was used as the key identifier. Noel Levitz reassigns an identifying number after completing the survey. The Noel Levitz identifying number will be used to identify participants.

Statistical Analysis

Comparisons of the respective populations of male student-athletes and male non-athletes who enrolled in Strategies for Academic Success and completed the CSI were conducted. Comparative analysis of the non-cognitive motivational factors scores (academic motivation and social motivation) of male athletes and male non-athletes as indicators of first and second semester Grade Point Average (GPA) was conducted. The
independent variables are CSI non-cognitive factors (academic motivation and social motivation). The dependent variable is first and second semester grade point average (GPA) of athletes and non-athletes. The software used was the Statistical Package for the Social Sciences (SPSS), version 13.

Five kinds of statistical tests were generated (1) descriptive statistics, (2) t-tests, (3) analysis of variance (ANOVA), (4) crombach's alpha and (5) correlation.

Descriptive statistical analysis was used to determine the sample characteristics, frequencies and percentages of athletes and non-athletes. The t-test was used to get GPA basic data means for athletes, non-athletes, race, and sport. The independent t-test was used to test for a difference between the means of athletes and non-athletes. Comparisons for significance of first and second semester GPA, CSI motivational scores (academic motivation and social motivation), race, and sport were conducted using correlation analysis. Comparisons included the first and second semester GPA of student-athletes and non-athletes. Cronbach's Alpha was used to assess the reliability of the academic motivation and social motivation scales for this study. The data from CSI motivation factor scores (academic motivation and social motivation) and academic achievement (GPA) was analyzed thusly: (1) The base data of first and second semester GPA was presented using means for the sample population of student-athletes in all sports and non-athletes. (2) Differences in first and second semester GPA between race and sport of student-athletes and non-athletes was determined by using descriptive statistics. (3) Correlation analysis was used to examine which motivational factor scores (academic motivation and social motivation) were significant indicators of first and second semester
GPA for student-athletes and non-athletes. The difference in motivational factor scores between UNI male student-athletes and male non-athletes by race and sport was determined by the one-way analysis of variance (ANOVA).

Summary of Chapter 3

This chapter discussed the participants of the study, the instrument used, data collection, and procedures for statistical analysis. Results of the statistical analysis of research questions and hypotheses will be discussed in Chapter 4.
CHAPTER 4
ANALYSIS OF DATA

Introduction

The results of methods used to investigate the non-cognitive motivational factors as indicators of academic achievement of male athletes and male non-athletes as measured by a secondary data analysis of the College Student Inventory (CSI) from Fall 2003 to Fall 2005 are presented in this chapter. This chapter is presented in five sections: (1) introduction, (2) reliability analysis, (3) descriptive data, (4) research questions and hypotheses tested, and (5) summarization of the chapter.

Precisely, this study attempted to accomplish the following:

1. To understand the relationship between motivation and academic achievement of male student-athletes and male non-athletes at the University of Northern Iowa (UNI) by race and sport.
2. To investigate the viability of non-cognitive motivational factors of the Noel-Levitz College Student Inventory (CSI).

This study assessed the motivational factors as related to academic achievement of male student-athletes and male non-athletes as measured by the CSI. More specifically, this study addressed the following questions:

1. Are motivational factors indicators of academic achievement/GPA?
2. Is there a difference in motivational factor scores and GPA’s between male athletes and male non-athletes?
It is hypothesized that:

1. Motivational factor scores cannot indicate academic achievement (GPA).
2. There is no difference in motivation factor scores between male student-athletes and male non-athletes at UNI by race and sport.

Five kinds of statistical tests were generated (1) cronbach’s alpha, (2) descriptive statistics, (3) t-tests, (4) correlation, and (5) analysis of variance (ANOVA). Cronbach’s Alpha was used to assess the reliability of the academic motivation and social motivation scales for this study. Descriptive statistical analysis was used to determine the sample characteristics, frequencies and percentages of athletes and non-athletes. The t-test was used to get GPA basic data means for male athletes, male non-athletes, race, and sport. The independent t-test was used to test for a difference between the means of athletes and non athletes. Comparisons for significance of first and second semester GPA, CSI motivation scores (academic motivation and social motivation), race, and sport were conducted using correlations. Comparisons included the first and second semester GPA of student-athletes and non-athletes. The difference in motivation scores between UNI male student-athletes and male non-athletes by race and sport was determined by the one-way analysis of variance (ANOVA).

**Reliability**

The reliability for this instrument in the assessment of the academic motivation and social motivation scales for this study was .90 using cronbach’s alpha. “Cronbach’s Alpha is a measure of internal consistency. As such, it is one of many tests of reliability. Cronbach’s Alpha comprises a number of items that make up a scale designed to measure
a single construct and determine the degree to which all items are measuring the same construct. Numbers close to 1.00 are very good, but numbers close to 0.00 represent poor internal consistency” (Cronk, 2004, p. 102). The reliability of this instrument is very good. (See Table 7.)

Table 7

*Reliability Statistics for Academic Motivation and Social Motivation Scales*

<table>
<thead>
<tr>
<th>Scales</th>
<th>Cronbach’s Alpha</th>
<th># of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Habits</td>
<td>.828</td>
<td>12</td>
</tr>
<tr>
<td>Intellectual Interests</td>
<td>.659</td>
<td>6</td>
</tr>
<tr>
<td>Academic Confidence</td>
<td>.856</td>
<td>10</td>
</tr>
<tr>
<td>Desire to Finish College</td>
<td>.778</td>
<td>10</td>
</tr>
<tr>
<td>Attitude Towards Educators</td>
<td>.823</td>
<td>10</td>
</tr>
<tr>
<td>Self-Reliance</td>
<td>.698</td>
<td>10</td>
</tr>
<tr>
<td>Sociability</td>
<td>.602</td>
<td>8</td>
</tr>
<tr>
<td>Leadership</td>
<td>.626</td>
<td>8</td>
</tr>
</tbody>
</table>

**Descriptive Data**

Descriptive statistical analysis was used to determine the sample characteristics, frequencies, and percentages of male athletes and male non-athletes. Table 8 contains demographic information for the sample N=142. The majority of the sample was non-
Table 8

*Demographic characteristics of sample (N = 142)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>% of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletes</td>
<td>33.8%</td>
</tr>
<tr>
<td>Non-athletes</td>
<td>66.2%</td>
</tr>
<tr>
<td>Age 17 - 18</td>
<td>55.6%</td>
</tr>
<tr>
<td>19</td>
<td>18.3%</td>
</tr>
<tr>
<td>20 - 22</td>
<td>15.5%</td>
</tr>
<tr>
<td>23 and up</td>
<td>10.6%</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>45.8%</td>
</tr>
<tr>
<td>Caucasian American</td>
<td>26.8%</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>18.3%</td>
</tr>
<tr>
<td>Other</td>
<td>9.2%</td>
</tr>
<tr>
<td>Sport</td>
<td></td>
</tr>
<tr>
<td>No Sport</td>
<td>66.2%</td>
</tr>
<tr>
<td>Football</td>
<td>22.5%</td>
</tr>
<tr>
<td>Basketball</td>
<td>2.8%</td>
</tr>
<tr>
<td>Wrestling</td>
<td>2.8%</td>
</tr>
<tr>
<td>Baseball</td>
<td>2.1%</td>
</tr>
<tr>
<td>Track</td>
<td>2.1%</td>
</tr>
<tr>
<td>Golf</td>
<td>1.4%</td>
</tr>
</tbody>
</table>
athletes (66.2%), 17-18 years of age (55.6%), and African-American (45.8%). Football (22.5%) was the highest represented sport in the sample.

The GPA of all athletes, 33.8% (N=48), for the first semester was 2.45. The GPA of all athletes for the second semester was 2.51. The GPA of athletes indicated by “other” (6.3%) had the highest GPA of 3.20 for the first semester and 2.82 for the second semester. African American athletes (43.8%) had the lowest first semester GPA of 2.31 and Hispanic American athletes (6.3%) had the lowest second semester GPA of 2.24. (See Table 9).

Table 9

<table>
<thead>
<tr>
<th>Race</th>
<th>% of Sample</th>
<th>1st Semester GPA</th>
<th>2nd Semester GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Athletes</td>
<td>33.8%</td>
<td>2.45</td>
<td>2.51</td>
</tr>
<tr>
<td>African American</td>
<td>43.8%</td>
<td>2.31</td>
<td>2.35</td>
</tr>
<tr>
<td>Caucasian American</td>
<td>47.9%</td>
<td>2.47</td>
<td>2.62</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>2.1%</td>
<td>2.64</td>
<td>2.24</td>
</tr>
<tr>
<td>Other</td>
<td>6.3%</td>
<td>3.20</td>
<td>2.82</td>
</tr>
</tbody>
</table>

Note: Other = American Indian, Asian or Pacific-Islander, Multiethnic or “other” ethnic origin, and preferred not to respond

Table 10 contains information on the race and GPA of non-athletes (N=94) for the first and second semester. The GPA of all male non-athletes (66.2%) for the first semester is 2.65. The GPA of all male non-athletes for the second semester is 2.58. The
GPA of male non-athletes indicated by "other" (10.6%) had the highest GPA of 2.82 for the first semester. Caucasian American male non-athletes (16.0%) had the highest GPA of 2.84 for the second semester. African-American male non-athletes (46.8%) had the lowest GPA for both the first semester, 2.55, and the second semester, 2.41.

Table 10

Race and GPA of Non athletes (N = 94)

<table>
<thead>
<tr>
<th>Race</th>
<th>% of Sample</th>
<th>1st Semester GPA</th>
<th>2nd Semester GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Non-Athletes</td>
<td>66.2%</td>
<td>2.65</td>
<td>2.58</td>
</tr>
<tr>
<td>African American</td>
<td>46.8%</td>
<td>2.55</td>
<td>2.41</td>
</tr>
<tr>
<td>Caucasian American</td>
<td>16.0%</td>
<td>2.78</td>
<td>2.84</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>26.6%</td>
<td>2.67</td>
<td>2.62</td>
</tr>
<tr>
<td>Other</td>
<td>10.6%</td>
<td>2.82</td>
<td>2.78</td>
</tr>
</tbody>
</table>

Note: Other = American Indian, Asian or Pacific-Islander, Multiethnic or "other" ethnic origin, and preferred not to respond

Research Question 1

Are motivation factors indicators of academic achievement/GPA?

The significance of relationships between academic motivation (study habits, intellectual interests, academic confidence, desire to finish college, attitude towards educators), social motivation (self-reliance, sociability, leadership), and first and second semester grade point average (GPA) was determined by the Pearson Correlation Coefficient (Pearson r). “The Pearson correlation coefficient (sometimes called the
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ATE</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SH</td>
<td>0.370**</td>
<td>1.00</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>DFC</td>
<td>0.449**</td>
<td>0.455**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td>II</td>
<td>0.373**</td>
<td>0.283**</td>
<td>0.224**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>AC</td>
<td>0.217**</td>
<td>0.515</td>
<td>0.423**</td>
<td>0.341**</td>
<td>0.091</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>L</td>
<td>0.107</td>
<td>0.377**</td>
<td>0.367**</td>
<td>0.413**</td>
<td>0.413**</td>
<td>0.426**</td>
<td>1.00</td>
<td></td>
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<tr>
<td>7</td>
<td>SR</td>
<td>0.079</td>
<td>0.229**</td>
<td>0.286**</td>
<td>0.177**</td>
<td>0.177**</td>
<td>0.468**</td>
<td>0.468**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>S</td>
<td>0.074*</td>
<td>0.298**</td>
<td>0.392**</td>
<td>0.026</td>
<td>-0.026</td>
<td>0.362**</td>
<td>0.362**</td>
<td>0.362**</td>
<td>1.00</td>
</tr>
<tr>
<td>9</td>
<td>GPA1</td>
<td>0.157</td>
<td>0.204**</td>
<td>0.115</td>
<td>0.141</td>
<td>0.141</td>
<td>0.066</td>
<td>0.066</td>
<td>0.066</td>
<td>1.00</td>
</tr>
<tr>
<td>10</td>
<td>GPA2</td>
<td>0.201*</td>
<td>0.231**</td>
<td>0.190*</td>
<td>0.151</td>
<td>0.151</td>
<td>0.190*</td>
<td>0.190*</td>
<td>0.190*</td>
<td>0.190*</td>
</tr>
</tbody>
</table>

Notes: ATE = attitude towards educators, SH = study habits, DFC = desire to finish college, II = intellectual intelligence, AC = academic confidence, L = leadership, SR = self-reliance, S = sociability, GPA = grade point average (range from 1.00 to 4.00), (Seven-Point Likert scale 1=Not At All True and 7=Completely True). *p = .05, **p = .01
Pearson Product-Moment Correlation Coefficient or simply the Pearson $r$) determines the strength of the linear relationship between two variables" (Cronk, 2004, p. 39). Results indicated significant correlations between the first semester GPA, and the motivation scales of study habits and leadership. There were significant correlations between second semester GPA, and the motivation scales of attitude towards educators, study habits, desire to finish college, and leadership. (See Table 11.)

First Semester Grade Point Average (GPA)

**Study Habits**

A Pearson $r$ was calculated for the relationship between study habits and first semester GPA. A weak positive correlation was found ($r(140) = .204, p < .05$), indicating that study habits has a positive effect on GPA, but the relationship is weak.

**Leadership**

A Pearson $r$ was calculated for the relationship between leadership and first semester GPA. A weak positive correlation was found ($r(140) = .176, p < .05$), indicating that leadership has a positive effect on GPA, but the relationship is weak.

Second Semester Grade Point Average (GPA)

**Attitude Towards Educators**

A Pearson $r$ was calculated for the relationship between attitude towards educators and second semester GPA. A weak positive correlation was found ($r(140) = .201, p < .05$), indicating that attitude towards educators has a positive effect on GPA, but the relationship is weak.
Study Habits

A Pearson $r$ was calculated for the relationship between study habits and second semester GPA. A weak positive correlation was found ($r(140) = .231, p < .01$), indicating that study habits has a positive effect on GPA, but the relationship is weak.

Desire to Finish College

A Pearson $r$ was calculated for the relationship between desire to finish college and second semester GPA. A weak positive correlation was found ($r(140) = .190, p < .05$), indicating that a desire to finish college has a positive effect on GPA, but the relationship is weak.

Leadership

A Pearson $r$ was calculated for the relationship between leadership and second semester GPA. A weak positive correlation was found ($r(140) = .203, p < .05$), indicating that leadership has a positive effect on GPA, but the relationship is weak.

Research Question 2

Is there a difference in motivation factor scores and GPA’s between male athletes and male non-athletes?

The difference in academic motivation scores (study habits, intellectual interests, academic confidence, desire to finish college, attitude towards educators), social motivation scores (self-reliance, sociability, leadership), and GPA’s between male athletes and male non-athletes was determined by the independent samples $t$-test. "The independent samples $t$ test compares the means of two samples" (Cronk, 2004, p. 56).
Intellectual Interests

Significant difference was found in the academic motivation scale questions of intellectual interest. An independent samples t test of intellectual interest survey questions comparing mean scores of male athletes and non-athletes found a significant difference between the means of the two groups \( t(140) = 5.126, p < .05 \). The mean of non-athletes was significantly higher \( (m = 24.22, sd = 6.45) \) than the mean of athletes \( (m = 18.50, sd = 5.96) \). The male athlete mean scores for intellectual interest questions ranged from 2.33 (Disagree) to 4.47 (Agreement is fairly strong). The male non-athlete

Table 12

Comparing Means of Academic Motivation – Intellectual Interests

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Mean</th>
<th>Athlete Mean</th>
<th>Non-athlete Mean</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intellectual Interest Scale</td>
<td>22.28</td>
<td>18.50</td>
<td>24.22</td>
<td></td>
</tr>
<tr>
<td>55. I get a great deal of personal satisfaction from reading.</td>
<td>3.75</td>
<td>2.93</td>
<td>4.17</td>
<td></td>
</tr>
<tr>
<td>112. Books have broadened may horizons and stimulated my imagination.</td>
<td>4.14</td>
<td>3.31</td>
<td>4.56</td>
<td>*</td>
</tr>
<tr>
<td>177. I like to spend some of my free time reading serious books and articles.</td>
<td>3.02</td>
<td>2.33</td>
<td>3.37</td>
<td>*</td>
</tr>
<tr>
<td>24. Books have never gotten me very excited.</td>
<td>3.33</td>
<td>2.45</td>
<td>3.78</td>
<td>*</td>
</tr>
<tr>
<td>94. I seldom go to a bookstore or shop online for serious books.</td>
<td>4.33</td>
<td>4.47</td>
<td>4.25</td>
<td></td>
</tr>
<tr>
<td>155. I get no enjoyment out of browsing for information in a library or online.</td>
<td>3.70</td>
<td>2.97</td>
<td>4.07</td>
<td>*</td>
</tr>
</tbody>
</table>

Note: Seven-Point Likert scale 1=Not At All True and 7=Completely True

*P value = < .05
mean for intellectual interest questions ranged from 3.37 (Agreement is weak) to 4.56 (Agreement is fairly strong). There was significant difference for a majority of intellectual interest survey items. “I get a great deal of personal satisfaction from reading.” The male athlete mean score was 2.93 (Disagree) and the male non-athlete mean score was 4.17 (Agreement is fairly strong). “Books have never gotten me very excited.” The male athlete mean score was 2.45 (Disagree) and the male non-athlete mean score was 3.78 (Agree). “I get no enjoyment out of browsing for information in a library or online.” The male athlete mean score was 2.97 (Agreement is weak) and the male non-athlete mean score was 4.07 (Agree). (See Table 12.)

The majority of male athletes and male non-athletes strongly disagreed and disagreed (Not at all true) with question #177, “I like to spend some of my free time reading serious books and articles,” with a combined score of 62%. Male athletes and male non-athletes were split between strongly disagree (not at all true) 52% and agree (completely true) 47% for question #24, “Books have never gotten me excited.” (See Table 13.)

Study Habits

An independent samples t test was calculated comparing the mean scores of male athletes and male non-athletes for the study habits survey questions. The mean of male non-athletes (m = 48.61, sd = 10.03) was not significantly different than the mean of male athletes (m = 46.58, sd = 10.82). The male athlete mean scores for study habits questions ranged from 3.56 (Agreement is weak) to 4.47 (Agreement is fairly strong). The male non-athlete mean scores for intellectual interest questions ranged from 3.37 (Agreement is weak) to 4.56 (Agreement is fairly strong). There
Table 13

Comparing Means of Academic Motivation Questions (in percentages) – Intellectual Interests (N=142, alpha = .659)

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>55. I get a great deal of personal satisfaction from reading.</td>
<td>14.8</td>
<td>13.8</td>
<td>15.5</td>
<td>21.8</td>
<td>16.2</td>
<td>9.2</td>
<td>9.2</td>
<td>3.75</td>
<td>2.93</td>
<td>4.17</td>
<td></td>
</tr>
<tr>
<td>112. Books have broadened my horizons and stimulated my imagination.</td>
<td>9.2</td>
<td>12.7</td>
<td>16.2</td>
<td>19.7</td>
<td>16.2</td>
<td>11.3</td>
<td>14.8</td>
<td>4.14</td>
<td>3.31</td>
<td>4.56</td>
<td></td>
</tr>
<tr>
<td>177. I like to spend some of my free time reading serious books and articles.</td>
<td>26.8</td>
<td>19.0</td>
<td>16.2</td>
<td>16.9</td>
<td>12.0</td>
<td>2.8</td>
<td>6.3</td>
<td>3.02</td>
<td>2.33</td>
<td>3.37</td>
<td></td>
</tr>
<tr>
<td>24. Books have never gotten me very excited.</td>
<td>26.1</td>
<td>13.4</td>
<td>13.4</td>
<td>19.7</td>
<td>11.3</td>
<td>7.7</td>
<td>8.5</td>
<td>3.33</td>
<td>2.45</td>
<td>3.78</td>
<td></td>
</tr>
<tr>
<td>94. I seldom go to a bookstore or shop online for serious books.</td>
<td>12.0</td>
<td>12.0</td>
<td>10.6</td>
<td>11.3</td>
<td>20.4</td>
<td>18.3</td>
<td>15.5</td>
<td>4.33</td>
<td>4.47</td>
<td>4.25</td>
<td></td>
</tr>
<tr>
<td>155. I get no enjoyment out of browsing for information in a library or online.</td>
<td>13.4</td>
<td>17.6</td>
<td>16.9</td>
<td>18.3</td>
<td>13.4</td>
<td>12.0</td>
<td>8.5</td>
<td>3.70</td>
<td>2.97</td>
<td>4.07</td>
<td></td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True
was a significant difference for one survey item, “When trying to study, I usually get bored and quit after a few minutes.” The male athlete mean score was 3.93 (Agreement is weak) and the male non-athlete mean score was 4.80 (Agreement is fairly strong). There was no significant difference for a majority of study habits survey questions. “I study hard for all my courses, even those I don’t like.” The male athlete mean score was 3.75 (Agreement is weak) and the male non-athlete mean score was 3.44 (Agreement is weak). “Studying is only a small part of my life, and I don’t take it very seriously.” The male athlete mean score was 4.87 (Agreement is fairly strong) and the male non-athlete mean score was 5.47 (Agreement is fairly strong). “When I am studying, I am able to keep my attention clearly focused on the material.” The male athlete mean score was 3.56 (Agreement is weak) and the male non-athlete mean score was 4.06 (Agreement is weak). (See Table 14.)

The majority of male athletes and male non-athletes strongly agreed and agreed (Completely true) with question #99, “Studying is only a small part of my life, and I don’t take it very seriously.” with a combined score of 71%. Male athletes and male non-athletes were split between strongly disagree (not at all true) 52% and agree (completely true) 49% for question #25, “I study all of the assigned readings in my courses.”(See Table 15.)

Desire to Finish College

An independent samples t test was calculated for desire to finish college survey questions comparing the mean scores of male athletes and male non-athletes. No significant difference was found ($t(140) = .742, p < .05$). The mean of male non-
Table 14

Comparing Means of Academic Motivation – Study Habits

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Habits Scale</td>
<td>47.92</td>
<td>46.58</td>
<td>48.61</td>
<td></td>
</tr>
<tr>
<td>25. I study all of the assigned readings in my courses.</td>
<td>4.45</td>
<td>4.18</td>
<td>4.58</td>
<td></td>
</tr>
<tr>
<td>60. I take very clear notes during class, and I review them carefully before a test.</td>
<td>4.76</td>
<td>4.68</td>
<td>4.67</td>
<td></td>
</tr>
<tr>
<td>89. When studying, I am able to keep my attention clearly focused on the material.</td>
<td>3.89</td>
<td>3.56</td>
<td>4.06</td>
<td></td>
</tr>
<tr>
<td>119. I study hard for all my courses, even those I don’t like.</td>
<td>3.59</td>
<td>3.75</td>
<td>3.44</td>
<td></td>
</tr>
<tr>
<td>146. I have developed some very effective study techniques.</td>
<td>3.96</td>
<td>4.06</td>
<td>3.91</td>
<td></td>
</tr>
<tr>
<td>172. I have developed a solid system of self-discipline, which helps me keep up with my school work.</td>
<td>4.75</td>
<td>4.77</td>
<td>4.74</td>
<td></td>
</tr>
<tr>
<td>43. I have great difficulty concentrating on school work.</td>
<td>4.23</td>
<td>4.79</td>
<td>4.43</td>
<td></td>
</tr>
<tr>
<td>67. I usually put off doing school assignments until it’s too late.</td>
<td>4.55</td>
<td>4.72</td>
<td>4.46</td>
<td></td>
</tr>
<tr>
<td>99. Studying is only a small part of my life, and I don’t take it very seriously.</td>
<td>5.27</td>
<td>4.87</td>
<td>5.47</td>
<td></td>
</tr>
<tr>
<td>111. My studying is very irregular and unpredictable.</td>
<td>4.07</td>
<td>4.14</td>
<td>4.04</td>
<td></td>
</tr>
<tr>
<td>133. When trying to study, I usually get bored and quit after a few minutes.</td>
<td>4.51</td>
<td>3.93</td>
<td>4.80 *</td>
<td></td>
</tr>
<tr>
<td>154. The notes I take during class are very rough and incomplete.</td>
<td>4.73</td>
<td>4.70</td>
<td>4.75</td>
<td></td>
</tr>
</tbody>
</table>

Note: Seven-Point Likert scale 1=Not At All True and 7=Completely True

*P value = < .05
Table 15

Comparing Means of Academic Motivation Questions (in percentages) – Study Habits (N=142, alpha = .828)

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Fairly Strong</th>
<th>5</th>
<th>6</th>
<th>Completely True</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Habits Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. I study all of the assigned readings in my courses.</td>
<td>4.2</td>
<td>4.9</td>
<td>12.7</td>
<td>27.5</td>
<td>26.8</td>
<td>18.3</td>
<td>5.6</td>
<td></td>
<td>4.45</td>
<td>4.18</td>
<td>4.58</td>
</tr>
<tr>
<td>60. I take very clear notes during class, and I review them carefully before a test.</td>
<td>2.1</td>
<td>7.0</td>
<td>14.8</td>
<td>16.9</td>
<td>28.2</td>
<td>18.3</td>
<td>12.7</td>
<td></td>
<td>4.76</td>
<td>4.68</td>
<td>4.67</td>
</tr>
<tr>
<td>89. When studying, I am able to keep my attention clearly focused on the material.</td>
<td>5.6</td>
<td>13.4</td>
<td>21.1</td>
<td>21.8</td>
<td>25.4</td>
<td>9.2</td>
<td>3.5</td>
<td></td>
<td>3.89</td>
<td>3.56</td>
<td>4.06</td>
</tr>
<tr>
<td>119. I study hard for all my courses, even those I don't like.</td>
<td>12.0</td>
<td>16.9</td>
<td>21.1</td>
<td>20.4</td>
<td>16.9</td>
<td>9.2</td>
<td>3.5</td>
<td></td>
<td>3.59</td>
<td>3.75</td>
<td>3.44</td>
</tr>
<tr>
<td>146. I have developed some very effective study techniques.</td>
<td>8.5</td>
<td>10.6</td>
<td>19.0</td>
<td>21.8</td>
<td>22.5</td>
<td>13.4</td>
<td>4.2</td>
<td></td>
<td>3.96</td>
<td>4.06</td>
<td>3.91</td>
</tr>
<tr>
<td>172. I have developed a solid system of self-discipline, which helps me keep up with my school work.</td>
<td>4.2</td>
<td>2.1</td>
<td>12.7</td>
<td>26.1</td>
<td>21.8</td>
<td>16.2</td>
<td>16.9</td>
<td></td>
<td>4.75</td>
<td>4.77</td>
<td>4.74</td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True
## Academic Motivation

<table>
<thead>
<tr>
<th>Study Habits Scale</th>
<th>Not At All True (1)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Fairly Strong (5)</th>
<th>6</th>
<th>Completely True (7)</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>43. I have great difficulty concentrating on school work.</td>
<td>7.0</td>
<td>10.6</td>
<td>19.0</td>
<td>15.5</td>
<td>19.7</td>
<td>19.7</td>
<td>8.5</td>
<td>4.23</td>
<td>4.79</td>
<td>4.43</td>
</tr>
<tr>
<td>67. I usually put off doing school assignments until it's too late.</td>
<td>4.9</td>
<td>9.9</td>
<td>10.6</td>
<td>18.3</td>
<td>23.9</td>
<td>20.4</td>
<td>12.0</td>
<td>4.55</td>
<td>4.72</td>
<td>4.46</td>
</tr>
<tr>
<td>99. Studying is only a small part of my life, and I don't take it very seriously.</td>
<td>4.2</td>
<td>12.7</td>
<td>12.0</td>
<td>19.7</td>
<td>25.7</td>
<td>26.1</td>
<td></td>
<td>5.27</td>
<td>4.87</td>
<td>5.47</td>
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<td>111. My studying is very irregular and unpredictable.</td>
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<td>21.1</td>
<td>16.9</td>
<td>12.0</td>
<td>19.7</td>
<td>8.5</td>
<td>4.07</td>
<td>4.14</td>
<td>4.04</td>
</tr>
<tr>
<td>133. When trying to study, I usually get bored and quit after a few minutes.</td>
<td>4.9</td>
<td>7.0</td>
<td>17.6</td>
<td>15.5</td>
<td>23.2</td>
<td>20.4</td>
<td>11.3</td>
<td>4.51</td>
<td>3.93</td>
<td>4.80</td>
</tr>
<tr>
<td>154. The notes I take during class are very rough and incomplete.</td>
<td>2.8</td>
<td>4.9</td>
<td>16.2</td>
<td>18.3</td>
<td>21.1</td>
<td>22.5</td>
<td>14.1</td>
<td>4.73</td>
<td>4.70</td>
<td>4.75</td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True
athletes ($m = 57.94, sd = 7.66$) was not significantly different from the mean of male athletes ($m = 56.83, sd = 9.83$). The male athlete mean scores for desire to finish college questions ranged from 2.97 (Agreement is weak) to 6.41 (Agree completely). The male non-athlete mean scores for desire to finish college questions ranged from 2.76 (Agreement is weak) to 6.65 (Agree completely). There was no significant difference for a majority of desire to finish college survey questions. "I am strongly dedicated to finishing college - no matter what obstacles get in my way." The male athlete mean score was 6.41 (Agree completely) and the male non-athlete mean score was 5.47 (Agreement is fairly strong) "finishing college - no matter what obstacles get in my way." The male athlete mean score was 6.41 (Agree completely) and the male non-athlete mean score was 5.47 (Agree is fairly strong). "I would readily leave college if I found a well-paying job." The male athlete mean score was 5.95 (Agreement is weak) and the male non-athlete mean score was 2.76 (Agreement is weak). "I expect to get a lot out of college." The male athlete mean score was 5.95 (Agreement is fairly strong) and the male non-athlete mean score was 6.48 (Agree completely). (See Table 16.)

The majority of male athletes and male non-athletes strongly agreed and agreed (Completely true) with questions #59, "I am strongly dedicated to finishing college – no matter what obstacles get in my way." with a combined score of 90%, question #144, "I am quite confident that my decision to go to college was right for me." with a combined score of 85%, question #90, "I expect to get a lot out of college." with a combined score of 84%, question #35, "Of all things I could do at this point in my life, going to college is definitely the most satisfying." with a
combined score of 76%, and question #47, "I have some serious concerns about my decision to come to college." with a combined score of 75%. (See Table 17.)

Table 16

Comparing Means of Academic Motivation – Desire to Finish College

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire to Finish College Scale</td>
<td>56.83</td>
<td>56.94</td>
<td>57.94</td>
<td></td>
</tr>
<tr>
<td>35. Of all the things I could do at this point in my life, going to college is</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>definitely the most satisfying.</td>
<td>6.12</td>
<td>6.02</td>
<td>6.18</td>
<td></td>
</tr>
<tr>
<td>59. I am strongly dedicated to finishing college - no matter what obstacles get</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in my way.</td>
<td>6.57</td>
<td>6.41</td>
<td>6.65</td>
<td></td>
</tr>
<tr>
<td>90. I expect to get a lot out of college.</td>
<td>6.30</td>
<td>5.95</td>
<td>6.48</td>
<td></td>
</tr>
<tr>
<td>122. The total college experience – including both the studying and the social</td>
<td>5.61</td>
<td>5.60</td>
<td>5.62</td>
<td></td>
</tr>
<tr>
<td>life - is very attractive to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>144. I am quite confident that my decision to go to college was right for me.</td>
<td>6.32</td>
<td>6.27</td>
<td>6.35</td>
<td></td>
</tr>
<tr>
<td>47. I have some serious concerns about my decision to come to college.</td>
<td>6.02</td>
<td>6.00</td>
<td>6.04</td>
<td></td>
</tr>
<tr>
<td>71. I can think of many things I would rather do than go to college.</td>
<td>5.54</td>
<td>5.31</td>
<td>5.65</td>
<td></td>
</tr>
<tr>
<td>108. I would readily leave college if I found a well-paying job.</td>
<td>5.16</td>
<td>2.97</td>
<td>2.76</td>
<td></td>
</tr>
<tr>
<td>130. I often wonder if a college education is really worth all the time, money,</td>
<td>5.01</td>
<td>5.31</td>
<td>4.68</td>
<td></td>
</tr>
<tr>
<td>and effort that I'm being asked to spend on it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>160. I dread the thought of going to school for several more years.</td>
<td>4.86</td>
<td>4.91</td>
<td>4.84</td>
<td></td>
</tr>
</tbody>
</table>

Note: Seven-Point Likert scale 1=Not At All True and 7=Completely True

*P value = < .05
Table 17

Comparing Means of Academic Motivation Questions (in percentages) – Desire to Finish College (N=142, alpha = .778)

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Completely True 7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire to Finish College Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>56.83</td>
<td>56.94</td>
<td>57.94</td>
</tr>
<tr>
<td>35. Of all the things I could do at this point in my life, going to college is definitely the most satisfying.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59. I am strongly dedicated to finishing college - no matter what obstacles get in my way.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.57</td>
<td>6.41</td>
<td>6.65</td>
</tr>
<tr>
<td>90. I expect to get a lot out of college.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.30</td>
<td>5.95</td>
<td>6.48</td>
</tr>
<tr>
<td>122. The total college experience – including both the studying and the social life - is very attractive to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.61</td>
<td>5.60</td>
<td>5.62</td>
</tr>
<tr>
<td>144. I am quite confident that my decision to go to college was right for me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.32</td>
<td>6.27</td>
<td>6.35</td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True

(Table Continues)
Academic Motivation

Desire to Finish College Scale

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Fairly Strong</th>
<th>5</th>
<th>6</th>
<th>Completely True</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>47. I have some serious concerns about my decision to come to college.</td>
<td>.7</td>
<td>1.9</td>
<td>4.9</td>
<td>7.0</td>
<td>9.9</td>
<td>25.4</td>
<td>50.7</td>
<td>6.02</td>
<td>6.00</td>
<td>6.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>71. I can think of many things I would rather do than go to college.</td>
<td>4.9</td>
<td>2.8</td>
<td>7.0</td>
<td>8.5</td>
<td>12.0</td>
<td>24.6</td>
<td>40.1</td>
<td>5.54</td>
<td>5.31</td>
<td>5.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>108. I would readily leave college if I found a well-paying job.</td>
<td>6.3</td>
<td>5.6</td>
<td>8.5</td>
<td>11.3</td>
<td>18.3</td>
<td>13.4</td>
<td>36.6</td>
<td>5.16</td>
<td>2.97</td>
<td>2.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>130. I often wonder if a college education is really worth all the time, money, and effort that I'm being asked to spend on it.</td>
<td>9.9</td>
<td>4.2</td>
<td>8.5</td>
<td>13.4</td>
<td>13.4</td>
<td>17.6</td>
<td>33.1</td>
<td>5.01</td>
<td>5.31</td>
<td>4.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>160. I dread the thought of going to school for several more years.</td>
<td>4.2</td>
<td>3.5</td>
<td>14.1</td>
<td>18.3</td>
<td>20.4</td>
<td>18.3</td>
<td>21.1</td>
<td>4.86</td>
<td>4.91</td>
<td>4.84</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True
Attitude Towards Educators

An independent samples t test was calculated for “attitude towards educators” questions comparing the mean scores of male athletes and male non-athletes. No significant difference was found (t(140) = -1.124, p < .05). The mean of male non-athletes (m = 49.57, sd = 10.25) was not significantly different from the mean of male athletes (m = 47.66, sd = 8.03). The male athlete mean scores for “attitude towards educators” questions ranged from 4.20 (Agreement is weak) to 5.60 (Agreement is fairly strong). The male non-athlete mean scores for “attitude towards educators” questions ranged from 4.54 (Agreement is weak) to 5.92 (Agreement is fairly strong).

There was no significant difference for a majority of attitude towards educators survey questions. “My teachers did a very poor job of explaining the purpose of our studies.” The male athlete mean score was 5.60 (Agreement is fairly strong) and the male non-athlete mean score was 5.92 (Agreement is fairly strong). “I resent the large amount of power that teachers have always had over me.” The male athlete mean score was 4.20 (Agreement is fairly strong) and the male non-athlete mean score was 4.64 (Agreement is fairly strong). “Most teachers have superior attitude, and I find that annoying.” The male athlete mean score was 4.24 (Agreement is fairly strong) and the male non-athlete mean score was 4.54 (Agreement is fairly strong). (See Table 18). The majority of male athletes and male non-athletes strongly agreed and agreed (Completely true) with question #33, “My teachers did a very poor job of explaining the purpose of our studies.” with a combined score of 69%. Male athletes and male non-athletes were split between strongly disagree (not at all true)
49% and agree (completely true) 50% for question #93, “Most teachers have a superior attitude that I find very annoying.” (See Table 19.)

Table 18

Comparing Means of Academic Motivation – Attitude Towards Educators

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Towards Educators Scale</td>
<td>48.92</td>
<td>47.66</td>
<td>49.57</td>
<td></td>
</tr>
<tr>
<td>23. Most of my teachers have been very caring and dedicated.</td>
<td>5.29</td>
<td>5.47</td>
<td>5.20</td>
<td></td>
</tr>
<tr>
<td>78. My teachers were very interesting and engaging, and they made the learning process quite enjoyable.</td>
<td>4.69</td>
<td>4.56</td>
<td>4.75</td>
<td></td>
</tr>
<tr>
<td>115. Most teachers do a very good job of explaining their objectives.</td>
<td>4.97</td>
<td>4.79</td>
<td>5.06</td>
<td></td>
</tr>
<tr>
<td>134. The teachers I had in school were very fair and objective in assigning grades.</td>
<td>4.68</td>
<td>4.68</td>
<td>4.68</td>
<td></td>
</tr>
<tr>
<td>162. I liked my teachers, and I feel they did a good job.</td>
<td>5.20</td>
<td>5.31</td>
<td>5.14</td>
<td></td>
</tr>
<tr>
<td>33. My teachers did a very poor job of explaining the purpose of our studies.</td>
<td>5.81</td>
<td>5.60</td>
<td>5.92</td>
<td></td>
</tr>
<tr>
<td>61. I resent the large amount of power that teachers have always had over me.</td>
<td>4.50</td>
<td>4.20</td>
<td>4.64</td>
<td></td>
</tr>
<tr>
<td>93. Most teachers have a superior attitude that I find very annoying.</td>
<td>4.44</td>
<td>4.25</td>
<td>4.54</td>
<td></td>
</tr>
<tr>
<td>123. Although school administrators may pretend to have their students' interest at heart, they really don't.</td>
<td>4.53</td>
<td>4.45</td>
<td>4.73</td>
<td></td>
</tr>
<tr>
<td>147. In my opinion, many teachers are more concerned about themselves than they are about their students.</td>
<td>4.78</td>
<td>4.62</td>
<td>4.85</td>
<td></td>
</tr>
</tbody>
</table>

Note: Seven-Point Likert scale 1=Not At All True and 7=Completely True

*P value = < .05
### Table 19

**Comparing Means of Academic Motivation Questions (in percentages) – Attitude Towards Educators (N=142, alpha = .823)**

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Towards Educators Scale</td>
<td>48.92</td>
<td>47.66</td>
<td>49.57</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Most of my teachers have been very caring and dedicated.</td>
<td>.7</td>
<td>1.4</td>
<td>11.3</td>
<td>14.1</td>
<td>20.4</td>
<td>31.0</td>
<td>21.1</td>
<td>5.29</td>
<td>5.47</td>
<td>5.20</td>
<td></td>
</tr>
<tr>
<td>78. My teachers were very interesting and engaging, and they made the learning process quite enjoyable.</td>
<td>3.5</td>
<td>5.6</td>
<td>12.0</td>
<td>21.8</td>
<td>24.6</td>
<td>19.0</td>
<td>13.4</td>
<td>4.69</td>
<td>4.56</td>
<td>4.75</td>
<td></td>
</tr>
<tr>
<td>115. Most teachers do a very good job of explaining their objectives.</td>
<td>1.4</td>
<td>1.4</td>
<td>9.2</td>
<td>24.6</td>
<td>28.9</td>
<td>19.0</td>
<td>15.5</td>
<td>4.97</td>
<td>4.79</td>
<td>5.06</td>
<td></td>
</tr>
<tr>
<td>134. The teachers I had in school were very fair and objective in assigning grades.</td>
<td>3.5</td>
<td>4.2</td>
<td>11.3</td>
<td>23.2</td>
<td>27.5</td>
<td>19.7</td>
<td>10.6</td>
<td>4.68</td>
<td>4.68</td>
<td>4.68</td>
<td></td>
</tr>
<tr>
<td>162. I liked my teachers, and I feel they did a good job.</td>
<td>2.1</td>
<td>1.4</td>
<td>8.5</td>
<td>12.7</td>
<td>27.5</td>
<td>33.1</td>
<td>14.8</td>
<td>5.20</td>
<td>5.31</td>
<td>5.14</td>
<td></td>
</tr>
<tr>
<td>33. My teachers did a very poor job of explaining the purpose of our studies.</td>
<td>.7</td>
<td>.7</td>
<td>7.7</td>
<td>7.0</td>
<td>14.1</td>
<td>30.3</td>
<td>39.4</td>
<td>5.81</td>
<td>5.60</td>
<td>5.92</td>
<td></td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True
<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Towards Educators Scale</td>
<td>7.0</td>
<td>8.5</td>
<td>14.1</td>
<td>21.8</td>
<td>12.7</td>
<td>18.3</td>
<td>17.6</td>
<td>4.50</td>
<td>4.20</td>
<td>4.64</td>
</tr>
<tr>
<td>61. I resent the large amount of power that teachers have always had over me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>93. Most teachers have a superior attitude that I find very annoying.</td>
<td>7.7</td>
<td>6.3</td>
<td>21.8</td>
<td>13.4</td>
<td>14.8</td>
<td>20.4</td>
<td>15.5</td>
<td>4.44</td>
<td>4.25</td>
<td>4.54</td>
</tr>
<tr>
<td>123. Although school administrators may pretend to have their students' interest at heart, they really don't.</td>
<td>4.2</td>
<td>7.0</td>
<td>19.7</td>
<td>16.9</td>
<td>19.0</td>
<td>18.3</td>
<td>14.8</td>
<td>4.53</td>
<td>4.45</td>
<td>4.73</td>
</tr>
<tr>
<td>147. In my opinion, many teachers are more concerned about themselves than they are about their students.</td>
<td>2.8</td>
<td>4.2</td>
<td>16.2</td>
<td>15.5</td>
<td>22.5</td>
<td>26.8</td>
<td>12.0</td>
<td>4.78</td>
<td>4.62</td>
<td>4.85</td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True
Academic Confidence

An independent samples \( t \) test was calculated for academic confidence survey questions comparing the mean scores of male athletes and male non-athletes. No significant difference was found (\( t(140) = -1.794, p < .05 \)). The mean of male non-athletes (\( m = 50.98, \ sd = 9.90 \)) was not significantly different from the mean of male athletes (\( m = 47.89, \ sd = 9.35 \)). The male athlete mean scores for academic confidence questions ranged from 3.81 (Agreement is weak) to 4.89 (Agreement is fairly strong). The male non-athlete mean scores for academic confidence questions ranged from 1.37 (Total disagreement) to 5.22 (Agreement is fairly strong). There was no significant difference for a majority of academic confidence survey questions.

"I have a good memory of the information that teachers present in class." The male athlete mean score was 3.81 (Agreement is weak) and the male non-athlete mean score was 4.61 (Agreement is fairly strong). "I am good at figuring out what material is most important for an exam and what is secondary." The male athlete mean score was 4.16 (Agreement is fairly strong) and the male non-athlete mean score was 1.37 (Agreement is weak). "I am able to grasp complicated ideas." The male athlete mean score was 4.77 (Agreement is fairly strong) and the male non-athlete mean score was 5.22 (Agreement is fairly strong). "When taking notes in class, I often get confused and can't keep up." The male athlete mean score was 4.89 (Agreement is fairly strong) and the male non-athlete mean score was 4.71 (Agreement is fairly strong). (See Table 20.)

The majority of male athletes and male non-athletes strongly agreed and agreed (Completely true) with question #135, "I am able to grasp complicated ideas,"
with a combined score of 68%. Male athletes and male non-athletes were split between strongly disagree (not at all true) 48% and agree (completely true) 51% for question #29, “Often I get so uptight about an exam that I can’t concentrate on studying.”(See Table 21.)

Table 20

Comparing Means of Academic Motivation – Academic Confidence

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Confidence Scale</td>
<td>49.94</td>
<td>47.89</td>
<td>50.98</td>
<td></td>
</tr>
<tr>
<td>40. I have a good memory of the information that teachers present in class.</td>
<td>4.34</td>
<td>3.81</td>
<td>4.61</td>
<td></td>
</tr>
<tr>
<td>73. When I need to, I can work quickly on an exam without getting uptight.</td>
<td>4.52</td>
<td>4.64</td>
<td>1.73</td>
<td></td>
</tr>
<tr>
<td>103. I am good at figuring out what material is most important for an exam and what is secondary.</td>
<td>4.30</td>
<td>4.16</td>
<td>1.37</td>
<td></td>
</tr>
<tr>
<td>135. I am able to grasp complicated ideas.</td>
<td>5.07</td>
<td>4.77</td>
<td>5.22</td>
<td></td>
</tr>
<tr>
<td>179. during an exam, I’m able to concentrate and keep my thoughts well organized</td>
<td>4.69</td>
<td>4.57</td>
<td>4.77</td>
<td></td>
</tr>
<tr>
<td>29. Often I get so uptight about an exam that I can’t concentrate on studying.</td>
<td>4.48</td>
<td>4.27</td>
<td>4.59</td>
<td></td>
</tr>
<tr>
<td>53. I often have a hard time trying to imagine the people and actions described in a novel.</td>
<td>4.81</td>
<td>4.22</td>
<td>5.11</td>
<td></td>
</tr>
<tr>
<td>84. My vocabulary is fairly limited, and I have a hard time reading textbooks.</td>
<td>4.92</td>
<td>4.56</td>
<td>5.11</td>
<td></td>
</tr>
<tr>
<td>121. I get so nervous during an exam that I tend to lose track of what I’m doing.</td>
<td>4.76</td>
<td>4.52</td>
<td>4.89</td>
<td></td>
</tr>
<tr>
<td>165. When taking notes in class, I often get confused and can't keep up.</td>
<td>4.77</td>
<td>4.89</td>
<td>4.71</td>
<td></td>
</tr>
</tbody>
</table>

Note: Seven-Point Likert scale 1=Not At All True and 7=Completely True
*P value = <.05
Table 21

Comparing Means of Academic Motivation Questions (in percentages) – Academic Confidence (N=142, alpha = .856)

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Fairly Strong</th>
<th>6</th>
<th>Completely True</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Confidence Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. I have a good memory of the information that teachers present in class.</td>
<td>4.9</td>
<td>9.9</td>
<td>14.8</td>
<td>21.1</td>
<td>22.5</td>
<td>19.0</td>
<td>7.7</td>
<td>4.34</td>
<td>3.81</td>
<td>4.61</td>
</tr>
<tr>
<td>73. When I need to, I can work quickly on an exam without getting uptight.</td>
<td>9.2</td>
<td>9.9</td>
<td>9.2</td>
<td>16.2</td>
<td>20.4</td>
<td>17.0</td>
<td>17.6</td>
<td>4.52</td>
<td>4.64</td>
<td>1.73</td>
</tr>
<tr>
<td>103. I am good at figuring out what material is most important for an exam and what is secondary.</td>
<td>5.6</td>
<td>9.2</td>
<td>14.1</td>
<td>19.7</td>
<td>29.6</td>
<td>15.5</td>
<td>16.3</td>
<td>4.30</td>
<td>4.16</td>
<td>1.37</td>
</tr>
<tr>
<td>135. I am able to grasp complicated ideas.</td>
<td>1.4</td>
<td>2.1</td>
<td>8.5</td>
<td>19.7</td>
<td>28.9</td>
<td>23.2</td>
<td>16.2</td>
<td>5.07</td>
<td>4.77</td>
<td>5.22</td>
</tr>
<tr>
<td>179. When taking notes in class, I often get confused and can't keep up.</td>
<td>4.2</td>
<td>4.2</td>
<td>12.7</td>
<td>21.8</td>
<td>24.6</td>
<td>18.3</td>
<td>14.1</td>
<td>4.69</td>
<td>4.57</td>
<td>4.77</td>
</tr>
<tr>
<td>29. Often I get so uptight about an exam that I can't concentrate on studying.</td>
<td>7.7</td>
<td>9.9</td>
<td>12.0</td>
<td>19.0</td>
<td>16.2</td>
<td>18.3</td>
<td>16.9</td>
<td>4.48</td>
<td>4.27</td>
<td>4.59</td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True

(Table Continues)
<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic Confidence Scale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>49.94</td>
<td>47.89</td>
<td>50.98</td>
</tr>
<tr>
<td>53. I often have a hard time trying to imagine the people and actions described in a novel.</td>
<td>4.2</td>
<td>11.3</td>
<td>14.1</td>
<td>16.2</td>
<td>16.2</td>
<td>27.5</td>
<td>4.81</td>
<td>4.22</td>
<td>5.11</td>
<td></td>
</tr>
<tr>
<td>84. My vocabulary is fairly limited, and I have a hard time reading textbooks.</td>
<td>2.1</td>
<td>7.0</td>
<td>11.3</td>
<td>19.7</td>
<td>16.2</td>
<td>22.5</td>
<td>21.1</td>
<td>4.92</td>
<td>4.56</td>
<td>5.11</td>
</tr>
<tr>
<td>121. I get so nervous during an exam that I tend to lose track of what I'm doing.</td>
<td>21.1</td>
<td>24.6</td>
<td>10.6</td>
<td>16.2</td>
<td>13.4</td>
<td>9.2</td>
<td>4.9</td>
<td>4.76</td>
<td>4.52</td>
<td>4.89</td>
</tr>
<tr>
<td>165. When taking notes in class, I often get confused and can't keep up.</td>
<td>4.2</td>
<td>4.9</td>
<td>12.7</td>
<td>17.6</td>
<td>23.2</td>
<td>22.5</td>
<td>14.8</td>
<td>4.77</td>
<td>4.89</td>
<td>4.71</td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True
Sociability

There was no significant difference found in the social motivation scale questions of sociability. An independent samples t test was calculated for sociability survey questions comparing the mean scores of male athletes and male non-athletes. No significant difference was found ($t(140) = .848, p < .05$). The mean of male non-athletes ($m = 40.11, sd = 6.74$) was not significantly different from the mean of male athletes ($m = 41.10, sd = 6.18$). The male athlete mean scores for sociability questions

Table 22

Comparing Means of Social Motivation – Sociability

<table>
<thead>
<tr>
<th>Social Motivation</th>
<th>Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociability Scale</td>
<td>40.45</td>
<td>41.10</td>
<td>40.11</td>
<td></td>
</tr>
<tr>
<td>50. I like to participate in large social gatherings.</td>
<td>4.60</td>
<td>5.29</td>
<td>4.25</td>
<td>*</td>
</tr>
<tr>
<td>85. I spend a lot of time with other people.</td>
<td>2.97</td>
<td>5.58</td>
<td>4.74</td>
<td>*</td>
</tr>
<tr>
<td>129. I tend to be adventurous and outgoing.</td>
<td>5.69</td>
<td>5.70</td>
<td>5.68</td>
<td></td>
</tr>
<tr>
<td>167. I enjoy activities that bring me into close contact with people.</td>
<td>5.45</td>
<td>5.43</td>
<td>5.46</td>
<td></td>
</tr>
<tr>
<td>36. I try to avoid long conversations with people.</td>
<td>5.11</td>
<td>4.89</td>
<td>5.22</td>
<td></td>
</tr>
<tr>
<td>77. I often don’t know what to say when I’m in a group of people, so I try to get away as soon as I can.</td>
<td>5.51</td>
<td>2.22</td>
<td>2.26</td>
<td></td>
</tr>
<tr>
<td>102. I find it very hard to get into the joking and casual conversation that goes on at social gatherings.</td>
<td>5.71</td>
<td>2.04</td>
<td>2.41</td>
<td></td>
</tr>
<tr>
<td>145. I avoid most types of social activities.</td>
<td>5.38</td>
<td>3.45</td>
<td>3.61</td>
<td></td>
</tr>
</tbody>
</table>

Note: Seven-Point Likert scale 1=Not At All True and 7= Completely True

*P value = < .05
ranged from 2.04 (Total disagreement) to 5.70 (Agreement is fairly strong). The male non-athlete mean scores for sociability questions ranged from 2.26 (Agreement is weak) to 5.68 (Agreement is fairly strong). There was significant difference for two survey items. "I like to participate in large social gatherings." The male athlete mean score was 5.29 (Agreement is fairly strong), and the male non-athlete mean score was 4.25 (Agreement is weak). "I spent a lot time with other people." The male athlete mean score was 5.58 (Agreement is fairly strong), and the male non-athlete mean score was 4.74 (Agreement is weak). There was no significant difference for a majority of sociability survey questions. (See Table 22.)

The majority of male athletes and male non-athletes strongly agreed and agreed (Completely true) with questions #102, "I find it very hard to get into the joking and causal conversation that goes on at parties." with a combined score of 69% and question # 77, "I often don’t know what to say when I’m in a group of people, so I try to get away as soon as I can." with a combined score of 61%. (See Table 23.)

Self-Reliance

An independent samples t test was calculated for self-reliance survey questions comparing the mean scores of male athletes and male non-athletes. No significant difference was found (t(140) = -1.878, p < .05). The mean of male non-athletes (m = 53.14, sd = 7.21) was not significantly different from the mean of male athletes (m = 50.77, sd = 6.98). The male athlete mean scores for self-reliance questions ranged from 2.93 (Agreement is weak) to 5.81 (Agreement is fairly strong). The male non-athlete mean scores for self-reliance questions ranged from 2.27 (Agreement is weak) to 5.88 (Agreement is fairly strong). There was no significant
Table 23

Comparing Means of Social Motivation Questions (in percentages) – Sociability (N=142, alpha = .602)

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociability Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40.45</td>
<td>41.10</td>
<td>40.11</td>
</tr>
<tr>
<td>50. I like to participate in large social gatherings.</td>
<td>12.7</td>
<td>9.2</td>
<td>5.6</td>
<td>12.0</td>
<td>21.1</td>
<td>16.9</td>
<td>22.5</td>
<td>4.60</td>
<td>5.29</td>
<td>4.25</td>
<td></td>
</tr>
<tr>
<td>85. I spend a lot of time with other people.</td>
<td>14.8</td>
<td>29.6</td>
<td>23.2</td>
<td>15.5</td>
<td>12.0</td>
<td>2.8</td>
<td>2.1</td>
<td>2.97</td>
<td>5.58</td>
<td>4.74</td>
<td></td>
</tr>
<tr>
<td>129. I tend to be adventurous and outgoing.</td>
<td>1.4</td>
<td>1.4</td>
<td>2.8</td>
<td>11.3</td>
<td>22.5</td>
<td>25.4</td>
<td>35.2</td>
<td>5.69</td>
<td>5.70</td>
<td>5.68</td>
<td></td>
</tr>
<tr>
<td>167. I enjoy activities that bring me into close contact with people.</td>
<td>2.1</td>
<td>2.1</td>
<td>4.9</td>
<td>14.8</td>
<td>18.3</td>
<td>30.3</td>
<td>27.5</td>
<td>5.45</td>
<td>5.43</td>
<td>5.46</td>
<td></td>
</tr>
<tr>
<td>36. I try to avoid long conversations with people.</td>
<td>5.6</td>
<td>3.5</td>
<td>9.9</td>
<td>14.1</td>
<td>15.5</td>
<td>24.6</td>
<td>26.8</td>
<td>5.11</td>
<td>4.89</td>
<td>5.22</td>
<td></td>
</tr>
<tr>
<td>77. I often don’t know what to say when I’m in a group of people, so I try to get away as soon as I can.</td>
<td>1.4</td>
<td>2.8</td>
<td>7.0</td>
<td>14.1</td>
<td>13.4</td>
<td>28.9</td>
<td>32.4</td>
<td>5.51</td>
<td>2.22</td>
<td>2.26</td>
<td></td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True

(Table Continues)
### Academic Motivation

<table>
<thead>
<tr>
<th>Sociability Scale</th>
<th>Not At All True</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>102. I find it very hard to get into the joking and causal conversation that goes on at parties.</td>
<td>2.8</td>
<td>2.8</td>
<td>7.0</td>
<td>7.7</td>
<td>9.9</td>
<td>26.8</td>
<td>43.0</td>
<td>5.71</td>
<td>2.04</td>
<td>2.41</td>
</tr>
<tr>
<td>145. I avoid most types of social activities.</td>
<td>2.8</td>
<td>2.8</td>
<td>7.0</td>
<td>13.4</td>
<td>14.1</td>
<td>33.8</td>
<td>26.1</td>
<td>5.38</td>
<td>3.45</td>
<td>3.61</td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True
Table 24

Comparing Means of Social Motivation – Self Reliance

<table>
<thead>
<tr>
<th>Social Motivation</th>
<th>Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self Reliance Scale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. I often rely on my own ideas when making a decision, and I’m prepared to</td>
<td>5.41</td>
<td>5.47</td>
<td>5.38</td>
<td></td>
</tr>
<tr>
<td>make an unpopular decision if necessary.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62. I have a lot of faith in my own reasoning, and I’m not discouraged when</td>
<td>5.74</td>
<td>5.72</td>
<td>5.75</td>
<td></td>
</tr>
<tr>
<td>someone else disagrees with my conclusions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92. I feel confident of my own opinions, and I’m willing to act on them.</td>
<td>5.85</td>
<td>5.81</td>
<td>5.88</td>
<td></td>
</tr>
<tr>
<td>120. I like to make my own decisions, and I have a lot of trust in my judgment.</td>
<td>5.81</td>
<td>5.72</td>
<td>5.86</td>
<td></td>
</tr>
<tr>
<td>157. I often take the initiative in solving my own problems.</td>
<td>5.61</td>
<td>5.37</td>
<td>5.73</td>
<td></td>
</tr>
<tr>
<td>45. I often get confused when trying to reach major decisions, and I seek a</td>
<td>3.65</td>
<td>3.45</td>
<td>3.61</td>
<td></td>
</tr>
<tr>
<td>lot of help with them.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>83. On controversial issues, my opinions are often strongly influenced by what</td>
<td>5.04</td>
<td>3.31</td>
<td>2.27</td>
<td></td>
</tr>
<tr>
<td>other people think.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>104. I don’t express unpopular opinions, even when something important is at</td>
<td>5.14</td>
<td>4.70</td>
<td>5.37</td>
<td></td>
</tr>
<tr>
<td>stake.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>132. I let my friends have too much influence on my life.</td>
<td>5.19</td>
<td>2.93</td>
<td>2.73</td>
<td></td>
</tr>
<tr>
<td>174. I often feel unsure of my opinions on important matters.</td>
<td>4.93</td>
<td>4.72</td>
<td>5.04</td>
<td></td>
</tr>
</tbody>
</table>

Note: Seven-Point Likert scale 1=Not At All True and 7=Completely True

*P value = < .05
difference for a majority of self-reliance survey questions. "I feel confident of my own opinions, and I’m willing to act on them." The male athlete mean score was 5.81 (Agreement is fairly strong), and the male non-athlete mean score was 5.88 (Agreement is fairly strong). "On controversial issues, my opinions are often strongly influenced by what other people think." The male athlete mean score was 3.31 (Agreement is weak) and the male non-athlete mean score was 2.27 (Total disagreement). "I let my friends influence my opinions on important matters." The male athlete mean score was 2.93 (Agreement is weak), and the male non-athlete mean score was 2.73 (Agreement is weak). (See Table 24.)

The majority of male athletes and male non-athletes strongly agreed and agreed (Completely true) with question #120, "I like to make my own decisions, and I have a lot of trust in my judgment," with a combined score of 68% and question #62 "I have a lot of faith in my own reasoning, and I’m not discouraged when someone else disagrees with my conclusions," with a combined score of 66%. (See Table 25.)

Leadership

An independent samples t test was calculated for leadership survey questions comparing the mean scores of male athletes and male non-athletes. No significant difference was found (t(140) = .014, p < .05). The mean of male non-athletes (m = 38.21, sd = 6.71) was not significantly different from the mean of male athletes (m = 38.22, sd = 6.05). The male athlete mean scores for leadership questions ranged from 2.52 (Agreement is weak) to 5.52 (Agreement is fairly strong). The male non-athlete mean scores for leadership questions ranged from 2.88 (Agreement is weak) to 5.64 (Agreement is fairly strong). There was no significant difference for a majority
### Table 25

**Comparing Means of Social Motivation Questions (in percentages) – Self Reliance (N=142, alpha = .698)**

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Fairly Strong</th>
<th>5</th>
<th>6</th>
<th>Completely True</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Reliance Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. I often rely on my own ideas when making a decision, and I'm prepared to make an unpopular decision if necessary.</td>
<td>2.1</td>
<td>2.8</td>
<td>5.6</td>
<td>10.6</td>
<td>26.8</td>
<td>23.9</td>
<td>28.2</td>
<td></td>
<td></td>
<td>5.41</td>
<td>5.47</td>
<td>5.38</td>
<td></td>
</tr>
<tr>
<td>62. I have a lot of faith in my own reasoning, and I'm not discouraged when someone else disagrees with my conclusions.</td>
<td>.7</td>
<td>1.4</td>
<td>4.2</td>
<td>8.5</td>
<td>19.0</td>
<td>33.8</td>
<td>32.4</td>
<td></td>
<td></td>
<td>5.74</td>
<td>5.72</td>
<td>5.75</td>
<td></td>
</tr>
<tr>
<td>92. I feel confident of my own opinions, and I'm willing to act on them.</td>
<td>2.8</td>
<td>5.6</td>
<td>27.5</td>
<td>31.0</td>
<td>33.1</td>
<td></td>
<td></td>
<td>5.85</td>
<td>5.81</td>
<td>5.88</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>120. I like to make my own decisions, and I have a lot of trust in my judgment.</td>
<td>.7</td>
<td>3.5</td>
<td>8.5</td>
<td>19.0</td>
<td>36.6</td>
<td>31.7</td>
<td></td>
<td>5.81</td>
<td>5.72</td>
<td>5.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>157. I often take the initiative in solving my own problems.</td>
<td>.7</td>
<td>1.4</td>
<td>2.8</td>
<td>12.7</td>
<td>24.6</td>
<td>28.9</td>
<td>28.9</td>
<td></td>
<td>5.61</td>
<td>5.37</td>
<td>5.73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1 = Not At All True and 7 = Completely True
### Academic Motivation

#### Self Reliance Scale

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>45. I often get confused when trying to reach major decisions, and I seek a lot of help with them.</td>
<td>7.7</td>
<td>22.5</td>
<td>23.2</td>
<td>19.7</td>
<td>9.9</td>
<td>12.7</td>
<td>4.2</td>
<td>3.65</td>
<td>3.45</td>
<td>3.61</td>
</tr>
<tr>
<td>83. On controversial issues, my opinions are often strongly influenced by what other people think.</td>
<td>1.4</td>
<td>1.4</td>
<td>14.1</td>
<td>22.5</td>
<td>19.0</td>
<td>17.6</td>
<td>23.9</td>
<td>5.04</td>
<td>3.31</td>
<td>2.27</td>
</tr>
<tr>
<td>104. I don’t express unpopular opinions, even when something important is at stake.</td>
<td>2.8</td>
<td>3.5</td>
<td>6.3</td>
<td>21.1</td>
<td>16.9</td>
<td>28.2</td>
<td>21.1</td>
<td>5.14</td>
<td>4.70</td>
<td>5.37</td>
</tr>
<tr>
<td>132. I let my friends have too much influence on my life.</td>
<td>1.41</td>
<td>3.5</td>
<td>7.0</td>
<td>21.1</td>
<td>23.9</td>
<td>25.4</td>
<td>19.7</td>
<td>5.19</td>
<td>2.93</td>
<td>2.73</td>
</tr>
<tr>
<td>174. I often feel unsure of my opinions on important matters.</td>
<td>2.8</td>
<td>4.2</td>
<td>14.1</td>
<td>14.1</td>
<td>21.8</td>
<td>26.1</td>
<td>16.9</td>
<td>4.93</td>
<td>4.72</td>
<td>5.04</td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True
of leadership survey questions. "Other people don’t think of me as a leader.” The male athlete mean score was 2.52 (Agreement is weak) and the male non-athlete mean score was 2.88 (Agreement is weak). "On those occasions when I’ve tried to lead other people, the outcomes have been disappointing.” The male athlete mean score was 5.52 (Agreement is fairly strong), and the male non-athlete mean score was 5.64 (Agreement is fairly strong).

Table 26

Comparing Means of Social Motivation – Leadership

<table>
<thead>
<tr>
<th>Social Motivation</th>
<th>Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership Scale</td>
<td>38.21</td>
<td>38.22</td>
<td>38.21</td>
<td></td>
</tr>
<tr>
<td>37. Most people have a lot of trust in my judgment and respect for my opinion.</td>
<td>5.49</td>
<td>5.32</td>
<td>5.54</td>
<td></td>
</tr>
<tr>
<td>79. Over the years, I have frequently been selected as a spokesperson or group leader.</td>
<td>4.44</td>
<td>4.50</td>
<td>4.41</td>
<td></td>
</tr>
<tr>
<td>117. Many people consider me an effective leader, and they look to me for direction.</td>
<td>4.73</td>
<td>4.83</td>
<td>4.69</td>
<td></td>
</tr>
<tr>
<td>143. When I’m doing something with a group of people, they often turn to me as the group’s natural leader.</td>
<td>4.55</td>
<td>4.79</td>
<td>4.43</td>
<td></td>
</tr>
<tr>
<td>52. Other people don’t think of me as a leader.</td>
<td>2.76</td>
<td>2.52</td>
<td>2.88</td>
<td></td>
</tr>
<tr>
<td>96. Most people either avoid me or take me for granted.</td>
<td>5.36</td>
<td>5.52</td>
<td>5.28</td>
<td></td>
</tr>
<tr>
<td>127. On those occasions when I’ve tried to lead other people, the outcomes have been disappointing.</td>
<td>5.60</td>
<td>5.52</td>
<td>5.64</td>
<td></td>
</tr>
<tr>
<td>163. People show little regard for my views, and they hardly ever seek my advice.</td>
<td>5.25</td>
<td>5.14</td>
<td>5.30</td>
<td></td>
</tr>
</tbody>
</table>

Note: Seven-Point Likert scale 1=Not At All True and 7=Completely True
*P value = < .05
Table 27

Comparing Means of Academic Motivation Questions (in percentages) – Leadership (N=142, alpha = .626)

<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Fairly Strong</th>
<th>5</th>
<th>6</th>
<th>Completely True</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>37. Most people have a lot of trust in my judgment and respect for my opinion.</td>
<td>.7</td>
<td>2.8</td>
<td>2.1</td>
<td>15.5</td>
<td>23.3</td>
<td>31.0</td>
<td>24.6</td>
<td>5.49</td>
<td>5.32</td>
<td>5.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>79. Over the years, I have frequently been selected as a spokesperson or group leader.</td>
<td>9.2</td>
<td>12.7</td>
<td>10.6</td>
<td>14.1</td>
<td>16.9</td>
<td>19.0</td>
<td>17.6</td>
<td>4.44</td>
<td>4.50</td>
<td>4.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>117. Many people consider me an effective leader, and they look to me for direction.</td>
<td>4.2</td>
<td>5.6</td>
<td>13.4</td>
<td>20.4</td>
<td>20.4</td>
<td>16.9</td>
<td>19.0</td>
<td>4.73</td>
<td>4.83</td>
<td>4.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>143. When I’m doing something with a group of people they often turn to me as the group’s natural leader.</td>
<td>2.1</td>
<td>9.9</td>
<td>15.5</td>
<td>19.0</td>
<td>20.4</td>
<td>22.5</td>
<td>10.6</td>
<td>4.55</td>
<td>4.79</td>
<td>4.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52. Other people don’t think of me as a leader.</td>
<td>24.6</td>
<td>26.1</td>
<td>19.7</td>
<td>14.8</td>
<td>9.2</td>
<td>4.2</td>
<td>1.4</td>
<td>2.76</td>
<td>2.52</td>
<td>2.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>96. Most people either avoid me or take me for granted.</td>
<td>2.8</td>
<td>4.2</td>
<td>4.2</td>
<td>13.4</td>
<td>21.8</td>
<td>24.6</td>
<td>28.9</td>
<td>5.36</td>
<td>5.52</td>
<td>5.28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True

(Table Continues)
<table>
<thead>
<tr>
<th>Academic Motivation</th>
<th>Not At All True</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Fairly Strong</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Sample Mean</th>
<th>Athlete Mean</th>
<th>Non-Athlete Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>127. On those occasions when I've tried to lead other people, the outcomes have been disappointing.</td>
<td>.7</td>
<td>.70</td>
<td>10.6</td>
<td>21.8</td>
<td>31.7</td>
<td>28.2</td>
<td>5.60</td>
<td>5.52</td>
<td>5.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>163. People show little regard for my views, and they hardly ever seek my advice.</td>
<td>.7</td>
<td>2.8</td>
<td>8.5</td>
<td>14.8</td>
<td>24.6</td>
<td>28.9</td>
<td>19.7</td>
<td>5.25</td>
<td>5.14</td>
<td>5.30</td>
<td></td>
</tr>
</tbody>
</table>

Note: seven-point Likert scale 1=Not At All True and 7=Completely True
The majority of male athletes and male non-athletes strongly agreed and agreed (Completely true) with question #127, “On those occasions when I’ve tried to lead other people, the outcomes have been disappointing.” with a combined score of 59% and question #37 “Most people have a lot of trust in my judgment and respect for my opinion.” with a combined score of 55%. The majority of male athletes and male non-athletes strongly disagreed and disagreed (Not at all true) with question #52, “Other people don’t think of me as a leader.” (See Table 27.)

First Semester Grade Point Average (GPA)

An independent samples t test was calculated for first semester grade point average (GPA) comparing the mean scores of male athletes and male non-athletes. No significant difference was found ($t(140) = -1.850$, $p < .05$). The mean of male non-athletes ($m = 2.65$, $sd = .65$) was not significantly different from the mean of male athletes ($m = 2.45$, $sd = .49$).

Second Semester Grade Point Average (GPA)

An independent samples t test was calculated for second semester grade point average (GPA) comparing the mean scores of male athletes and male non-athletes. No significant difference was found ($t(140) = -.605$, $p < .05$). The mean of male non-athletes ($m = 2.57$, $sd = .67$) was not significantly different from the mean of male athletes ($m = 2.51$, $sd = .50$).
Hypothesis 1

Motivational factor scores cannot indicate academic achievement grade point average (GPA).

The significance of relationships between academic motivation (study habits, intellectual interests, academic confidence, desire to finish college, attitude towards educators), social motivation (self-reliance, sociability, leadership), and first and second semester grade point average (GPA) of male athletes and male non-athletes was determined by the Pearson Correlation Coefficient (Pearson r).

The correlation matrix revealed that academic motivation had three scale items (attitude towards educators, study habits, and desire to finish college) that significantly correlated with GPA; and social motivation had one scale item (leadership) that significantly correlated with GPA of male athletes and non-athletes. (See Table 11.)

Attitude Towards Educators

A Pearson r was calculated for the relationship between attitude towards educators and second semester GPA. A weak positive correlation was found ($r(140) = .201$, $p < .05$), indicating that attitude towards educators has a positive effect on GPA, but the relationship is weak.

Study Habits

A Pearson r was calculated for the relationship between study habits and first semester GPA. A weak positive correlation was found ($r(140) = .204$, $p < .05$), indicating that study habits have a positive effect on GPA, but the relationship is weak.
A Pearson $r$ was calculated for the relationship between study habits and second semester GPA. A weak positive correlation was found ($r(140) = .231$, $p < .01$), indicating that study habits have a positive effect on GPA, but the relationship is weak.

**Desire to Finish College**

A Pearson $r$ was calculated for the relationship between desire to finish college and second semester GPA. A weak positive correlation was found ($r(140) = .190$, $p < .05$), indicating that desire to finish college has a positive effect on GPA, but the relationship is weak.

**Leadership**

A Pearson $r$ was calculated for the relationship between leadership and first semester GPA. A weak positive correlation was found ($r(140) = .204$, $p < .05$), indicating that leadership has a positive effect on GPA, but the relationship is weak.

A Pearson $r$ was calculated for the relationship between leadership and second semester GPA. A weak positive correlation was found ($r(140) = .203$, $p < .05$), indicating that leadership has a positive effect on GPA, but the relationship is weak.

**Hypothesis 2**

There is no difference in motivation factor scores between UNI male student-athletes and male non-athletes by race and sport.

The difference in motivation factor scores between UNI male student-athletes and male non-athletes by race and sport was determined by the one-way analysis of variance (ANOVA) and the Tukey HSD (honesty significant difference).
"ANOVA is a procedure that determines that proportion of variability attributed to each of several components. The one-way ANOVA compares the means of two or more groups of subjects that vary on a single independent variable (thus, the one-way designation)” (Cronk, 2004, p. 62). Tukey HSD determined the nature of differences between race and sport of male athletes and male non-athletes. The Tukey HSD is a procedure that tests for significant differences between groups when the factor you examining has many levels (George & Mallery, 2003, p. 300). A significant difference in the race of male athletes and male non-athletes was found in the academic motivation scales of intellectual interest, and attitude towards educators. A significant difference was also found in the social motivation scale of self-reliance. (See Table 28.)

**Male Athletes and Male Non-athletes by Race**

**Attitude Towards Educators**

A one-way ANOVA was computed comparing attitude towards educators of male athletes and male non-athletes by race. A significant difference was found \( F(3, 138) = 2.92, p < .05 \). Tukey’s HSD was used to determine the nature of the differences between the race of male athletes and male non-athletes. This analysis revealed that African Americans scored lower \( (m = 46.86, sd = 9.87) \) than Hispanic Americans \( (m = 53.07, sd = 8.49) \). Caucasian Americans \( (m = 46.97, sd = 8.49) \) and “other” \( (m = 50.84, sd = 8.76) \) were not significantly different from either of the other three racial groups.
Table 28

Analysis of Variance (ANOVA) - Race

<table>
<thead>
<tr>
<th>Academic Motivation:</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Towards Educators</td>
<td>2.92</td>
<td>.036</td>
</tr>
<tr>
<td>Study Habits</td>
<td>.915</td>
<td>.435</td>
</tr>
<tr>
<td>Desire to Finish College</td>
<td>.636</td>
<td>.593</td>
</tr>
<tr>
<td>Intellectual Interest</td>
<td>4.83</td>
<td>.003</td>
</tr>
<tr>
<td>Academic Confidence</td>
<td>.708</td>
<td>.549</td>
</tr>
</tbody>
</table>

Social Motivation:

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>2.45</td>
<td>.066</td>
</tr>
<tr>
<td>Self-Reliance</td>
<td>3.70</td>
<td>.013</td>
</tr>
<tr>
<td>Sociability</td>
<td>.949</td>
<td>.419</td>
</tr>
</tbody>
</table>

Intellectual Interests

A one-way ANOVA was computed comparing intellectual interests of male athletes and male non-athletes by race. A significant difference was found (F(3, 138) = 4.83, p < .05). Tukey’s HSD was used to determine the nature of the differences between the race of male athletes and male non-athletes. This analysis revealed that African Americans (m = 21.89, sd = 6.74) and Caucasian Americans (m = 19.84, sd = 6.73) scored lower than Hispanic Americans (m = 25.91, sd = 5.96). “Others” (m =
24.15, sd = 6.32) were not significantly different from either of the other three racial groups.

**Self-Reliance**

A one-way ANOVA was computed comparing self-reliance of male athletes and male non-athletes by race. A significant difference was found (F(3, 138) = 3.70, p < 05). Tukey’s HSD was used to determine the nature of the differences between the race of male athletes and male non-athletes. This analysis revealed that Caucasian Americans (m = 49.78, sd = 6.78) scored lower than African Americans (m = 54.16, sd = 6.19). Hispanic Americans (m = 52.73, sd = 9.22) and “Others” (m = 49.92, sd = 6.33) were not significantly different from either of the other three racial groups.

**Male Athletes and Male Non-athletes by Sport**

Significant difference of male athletes and male non-athletes by sport was found in the academic motivation scale of intellectual interest. Significant difference was also found in the social motivation scale of self-reliance. (See Table 29.)

**Intellectual Interests**

A one-way ANOVA was computed comparing intellectual interests of male athletes and male non-athletes by sport. A significant difference was found (F(3, 135) = 6.54, p < 05). Tukey’s HSD was used to determine the nature of the differences between male athlete and male non-athlete by sport. This analysis revealed that football athletes (m = 17.37, sd = 4.98) scored lower than male non-athletes (m = 24.22, sd = 6.45). Basketball athletes (m = 15.00, sd = 4.69), wrestling athletes (m = 23.25, sd = 4.69), baseball athletes (m = 17.00, sd = 5.56), track athletes
Table 29

*Analysis of Variance (ANOVA) - Sport*

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Motivation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude Towards Educators</td>
<td>1.24</td>
<td>.285</td>
</tr>
<tr>
<td>Study Habits</td>
<td>1.27</td>
<td>2.73</td>
</tr>
<tr>
<td>Desire to Finish College</td>
<td>1.00</td>
<td>.425</td>
</tr>
<tr>
<td>Intellectual Interest</td>
<td>6.54</td>
<td>.000</td>
</tr>
<tr>
<td>Academic Confidence</td>
<td>1.54</td>
<td>.857</td>
</tr>
<tr>
<td>Social Motivation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>.431</td>
<td>.857</td>
</tr>
<tr>
<td>Self-Reliance</td>
<td>2.17</td>
<td>.049</td>
</tr>
<tr>
<td>Sociability</td>
<td>1.93</td>
<td>.080</td>
</tr>
</tbody>
</table>

(m = 26.33, sd = 8.50), and golf athletes (m = 24.50, sd = .70) were not significantly different from the other seven groups.

**Self-Reliance**

A one-way ANOVA was computed comparing self-reliance of male athletes and male non-athletes by sport. A significant difference was found (F(3, 135) = 2.17, p < .05). Tukey’s HSD was used to determine the nature of the differences between male athletes and male non-athletes by sport. This analysis revealed that baseball athletes (m = 39.66, sd = 8.02) scored lower than non-athletes (m = 53.14, sd = 7.21).
Football athletes (m = 51.18, sd = 6.50), basketball athletes (m = 55.00, sd = 6.87), wrestling athletes (m = 50.00, sd = 4.54), track athletes (m = 53.00, sd = 7.00), and golf athletes (m = 50.50, sd = 9.19), were not significantly different from the other seven groups.

Summary of Chapter 4

The analyses utilized in this chapter determined if a correlation exits between academic motivation and social motivation scores and academic achievement/GPA of male athletes and non-athletes by race and sport.

Table 30

Analysis of Variance (ANOVA) Results – Significance by Race & Sport

<table>
<thead>
<tr>
<th>Scale</th>
<th>Race/Sport</th>
<th>F-value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Motivation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude Towards Educators</td>
<td>RACE</td>
<td>2.92</td>
<td>YES</td>
</tr>
<tr>
<td>Intellectual Interest</td>
<td>RACE</td>
<td>4.83</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>SPORT</td>
<td>6.54</td>
<td>YES</td>
</tr>
<tr>
<td>Social Motivation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Reliance</td>
<td>RACE</td>
<td>3.70</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>SPORT</td>
<td>2.17</td>
<td>YES</td>
</tr>
</tbody>
</table>

Significant difference by race of male athletes and non-athletes was found in the academic motivation scales of intellectual interests (F(3, 138) = 4.83, p < 05) and attitude towards educators (F(3, 138) = 2.92, p < 05). Significant difference by race of
male athletes and non-athletes was found in the social motivation scale of self-reliance (F(3, 138) = 3.70, p < 05). Significant difference by sport of male athletes and male non-athletes was found in the academic motivation scale of intellectual interests (F(3, 135) = 6.54, p < 05) and the social motivation scale of self-reliance (F(3, 135) = 2.17, p < 05). (See Table 30.) Discussion of conclusions, implications, and recommendations for future research are presented in Chapter 5.
CHAPTER 5
DISCUSSION AND CONCLUSIONS

Introduction

The results of methods used to investigate the non-cognitive motivation factors as indicators of academic achievement of male athletes and male non-athletes as measured by a secondary data analysis of the College Student Inventory (CSI) from Fall 2003 to Fall 2005 are discussed in this chapter. This chapter is presented in four sections:

(1) introduction, (2) discussion of conclusions, (3) implications, and
(4) recommendations for future research.

Precisely, this study attempted to accomplish the following:

1. To understand the relationship between motivation and academic achievement of male student-athletes and male non-athletes at the University of Northern Iowa (UNI) by race and sport.

2. To investigate the viability of non-cognitive motivation factors of the Noel-Levitz College Student Inventory (CSI).

This study assessed the motivation factors as related to the academic achievement of male student-athletes and male non-athletes as measured by the CSI.

More specifically, this study addressed the following questions:

1. Are motivation factors indicators of academic achievement/grade point average (GPA)?

2. Is there a difference in motivation factor scores and GPA's between male athletes and male non-athletes?
It is hypothesized that:

1. Motivation factor scores cannot indicate academic achievement (GPA).
2. There is no difference in motivation factor scores between male student-athletes and male non-athletes at UNI by race and sport.

Five kinds of statistical tests were generated: (1) Cronbach’s alpha, (2) descriptive statistics, (3) t-tests, (4) correlation, and (5) analysis of variance (ANOVA). Cronbach’s Alpha was used to assess the reliability of the academic motivation and social motivation scales for this study. Descriptive statistical analysis was used to determine the sample characteristics, frequencies, and percentages of athletes and non-athletes. The t-test was used to get GPA basic data means for male athletes, male non-athletes, race, and sport. The independent t-test was used to test for a difference between the means of athletes and non-athletes. Comparisons for significance of first and second semester GPA, CSI motivation scores (academic motivation and social motivation), race, and sport were conducted using correlation analysis. Comparisons included the first and second semester GPA of student-athletes and non-athletes. The difference in motivation scores between UNI male student-athletes and male non-athletes by race and sport was determined by the one-way analysis of variance (ANOVA).

Discussion and Conclusions

The two research questions and two hypotheses were answered by analyzing male athlete and male non-athlete responses to the College Student Inventory (CSI) survey, which identifies specific motivation variables that are most closely related to
persistence and academic success in college. The CSI uses a seven-point likert scale
(1 = Not At All True and 7 = Completely True).

Descriptive Data

Descriptive statistical analysis was used to determine the sample
characteristics, frequencies, percentages, and demographic information for the sample
N=142 of male athletes and male non-athletes. The majority of the sample was non-
athletes (66.2%), 17-18 years of age (55.6%), and African-American (45.8%).
Football (22.5%) was the highest represented sport in the sample.

The GPA of all athletes, 33.8% (N=48), for the first semester was 2.45. The
GPA of all athletes for the second semester was 2.51. The GPA of athletes indicated
by “other” (6.3%) had the highest GPA of 3.20 for the first semester and 2.82 for the
second semester. African American athletes (43.8%) had the lowest first semester
GPA of 2.31 and Hispanic American athletes (6.3%) had the lowest second semester
GPA of 2.82.

The GPA of all male non-athletes 66.2%, (N=94) for the first semester was
2.65. The GPA of all male non-athletes for the second semester was 2.58. The GPA
of male non-athletes indicated by “other” (10.6%) had the highest GPA of 2.82 for
the first semester. Caucasian American male non-athletes (16.0%) had the highest
GPA of 2.84 for the second semester. African-American male non-athletes (46.8%)
had the lowest GPA for both the first semester, 2.55, and the second semester, 2.41.
Findings

The findings of this study suggest that:

- The College Student Inventory (CSI) academic motivation and social motivation scales were not indicators of academic achievement/GPA.

- There is a difference in motivation factor scores and GPA's between male athletes and non-athletes.

- The null hypothesis that motivation factor scores (academic motivation and social motivation), cannot indicate academic achievement / (GPA) is retained.

- The null hypothesis that there is no difference in motivational factor scores between male student-athletes and male non-athletes at UNI by race and, sport is rejected.

- Male non-athletes are more likely to enjoy classroom discussions and feel comfortable with the high level of intellectual activity that often occurs in the college classroom than male athletes.

- Caucasian males and Hispanic males may have a more positive attitude towards educators than African American males and this may affect their academic achievement.

- African American males may have a greater capacity to make their own decisions and carry through with them, than Caucasian males.
Male non-athletes are more likely to enjoy classroom discussions and feel comfortable with the high level of intellectual activity that often occurs in the college classroom than male football athletes.

Male non-athletes may have a greater capacity to make their own decisions and carry through with them, than male baseball athletes.

Summary of the Findings

The three primary findings to emerge from this study are summarized. First, the results of the Pearson \( r \) that tested the existence of a linear relationship of motivation factors and GPA indicated that four motivation factors (attitude towards educators, study habits, desire to finish college, and leadership) did not significantly correlate with GPA. Second, the results of the independent samples \( t \) test that measured the difference between the mean scores of athletes and non-athletes indicated one motivation factor, intellectual interest, had a difference in mean scores. Third, the results of the analysis of variance (ANOVA) that measured the difference in motivation factor scores between UNI male student-athletes and male non-athletes by race and sport found significance in intellectual interests, attitude towards educators, and self-reliance.

Explanation of Pearson \( r \) as Noted in Literature

The results of the Pearson \( r \) that tested the existence of a linear relationship of motivation factors and GPA indicated that four motivation factors (attitude towards educators, study habits, desire to finish college, and leadership) did not significantly correlate with GPA. (See Table 11.) The results of this analysis indicated that the CSI academic motivation scale and social motivation scale are weak indicators of
academic achievement/GPA. These findings may be due to the fact that all CSI motivation scales (academic motivation, social motivation, general coping skills, receptivity to support services, and initial impression) are needed to assess the CSI viability to indicate student academic achievement/GPA. Harris (1999) conducted a study investigating the extent to which selected CSI motivation factors predict at-risk first time freshman academic success and persistence. Results of the study concluded, “that overall, the CSI appears to be an acceptable instrument for more precise identification of at-risk students who may be in need of additional support services beyond the freshman year” (p. 85).

**Explanation of Independent Samples t test as Noted in Literature**

The literature indicated that the independent samples t test had significant results in explaining the mean scores for academic and social motivation.

**Mean Scores**

The results of the independent samples t test that measured the difference between the mean scores of athletes and non-athletes indicated one motivation factor, intellectual interests, had a difference in mean scores. The t test indicated a difference in the mean score for male athletes and male non-athletes (t (140) = 5.126, p < .05). The non-athlete mean score (m = 24.22, sd = 6.45) was significantly higher than the athlete mean score (m = 18.50, sd = 5.96). According to Noel-Levitz (2006), “Students with high scores are likely to enjoy classroom discussion and feel comfortable with the high level of intellectual activity that often occurs in the college classroom” (p. 17-B). Therefore, male non-athletes were more comfortable participating in classroom discussions and activities than male athletes. Morrison
(1999) writes, "the scores in this section relate to how much the students enjoy the actual learning process and associated activities of reading and discussing serious ideas. Although professors do not naively assume that students engendered the same enthusiasm toward learning that they themselves engage in, they might not realize that students in developmental programs may exhibit lower levels of intellectual interests than most college freshmen bring to the classroom" (p. 13).

First Semester GPA

The results of the independent samples $t$-test that measured the difference between the mean scores of male athletes’ and male non-athletes’ first semester grade point average (GPA) indicated no significant difference was found. These findings may be due to the fact that male athletes and male non-athletes did not have significant differences for a majority of the CSI survey questions.

Second Semester GPA

The results of the independent samples $t$-test that measured the difference between the mean scores of male athletes’ and male non-athletes’ second semester grade point average (GPA) indicated no significant difference was found. These findings may be due to the fact that male athletes and male non-athletes did not have significant differences for a majority of the CSI survey questions.

Explanation of ANOVA as Noted in Literature

ANOVA by Race

The results of the analysis of variance (ANOVA) that measured the difference in motivation factor scores between UNI male student-athletes and male non-athletes by race found significance in the academic motivation scales of
intellectual interest and attitude towards educators. Significant difference was also found in the social motivation scale of self-reliance. (See Table 28.) The psychological needs of Self-Determination Theory (SDT) can further explain the findings of the ANOVA. Deci and Ryan (2000) wrote, “SDT proposes fundamental needs: (a) to engage optimal challenges and experience master or effectance in the physical and social worlds - competence; (b) to seek attachments and experience feelings of security, belongingness, and intimacy with others - relatedness; and (c) to self-organize and regulate one’s own behavior (and avoid heteronomous control), which includes the tendency to work towards inner coherence and integration among regulatory demands and goals - autonomy. These three basic psychological needs serve, under appropriate conditions, to guide people toward more competent, vital, and socially integrated forms of behavior” (p. 252).

Intellectual Interests

The results of an ANOVA revealed that African American males and Caucasian males had lower scores than Hispanic males in the motivation scale of intellectual interest. According to Noel-Levitz (2006), “Students with high scores are likely to enjoy classroom discussion and feel comfortable with the high level of intellectual activity that often occurs in the college classroom” (p. 17-B). Therefore, these findings suggest that Hispanic males are more likely to enjoy the learning process and discussing serious ideas more than African American males and Caucasian males. According to Deci and Ryan (2000), “Competence is the need to engage optimal challenges and experience mastery or effectance in the physical and social worlds. If people did not experience satisfaction from learning for its own sake
(but instead need to be prompted by external reinforcements) they would be less likely to engage the domain-specific skills and capacities they inherited, to develop new potentialities for adaptive employment or both. They would thus be ill prepared for new situations and demands in the physical world and, moreover, they would be less adaptable to the extremely varied cultural niches into which a given individual might be born or adopted” (p. 252).

Attitude Towards Educators

The results of an ANOVA revealed that African Americans had lower scores than Hispanic Americans and Caucasian Americans in the “attitude towards educators” motivation scale. These findings suggest that Caucasian males and Hispanic males may have a more positive attitude towards educators than African American males. Attitude towards educators can affect the learning process of students. According to Noel-Levitz (2006), “A low score in this area reflects a degree of self-sufficiency that borders on arrogance when the student is a high achiever. Other times a low score may indicate that the student has been treated poorly by one or more teachers as far back as elementary school; perhaps the student was subjected to ridicule or perhaps efforts were criticized or went unrecognized by a teacher” (p. 17-B). According to Ryan and Deci (2000), “Relatedness is the tendency towards social coherence or homonomy. The need for relatedness can at times compete or conflict with self organization tendencies, that is, the need for autonomy. Thus, much of the rich fabric of the human psyche is founded upon the interplay of the deep adaptive tendencies towards autonomy (individual integration) and relatedness (integration of the individual into a larger social whole) that are part of our archaic
heritage and will, under optimal circumstances, be complementary but can, under less optimal circumstances, become antagonistic” (p. 253).

Self-Reliance

The results of an ANOVA revealed that Caucasian Americans had lower scores than African Americans in the motivation scale of self-reliance. The findings suggest that African American males may have a higher capacity to make their own decisions and carry through with them, than Caucasian males. Deci and Ryan (2000) wrote, “Autonomy is the need to self-organize and regulate one’s own behavior. Through autonomy individuals better regulate their own actions in accord with their full array of felt needs and available capacities, thus coordinating and prioritizing processes towards more effective self-maintenance”(p. 254).

ANOVA by Sport

The results of the analysis of variance (ANOVA) that measured the difference in motivation factor scores between UNI male student-athletes and male non-athletes by sport found significant difference in the academic motivation scale of intellectual interest. Significant difference was also found in the social motivation scale of self-reliance. (See Table 29.)

Intellectual Interests

The results of an ANOVA revealed that football athletes had lower scores than male non-athletes in the motivation scale of intellectual interest. These findings suggest that male non-athletes are more likely to enjoy the learning process and discussing serious ideas more than football athletes. This finding supports research by Cote and Levine (1997), “Personal intellectual development includes attempting to
develop oneself personally, intellectually, and wanting to understand the complexities of the world. If these qualities translate beyond the university, not only might they produce committed workers, but they might cultivate democratic citizens, who sincerely want to be of maximum benefit to self and others” (p. 240).

Self-Reliance

The results of an ANOVA revealed that baseball athletes had lower scores than male non-athletes in the motivation scale of self-reliance. The findings suggest that male non-athletes may have a higher capacity to make their own decisions and carry through with them, than baseball athletes. This finding is consistent with results from a study conducted by Geiger and Cooper (1995) which stated, “Students who take personal responsibility for their performance actually perform at a higher level than students who attribute their successes or failures to other individuals or circumstances” (p. 260).

Implications

“Criticism abounds about how our institutions of higher education can change the culture of intercollegiate athletics and make it compatible with each institution’s mission. The NCAA has undertaken initiatives to institute academic reforms that hold student-athletes more accountable for their progress towards a degree” (Meyer, 2005, p. 15). This study utilized the College Student Inventory (CSI) as an instrument to assess the motivation of male athletes and male non-athletes toward academic achievement by race and sport.

The results of this study suggest the need to focus on non-cognitive variables to assist in the academic achievement of athletes and non-athletes. The CSI
motivational factors of attitude towards educators, self-reliance, and intellectual interest were key indicators of academic achievement for male athletes and male non-athletes.

**Attitude Towards Educators**

Black male athletes had low scores in the attitude towards educators motivation subscale. According to Noel-Levitz (2006), “Attitude towards educators measures the student’s attitude towards teachers and administrators in general, as acquired through his/her precollege experiences” (p. 17-B). Therefore, an increase of positive student – teacher interaction may eliminate negative attitudes towards educators. This may improve their academic achievement. A study conducted by Person and LeNoir (1997) on persistence and evaluation of African American male mathematics, science, and engineering students concluded that “Faculty – student interaction is found to be less frequent outside of the classroom and office hours. Overall, nonpersisters in this study are less likely to engage in research activities, less likely to participate in study groups, and less comfortable with faculty, in class, and with staff and administrators” (p.86). Dawson-Threat (1997) conducted a study of Black Student Athletes and concluded, “Assisting students in synthesizing information and giving them an opportunity to clarify for themselves their future position in society aids in moving them towards internalization. With that achieved the student feels comfortable with himself and with the processing and filtering of new information and learning received from the class; he has a sense of growth and development (both cognitive and psychosocial) and should appear to be stimulated, focused, and encouraged about his next academic experience” (p.39).
Intellectual Interests

Male athletes had low scores for the subscale of intellectual interests. According to Morrison (1999), "The scores in this section relate to how much the students enjoy the actual learning process and associated activities of reading and discussing serious ideas." (p. 13). Like other students, student-athletes face the challenge of mastering cognitive and psychosocial developmental tasks (Carodine, Almond, & Gatto, 2001, p. 20). According to Lucas and Lovaglia (2002) "One reason that student athletes struggle in college may be that athletes have unrealistic expectations for careers in professional sports. It appears that student-athletes are diverted into athletic career aspirations and away from mainstream opportunities for success, such as academic achievement. In that, student-athletes often struggle academically and socially in college, it may be that athletes expect greater costs and fewer benefits to accompany a university education than do other students" (p.20). Therefore, male athletes need support programs that increase intellectual interests in areas other than sports.

Self-Reliance

Male non-athletes and African American males had high scores in the subscale of self-reliance. The majority of non-athletes (46.8%) for this study were African American. According to Morrison (1999), "The self-reliance scale measures the student’s capacity to make decisions and carry through with them. It also assesses the degree, to which, an individual is able to develop opinions independent of social pressure" (p.13). African American male athletes and non-athletes face unique challenges on white campuses. Their experiences, background, and academic
preparation form their identities. The way in which African Americans view
themselves shape their academic achievement. Dawson-Threat (1997) states,
“Through reflection, and comparative analysis with the content of the subject,
students can safely search and explore their experiences and then possibly reach some
resolution and commitment to an identity. Students can make a conscious decision on
their commitment to an African American identity while simultaneously shaping
themselves as scholars, intellectuals, and budding professionals” (p. 34).

Strategies for Academic Achievement

Developing strategies to assist first year male athletes and male non-athletes is
crucial in academic achievement. The following strategies may be used to address the
key indicators of academic achievement, attitude towards educators, self-reliance, and
intellectual interest for male athletes and male non-athletes.

Attitude Towards Educators

The results from this study in terms of attitude towards educators and African
American athletes suggests three components by Dawson-Threat (1997) that may
serve as a conduit for facilitating identity development:

(1) Including a safe space for expression of personal experience,
(2) Facilitating and promoting the understanding of differences, and
(3) Providing the opportunity to explore black manhood issues.

The faculty and staff at the University of Northern Iowa could further address
the issue of attitude towards educators by creating an environment conducive for
learning. This can be done by:
(1) Creating an ‘Office of Minority Affairs’ that coordinates all recruitment of all American students of color. The culture at UNI is ‘one size fits all.’ In other words, UNI believes that support services for American students are sufficient for all students regardless of race. Students of color at UNI have issues adjusting to a predominately white campus; especially students from Black and Brown environments.

(2) Requiring a diversity course in the UNI general education curriculum. This will introduce white students to cultural sensitivity of students of color.

(3) Faculty communicating the purpose and objectives of their subject matter.

(4) Faculty facilitating the course content in an interesting and engaging manner; therefore, making the learning process more enjoyable.

(5) Faculty being fair and objective in assigning grades.

**Intellectual Interests**

The results from this study in terms of intellectual interests and male athletes suggest two components by Person and LeNoir (1997):

(1) Using non-athletes as mentors who can provide peer support so as to positively affect students success.

(2) Collaborate with outside organizations (NCAA, the Urban League, or National Science Foundation) to provide outreach and support aimed at meeting the needs of the student-athletes.

The faculty and staff at the University of Northern Iowa could further address the issue of intellectual interests by exposing students to experiences other than those related to their sport or discipline. This can be done by:
(1) Using non-athletes as mentors for athletes and non-athletes.

(2) Placing non-athletes as roommates with athletes.

(3) Encouraging athletes to read autobiographies of professional athletes. This will enable the athlete to learn more about the person, not just the sport.

(4) Encouraging non-athletes to read autobiographies of professionals in their discipline.

(5) Faculty could adjust class assignments that align with students discipline, hobbies, or experiences.

Self-Reliance

The results of this study for self-reliance in male non-athletes and African American males suggests creating a personal development program, in which, the CSI could be used as a tool to assist college administrators in providing academic support that focus on three key elements by Street (1999) are:

(1) Understand the needs of students.

(2) Identify students who might be at risk.

(3) Design effective interventions that will facilitate student personal development and academic success.

The faculty and staff at the University of Northern Iowa could further address the issue of self-reliance by providing resources that assist in students’ academic development and success. This can be done by:

(1) Informing students of all available resources and support services available on- and off-campus.
(2) Administering the CSI to all students and identifying those who may be at-risk.

(3) Creating a mandatory leadership training class for athletes and non-athletes. This would aid students in making good decisions.

(4) Creating a mandatory conflict resolution class for athletes and non-athletes to assist students in developing problem-solving skills.

Suggestions for Future Research

Continuing research with the College Student Inventory (CSI) could include the following:

- The results of this study could be enhanced by comparing all components of the CSI to first year grade point average (GPA) of all students.
- Conduct a longitudinal study comparing the CSI, 4-year GPA, and graduation of athletes and non-athletes.
- An individual study comparing attitude towards educators and African American athletes and non-athletes.
- An individual study comparing intellectual interests and male athletes.
- Conduct this study at a Historically Black College/University (HBCU).

Conclusions

In conclusion, the purpose of this study is to investigate non-cognitive motivation factors as related to the academic achievement of male athletes and male non-athletes as measured by a secondary data analysis of the CSI from Fall 2003 to
Fall 2005 by race and sport. This study may be important for the success of college athletes and athletic programs. The success of college athletics is dependent upon having the best skilled players (athletes) on the team. If the best athletes never make it to the playing field, athletic programs will suffer. It is advantageous for collegiate athletic programs and college/university administrations to ensure the academic success and eligibility of all collegiate athletes.

Currently, the APR has been instituted by the NCAA to assist athletic programs, coaches, and college/university administrations in the persistence of athletes towards academic success. The APR has forced athletic programs, coaches, and college/university administrations to accept responsibility for the academic success of athletes. Knowledge of motivational research and studies could assist athletic programs, coaches, and college/university administrations in providing the necessary information needed to understand the support services needed to ensure athletic academic success.
REFERENCES


Carodine, K., Almond, K., & Gratto, K. (2001). College Student Athlete Success Both In and Out of the Classroom. *New Directions for Student Services, 93*.


APPENDIX A:

IRB APPLICATION
University of Northern Iowa
Application for Use of Existing Data

Note: Before completing this application investigators must read Information for Investigators
(http://fp.uni.edu/osp/grants/investigatorinformation.htm)

All items must be completed and the form must be typed or printed electronically. Submit 2 hard copies to
the Human Participants Review Committee, Office of Sponsored Programs, 213 East Bartlett

Title of proposal: MOTIVATION FACTORS AS PREDICTORS OF ACADEMIC ACHIEVEMENT: A
COMPARATIVE STUDY OF STUDENT-ATHLETES AND NON-ATHLETES

Name of Principal Investigator (PI): JONELL PEDESCELAX

Status: □ Faculty □ Undergraduate Student X Graduate Student □ Staff
Leisure, Youth and Human Services

PI Department: Faculty Advisor Dept(if different) Dr. Samuel Lankford

PI Phone: 319-433-1930 PI Email: pedescleauxj@yahoo.com

UNI Wellness & Recreation Center,

PI Campus Mailing Address/Mail Code 224 Cedar Falls IA 50614

Source of Funding:

Agency's Number (if assigned): School of HPELS

Data collection dates: Beginning Upon Approval Through 2009

Project Status: X New □ Renewal □ Modification

Please provide the date that the PI and faculty sponsor (if applicable) completed IRB training/certification in
Human Participants Issues and attach a copy of the certificate if not already on file with the IRB.

PI JONELL Pedescleaux DATE 20 September 2007 Certificate Attached X On File □
FACULTY SPONSOR DATE Certification Attached □ On File X

SIGNATURES: The undersigned acknowledge that: 1. this application represents an accurate an complete
description of the proposed research; 2. the research will be conducted in compliance with the
recommendations of and only after approval has been received the UNI IRB. The PI is responsible for
reporting any serious adverse events or problems to the IRB, for requesting prior IRB approval for
modifications, and for requesting continuing review and approval.

Principal Investigator(s): Jonell Pedescleaux 
NAME SIGNATURE (required) DATE

Faculty sponsor (required for all student projects): Dr. Samuel Lankford
NAME SIGNATURE (required) DATE
APPENDIX B:

IRB APPROVAL LETTER
Dear Ms. Pedescleaux:

Your study, Motivation Factors as Predictors of Academic Achievement: A Comparative Study of Student-Athletes and Non-Athletes, has been approved by the UNI IRB effective 3/25/08, following a review performed by IRB member, William Clohesy, Ph.D. You may begin enrolling participants in your project.

**Modifications:** If you need to make changes to your study procedures, samples, or sites, you must request approval of the change before continuing with the research. Changes requiring approval are those that may increase the social, emotional, physical, legal, or privacy risks to participants. Your request may be sent by mail or email to the IRB Administrator.

**Problems and Adverse Events:** If during the study you observe any problems or events pertaining to participation in your study that are serious and unexpected (e.g., you did not include them in your IRB materials as a potential risk), you must report this to the IRB within 10 days. Examples include unexpected injury or emotional stress, missteps in the consent documentation, or breaches of confidentiality. You may send this information by mail or email to the IRB Administrator.

**Expiration Date:** Your study is Exempt from continuing review.

**Closure:** Your study is Exempt from standard reporting and you do not need to submit a Project Closure form.

**Forms:** Information and all IRB forms are available online at www.uni.edu/osp/research/IRBforms.htm.

If you have any questions about Human Participants Review policies or procedures, please contact me at 319.273.6148 or at anita.kleppe@uni.edu. Best wishes for your project success.

Sincerely,

Anita M. Kleppe, MSW
IRB Administrator

Cc: Samuel Lankford, Advisor
APPENDIX C:

NOEL-LEVITZ NOTIFICATION
Dear Colleague,

Thank you so much for writing and for your leadership in student success initiatives.

As you review your findings from administering the motivational assessment, please remember the many resources available to support your interventions at: www.noellevitz.com/RMSclient.

If you need technical support or any assistance with your online account, please contact: RMS-tech@noellevitz.com or call 800-876-1117.

Yours in student success, Beth and Colleagues

"Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has."
Margaret Mead