



Academic achievement of student-athletes : semester of competition vs semester of non-competition
by Brian Lewis Evans

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Education
Montana State University

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Abstract:

The problem of the study was to determine if there were differences in student-athlete's grade point averages for their semester of competition compared to the semester of non-competition. Student-athletes from football, volleyball, women's soccer, baseball, and softball were sampled from each Big Twelve Conference member institution. Mean grade point averages from the semester of competition and semester of non-competition during the 1997-1998 academic year were compared, as well as the mean number of credit hours completed during each semester. The independent variables of gender, race, sport, and class standing were utilized in testing. Methods of analysis included independent t tests, analysis of variance, and regression analysis. Results show only one significant differences in mean grade point average change between semester of competition and noncompetition. Women's soccer experienced a significant difference in mean GPA change, having a greater mean GPA during the semester of non-competition. Several significant differences were found among the variables examining mean credits completed. Overall, male, female, White, Black, freshman, sophomore, junior, volleyball, and baseball student-athletes experienced a significant difference in mean change in credits completed from semester of competition to semester of non-competition. There was a significant, positive relationship between the number of credits completed and grade point average.

ACADEMIC ACHIEVEMENT OF STUDENT-ATHLETES:
SEMESTER OF COMPETITION VS SEMESTER
OF NON-COMPETITION

by

Brian Lewis Evans

A thesis submitted in partial fulfillment
of the requirements for the degree

of

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MONTANA STATE UNIVERSITY-BOZEMAN
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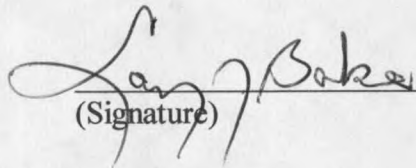
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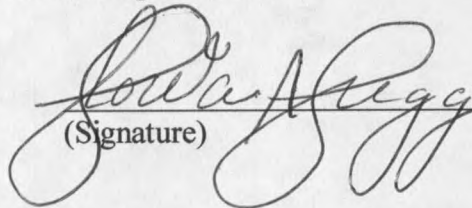
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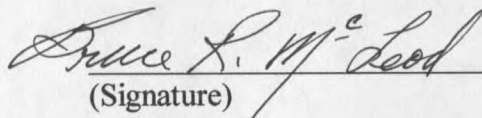
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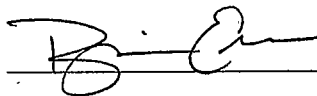

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Abstract

The problem of the study was to determine if there were differences in student-athlete's grade point averages for their semester of competition compared to the semester of non-competition. Student-athletes from football, volleyball, women's soccer, baseball, and softball were sampled from each Big Twelve Conference member institution. Mean grade point averages from the semester of competition and semester of non-competition during the 1997-1998 academic year were compared, as well as the mean number of credit hours completed during each semester. The independent variables of gender, race, sport, and class standing were utilized in testing. Methods of analysis included independent *t* tests, analysis of variance, and regression analysis. Results show only one significant differences in mean grade point average change between semester of competition and non-competition. Women's soccer experienced a significant difference in mean GPA change, having a greater mean GPA during the semester of non-competition. Several significant differences were found among the variables examining mean credits completed. Overall, male, female, White, Black, freshman, sophomore, junior, volleyball, and baseball student-athletes experienced a significant difference in mean change in credits completed from semester of competition to semester of non-competition. There was a significant, positive relationship between the number of credits completed and grade point average.

CHAPTER I

INTRODUCTION

Intercollegiate Athletics in the Academic Domain

Since the mid-1800's, intercollegiate athletics has been a growing and continually changing segment of American higher education. As intercollegiate athletics evolved and changed, there has been a growing concern for how athletics affect student-athletes' academic development. Early researchers questioned the influence of athletic participation on intercollegiate athletes' academic endeavors. "There are those who are skeptical of the athletic picture fitting into the educational frame," wrote Davis and Cooper in 1934 (p. 68). "It is even held that no corner of the athletic design 'squares,' at present, within the rectangular frame of the educational institution" (p. 68).

Before the turn of the twentieth century, scholars began to look at the athletic fit in the academic domain. In an 1898 study of competitive athletics and scholarship, Phillips researched this question: If there is a difference between athletes and non-athletes academically, is it due to "...competitive athletics immediately or remotely, or to the natural mental powers, or disposition of athletes?" (1908, p. 547). Phillips concluded that athletics did have a negative affect on academic performance. Nearly a century later, other studies echoed these findings. Adler and Adler (1985) discovered that most studies of college athletes have found a negative relationship between athletic participation and

academic performance. "These studies conclude that athletes are unprepared for and uninterested in academics" (p. 241).

Evolution of Athletics

Since the inception of intercollegiate athletics in 1852, a precarious relationship between academics and athletics has been a driving force affecting the growth of intercollegiate sports (Messner & Groisser, 1981, p. 258). Messner and Groisser outlined four periods in which the governance and relationship between academics and athletics has evolved. Early in the first period, which spanned the years 1852 to 1905, intercollegiate athletics was controlled largely by the students. Later, faculty and students wrestled with control because the students lacked the ability and willingness to continue being in charge (Newman & Miller, 1994). "These early internal regulatory efforts were not consistently effective because of the philosophical differences between students and faculty regarding various program elements" (p. 3).

The second period began by what is often considered the single most important event in intercollegiate athletics – the football controversy of 1905 (Lewis, 1975). Concerned about the violence and injuries occurring in football, the Intercollegiate Athletic Association of the United States (IAAUS) and the Intercollegiate Football Rules Committee (IFRC) clashed over the spirit and nature of football. "In 1905, life was peaceful in America, except for college football. Protection was inadequate, tackles were nasty, and athletes did not leave the field unless they were carried off on a stretcher" (Ottersdorf, 1999, p. 28). This violence, which accounted for 45 deaths between 1900 and 1905, prompted President Theodore Roosevelt to tell the presidents of Yale, Harvard,

and Princeton to fix football or it would be abolished (Ottersdorf, 1999). Thus the National Collegiate Athletic Association, basically a restructured IAAUS, was established in 1910.

The third period, from 1921 to about 1950, was characterized by "...greater faculty regulations and greater acceptance of intercollegiate athletic activities as an integral part of the program of higher education" (Messner & Groisser, p. 258). Despite great strides to integrate athletics into higher education, athletics remained in relative obscurity in this domain throughout this period (Newman & Miller, 1994).

The current period, 1951 to present, has been marked by concern over both control and the direction intercollegiate athletes has and is taking in higher education. Early in this period the Ivy League schools (Brown, Columbia, Cornell, Dartmouth, Harvard, Pennsylvania, Princeton, and Yale,) formed an athletic conference to maintain a strict academic philosophy regarding intercollegiate athletics. This philosophy intended, in part, to prevent any undue stress on academic pursuits brought about by athletic participation. In 1980, however, Yale President Bartlett Giamatti expressed concern over the growing imbalance of athletics and academics; an imbalance contrary to the original Ivy League philosophy. He questioned whether students at the Ivy League institutions were suffering academically at the expense of their athletic participation (Messner & Groisser, 1981). The Ivy League's philosophical concept was reinforced in the 1990s with the emergence of presidential control of intercollegiate athletics. The primary focus of this control was, according to Newman & Miller, "...directed at legislative measures

designed to promote the concept of academic integrity in intercollegiate athletic programs" (1994, p. 10).

The growth and evolution of intercollegiate athletics and its integration into higher education has weathered substantial criticism. The NCAA was criticized by Harold Savage in the 1929 Carnegie Foundation Report, stating that educational concerns were taking a backseat to financial and commercial concerns. In 1974 the American Council on Education reported, among other criticisms, the questionable relationship between athletic programs and academic programs. The Black Coaches Association, in response to a 1983 move to help increase academic success of student-athletes, claimed that the initial eligibility standards (Proposition 48) set by the NCAA were discriminatory against Black student-athletes. In his comparative study of Propositions 48 and 16, Zangari (1995) noted that in 1986 (the year Prop 48 went into effect) 51 percent of Black males and 60 percent of Black females scored lower than the required SAT minimum combined score of 700. All student-athletes entering college in the fall of 1986 and thereafter were required to achieve the SAT 700 or an ACT composite score of 15.

Measures of Academic Preparedness

Despite and in response to criticism, the NCAA has taken action to ensure the academic preparedness and integrity of its member institutions' student-athletes. In 1983 the NCAA adopted Proposition 48, mandating that high school students achieve a minimum grade point average in a set number of core academic courses, as well as a minimum standardized (ACT/SAT) test score in order to compete in intercollegiate athletics as freshman. The struggle for many student-athletes to do well in the classroom,

supposedly because of inadequate academic preparation and subsequent low graduation rates, facilitated this proposal's passage. Proposition 48 has not been without its detractors. The minimum standardized test scores were targeted as being arbitrarily chosen with no research based data as a basis. In his study of student-athletes who were eligible and non-eligible under Proposition 48, Judge (1992) asserts that "...meeting or not meeting the requirements of Bylaw 14.3 (Proposition 48) does not appear to cause or contribute to the attrition rate of student-athletes" (p. 40). Rather, the student-athlete support system that provides tutoring, structured study time, and study skills classes was the primary factor in the retention of student-athletes.

Jokes about student-athletes' class schedules being filled with underwater basket weaving, pottery, and physical education activity courses are a thing of the past. In addition to revising initial eligibility standards via Proposition 16, the NCAA passed in 1992 the 25/50/75 percent rule, requiring that student-athletes complete a certain percentage of coursework satisfying progress towards a designated program of study by the beginning of the 3rd, 4th, and 5th academic years, respectively (NCAA Manual, 1997). For example, a student-athlete pursuing a degree program that requires 128 credit hours to graduate must have completed 32 *applicable* credit hours toward that program by the beginning of his or her 5th semester; 64 at the beginning of the 7th semester; and 96 at the beginning of the 9th semester. If they do not meet the required percentage, they cannot be certified eligible by the institution or conference as eligible to compete in intercollegiate athletics. This limits student-athletes from taking non-applicable, or elective ("basket weaving") courses and keeps them on track towards graduation. In response to stricter

satisfactory progress rules imposed for academic eligibility, coupled with the time constraints during the season of competition to access university support services, the NCAA passed legislation requiring all Division I institutions to make academic counseling and tutor services available to student-athletes. Athletic student support programs grew from fewer than two-dozen in 1982 to nearly 500 in 1997 (Stroock, 1997).

The "Student-Athlete"

Walter Byers, the NCAA Executive Director from 1951 to 1987, coined the term "student-athlete" in 1953. This phrase has since become widely recognized on college campuses and within society, and implies dual and separate roles of being both a student and an athlete. As the term implies, these individuals attend college for two main reasons: to make progress towards a college degree and to participate in intercollegiate athletics.

Student-athletes face the same developmental issues as non-athletes, they struggle with the usual tasks of developing and reinforcing personal competencies, establishing identities, accepting and owning personal beliefs and values, nurturing interpersonal and intimate relationships, and forming a degree program and career goals. According to Parham (1993), student-athletes face special challenges beyond those of non-athletes. "Student-athletes... are socialized from an early age in an environment that presents a set of challenges and demands that are in addition to and vastly different from the challenges and demands that their non-student-athlete peers have had to face" (p. 412). The most obvious challenge is that of balancing athletic requirements with academic

responsibilities. The student-athlete must balance involvement in academic and athletic pursuits successfully enough to satisfy both faculty and coaches.

Semester of Competition/Non-Competition

For many student-athletes, sport participation occurs primarily during one semester of a two-semester academic year. During the semester of competition student-athletes' time is devoted to academic involvement (attending classes, study hall, group and tutor sessions; conducting library research, meeting with faculty) and their sport (practice, conditioning, weight training, meetings, studying play books, training room time, and competition). During this semester, however, less time is devoted to developing and strengthening academic competencies. "The stress of balancing the academic and athletic activities seems to be particularly acute when the athlete is 'in season,' when from sun up to sundown the student-athlete is involved in some way with the various academic demands as well as with the demands of athletics." (Parham, p. 412).

Because of the increased athletic commitment, there is evidence that most student-athletes will take fewer credits during this semester than during the semester of non-competition (Bryant & Clifton, 1990; Gurney & Stuart, 1987). During the semester of non-competition the student-athlete's time is not as structured or consumed by their sport, although some sport-related activities occur. If the negative relationship between athletic participation and academic performance that Adler and Adler (1985) purport does indeed exist, then what assumptions, if any, could one make regarding academic motivation and achievement during the semester that student-athletes are not consumed

by athletics? If athletic participation for many student-athletes occurs primarily during one semester, it would seem logical that academic achievement would improve in the semester of non-competition. Kiger and Lorentzen (1986), however, found that academic performance was *positively* correlated to the intensity, commitment, and involvement in the sport. This finding indicates that student-athletes perform better academically in the semester of competition.

Previous studies (Adler & Adler, 1985; Bryant & Clifton, 1990; Kiger & Lorentzen, 1986; Parham, 1993) clearly indicate a contradiction among scholars over the consequences of athletic participation on academic performance. Adler and Adler generalize an overall negative relationship between athletics and academics, while Parham points out that less time is devoted to academic competencies during the semester of competition. Bryant and Clifton concluded that their student-athletes performed better in-season, while Kiger & Lorentzen's study indicated academic performance was positively correlated with involvement in sport. These contradictory findings required a more comprehensive study of academic performance of student-athletes.

Statement of the Problem

The problem of the study was to determine if there were differences in student-athletes' grade point averages for their semester of competition compared to the semester of non-competition. It was not the intent of this study to be comparative of Big 12 Conference member institutions. Variables included in this study were gender, race,

sport, and class standing. Credits completed in each semester by student-athletes were also considered.

Contribution to Educational Theory,
Product, or Practice

The purpose of this study was to gain a better understanding of how student-athletes perform academically when their time is structured by the activity of their sport (semester of competition) and when it is less controlled by their sport (semester of non-competition). These data provide the most comprehensive results to date of student-athlete academic achievement during the semester of competition vs the semester of non-competition. Judge (1992) indicated that student-athlete support services are the primary factor for retaining student-athletes. This study provides details of student-athlete achievement patterns between the two semesters for student services to program for optimal achievement and retention. Since athletic academic services is a relatively new entity among most institutions (Stroock, 1997), this study fills a vital gap in understanding how programming affects student-athlete academic achievement.

Each Division I institution must complete an Institutional Self-Study for NCAA Certification. Section 3.3.1.4 of the Self Study - Academic Support, states:

Adequate academic support services shall be available for student-athletes. Student-athletes shall be encouraged and assisted in reaching attainable academic goals of their own choosing. When it is determined that individual student-athletes have special academic needs, these needs shall be addressed. The support services shall be approved and reviewed periodically by academic authorities outside the department of intercollegiate athletics (Texas A&M University Athletic Department, 1999).

Results of this study will greatly aid in “determining that individual student-athletes have special academic needs”, and provide reviewers the hard data to adequately assess a program’s academic integrity in this regard.

Overall, this study provides the information to help athletic academic services develop more effective academic assistance programs/interventions which could prove to be the difference between eligibility/ineligibility and retention/attrition. Results of this study provide a statistically based answer to the question, rather than relying on empirically based assumptions of professionals in the field. This study also provides a foundation for seeking the answers as to why differences exist.

Few studies have examined this particular aspect of student-athlete academic achievement. In a study of academic achievement of student-athletes at Trenton State College, Bryant and Clifton noted that they “...were unable to locate a study comparing athlete’s in-season grades with their out-of-season grades” (1990, p. 3). Other studies of student-athlete academic achievement mention this comparison (Phillips, 1908; Davis & Cooper, 1934; Parham, 1993; Maloney & McCormick, 1993), while not being the primary focus of their research. One study noted the number of specific studies on student-athletes and their educational attainment as being ‘meager’ (Purdy, Eitzen & Hufnagel, 1982), and several (Brede & Camp, 1987; Kiger & Lorentzen, 1986 Mayo, 1986; Petrie, 1993; Pascarella & Smart, 1991) have called for more research in this field.

While few researchers have specifically studied academic achievement in-season versus out-of-season, those who have conducted such research, typically limited subjects to student-athletes from only one particular institution. Getz (1976) conducted research

specifically comparing semesters of competition and non-competition, but did so with only male student-athletes at a small Division III college. The scarcity of studies comparing achievement between the semesters of competition and non-competition of student-athletes, and the lack of a more expansive sample than subjects from a single institution, demonstrated the need for a broader study .

Personal discussions with athletic academic services professionals across the country indicated a strong interest in the results of this study (C. Anzelmo, June 20, 1997; B. Bradley, June 21, 1997; R. Caldwell, June 13, 1998; P. Gautt, April 17, 1998; T. Lakin, February 13, 1998; C. Troester, October 13, 1998; S. Kinoshita, May 14, 1999; M. Nelson, June 12, 1999; S. Vigil, June 12, 1999; K. Riffie, June 13, 1999; P. Hughes, June 13, 1999; K. Barger, June 13, 1999; E. Brey, June 13, 1999; E. Hardt-Arnold, June 14, 1999; K. Glanville, June 14, 1999). Subsequently, these discussions have resulted in a split opinion about which semester student-athletes actually have better academic achievement.

Definition of Terms

Academic Achievement/ Performance - Grade point average based on a 4.0 scale.

Academic Year - A school year consisting of two separate terms that typically begins in late August or early September and ends in May.

Athletic Participation - Practicing and competing in at least one of the institutions intercollegiate sports.

Big 12 Conference - Athletic conference comprised of the following institutions: Texas Tech University; Texas A&M University; University of Texas; Baylor University;

Oklahoma State University; University of Oklahoma; Kansas State University; University of Kansas; University of Nebraska; University of Missouri; Iowa State University; and University of Colorado.

Change - The difference in grade point average between semester of competition and semester of non-competition.

Grade Point Average – With quality points assigned as A=4.00; B=3.00; C=2.00; D=1.00; and F=0.00; the quotient obtained by dividing quality points by number of credit hours.

Non-Revenue Sport – All intercollegiate sports other than men's basketball and football.

Official Competition - Competition that records official win-loss records, which determines post-season championship participation.

Revenue Sport – Men's basketball and football, as recognized by the NCAA.

Semester of Competition - The semester in which all of a particular sport's official competition occurs.

Semester of Non-Competition - The semester in which none of a particular sport's official competition occurs.

Student-Athlete - An individual who is enrolled for a minimum of 12 credit hours at a four-year institution of higher education and participates in at least one of the intercollegiate sports sponsored by the institution.

Questions Answered

1. Is there a grade point average change between student-athletes from semester of competition to semester of non-competition?
2. Is there a grade point average change among males from semester of competition to semester of non-competition?
3. Is there a grade point average change among females from semester of competition to semester of non-competition?
4. Is there a grade point average change among White student-athletes from semester of competition to semester of non-competition?
5. Is there a grade point average change among Black student-athletes from semester of competition to semester of non-competition?
6. Is there a grade point average change among freshman, sophomore, junior, and senior student-athletes?
7. Is there a grade point average change among student-athletes in sports of volleyball, football, women's soccer, baseball, and softball?
8. Using the variables in questions 1-7, is there a difference in the number of credits completed between the semester of competition and semester of non-competition?
9. Does a relationship exist between change in credits completed and change in grade point average?

Review of Relevant Research

This study considers academic achievement of student-athletes during one academic year with regard to selected demographic variables. This section will summarize findings according to the following variables: Gender; Race; Sport; and Class Standing.

Gender

Intercollegiate athletics has, traditionally, been dominated by males. Twenty-five years ago it would have been difficult to compare academic achievement of male and female student-athletes simply because there were far fewer females participating in athletics. The inception of Title IX of the Education Amendment Act in 1972 gave rise to women's intercollegiate athletic participation and has brought the genders closer, at least quantitatively. Women and men, in this context, are more evenly represented now than ever before. They each have dual roles of student and athlete, and must devote time and energy to both.

Although role emphasis research was not the intent of this study, the importance placed on each role (academics and athletics) affects the outcome of achievement. Student-athletes have, at a minimum, these two primary role obligations, which often conflict. "If he (she) conforms fully or adequately in one direction, fulfillment will be difficult in another..." (Goode, 1960, p. 485).

In 1985 Adler and Adler published a qualitative "systematic participant-observation study" (p. 241) examining the relationship between athletic participation and

academic performance among male student-athletes in a major college basketball program. A similar study was conducted with women's volleyball and basketball players by Meyer (1990) in a direct comparison to the Adler and Adler study. Meyer's intent was to identify gender-related differences/similarities between the two studies.

The majority of student-athletes in both studies entered college with high academic aspirations and optimism to earn a degree. By the end of the freshman year a split developed between the genders. Male student-athletes in the Adler and Adler study, having often been placed in freshman classes with athlete-sympathetic faculty, incorrectly perceived that academics would not be a major concern. They soon began to realize that coursework was difficult and their academic idealism turned to cynicism. They also realized basketball consumed most of their time, leaving less time to study and socialize. "They progressively detached themselves from caring about or identifying themselves with (academics)" (p. 248).

In contrast, the females in the Meyer study exhibited a positive relationship between athletics and academics. The discipline of athletics encouraged them to focus on academics, which paralleled Kiger and Lorentzen's (1986) positive correlation of the two roles and the assertion that female athletes typically are more involved in their sport than male athletes. The Meyer study participants budgeted their time and were disciplined in studying. In contrast the males in the Adler and Adler study, when given free time, preferred to catch up on missed socializing. Another distinction between the two studies showed that the female participants had more class choices available to them, enjoyed classes more, and were interested in obtaining knowledge that they could use after

college. Conversely, the male participants were more often enrolled in courses not of their choosing, were uninterested in the content, and found no merit in the knowledge gained.

Furthermore, a recent national study of men's and women's basketball programs support the conclusions in Adler and Adler and Meyer (Allen, 1997). "While the coaches and teammates of Division I men generally demonstrated negative academic attitudes and behaviors, the coaches and teammates of Division I women appeared to create extremely positive academic environments within their teams" (p. 186). Although these studies provide qualitative observations why male and female student-athletes (primarily basketball) do or do not perform well academically, they do not quantitatively assess the differences between the genders.

A 1986 study of Division I student-athletes by Mayo compared independent variables of gender, race, scholarship status, and revenue/non-revenue sports to academic performance. The first hypothesis tested was the comparison of academic performance between male and female athletes. Female student-athletes achieve a statistically significant higher grade point average (2.88) than their male counterparts, in comparison with both male non-revenue (2.43) and revenue (2.09) student-athletes. Similarly, Purdy, et al. (1982) in a 10-year study of student-athletes at Colorado State University reported that "women scored significantly higher than men on nearly all measures of educational achievements..." (p. 442).

Gender research of academic performance and athletic participation is inconsistent and the manner in which findings are reported has been much the same.

Bryant and Clifton (1990) studied season of competition vs. season of non-competition grade point averages among football, women's soccer, and softball student-athletes at Trenton State College, but did not compare male vs. female academic achievement. Rather, they concluded that both genders performed better during in-season than out-of-season. Kanter and Lewis (1991) studied student-athletes in six intercollegiate sports (three male, three female) from 11 participating California community colleges. The authors found that female student-athletes earned a better overall grade point average than males -- 2.63 to 2.45, but did not test for statistical significance. Kiger and Lorentzen (1986) did not find a significant, direct relationship between academic performance and gender among student-athletes in their study of academic achievement among university athletes. They concluded, however, that white female non-revenue student-athletes perform better academically than other student-athletes at the university.

Perhaps most revealing in the comparison of academic achievement by genders is an NCAA survey of 42 Division I institutions where "female basketball players achieved a 2.64 grade point average, and other female scholarship athletes averaged a 2.67 in college. Their male counterparts earned a 2.44 grade point average in college" (cited in Foltz, 1992, p. 9).

Race

The comparison of Black and White student-athlete academic achievement is ubiquitous in the literature, with little variation of results. A tenor exists in the literature that Black student-athletes enter college less prepared academically than do White student-athletes, and do not perform as well as their White counterparts (Kanter & Lewis,

1991; Kiger & Lorentzen, 1986; Purdy, et al., 1982; Young & Sowa, 1992). Mayo points out that there is a specific problem area within the academic population in regards to athletics, and that is the Black male student-athletes representing football and basketball (1986).

One possible explanation is that participation in sports, and becoming a professional athlete (football or basketball), is a means for upward mobility for many Black athletes (Purdy, et al., 1982).. Therefore academics are not emphasized. Many Black student-athletes come to the university less prepared and are most likely in college because of involvement in sport (Purdy, et al.).

In a comprehensive study of 42 NCAA Division I institutions encompassing 2,818 student-athletes, Lang and Rossi (1991) measured academic performance by indexing college GPA, history of academic probation, and number of classes missed in both the season of competition and non-competition. Student-athletes were then placed into one of three groups: those who perform well academically; those who perform at a moderate level; and those who perform poorly. This unique study, although different from most in the method of determining academic performance, is consistent with prior research findings. "For males especially, being Black (versus White) and competing in intercollegiate football or basketball... significantly increases the likelihood of being in the low academic performance group and decreases the likelihood of being in the high academic group" (p. 17). The GPA corresponding with each group in association with the other indexing variables was a 2.5 or higher for the high performance group; 2.0 or

less for the low performance group; and between a 2.0 and 2.5 for the moderate performance group.

The missing link in most studies is the Black female student-athlete. Little is known of this group other than they comprised nearly 16% of all female student-athletes attending Division I institutions in 1992-'93 and participated primarily in basketball and cross country/track & field (Siegel, 1996). Whereas much has been studied and reported about the Black male student-athlete and his White counterpart, less attention has been paid to the female student-athlete, especially the Black female.

Sport

Within intercollegiate athletics the terms 'revenue' and 'non-revenue' are fairly commonplace. Football and men's basketball are the only two sports recognized by the NCAA as revenue sports, with all the rest categorized as non-revenue. Within the literature most studies make direct comparisons between these two groups rather than between individual sports (Camp & Epps, 1986; Gurney & Stuart, 1987; Davis & Berger, 1973; Brede & Camp, 1987; Mayo, 1986). This study examined the achievement of individuals within each sport.

The dominant outcome in previous studies showed that student-athletes who participate in revenue sports, as a group, do not achieve nearly as well academically as student-athletes in non-revenue sports. In her study of student-athlete academic achievement at Ohio State University, Mayo (1986) found that female student-athletes outpaced males in both non-revenue and revenue sports with an average GPA of 2.87 to 2.47 and 2.25, respectively (1986). Moreover, during the season of competition, the male

revenue GPA dropped considerably (2.09) while the female GPA increased slightly (2.88) and the male non-revenue GPA dropped only slightly (2.43). Lang and Rossi (1991), with their unique academic achievement classification, determined that male student-athletes in revenue sports were consistently more likely to be in the low academic group classification and less likely to be in the high academic group classification. Interestingly, Kiger and Lorentzen (1986) indicated that while revenue sport participants enter college with a pattern of poor academic achievement, this pattern does not continue once in college. They did find, however, that academic performance was influenced by type of sport participation.

In a direct comparison of 12 sports at Colorado State University, Purdy, et al. (1982) found that the revenue sports of football and men's basketball had the lowest mean grade point averages of all sports with a 2.30 and 2.49, respectively. Women's volleyball had the highest mean GPA with a 2.95, followed by softball (2.73), and baseball (2.52).

In a study of Clemson University athletes and non-athletes, Maloney and McCormick (1993) examined the role athletic participation played on academic performance. According to their findings men's basketball and football have the lowest mean grade point averages, 1.93 and 2.11 respectively, of the 14 teams studied. As was the case in the Colorado State University study, women's volleyball had the highest mean GPA with a 2.88, and Baseball had a mean grade point average of 2.31. Maloney and McCormick also revealed that participants in football and men's basketball achieve one-

tenth of a grade point worse each semester than non-revenue sport student-athletes, and that academic achievement in these two sports is worse during the season of competition.

Maloney and McCormick (1993) concluded that participating in sports reduces academic success, but is not homogeneous across sports and only significantly affects the revenue sports. This conclusion is the common assessment throughout the literature.

“The exploitation of athletes in the big-money sports extends into the classroom, and limitations on spring practice in football and the shortening of basketball season would, in our estimation, improve the academic achievement of the participants in these sports.”

(p. 570). In his study of student-athletes at Division III Heidelberg College, Getz (1976)

compared academic achievement during the semester of competition to the semester of

non-competition. Significant differences were found in football, wrestling,

baseball, track, tennis, and golf. No differences were found of cross country

and women's soccer.

Class

A great deal of attention has been given in the literature to the graduation rates of student-athletes since the NCAA tightened initial eligibility standards for freshman.

Likewise, many studies focused on freshman student-athletes and their predicted or actual

academic achievement in college (Head, Walker, & Lindsey, 1989; Roberts-Wilber,

Wilber, & Morris, 1987; Gurney & Stuart, 1987). However, a dearth of information

exists in the literature regarding the academic achievement of student-athletes throughout

all class levels.

Students enter college with varied academic preparedness, but many do not seem to have an accurate realization of the difference between high school and college coursework. The difficulty in adjusting to rigors of college academics, the demand of college athletics, and college life in general, may affect this group's academic performance. In their comparative study of softball, football, and women's soccer grades, Bryant and Clifton (1990) found, however, the opposite. Freshman perform better in the fall, or transitional, semester (2.37) than they did in the spring semester (2.28). The senior class level also had a lower mean GPA from fall to spring, while sophomores and juniors improved their mean grade point averages. In comparing GPA by semester of competition/non-competition, freshman had the second highest mean GPA (2.41) of all class levels during the semester of competition. However, this changed for the semester of non-competition when freshman recorded the lowest mean GPA (2.24) of all class levels. This is possibly attributed to the freshman status which, of all class levels, experience the least amount of sport performance and the related pressures.

Seniors recorded the largest semester-to-semester change, having the second lowest mean GPA during the semester of competition yet the highest mean GPA (2.75) in the semester of non-competition. Sophomores had virtually no change, and juniors, having the lowest mean GPA of all class levels during the semester of competition (2.37), with a slight improvement during the semester of non-competition. None of the changes were statistically significant. Getz's 1976 study of the class levels revealed that only the junior class earned a better GPA during the semester of competition, while freshman, sophomores, and seniors performed better during the semester of non-competition.

Purdy, et al. (1982) found that as a student-athlete's years of sport participation increased, so did the mean GPA. Although these researchers did not classify students as freshman, sophomores, etc., they found that student-athletes with one year of participation had a mean end-of-year cumulative GPA of 2.48; two years a 2.55; three years a 2.67; and four years or more a 2.78. Purdy, et al. conducted their study over a 10-year period and included 2,000 student-athletes.

CHAPTER II

METHODOLOGY

Theoretical/Conceptual Framework

The conceptual framework of this design is based in part on the Student Involvement Theory of Alexander Astin (1984). This theory posits that the most precious resource is student time, and that outside activities (i.e. athletics) reduce the time and energy students put toward educational attainment. Goal achievement, such as being academically successful, directly correlates with the time and effort devoted to the activities that produce desired outcomes. Astin places this devotion of time, or involvement, on a continuum. Each individual student-athlete exhibits different degrees of involvement and motivation towards different activities (academics, athletics) at different times (season of competition/non-competition). Involvement is also marked by quantitative and qualitative considerations. Depending on the time and energy demands of athletic activities, a student-athlete's academic achievement during a given semester depends on the quantity and quality of time and motivation to academic work. This study will not address but recognizes that motivation issues are important in student-athlete academic achievement.

Population Description and Sampling Procedure

The participants in this study were student-athletes who were on the 1997-'98 official team roster in the sports of football, volleyball, softball, baseball, and women's soccer at NCAA Big 12 Conference institutions – all Division I-A. The institutions that make up the Big 12 Conference are: Texas Tech University, Texas A&M University, University of Texas, Baylor University, Oklahoma State University, University of Oklahoma, Kansas State University, University of Kansas, University of Nebraska, University of Missouri, Iowa State University, and University of Colorado.

Football was selected because it has no overlap into the semester of non-competition and because of its prominence in college athletics. Volleyball was selected because it is the companion sport to football for women and conducts its official competition in the fall. Baseball and softball were selected because they are companion sports and they conduct their official competition in the spring. Women's soccer was selected to help offset the large male sampling caused by the inclusion of football, and because their official competition is conducted in the fall. Each sport conducts its entire official competition within one semester, or at least prior to the next semester beginning.

Of the sports considered, volleyball and football are considered "Head Count" sports – those that must provide a full athletic scholarship up to the maximum number of student-athletes that can receive such aid. Therefore, volleyball has 12 full scholarship student-athletes with an average of approximately 15 participants on each Big 12 member roster. Football has 85 full scholarship student-athletes, with an average of 123

participants on each Big 12 member roster. Those not on scholarship are considered "walk-on" student-athletes.

Baseball, softball, and women's soccer are considered "Equivalency" sports. These sports can divide scholarships among their student-athletes, but cannot exceed the set equivalency number for each sport. For these sports, baseball is allotted 11.7 scholarships, with an average Big 12 member roster size of 37; softball is allotted 12 scholarships, with an average Big 12 member roster size of 20; women's soccer is allotted 12 scholarships, with an average Big 12 member roster size of 22.

Since the population is composed of subgroups (sports), stratified random sampling procedures were employed. This population consists of a total 2,604 student-athletes. Nine of the 12 institutions within the Big 12 Conference returned surveys, leaving a total of 1,953 student-athletes from the population available to be randomly sampled. Given average roster sizes, football comprises 56% of the population; baseball 17%; women's soccer 10%; softball 9%; and volleyball 7%. Given these roster sizes, it was necessary to deviate slightly from sampling each subgroup in the same proportion as it existed in the population. For example, if a sample were selected for each sport based on the proportion within the population, the sample would consist of only 1 volleyball student-athlete; 2 softball student-athletes; 2 women's soccer student-athletes; and 6 baseball student-athletes from each roster. Conversely, there would be a sample of 68 football student-athletes from each roster. To have greater sampling parity within the population, and specifically for each subgroup of the population, as well as reducing the overwhelming number of football samples, a sample of 20% of the roster size for each

sport was used. This resulted in sampling approximately 390 student-athletes of the entire population, and provided more accurate estimates from each non-football subgroup (sport), yet still provided substantial estimates for football.

Random samples were drawn from official team rosters, for each sport, at each institution. Data samples were collected on the individuals whose names corresponded with the randomly selected numbers.

Sources of Evidence and Authority

Hypotheses Tested

1. Ho: The student-athlete mean GPA for semester of competition equals the student-athlete mean GPA for semester of non-competition.
2. Ho: The male student-athlete mean GPA for semester of competition equals the male student-athlete mean GPA for semester of non-competition.
3. Ho: The female student-athlete mean GPA for semester of competition equals the female student-athlete mean GPA for semester of non-competition.
4. Ho: The White student-athlete mean GPA for semester of competition equals the White student-athlete mean GPA for semester of non-competition.
5. Ho: The Black student-athlete mean GPA for semester of competition equals the Black student-athlete mean GPA for semester of non-competition.
6. Ho: The freshman student-athlete mean GPA for semester of competition equals the freshman student-athlete mean GPA for semester of non-competition.

7. Ho: The sophomore student-athlete mean GPA for semester of competition equals the sophomore student-athlete mean GPA for semester of non-competition.
8. Ho: The junior student-athlete mean GPA for semester of competition equals the junior student-athlete mean GPA for semester of non-competition.
9. Ho: The senior student-athlete mean GPA for semester of competition equals the senior student-athlete mean GPA for semester of non-competition.
10. Ho: The football student-athlete mean GPA for semester of competition equals the football student-athlete mean GPA for semester of non-competition.
11. Ho: The volleyball student-athlete mean GPA for semester of competition equals the volleyball student-athlete mean GPA for semester of non-competition.
12. Ho: The baseball student-athlete mean GPA for semester of competition equals the baseball student-athlete mean GPA for semester of non-competition.
13. Ho: The softball student-athlete mean GPA for semester of competition equals the softball student-athlete mean GPA for semester of non-competition.
14. Ho: The women's soccer student-athlete mean GPA for semester of competition equals the women's soccer student-athlete mean GPA for semester of non-competition.

The following hypotheses for interaction were tested. GPA change was computed by subtracting the GPA earned during the semester of competition from the GPA earned during the semester of non-competition.

15. Ho: Gender and race do not interact with GPA change.
16. Ho: Gender and class standing do not interact with GPA change.

17. Ho: Race and class standing do not interact with GPA change.
18. Ho: Race and sport do not interact with GPA change.
19. Ho: Class standing and sport do not interact with GPA change.
20. Ho: Gender, race, and class standing do not interact with GPA change.
21. Ho: Race, sport, and class standing do not interact with GPA change.

If the interaction null hypotheses were retained the following main effects hypotheses were tested:

22. Ho: The mean GPA change of female student-athletes equals the mean GPA change of male student-athletes.
23. Ho: The mean GPA change of Black student-athletes equals the mean GPA change of White student-athletes
24. Ho: The mean GPA change of freshman student-athletes equals the mean GPA change of sophomore student-athletes equals the mean GPA change of junior student-athletes equals the mean GPA change of senior student-athletes.
25. Ho: The mean GPA change of football student-athletes equals the mean GPA change of volleyball student-athletes equals the mean GPA change of baseball student-athletes equals the mean GPA change of softball student-athletes equals the mean GPA change of women's soccer student-athletes.

Hypotheses 1-14 and 15-21 were tested by replacing the dependent variable "GPA" and "GPA change", respectively, with the dependent variable "credits completed", as were 22-25, if necessary.

26. Ho: No correlation exists between the change in credits completed and change in GPA of student-athletes.

All hypotheses were tested using alpha .05. This level of alpha was chosen because of its broad use in statistical analysis. A more stringent alpha (.01) could make finding significance very difficult; and a less stringent alpha (.10) could produce more significant findings, either of which could lead to misleading results.

Explanation of Investigative Categories

The following variables were considered in this study:

Gender - males on the football and baseball teams; females on the volleyball, softball, and women's soccer teams of surveyed institutions;

Race - White and Black student-athletes that participate on the football, volleyball, baseball, softball, and women's soccer teams of surveyed institutions. Due to small numbers, other racial groups were not considered.

Sport - student-athletes who compete in football, volleyball, baseball, softball, and women's soccer.

Class Standing - student-athletes are distinguished by their status of freshman, sophomore, junior, and senior based on the number of semesters they have completed at the end of the spring semester of the 1997-'98 academic year;

1-2 = freshman

3-4 = sophomore

5-6 = junior

7 or more = senior

Semester of Competition - the semester that each respective sport begins and concludes all of its *official* competition against other collegiate teams;

Semester of Non-Competition - the semester that each respective sport does not conduct any official competition against other collegiate teams;

Credits Completed - the number of credit hours completed per semester.

Controls

To eliminate possible contamination the following were omitted:

- Sophomore, junior, or seniors who took a remedial/developmental course during either semester that the study encompasses.
- Student-athletes who participated in both a fall and winter/spring sport.
- Student-athletes who repeated a course during the spring semester that he/she originally took during the 1997 fall semester.
- Student-athletes that were not certified as eligible for the 1997-'98 academic year.
- Racial groups other than Black or White.

The internal validity threat of maturation was considered due to student-athletes' possible improvement from fall semester to spring semester, and from year to year. This is likely to occur between the first and second semester of the freshman year, as freshman tend to become familiar with the academic expectations and time commitments of college during their first, or fall semester. This maturation could result in better performance during the second, or spring semester. This internal threat was in part accounted for by the testing of all class standings separately.

Method of Data Collection

The instrument was sent to the Directors of Student-Athlete Support Services at each Big 12 Conference member institution. Directors were asked to provide the following data on each selected student-athlete:

- Race (Black/White/Other)
- Semester GPA for fall 1997 (to two decimal points, i.e. 3.42)
- Number of credit hours completed (as opposed to earned) during the fall 1997 semester (includes remedial).
- Semester GPA for spring 1998.
- Number of credit hours completed (as opposed to earned) during the spring 1998 semester (includes remedial).
- Had the student-athlete repeated a fall course during the spring semester (Yes/No).
- Had the student-athlete taken a remedial course during either semester (Yes/No).
- Had the student-athlete participated in more than one sport during 1997-'98 (Yes/No).
- Was the student-athlete certified as eligible for both semesters (Yes/No).
- How many full-time collegiate semesters the student-athlete has completed at all colleges.

The information requested above is demographic data and student record data. Grade point average is a measurement of academic achievement based on a 4.0 scale and computed by dividing total (quality) points by number of credits taken.

This is the sole criterion to report college academic achievement of Big 12 Conference member institutions. This five-letter grading system with corresponding

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