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STUDENT-ATHLETE: A STUDY OF STUDENT-ATHLETE WORKLOAD
COMPARED WITH TRADITIONAL STUDENT WORKLOAD

BY

CHUCK PROVENCIO

A thesis submitted in partial fulfillment of the requirements for the

Master of Science

Major in Sport and Recreation Studies

South Dakota State University

2016

STUDENT-ATHLETE: A STUDY OF STUDENT-ATHLETE WORKLOAD
COMPARED WITH TRADITIONAL STUDENT WORKLOAD

This thesis is approved as a creditable and independent investigation by the candidate for the Master of Science degree in Sport and Recreation Studies and is acceptable for meeting the thesis requirements for this degree. Acceptance of this thesis does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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ACKNOWLEDGMENTS

First to my advisor, Dr. Patty Hacker, for helping me through the process of creating a paper and supporting my decision to take on a topic that has the potential to be extremely challenging both to hear about and write about. Her efforts and insight have made this project possible.

Thanks also to my SDSU Health, Recreation, and Nutrition Science department faculty, who have given me a wider perspective into the broad range of issues in athletics and recreation. The experiences I've had in the department have helped me in knowing what to look for and have given me insight into both the competitive and non-competitive world of sport as well as the administrative side of athletics.

Thanks to Michael Engdahl and the Jackrabbit Tennis Family. This group of athletes have shown true dedication through the challenges of being student-athletes and gave inspiration to this project. They have proven time and time again that it is no easy task to pursue what you love, but it is certainly worthwhile.

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ABBREVIATIONS

1. SAL Student Activity Log
2. MWU Mann-Whitney U-Test
3. FBS Football Bowl Series
4. FCS Football Championship Series
5. NCAA National Collegiate Athletic Association
6. SDSU South Dakota State University
7. SAAC Student Athlete Advisory Committee

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ABSTRACT

STUDENT-ATHLETE: A STUDY OF STUDENT-ATHLETE WORKLOAD
COMPARED WITH TRADITIONAL STUDENT WORKLOAD

CHUCK PROVENCIO

2016

Purpose: The purpose of this study was to collect and analyze data on the workload of students and student-athletes to determine if there is a significant difference in the workloads of student-athletes compared with non-athletes, including undergraduate and graduate students. It was hypothesized that student-athletes would spend more time in athletic activities, but would sacrifice time in other areas. **Method:** This analysis of variance study collected data from 22 students at South Dakota State University using the Student Activity Log and categorized those students using a combination of three of six labels (student-athlete or non-athlete, undergraduate or graduate, and working or non-working). Once students were categorized, they submitted data using the Student Activity Log to show how much time was spent doing various activities, which were divided into the four major groups Academic, Athletic, Work, and Social. Those hours were then analyzed using a Mann-Whitney U Test to determine significant differences in the time expenditures between student-athletes and non-athletes. **Statistical Analysis: Results:** There was a significant difference in the time demands between student-athletes and non-athletes in their Academic, Athletic, and Work activities. There was no significant difference in the time demands between student-athletes and non-athletes in their Social

activities. When adjusted to include only undergraduate students, the Academic time spent was no longer significantly different, but the results in the other categories remained the same. **Conclusions:** The time demands on student-athletes is similar to that of other students on campus in academic and social categories when only undergraduates are considered, but the time spent on athletic participation replaces that of having a job among other students. When all participants are included, athletes spend more time on academics than non-athletes. More research is needed to further validate these results.

Chapter 1

Introduction

Student-athletes have seen a growing presence in the media over the past decade for a variety of reasons. From the Cinderella stories during the annual March Madness basketball tournament to any number of controversial coaching scandals, student-athletes have been the centerpiece of collegiate publicity. With so much exposure, college athletic departments are regularly placed under a microscope for their treatment of these students. However, most of the information which is readily available is presented only by news and sports reporting, and there is only a small pool of research regarding the student-athlete experience during college.

Most recently, as athletic and university budgets grow and benefit from athletes' work (Trenkamp, 2009), some student-athletes desire payment and reform for their services, and the rights to the use of their names and images. This trend of seeking compensation reflects a skewing of the collegiate athlete persona, showing that these student-athletes perceive themselves as being employees of the university rather than students with the opportunity to participate in extracurricular activities. The question at hand, therefore, was a matter of deciding if the athletes are employees with the right to fair compensation or students with the opportunity to play a game at a high level with some additional perks, including scholarships and academic support.

This study looked at the workload comparison between student-athletes and traditional students to help determine the opportunity cost of being student-athletes. This data would help to determine if there is a need for additional support for student-athletes

or if there is a need for additional support that traditional students may unfairly fail to receive. The implications of this study may affect public perception of scholarship distribution and allocation, paying of student-athletes, student-athlete unionization credibility, media coverage, college athletics mission and image, and the NCAA's reputation as a whole.

This study provided additional information to help understand the demands on student-athletes' time and the differences between athlete and non-athlete students by helping to give a clear expectation to those participating in, facilitating, or assessing collegiate athletic programs. There were, however, several variables that could not be controlled by the researcher. These variables included the honesty of participating subjects, the number and distribution of participants, and the accuracy of the measuring tool. Students might not have felt as though they needed to lie about their time, but may not have been totally honest when accounting for things like social media usage in the middle of time that was logged as studying, or thinking that a practice was mandatory, when it was in fact optional. While this variable had the potential to skew data, the researcher assumed that all students were honest about their time usage. The number and distribution of subjects was also a variable which the researcher could not control, but that affected the study. Different types of athletes often reported different demands. A basketball player who was in season may have reported a very different amount of time in different categories than a football player who was in his off-season. Likewise, a graduate student did not have the same class time demands as an undergraduate, so a surplus of graduate students or shortage of undergraduates did change the comparison in favor of athletes participating in more class hours. The Student Activity Log (SAL) was

also a factor in that it was both new and something that students had likely not attempted in another form. The regularity of data input and the independence in category selection were variables that the research influenced, but did not have control over.

This research attempted to validate the null hypothesis that there was no difference in time spent on activities between student-athletes and other students. It was the opinion of the researcher that there would be no difference between athletes and non-athletes in the academic and social time expenditures, but that student-athletes would spend more time in athletic participation and non-athletes would be both more likely to work and will spend more time at work.

Chapter 2

Review of Literature

With so much existing research on the result aspects of college athletics (several examples of this include financial impact, student GPA and graduation rates, and equity in athletics), it is surprising that research on what exactly a student-athlete is remains scarce. This study focused on the day-to-day activities of student-athlete life compared with student non-athlete life. This information is crucial in forming educated opinions about what student-athletes gain or lose through their participation in varsity college sports. This research is different from academic outcome studies in that it acknowledges the variety of ways in which an athlete gives up time to participate in their chosen sport. Workload in college varies from student to student. This research examined the experiences of Division I college athletes compared to the experiences of the traditional undergraduate and graduate students.

Defining types of students.

This study compared three types of students: student-athletes, traditional students, and graduate students.

According to the most recent NCAA bylaws (2015) a student-athlete is a student who has been solicited by a member of the athletic staff or other interested party associated with athletics and who actively participates on one or more intercollegiate team under the jurisdiction of the athletics department (bylaw 12.02.13). A study by Stone, Harrison, & Mottley (2012) defines student-athletes as students who receive scholarships in exchange for athletic participation. This definition indicated a belief that all student-athletes were on scholarship or that only those whose educations were

subsidized by the athletic program or university were worth consideration in past research. Another definition was put forth by Shulman and Bowen (2002) that included all students who lettered during college. For the purposes of this study, the NCAA definition was used, which included both scholarship and non-scholarship (walk-on) athletes.

The term "traditional student" has a constantly evolving definition. One might define a traditional student as someone who goes to a university full-time and does not work; however, according to an article by Lang (2012), in the mid-90s over half of college students worked at least part time, a trend that has been steadily growing since the 1960s. Another study excluded students who postponed entering college, enrolled part-time, worked full-time, relied on themselves financially, financially supported others, were single parents, did not earn a high school diploma (either received a GED or graduated from a junior college), or were female from being considered traditional students (Mounsey, Vandehey, & Deikhoff, 2013). For the purposes of this study, we considered any undergraduate college student that did not participate in athletics at the varsity level and was enrolled full time (12 units or more) a traditional student and any student that took a full load (6 units or more) of post-bachelor level courses was considered a graduate student. This eliminated part-time students from the pool of traditional students.

NCAA GOALS study.

The NCAA Growth, Opportunities, Aspirations, and Learning of Students in College (GOALS) study is a survey study that was designed to collect information from student-athletes for NCAA committees, policy makers, and member institutions to better

their understanding of student-athletes. This study looked at a variety of issues, such as the athletic and academic experience, recruiting, finances, and time commitments. The survey has been issued three times, in the years 2006, 2010, and 2015. The most recent survey included 7,252 Division I student-athlete responses. It should be noted that these surveys asked athletes to respond to many questions that were qualitative in nature (for example question 73: "If you could, would you prefer to spend more or less time in each of these areas while in college?" followed by several categories including classwork, athletics, family, working, socializing, and sleeping.), but were presented to the students as Likert response questions; their responses were, therefore, mostly in terms of how they felt about the issues presented to them (qualitative information) rather than how frequently or how often they participated in an event (quantitative information). Although Likert scale data can be presented in a quantitative fashion, the information it was derived from was not quantitative information (NCAA, 2015; NCAA, 2016a, NCAA, 2016b).

The 2015 GOALS survey showed that the median time spent on athletics in Division I was 34 hours per week, up by two hours since the 2010 study. The median for Football Bowl Series (FBS) football players was the highest among men's sports at 42 hours per week, while the highest women's sport was softball at 39 hours per week. The report also showed that among Division I men, 42% of student-athletes wanted to spend more time on athletics, while 16% preferred less. Among Division I female student-athletes 24% wanted to spend more time on athletics, while 25% wanted less. Two-thirds of student-athletes in Division I also reported spending as much or more time on athletics during the off-season as during the competitive season.

Academic pursuits also saw an increase in time allocated by Division I student-athletes from 35.5 hours per week in 2010 to 38.5 hours per week in the 2015 GOALS results. In addition, 59% of male student-athletes reported wanting to spend more time on academics as did 66% of female student-athletes, while only 9% of men and 6% of women reported wanting less. They also noted that Division I women's rowing was an outlier, with 83% preferring more time on academics. The study also notes that student-athletes reported missing class for about 1.5 days per week during their season.

Student-athletes also reported between 11% and 23% had paying jobs in addition to school and athletics. The highest percentage of Division I athletes with jobs were FBS football players at 23%. The average hours per week worked rose from 8.1 hours per week in 2010 to 8.8 hours per week in 2015. Among Division I student-athletes 36% of men and 40% of women reported that they would like to spend more time working at a job.

Median socialization and relaxation was reported as being down from 19.5 hours in 2010 to 17.1 hours in 2015 across all NCAA divisions. 62% of male Division I student-athletes and 72% of female Division I student-athletes reported that they would prefer more time for socializing with friends, compared to 4% of men and 1% of women reporting a desire for less. In addition, 66% of men and 78% of women in Division I athletics reported wanting more time to relax alone.

Working and non-working students.

In a study by Lang (2012), it was found that students who work during college yield benefits that non-working students do not receive. The author found that students

who worked some kind of job during their non-school hours received higher grades and reported increased satisfaction with their overall college experience. Lang also found that students who worked on campus had higher GPA and satisfaction than those who worked off campus.

In a study by Mounsey, et al. (2013), the researchers found that students who worked had slightly higher GPAs (Grade Point Averages) than those who did not, although the difference was not significant (mean of 2.95 for working students and mean of 2.93 for non-working students). It was also found that working and non-working students did not differ in their anxiety or depression levels.

Academic standards and recruiting in the university vs. NCAA athletics.

According to Oriard (2012) in 1965, the NCAA implemented its first academic requirements for incoming freshmen, mandating a 1.6 minimum GPA and then in 1973 raised the minimum to 2.0. It wasn't until 1986 that SAT or ACT minimum scores and core class requirements were added. The sliding scale (GPA to SAT/ACT score ratio) was implemented in 1996 in addition to a 13 core class requirement. In the 2000s, the NCAA began implementing degree progress standards. The current Academic Progress Rate (APR) measures retention and eligibility to ensure appropriate degree progress for athletes. These were all partly in response to the reports of the Knight Commission of Intercollegiate Athletics (1991), and began with the Commission's "No Pass No Play" policy.

With these recent evolutions in the requirements of the NCAA, an argument could be made that these changes are publicity driven rather than being in the interest of the student-athletes. A study by Shulman and Bowen (2002) showed that during the years of

1951, 1976, and 1989 student-athletes had little impact on the composition of the general student body. Shulman and Bowen also noted that while the percentage of student-athletes attending the universities did not change dramatically, the number of recruited athletes did drastically increase compared to the general student body (73% of student-athletes compared to only 13% of the general student body). This led the researchers to look into the chances of getting admitted based on athletic recruitment when adjusting for SAT scores. Next they found that in 1999 a recruited athlete had a 48% better chance of being admitted than a standard traditional application. This was also compared with a 18% improved chance for minorities and 25% improvement for legacy applications (applicants whose families have a historic relation to the school). Despite data showing that in 1989, students at large had better SAT scores than both impact and non-impact sport athletes, universities continue to allocate admission spots and give preference to student-athletes (Shulman & Bowen, 2002).

Athletic scholarship and their academic impact.

The NCAA reported in 2011 that 126,000 of the 400,000 student-athletes participating in their sanctioned teams received some form of athletic scholarship, either full or partial (Rubin & Rosser, 2014). After the first intercollegiate athletic competition in 1852, athletic scholarships began to be awarded to students to improve athletic quality on campuses. The NCAA (which was formed in 1906) sanctioned athletic scholarships starting in 1956 to help preserve amateurism in college athletics and to prevent students from claiming status as employees.

The NCAA has two scholarship models: head count sports and equivalency sports. In a head count sport, the scholarships are limited to a certain number of athletes

which encourages more full scholarships for those particular sports. Equivalency sports may divide scholarships among as many players as desired. This means that equivalency sport athletes may receive minor perks such as books, but could receive a full scholarship as well.

Rubin and Rosser (2014) found that non-scholarship athletes had higher GPAs than those on athletic scholarships, which is consistent with previously examined research, but that they also take longer to graduate. Student-athletes who were not receiving scholarships took an average of 9.34 semesters to graduate, while scholarship student-athletes were able to graduate in just 8.95 semesters on average. These researchers also found that females who graduated took less time than males who graduated.

The academic consequences of being a student-athlete have been contested and studied thoroughly. In an older study comparing student-athlete GPAs, Brede and Camp (1987) found that student-athletes could be divided into categories in which a little over half could maintain academic eligibility. This study aimed to show that much like other students, some athletes were motivated and had an easy time passing, while others struggled or were not motivated to pass. Another study indicated that predictors of collegiate academic success included high school GPA, repeated years in high school, academic motivation, history of trouble, mother's education level, and the type of high school attended (Milton, Freeman, & Williamson, 2012). This study also found that among Division II student-athletes those who were awarded athletic scholarships were more likely to get a GPA above a 3.0 than those who were not awarded athletic scholarships, especially among female athletes.

In 2014, the NCAA reported that 84% of student-athletes graduated within six years of starting college (Hosick, 2014). This is an improvement of 10 percentage points (totaling almost 14,000 students) since they began tracking graduation success rates (GSR) in 1995.

Student engagement.

In another study conducted by Gayles & Hu (2009), it was found that students who were able to participate in student engagement activities had improved college experiences. The authors also found that student-athletes were more likely to participate in student engagement activities than non-athletes, especially students in low-profile sports (e.g.: sports other than basketball and football). These researchers noted that student engagement led to improved learning outcomes, cultural attitudes, communication skills, and personal self-concept.

Student engagement (e.g. community service, voluntary community involvement, and community outreach) by athletes can also be promoted by the athletic department mission statements. Huml, Svensson, and Hancock (2014) found that while mission statements encouraged the included behavior by the institutions, only 10 out of 64 institutions studied had missions that were perceived as service-focused. Their study also found that Division I FBS programs were more likely to include mission statements, student handbooks with Life Skills programming, and offer community service opportunities for athletes than NCAA Division I Football Championship Subdivision (FCS) and Division II programs. In the same study Huml et al. also found that student-athlete handbooks sometimes included community service as punishment, which may

reduce the likelihood of voluntary community involvement, while others championed community outreach by student-athletes.

Psychological well-being.

In addition to the stressors of academic life, student-athletes are under constant scrutiny that can result in some forms of psychological damage. In 2007, research reported that athletes perceived they were viewed negatively by both faculty and students, to the point that the athletes felt they needed to conceal their athletic identity in many situations to avoid being stigmatized, made the object of jokes, or negative comments in the classroom (Simons, H.D., Bosworth, C., Fujita, S., & Jensen, M., 2007). Stone, et. al. (2012) studied the effect of triggering the student-athlete identity on academic performance and found that for some students it can be difficult to reconcile their athletic and student roles, causing deflated academic performance. The researchers described their findings in the phrase below:

“Rather than activating a positive connection between their scholastic and athletic identities, priming the identity “scholar-athlete” induced stereotype threat among African American college athletes who place high value on their scholarship, which caused them to perform more poorly on the test of verbal reasoning, compared to academically engaged white college athletes and compared to college athletes in each racial group who do not place a high value on their educational outcomes” (Stone et al., 2012, p.104).

Student-athletes rarely responded to this stereotype threat by working harder according to Dee (2014), and the academic stigma against student-athletes is a significant contributor to academic underperformance. Based on the information from the Knight

Commission report and information from research from Banbel (2014), student support services can help with alleviating this sense of a stigma by providing counseling as well as tools to support student-athletes in their academic work and efforts in the classroom. These same offices can also work with faculty to give them support to help alleviate some of the negative attitudes that still may permeate classrooms as a result of inadvertent comments made by professors as well as students, whether those comments are in passing or not. It is understood that the support services offices may be small or understaffed, as may be the support services staffs provided by the athletic departments at the university, but it is important that all efforts be made to help make the university experience a good one for ALL student, no matter if they are an athlete, a debate team member, a rodeo team member or a non-traditional student (Banbel, 2014).

Student-athletes after college.

With many benefits and many more stressors related to the student-athlete experience, what is life after college like for student-athletes? Research indicates that employers value student-athletes for, among other things, their time management skills, competitiveness, leadership qualities, and team related skills (Chalfin, et al., 2015). One employer interviewed in Chalfin, et al.'s study noted that they considered college athletics as a full-time job. This study showed that employers valued athletic participation over part-time work, volunteer work, student jobs, student clubs, and debate teams. In addition, being a team captain or All-American were statistically more important to employers than being the captain of the school debate team or the president of a fraternity. Employers recognize athletics as being a better quality activity than any other extra-curricular or work experience for college students.

Shulman & Bowen's research (2001) showed that among male students, athletes were more likely to pursue advanced degrees in business and finance but were less likely to pursue advanced degrees in other fields. In 1976 female athletes were more likely to pursue advanced degrees than non-athletes. This advantage was no longer present by 1989, but female athletes were just as likely as other female students to continue on to Masters, PhD, or other advanced degrees. Shulman & Bowen also found differences in the earning potential of student-athletes after college. In all three groups studied (classes of 1951, 1976, and 1989) male athletes had higher earnings than their non-athlete counterparts. Women also reported higher earnings, but this was only reported in the 1976 cohort.

Employer preference for athletes, improved earnings, and the higher rate of advanced degrees (especially among women) could be valuable arguments for the benefit of participating in collegiate athletics. The long term benefits and lessons gained from athletic participation could outweigh the challenges student-athletes face.

Summary of the Review of Literature

Existing research has provided a wide range of perspectives into the health, academic, and social topics surrounding student-athletes. From improved GPAs and student engagement to a higher chance of employment, there are many good reasons to participate in collegiate athletics. This study will attempt to quantify some of the experiences that student-athletes face using their time rather than the perceived benefit of how they use their time, as is done in the NCAA studies presented above.

Methods

This study analyzed activity data collected from the subjects using a data collection tool that the subjects volunteered to use. The tool, named Student Activity Log (SAL), allowed students to document time spent participating in several varying types of activities categorized under four major areas titled Academic, Athletic, Work and Social. The SAL required subjects to select activities from provided categories and record the number of hours spent on those activities each day. Subjects did this for each activity performed during a consecutive fifteen-day period.

Subjects.

The researcher obtained Human Subject Approval from South Dakota State University Institutional Review Board after submitting the appropriate application explaining the method of data collection and testing processes and completing the appropriate human subject training in ethical treatment and testing methodology. Subjects were recruited using a variety of methods including fliers on campus, information and sign up table in the student union, creation and upkeep of social media groups, speaking with classes, teams at practice, and in the Student Athlete Advisory Committee (SAAC), and email contacts. During the testing period all volunteers were contacted to remind them to fill out their forms and answer any general questions regarding the SAL or what was appropriate to log.

Approximately 250 students from South Dakota State University volunteered to fill out SALs. Ultimately 22 students completed and returned their SALs. The small sample size required a non-parametric analysis to prevent skewed data from outliers, so data was examined as ordinal data. While this is not as powerful, it does eliminate

outliers, which were much more likely in this small sample. Subjects came from a diverse background, including a variety of majors, work statuses, athletic or non-athletic participation, as well as class standings. Prior to logging information on the SAL, subjects were identified based on their status as undergraduate, graduate, working, non-working, student-athlete, and non-athlete by filling in a demographic information box at the top of the SAL (See Figure 1). Demographic information included general information (name, date of birth, gender, and nationality), academic information (school, year in school, major and minor, and academic scholarship status), athletic information (sport or sports played and athletic scholarship), as well as information on the nature of the subjects' employment (on or off campus, graduate or teaching assistantship, internship, full or part time, and the number of jobs held). If a subject left a box blank, it was assumed that they did not participate in that type of activity (i.e.: if the "Sport" box was left empty, the subject was assumed to not be an athlete).

Basic Info	School Info	Athletic Info	Work Info	Job Name	Job Site
Name	School	Sport	Job		On Campus/ Off campus
DOB	Year in School	Athletic Scholarship	% Job		On Campus/ Off campus
Nationality	Academic Scholarship	% Sport 2	Job		On Campus/ Off campus
Gender	Major	Athletic Scholarship	% Internship		On Campus/ Off campus
	Minor		GA/ TA		On Campus

Figure 1: Demographic Information Box

Using the demographic information collected, students were placed into groups and assigned numeric labels. Student-athletes received a "1" in the first numeric placeholder, while non-athletes received a "2". For the purposes of further sub-dividing students, the second numeric placeholder assigned undergraduates a 1 and graduate-students a 2. The final numeric placeholder gave working students a 1 and non-working students a 2. The chart below outlines all possible categories, their numeric values, and

the number of subject in each category. For the purposes of this study, only student-athlete and non-athlete status were used for calculating the statistics.

Subject Category	Numeric Label	Number of Subjects
Athlete:Undergraduate:Working	1.1.1	N=1
Athlete:Undergraduate:Non-Working	1.1.2	N=13
Athlete:Graduate:Working	1.2.1	N=0
Athlete:Graduate:Non-Working	1.2.2	N=0
Non-Athlete: Undergraduate:Working	2.1.1	N=3
Non-Athlete:Undergraduate:Non-Working	2.1.2	N=1
Non-Athlete:Graduate:Working	2.2.1	N=4
Non-Athlete:Graduate:Non-Working	2.2.2	N=0
Total		N=22

Table 1: Subject Categories, Numeric Label, and Number of Subjects

Experimental Design.

Once subjects entered their demographic information they began to fill out the log portion of the SAL (Appendix 1). The four umbrella categories included academic, athletic, work, and social activities. Each of these categories had specific sub-categories that may be relevant or irrelevant to the subject based on their demographic information (i.e. a subject who is not a student-athlete did not use the athletic category). Once a subject participated in an activity they recorded the number of hours spent on that activity in the box next to that category in the corresponding day of the study. If a subject participated in the same activity on multiple occasions during a particular day, they added the total time spend together (i.e. if a student has class from 10am-11am and again from

2pm-4pm, they wrote in $\bar{3}$ as the total number of hours spent on the \bar{c} lass \bar{o} activity). Subjects were asked to round their times to the nearest half hour (a class from 9am-9:50 am would be recorded as 1 hour).

The data collection period extended over fifteen days. Once the data collection period ended, subjects submitted their SALs to the researcher and the scores were input to Microsoft Excel for the researcher to analyze. The time for each of the four major categories was summed and then using a Mann-Whitney U-Test (MWU) the researcher compared rank scores of the various categories to determine whether there was a significant difference in the time usage between student-athletes and non-athletes. The student groups compared included only student-athletes (1) and non-athletes (2), and did not account for the different student sub-categories separately.

Chapter 4

Manuscript

Abstract

Purpose: The purpose of this study was to collect and analyze data on the workload of students and student-athletes to determine if there is a significant difference in the workloads of student-athletes compared with non-athletes, including undergraduate and graduate students. It was hypothesized that student-athletes would spend more time in athletic activities, but would sacrifice time in other areas. **Method:** This analysis of variance study collected data from 22 students at South Dakota State University using the Student Activity Log and categorized those students using a combination of three of six labels (student-athlete or non-athlete, undergraduate or graduate, and working or non-working). Once students were categorized, they submitted data using the SAL to show how much time was spent doing various activities, which were divided into the four major groups Academic, Athletic, Work, and Social. Those hours were then analyzed using a Mann-Whitney U Test to determine significant differences in the time expenditures between student-athletes and non-athletes. **Statistical Analysis: Results:** There was a significant difference in the time demands between student-athletes and non-athletes in their Academic, Athletic, and Work activities. There was no significant difference in the time demands between student-athletes and non-athletes in their Social activities. When adjusted to include only undergraduate students, the Academic time spent was no longer significantly different, but the results in the other categories remained the same. **Conclusions:** The time demands on student-athletes is similar to that of other students on campus in academic and social categories when only undergraduates

are considered, but the time spent on athletic participation replaces that of having a job among other students. When all participants are included, athletes spend more time on academics than non-athletes.

Keywords: student-athlete; university athletics; NCAA; time demands; time management; non-athlete; traditional student; time

Introduction

Student-athletes have seen a growing presence in the media over the past decade for a variety of reasons. From the Cinderella stories during the annual March Madness basketball tournament to any number of controversial coaching scandals, student-athletes have been the centerpiece of collegiate publicity. With so much exposure, college athletic departments are regularly placed under a microscope for their treatment of these students. However, most of the information that is readily available is presented only by news and sports reporting, and there is only a small pool of research regarding the student-athlete experience during college.

Most recently, as athletic and university budgets grow and benefit from athletes' work (Trenkamp, 2009), some student-athletes desire payment and reform for their services, and the rights to the use of their names and images. This trend of seeking compensation reflects a skewing of the collegiate athlete persona, showing that these student-athletes perceive themselves as being employees of the university rather than students with the opportunity to participate in extracurricular activities. The question at hand, therefore, was a matter of deciding if the athletes are employees with the right to

fair compensation or students with the opportunity to play a game at a high level with some additional perks, including scholarships and academic support.

This study looked at the workload comparison between student-athletes and traditional students to help determine the opportunity cost of being student-athletes. This data would help to determine if there is a need for additional support for student-athletes or if there is a need for additional support that traditional students may unfairly fail to receive. The implications of this study may affect public perception of scholarship distribution and allocation, paying of student-athletes, student-athlete unionization credibility, media coverage, college athletics mission and image, and the NCAA's reputation as a whole.

This study provided additional information to help understand the demands on student-athletes' time and the differences between athlete and non-athlete students by helping to give a clear expectation to those participating in, facilitating, or assessing collegiate athletic programs. There were, however, several variables that could not be controlled by the researcher. These variables included the honesty of participating subjects, the number and distribution of participants, and the accuracy of the measuring tool. Students might not have felt as though they needed to lie about their time, but may not have been totally honest when accounting for things like social media usage in the middle of time that was logged as studying, or thinking that a practice was mandatory, when it was in fact optional. While this variable had the potential to skew data, the researcher assumed that all students were honest about their time usage. The number and distribution of subjects was also a variable which the researcher could not control, but that affected the study. Different types of athletes often reported different demands. A

basketball player who was in season may have reported a very different amount of time in different categories than a football player who was in his off-season. Likewise, a graduate student did not have the same class time demands as an undergraduate, so a surplus of graduate students or shortage of undergraduates did change the comparison in favor of athletes participating in more class hours. The Student Activity Log (SAL) was also a factor in that it was both new and something that students had likely not attempted in another form. The regularity of data input and the independence in category selection were variables which the research influenced, but did not have control over.

This research attempted to validate the null hypothesis that there was no difference in time spent on activities between student-athletes and other students. It was the opinion of the researcher that there would be no difference between athletes and non-athletes in the academic and social time expenditures, but that student-athletes would spend more time in athletic participation and non-athletes would be both more likely to work and will spend more time at work.

Chapter 2

Review of Literature

With so much existing research on the result aspects of college athletics (several examples of this include financial impact, student GPA and graduation rates, and equity in athletics), it is surprising that research on what exactly a student-athlete is remains scarce. This study focused on the day-to-day activities of student-athlete life compared with student non-athlete life. This information is crucial in forming educated opinions about what student-athletes gain or lose through their participation in varsity college sports. This research is different from academic outcome studies in that it acknowledges

the variety of ways in which an athlete gives up time to participate in their chosen sport. Workload in college varies from student to student. This research examined the experiences of Division I college athletes compared to the experiences of the traditional undergraduate and graduate students.

Defining types of students.

This study compared three types of students: student-athletes, traditional students, and graduate students.

According to the most recent NCAA bylaws (2015) a student-athlete is a student who has been solicited by a member of the athletic staff or other interested party associated with athletics and who actively participates on one or more intercollegiate team under the jurisdiction of the athletics department (bylaw 12.02.13). A study by Stone, Harrison, & Mottley (2012) defines student-athletes as students who receive scholarships in exchange for athletic participation. This definition indicated a belief that all student-athletes were on scholarship or that only those whose educations were subsidized by the athletic program or university were worth consideration in past research. Another definition was put forth by Shulman and Bowen (2002), that included all students who lettered during college. For the purposes of this study, the NCAA definition was used, which included both scholarship and non-scholarship (walk-on) athletes.

The term "traditional student" has a constantly evolving definition. One might define a traditional student as someone who goes to a university full-time and does not work; however, according to an article by Lang (2012), in the mid-90s over half of college students worked at least part time, a trend that has been steadily growing since the

1960s. Another study excluded students who postponed entering college, enrolled part-time, worked full-time, relied on themselves financially, financially supported others, were single parents, did not earn a high school diploma (either received a GED or graduated from a junior college), or were female from being considered traditional students (Mounsey, Vandehey, & Deikhoff, 2013). For the purposes of this study, we considered any undergraduate college student that did not participate in athletics at the varsity level and was enrolled full time (12 units or more) a traditional student and any student that took a full load (6 units or more) of post-bachelor level courses was considered a graduate student. This eliminated part-time students from the pool of traditional students.

NCAA GOALS study.

The NCAA Growth, Opportunities, Aspirations, and Learning of Students in College (GOALS) study is a survey study that was designed to collect information from student-athletes for NCAA committees, policy makers, and member institutions to better their understanding of student-athletes. This study looked at a variety of issues, like the athletic and academic experience, recruiting, finances, and time commitments. The survey has been issued three times, in the years 2006, 2010, and 2015. The most recent survey included 7,252 Division I student-athlete responses. It should be noted that these surveys asked athletes to respond to many questions that were qualitative in nature (for example question 73: "If you could, would you prefer to spend more or less time in each of these areas while in college?" followed by several categories including classwork, athletics, family, working, socializing, and sleeping.), but were presented to the students as Likert response questions; their responses were, therefore, mostly in terms of how they

felt about the issues presented to them (qualitative information) rather than how frequently or how often they participated in an event (quantitative information). Although Likert scale data can be presented in a quantitative fashion, the information it was derived from was not quantitative information (NCAA, 2015; NCAA, 2016a, NCAA, 2016b).

The 2015 GOALS survey showed that the median time spent on athletics in Division I was 34 hours per week, up by two hours since the 2010 study. The median for Football Bowl Series (FBS) football players was the highest among men's sports at 42 hours per week, while the highest women's sport was softball at 39 hours per week. The report also showed that among Division I men, 42% of student-athletes wanted to spend more time on athletics, while 16% preferred less. Among Division I female student-athletes 24% wanted to spend more time on athletics, while 25% wanted less. Two-thirds of student-athletes in Division I also reported spending as much or more time on athletics during the off-season as during the competitive season.

Academic pursuits also saw an increase in time allocated by Division I student-athletes from 35.5 hours per week in 2010 to 38.5 hours per week in the 2015 GOALS results. In addition, 59% of male student-athletes reported wanting to spend more time on academics as did 66% of female student-athletes, while only 9% of men and 6% of women reported wanting less. They also noted that Division I women's rowing was an outlier, with 83% preferring more time on academics. The study also notes that student-athletes reported missing class for about 1.5 days per week during their season.

Student-athletes also reported between 11% and 23% had paying jobs in addition to school and athletics. The highest percentage of Division I athletes with jobs were FBS football players at 23%. The average hours per week worked rose from 8.1 hours per

week in 2010 to 8.8 hours per week in 2015. Among Division I student-athletes 36% of men and 40% of women reported that they would like to spend more time working at a job.

Median socialization and relaxation was reported as being down from 19.5 hours in 2010 to 17.1 hours in 2015 across all NCAA divisions. 62% of male Division I student-athletes and 72% of female Division I student-athletes reported that they would prefer more time for socializing with friends, compared to 4% of men and 1% of women reporting a desire for less. In addition, 66% of men and 78% of women in Division I athletics reported wanting more time to relax alone.

Working and non-working students.

In a study by Lang (2012), it was found that students who work during college yield benefits that non-working students do not receive. The author found that students who worked some kind of job during their non-school hours received higher grades and reported increased satisfaction with their overall college experience. Lang also found that students who worked on campus had higher GPA and satisfaction than those who worked off campus.

In a study by Mounsey, et al. (2013), the researchers found that students who worked had slightly higher GPAs (Grade Point Averages) than those who did not, although the difference was not significant (mean of 2.95 for working students and mean of 2.93 for non-working students). It was also found that working and non-working students did not differ in their anxiety or depression levels.

Academic standards and recruiting in the university vs. NCAA athletics.

According to Oriard (2012) in 1965, the NCAA implemented its first academic requirements for incoming freshmen, mandating a 1.6 minimum GPA and then in 1973 raised the minimum to 2.0. It wasn't until 1986 that SAT or ACT minimum scores and core class requirements were added. The sliding scale (GPA to SAT/ACT score ratio) was implemented in 1996 in addition to a 13 core class requirement. In the 2000s, the NCAA began implementing degree progress standards. The current Academic Progress Rate (APR) measures retention and eligibility to ensure appropriate degree progress for athletes. These were all partly in response to the reports of the Knight Commission of Intercollegiate Athletics (1991), and began with the Commission's "No Pass No Play" policy.

With these recent evolutions in the requirements of the NCAA, an argument could be made that these changes are publicity driven rather than being in the interest of the student-athletes. A study by Shulman and Bowen (2002) showed that during the years of 1951, 1976, and 1989 student-athletes had little impact on the composition of the general student body. Shulman and Bowen also noted that while the percentage of student-athletes attending the universities did not change dramatically, the number of recruited athletes did drastically increase compared to the general student body (73% of student-athletes compared to only 13% of the general student body). This led the researchers to look into the chances of getting admitted based on athletic recruitment when adjusting for SAT scores. Next they found that in 1999 a recruited athlete had a 48% better chance of being admitted than a standard traditional application. This was also compared with a 18% improved chance for minorities and 25% improvement for legacy applications

(applicants whose families have a historic relation to the school). Despite data showing that in 1989, students at large had better SAT scores than both impact and non-impact sport athletes, universities continue to allocate admission spots and give preference to student-athletes (Shulman & Bowen, 2002).

Athletic scholarship and their academic impact.

The NCAA reported in 2011 that 126,000 of the 400,000 student-athletes participating in their sanctioned teams received some form of athletic scholarship, either full or partial (Rubin & Rosser, 2014). After the first intercollegiate athletic competition in 1852, athletic scholarships began to be awarded to students to improve athletic quality on campuses. The NCAA (which was formed in 1906) sanctioned athletic scholarships starting in 1956 to help preserve amateurism in college athletics and to prevent students from claiming status as employees.

The NCAA has two scholarship models: head count sports and equivalency sports. In a head count sport, the scholarships are limited to a certain number of athletes which encourages more full scholarships for those particular sports. Equivalency sports may divide scholarships among as many players as desired. This means that equivalency sport athletes may receive minor perks such as books, but could receive a full scholarship as well.

Rubin and Rosser (2014) found that non-scholarship athletes had higher GPAs than those on athletic scholarships, which is consistent with previously examined research, but that they also take longer to graduate. Student-athletes who were not receiving scholarships took an average of 9.34 semesters to graduate, while scholarship student-athletes were able to graduate in just 8.95 semesters on average. These

researchers also found that females who graduated took less time than males who graduated.

The academic consequences of being a student-athlete have been contested and studied thoroughly. In an older study comparing student-athlete GPAs, Brede and Camp (1987) found that student-athletes could be divided into categories in which a little over half could maintain academic eligibility. This study aimed to show that much like other students, some athletes were motivated and had an easy time passing, while others struggled or were not motivated to pass. Another study indicated that predictors of collegiate academic success included high school GPA, repeated years in high school, academic motivation, history of trouble, mother's education level, and the type of high school attended (Milton, Freeman, & Williamson, 2012). This study also found that among Division II student-athletes those who were awarded athletic scholarships were more likely to get a GPA above a 3.0 than those who were not awarded athletic scholarships, especially among female athletes.

In 2014, the NCAA reported that 84% of student-athletes graduated within six years of starting college (Hosick, 2014). This is an improvement of 10 percentage points (totaling almost 14,000 students) since they began tracking graduation success rates (GSR) in 1995.

Student engagement.

In another study conducted by Gayles & Hu (2009), it was found that students who were able to participate in student engagement activities had improved college experiences. The authors also found that student-athletes were more likely to participate in student engagement activities than non-athletes, especially students in low-profile

sports (e.g.: sports other than basketball and football). These researchers noted that student engagement led to improved learning outcomes, cultural attitudes, communication skills, and personal self-concept.

Student engagement (e.g. community service, voluntary community involvement, and community outreach) by athletes can also be promoted by the athletic department mission statements. Huml, Svensson, and Hancock (2014) found that while mission statements encouraged the included behavior by the institutions, only 10 out of 64 institutions studied had missions that were perceived as service-focused. Their study also found that Division I FBS programs were more likely to include mission statements, student handbooks with Life Skills programming, and offer community service opportunities for athletes than NCAA Division I Football Championship Subdivision (FCS) and Division II programs. In the same study Huml et al. also found that student-athlete handbooks sometimes included community service as punishment, which may reduce the likelihood of voluntary community involvement, while others championed community outreach by student-athletes.

Psychological well-being.

In addition to the stressors of academic life, student-athletes are under constant scrutiny that can result in some forms of psychological damage. In 2007, research reported that athletes perceived they were viewed negatively by both faculty and students, to the point that the athletes felt they needed to conceal their athletic identity in many situations to avoid being stigmatized, made the object of jokes, or negative comments in the classroom (Simons, H.D., Bosworth, C., Fujita, S., & Jensen, M., 2007). Stone, et. al. (2012) studied the effect of triggering the student-athlete identity on

academic performance and found that for some students it can be difficult to reconcile their athletic and student roles, causing deflated academic performance. The researchers described their findings in the phrase below:

“Rather than activating a positive connection between their scholastic and athletic identities, priming the identity “scholar-athlete” induced stereotype threat among African American college athletes who place high value on their scholarship, which caused them to perform more poorly on the test of verbal reasoning, compared to academically engaged white college athletes and compared to college athletes in each racial group who do not place a high value on their educational outcomes” (Stone et al., 2012, p.104).

Student-athletes rarely responded to this stereotype threat by working harder according to Dee (2014), and the academic stigma against student-athletes is a significant contributor to academic underperformance. Based on the information from the Knight Commission report and information from research from Banbel (2014), student support services can help with alleviating this sense of a stigma by providing counseling as well as tools to support student-athletes in their academic work and efforts in the classroom. These same offices can also work with faculty to give them support to help alleviate some of the negative attitudes that still may permeate classrooms as a result of inadvertent comments made by professors as well as students, whether those comments are in passing or not. It is understood that the support services offices may be small or understaffed, as may be the support services staffs provided by the athletic departments at the university, but it is important that all efforts be made to help make the university

experience a good one for ALL student, no matter if they are an athlete, a debate team member, a rodeo team member or a non-traditional student (Banbel, 2014).

Student-athletes after college.

With many benefits and many more stressors related to the student-athlete experience, what is life after college like for student-athletes? Research indicates that employers value student-athletes for, among other things, their time management skills, competitiveness, leadership qualities, and team related skills (Chalfin, et al., 2015). One employer interviewed in Chalfin, et al.'s study noted that they considered college athletics as a full-time job. This study showed that employers valued athletic participation over part-time work, volunteer work, student jobs, student clubs, and debate teams. In addition, being a team captain or All-American were statistically more important to employers than being the captain of the school debate team or the president of a fraternity. Employers recognize athletics as being a better quality activity than any other extra-curricular or work experience for college students.

Shulman & Bowen's research (2001) showed that among male students, athletes were more likely to pursue advanced degrees in business and finance but were less likely to pursue advanced degrees in other fields. In 1976 female athletes were more likely to pursue advanced degrees than non-athletes. This advantage was no longer present by 1989, but female athletes were just as likely as other female students to continue on to Masters, PhD, or other advanced degrees. Shulman & Bowen also found differences in the earning potential of student-athletes after college. In all three groups studied (classes of 1951, 1976, and 1989) male athletes had higher earnings than their non-athlete

counterparts. Women also reported higher earnings, but this was only reported in the 1976 cohort.

Employer preference for athletes, improved earnings, and the higher rate of advanced degrees (especially among women) could be valuable arguments for the benefit of participating in collegiate athletics. The long term benefits and lessons gained from athletic participation could out-weigh the challenges student-athletes face.

Summary of the Review of Literature

Existing research has provided a wide range of perspectives into the health, academic, and social topics surrounding student-athletes. From improved GPAs and student engagement to a higher chance of employment, there are many good reasons to participate in collegiate athletics. This study will attempt to quantify some of the experiences that student-athletes face using their time rather than the perceived benefit of how they use their time, as is done in the NCAA studies presented above.

Methods

This study analyzed activity data collected from the subjects using a data collection tool that the subjects volunteered to use. The tool, named Student Activity Log (SAL), allowed students to document time spent participating in several varying types of activities categorized under four major areas titled Academic, Athletic, Work and Social. The SAL required subjects to select activities from provided categories and record the number of hours spent on those activities each day. Subjects did this for each activity performed during the fifteen-day period.

Subjects.

The researcher obtained Human Subject Approval from South Dakota State University Institutional Review Board after submitting the appropriate application explaining the method of data collection and testing processes and completing the appropriate human subject training in ethical treatment and testing methodology. Subjects were recruited using a variety of methods including fliers on campus, information and sign up table in the student union, creation and upkeep of social media groups, speaking with classes, teams at practice, and in the Student Athlete Advisory Committee (SAAC), and email contacts. During the testing period all volunteers were contacted to remind them to fill out their forms and answer any general questions regarding the SAL or what was appropriate to log.

Approximately 250 students from South Dakota State University volunteered to fill out SALs. Ultimately 22 students completed and returned their SALs. The small sample size required a non-parametric analysis, so data was examined as ordinal data. While this is not as powerful, it does eliminate outliers, which were much more likely in this small sample. Subjects came from a diverse background, including a variety of majors, work statuses, athletic or non-athletic participation, as well as class standings. Prior to logging information on the SAL, subjects were identified based on their status as undergraduate, graduate, working, non-working, student-athlete, and non-athlete by filling in a demographic information box at the top of the SAL (See Figure 1). Demographic information included general information (name, date of birth, gender, and nationality), academic information (school, year in school, major and minor, and academic scholarship status), athletic information (sport or sports played and athletic

scholarship), as well as information on the nature of the subjects' employment (on or off campus, graduate or teaching assistantship, internship, full or part time, and the number of jobs held). If a subject left a box blank, it was assumed that they did not participate in that type of activity (i.e.: if the "Sport" box was left empty, the subject was assumed to not be an athlete).

Basic Info	School Info	Athletic Info	Work Info	Job Name	Job Site
Name	School	Sport	Job		On Campus/ Off campus
DOB	Year in School	Athletic Scholarship	% Job		On Campus/ Off campus
Nationality	Academic Scholarship	% Sport 2	Job		On Campus/ Off campus
Gender	Major	Athletic Scholarship	% Internship		On Campus/ Off campus
	Minor		GA/ TA		On Campus

Figure 1: Demographic Information Box

Using the demographic information collected, students were placed into groups and assigned numeric labels. Student-athletes received a "1" in the first numeric placeholder, while non-athletes received a "2". For the purposes of further sub-dividing students, the second numeric placeholder assigned undergraduates a 1 and graduate-students a 2. The final numeric placeholder gave working students a 1 and non-working students a 2. The chart below outlines all possible categories, their numeric values, and the number of subject in each category. For the purposes of this study, only student-athlete and non-athlete status were used for calculating the statistics.

Subject Category	Numeric Label	Number of Subjects
Athlete:Undergraduate:Working	1.1.1	N=1
Athlete:Undergraduate:Non-Working	1.1.2	N=13
Athlete:Graduate:Working	1.2.1	N=0
Athlete:Graduate:Non-Working	1.2.2	N=0
Non-Athlete:Undergraduate:Working	2.1.1	N=3
Non-Athlete:Undergraduate:Non-Working	2.1.2	N=1
Non-Athlete:Graduate:Working	2.2.1	N=4
Non-Athlete:Graduate:Non-Working	2.2.2	N=0
Total		N=22

Table 1: Subject Categories, Numeric Label, and Number of Subjects

Experimental Design.

Once subjects entered their demographic information they began to fill out the log portion of the SAL (Appendix 1). The four umbrella categories included academic, athletic, work, and social activities. Each of these categories had specific sub-categories that may be relevant or irrelevant to the subject based on their demographic information (i.e. a subject who is not a student-athlete did not use the athletic category). Once a subject participated in an activity they recorded the number of hours spent on that activity in the box next to that category in the corresponding day of the study. If a subject participated in the same activity on multiple occasions during a particular day, they added the total time spent together (i.e. if a student has class from 10am-11am and again from 2pm-4pm, they wrote in 3 as the total number of hours spent on the class activity).

Subjects were asked to round their times to the nearest half hour (a class from 9am-9:50 am would be recorded as 1 hour).

The data collection period extended over fifteen days. Once the data collection period ended, subjects submitted their SALs to the researcher and the scores were input to Microsoft Excel for the researcher to analyze. The time for each of the four major categories was summed and then using a Mann-Whitney U-Test (MWU) the researcher compared rank scores of the various categories to determine whether there was a significant difference in the time usage between student-athletes and non-athletes. The student groups compared included only student-athletes (1) and non-athletes (2), and did not account for the different student sub-categories separately.

Results

Subjects were asked to volunteer at random for several weeks prior to the data collection period beginning on March 14th, 2016. To get more data from a different group of athletes, a second data set was collected starting April 4th, 2016 that gave us a more diverse group of athletes to observe. The researcher contacted students through the on campus SAAC, coach contacts, professor and in-class contacts, and by asking for volunteers in the student union. Approximately 250 students from South Dakota State University volunteered to fill out SALs. Ultimately 22 students completed and returned their SALs (n=22). Student-athletes accounted for 14 subjects (n1=14) and non-athletes included 8 subjects (n2=8).

All Groups, All Categories

The data collected was summed for each subject in four categories: academic, athletic, work, and social. This data is measured in hours (rounded to the nearest tenth). All data

was then sorted into means and medians for 1 ϕ (Student-Athletes) and 2 ϕ (Non-Athletes) shown in Figure 2-a. Means and medians were also calculated for subgroups (1.1.1, 1.1.2, 2.1.1, 2.1.2, and 2.2.1) shown in Figure 2-b. The summed data was then transferred to the MWU table under time. The next column includes the type of student with 010 indicating an athlete and 020 indicating a non-athlete. Each subject's time was then ranked and corrected for use in the MWU test. The MWU for each student type was calculated within each category and U scores were calculated (U1=Student-Athletes, U2=Non-Athletes). Next the critical value for an alpha of 0.05 from the table (Appendix 3) was calculated to be 26 ($U_{crit}=26$). The smaller U value needed to be greater than 26 to accept the null hypothesis that there was no difference in the time spent on activities between student-athletes and non-athletes.

CATEGORY	MEANS		MEDIANS	
	1	2	1	2
ACADEMIC	58.62143	37.3125	58	36.75
ATHLETIC	59.625	1.75	62.25	0
WORK	0.357143	48.9375	0	53.5
SOCIAL	77.38571	162.375	60	93.25
TOTAL HOURS LOGGED	195.9893	250.375	193.05	186.25

Figure 2-a: Means and Medians by Student-Athlete (1) and Non-Athlete (2)

CATEGORY	MEANS					MEDIANS				
	1.1.1	1.1.2	2.1.1	2.1.2	2.2.1	1.1.1	1.1.2	2.1.1	2.1.2	2.2.1
ACADEMIC	83.5	56.70769	42.66667	83	21.875	83.5	57	40	83	23
ATHLETIC	65.5	59.17308	0	0	3.5	65.5	61.5	0	0	0
WORK	5	0	49.66667	0	60.625	5	0	46	0	67.25
SOCIAL	37.5	80.45385	69.16667	98	248.375	37.5	68	65.5	98	123.5
TOTAL HOURS LOGGED	191.5	196.3346	161.5	181	334.375	191.5	194.6	169	181	225.5

Figure 2-b: Means and Medians by Sub-Category

For academic time, the U scores were calculated as $U_1=24.5$ and $U_2=87.5$, so the null hypothesis was rejected ($U_1 < U_{crit}$) and state that there is a significant difference

between student-athletes and non-athletes in academic time expenditure. In the athletic category $U_1=0$ and $U_2=112$, so the null hypothesis was also rejected ($U_1 < U_{crit}$) and state that there is a significant difference between athletic time expenditures between student-athletes and non-athletes. The work category U scores were $U_1=104.5$ and $U_2=7.5$ so again the null hypothesis was rejected ($U_2 < U_{crit}$) and state that there was a significant difference between work time expenditures between student-athletes and non-athletes. In the final category, social, we calculated $U_1=85$ and $U_2=27$; the null hypothesis was accepted, stating that there is no significant difference in social time spent between student-athletes and non-athletes.

	ACADEMIC	ATHLETIC	WORK	SOCIAL
U1	24.5	0	104.5	87
U2	87.5	112	7.5	27
U	24.5	0	7.5	27
U_{CRIT}	26	26	26	26
ACCEPT OR REJECT H₀	Reject	Reject	Reject	Accept

Figure 3: Summary of Results

Undergraduates, All Categories

Next, the MWU tests were updated to reflect only undergraduate students by removing graduate students from the table. The new U_{crit} was calculated to be 9 ($U_{crit}=9$). For academic time among undergraduates, U was calculated as 21.5, so the null hypothesis was accepted at a significance level of $\alpha=.05$ and stating that there is not a significant difference between student-athletes and non-athletes. In athletic time spent it was calculated that U was equal to 0 and so U_{crit} was greater than U and there was a significant difference in time spent between student-athletes and non-athletes. The U score for work was calculated at 7.5 and so there was still a significant difference between student-athletes and non-athletes in this category as well. Finally, the U score

for social was calculated at 20, so the null hypothesis was accepted and it is assumed that there is no significant difference in time spent between student-athletes and non-athletes.

	ACADEMIC	ATHLETIC	WORK	SOCIAL
U1	21.5	0	48.5	36
U2	34.5	56	7.5	20
U	21.5	0	7.5	20
U_{CRIT}	9	9	9	9
ACCEPT OR REJECT H₀	Accept	Reject	Reject	Accept

Figure 4: Summary of Results (Undergraduate Only)

Reporting Trends

Students were asked to log their results over a 15-day period. The researcher analyzed reporting trends using a MWU Test and found that there was no significant difference in reported hours between the weekdays and weekends or during the first and second week of the study.

The weekday to weekend comparison U_{crit} value was 1 ($U_{crit}=1$). U for this test was calculated to be 19 ($U=19$), so the researcher failed to reject the null hypothesis that there is no difference between weekend and weekday hours logged.

Next, the first seven days were compared to the last eight days to see if there was a difference between logging practices of participants in the first and second week of the study. The U_{crit} was calculated as 4 ($U_{crit}=4$) and U was calculated as 19 ($U=19$), so again the researcher failed to reject the null hypothesis that there is no difference between hours logged during the first and second week of the study.

Discussion

This study attempted to validate the null hypothesis that there is no difference in time demands between student-athletes and non-athletes. The researcher expected this to be true in the academic and social categories, while student-athletes were expected to

spend more time on athletics and non-athletes were expected to spend more time on work. The initial results demonstrated that the time expenditures of student-athletes were greater than non-athletes in the academic and athletic categories, and that non-athletes had greater time demands under the work category. In addition, there was no significant difference in social time between student-athletes and non-athletes. When the test parameter was altered to include only undergraduate students, academic time was not found to be significantly different while the other categories yielded similar results.

When adjusted for undergraduate students only, the researcher's hypothesis that there would be no difference in academic or social time, but that there would be a difference in work and athletic time, was found to be true. The difference in academic results between the two test parameters is likely due in part to the nature of graduate academic work, which is often more intensive but less time consuming. In addition, all the graduate students in this study were also working students, so their time is already divided between academic and work commitments.

Limitations.

While the findings of this study were analyzed using a Mann-Whitney U-Test to provide the ordinal rank statistics and ultimately to accept or reject the null hypothesis for each category as to whether or not there was a significant difference in time demands between student-athletes or non-athletes, the small sample size is the most notable limitation of this study. A larger sample size would have given insight into the size of the differences between groups, improved the validity, and allowed for a parametric analysis. While it is important to be able to see that there are differences, a larger sample would have allowed us to see where those differences occurred within categories as well as how

large or small those differences were. For example, knowing the amount of time spent on athletics and work would have allowed us to better estimate the tradeoff between athletes and non-athletes and could have given insight into how comparable athletics is to having a job.

Another limitation was the distribution of subjects. With more athletes than non-athletes and an equal number of graduate and undergraduate students among the non-athletes, it is difficult to say that the sample population accurately reflects the population distribution. This was another reason for the use of a non-parametric analysis. The underwhelming participation from non-athlete undergraduates might be due to lack of incentive, general disinterest, difficulty in using the SAL, or already demanding schedules that made it inconvenient to participate. Improvement of the data collection tool would likely improve the participation and distribution of the sample population. Some of the participants that did not complete the study reported stopping their participation due to the difficulty of using the SAL or simply forgetting to fill it out regularly resulting in getting too far behind to catch up. It is recommended that future studies improve the ease of use of the study tool by providing mobile friendly access to participants.

The study also relied upon support from school administrators, professors, and student leaders for recruiting purposes. The original study was intended to take place across several Division I institutions in the region, but the athletic directors responded by saying that they would not support a survey due to fear of impacting NCAA court cases. Even on the home campus of SDSU the athletic administration encouraged the researcher not to collect data, but instead to utilize the data collected by the NCAA. The GOALS

survey released by the NCAA was recommended, but the NCAA office was non-responsive to inquiries from this researcher and department faculty regarding questions about that data, their research references, their pilot for the surveys, and how they obtained their validity and reliability for the survey tools they utilized for the data collection. Research published by the NCAA thus far has failed to provide analysis of past literature, peer review, methods, or raw data. The NCAA data that was analyzed in their most recent study was qualitative survey data (see previous notations in this document; although Likert scale data was provided) rather than quantitative data. These NCAA studies focus on the perceptions of athletes.

Implications for the Future.

These results have some implications for the field of college athletics as a whole, as well as for those participating as athletes, coaches, or in administrative roles. It should be noted that, if the goal of the NCAA and other governing bodies in college athletics (such as school athletic departments) is to create equality between athletes and non-athletes, there must be some give and take in the way time demands are distributed. It can be noted from this study that athletes trade off work for athletics, but they afford the same academic and social time non-athletes. While this sample size is too small and unevenly distributed to determine a correlation between the amount of time spent in the fields of athletics and work, there is a clear difference that cannot be ignored. As indicated in the review of literature, employers have noted the value that college athletics has for those who participate and therefore the experience that would have been gained from working would not necessarily be lost by choosing athletics instead of work. Students, coaches, and administrators should therefore consider the economic impact of

competing in collegiate athletics in lieu of working during college. For a full-scholarship athlete, the decision to participate in athletics may yield advantages that working would not, while for an athlete with no scholarship or only a partial scholarship this is a much tougher decision.

It was also noteworthy that there was no difference in academic time between undergraduate student-athletes and non-athletes. While athletes miss more class than non-athletes, they are finding ways to make that time up by other methods (online work, independent study time, etc.). Study time and participation in online classes may help student-athletes to balance their academic time expenditures. This ability to manage their academic time is both a valuable academic tool and a life skill that should be noteworthy to future employers. Similarly, professors should note that the evolution of hybrid online and in-person classes has allowed the field of athletics to push their travel and practice schedules further. Coaches and athletic administrators may want to advocate for more of these types of classes on campus to allow student-athletes the flexibility to participate in academic opportunities while on the road.

The lack of difference in social time under both categorical parameters also has some important implications. Students in both the athlete and non-athlete groups manage their time in such a way as to include social activities on a somewhat regular basis. The expansion of online media consumption has undoubtedly contributed to this as there is no longer a timetable for when media will or will not be available. Athletes and non-athletes alike also found regular time for friends and family. While it might be expected that travel interferes with athletes' family and friends time, there is clearly an effort to maintain this time. This could be accounted for through social media, text or phone

interactions, or simply because athletes are more likely to be friends with their teammates and consider time spent at practice, traveling, or competing as time with friends and family. Sports are considered a recreational activity and even at high levels, this would account for dual roles as social and athletic activity.

Future studies would also largely benefit from an improved data collection tool. The SAL proved more difficult to use than intended. The use of an app would allow the researcher to communicate directly with participants on a large scale, track results in real time, and provides easy access for the user. This would also allow for a broader reach and studies on multiple campuses and across divisions.

Conclusion

This study demonstrates that there is a significant difference in the time demands on student-athletes and non-athletes in academic, athletic, and work fields. Social time is not, however, affected by student-athlete or non-athlete status. When adjusted to include only undergraduates, academic time is also not affected by participation or non-participation in athletics. These findings are important for better understanding the experience of college athletics and the experiences of participating students. It allows student-athletes, coaches, and administrators to better understand how to adjust policies to help students get the most out of their time at the university while having meaningful athletic opportunities. More research is needed to understand this experience on a broader scale and future studies should aim to generate more data from larger more evenly distributed samples.

It is the hope of this researcher that the NCAA will help to facilitate studies in this field not only for the sake of bettering the experience of student-athletes, but to provide a

fair and level playing field among academic institutions, to hold coaches and administrators accountable for reasonable department practices, and to make adjustments to tournament schedules, conference maps, and travel expectations. The current countable hours system fails to include travel at all, allows competition a maximum of three countable hours per day (regardless of actual length or number of competitions), and is verified by one coach and one athlete per team. It is the opinion of this researcher that this is a less than accurate system of accountability and is nothing more than an attempt to mask the actual commitment that student-athletes put forth.

This study quantifies what many people in and around the field of athletics can sense already: that student-athletes are experiencing athletics in place of having jobs. The NCAA and university athletic departments should make efforts to acknowledge the dedication of their participants, rather than hiding from the handful of lawsuits that might hurt them. Practical policy making cannot be achieved by masking research or inhibiting others from understanding the available information. With further investment into this field, student-athletes will be more likely to receive fair treatment and university athletics programs will be able to focus on creating educational experiences that benefit the student above all else.

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Tables

Directions: In order to view spreadsheet or edit tables, simply double click the object you wish to view. To exit spreadsheet view, click outside the table borders.

Table 1. Subject Categories, Numeric Label, and Number of Subjects

Subject Category	Numeric Label	Number of Subjects
Athlete:Undergraduate:Working	1.1.1	N=1
Athlete:Undergraduate:Non-Working	1.1.2	N=13
Athlete:Graduate:Working	1.2.1	N=0
Athlete:Graduate:Non-Working	1.2.2	N=0
Non-Athlete:Undergraduate:Working	2.1.1	N=3
Non-Athlete:Undergraduate:Non-Working	2.1.2	N=1
Non-Athlete:Graduate:Working	2.2.1	N=4
Non-Athlete:Graduate:Non-Working	2.2.2	N=0
Total		N=22

Table 2. Raw Stats

Raw Stats (Reduced)						
Type	1.1.1	1.1.2				
Subject No	Subject 1	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
Academic	83.5	57	37	39.5	34	86.5
Athletic	65.5	39	93	33	66.25	48
Work	5	0	0	0	0	0
Social	37.5	124	84	44.5	14	231
Total Hours Log	191.5	220	214	117	114.25	365.5
Means						
Athletes	1	2				

Table 3. Mann-Whitney U-Test for Academics

Mann-Whitney U Test		Academic	1-Athlete	2-Non-Athlete	
Athletes' individual data was summed in the four categories (Academic,					
Subject	Time	Type of	Rank n	Rank w	Correction
1 (1.1.1)	83.5	1	20	20	
1 (1.1.2)	57	1	14	14	MWU for Student = 2 60.5 R2
2	37	1	7	7.5	
3	39.5	1	9	9	
4	34	1	5	5	
5	86.5	1	22	22	
6	56	1	13	13	

Table 4. Mann-Whitney U-Test for Athletics

Mann-Whitney U Test		Athletic	1-Athlete	2-Non-Athlete	
Athletes' individual data was summed in the four categories (Academic,					
Subject	Time	Type of	Rank n	Rank w	Correction
1 (1.1.1)	65.5	1	17	17	
1 (1.1.2)	39	1	10	10	MWU for Student = 2 36 R2
2	93	1	22	22	
3	33	1	9	9	
4	66.25	1	18	18	
5	48	1	11	11	
6	49.5	1	13	13	

Table 5. Mann-Whitney U-Test for Work

Mann-Whitney U Test		Work	1-Athlete	2-Non-Athlete		
Athletes' individual data was summed in the four categories (Academic,						
Subject	Time	Type of	Rank n	Rank w	Correction	
1 (1.1.1)	5	1	15	15		
1 (1.1.2)	0	1	1	7.5		MWU for Student = 2 140.5 R2
2	0	1	1	7.5		
3	0	1	1	7.5		
4	0	1	1	7.5		
5	0	1	1	7.5		
6	0	1	1	7.5		

Table 6. Mann-Whitney U-Test for Social

Mann-Whitney U Test		Social	1-Athlete	2-Non-Athlete		
Athletes' individual data was summed in the four categories (Academic,						
Subject	Time	Type of	Rank n	Rank w	Correction	
1 (1.1.1)	37.5	1	2	2		
1 (1.1.2)	124	1	18	18		MWU for Student = 2 121 R2
2	84	1	13	13		
3	44.5	1	5	5		
4	14	1	1	1		
5	231	1	21	21		
6	68	1	10	10		

Table 7. Mann-Whitney U-Test for Academics (Adjusted for Undergraduate Students Only)

Mann-Whitney U Test		Academic	1-Athlete	2-Non-Athlete		
Athletes' individual data was summed in the four categories (Academic,						
Subject	Time	Type of	Rank n	Rank w	Correction	
1 (1.1.1)	83.5	1	16	16		
1 (1.1.2)	57	1	10	10		MWU for Student = 2 31.5 R2
2	37	1	3	3.5		
3	39.5	1	5	5		
4	34	1	2	2		
5	86.5	1	18	18		
6	56	1	9	9		

Table 8. Mann-Whitney U-Test for Athletics (Adjusted for Undergraduate Students Only)

Mann-Whitney U Test		Athletic	1-Athlete	2-Non-Athlete		
Athletes' individual data was summed in the four categories (Academic,						
Subject	Time	Type of	Rank n	Rank w	Correction	
1 (1.1.1)	65.5	1	13	13		MWU for Student = 2 10 R2
1 (1.1.2)	39	1	6	6		
2	93	1	18	18		
3	33	1	5	5		
4	66.25	1	14	14		
5	48	1	7	7		
6	49.5	1	9	9		

Table 9. Mann-Whitney U-Test for Work (Adjusted for Undergraduate Students Only)

Mann-Whitney U Test		Work	1-Athlete	2-Non-Athlete		
Athletes' individual data was summed in the four categories (Academic,						
Subject	Time	Type of	Rank n	Rank w	Correction	
1 (1.1.1)	5	1	15	15		MWU for Student = 2 58.5 R2
1 (1.1.2)	0	1	1	7.5		
2	0	1	1	7.5		
3	0	1	1	7.5		
4	0	1	1	7.5		
5	0	1	1	7.5		
6	0	1	1	7.5		

Table 10. Mann-Whitney U-Test for Social (Adjusted for Undergraduate Students Only)

Mann-Whitney U Test		Social	1-Athlete	2-Non-Athlete		
Athletes' individual data was summed in the four categories (Academic,						
Subject	Time	Type of	Rank n	Rank w	Correction	
1 (1.1.1)	37.5	1	2	2		MWU for Student = 2 46 R2
1 (1.1.2)	124	1	16	16		
2	84	1	13	13		
3	44.5	1	5	5		
4	14	1	1	1		
5	231	1	18	18		
6	68	1	10	10		

Figures

Figure 1. Demographic Info Box

Basic Info	School Info2	Athletic Info	Work Info	Job Name	Job Site
Name	School	Sport	Job		On Campus/ Off campus
DOB	Year in School	Athletic Scholarship	% Job		On Campus/ Off campus
Nationality	Academic Scholarship	% Sport 2	Job		On Campus/ Off campus
Gender	Major	Athletic Scholarship	% Internship		On Campus/ Off campus
	Minor		GA/ TA		On Campus

Figure 2-a. Means and Medians by Student-Athlete (1) and Non-Athlete (2)

CATEGORY	MEANS		MEDIANS	
	1	2	1	2
ACADEMIC	58.62143	37.3125	58	36.75
ATHLETIC	59.625	1.75	62.25	0
WORK	0.357143	48.9375	0	53.5
SOCIAL	77.38571	162.375	60	93.25
TOTAL HOURS LOGGED	195.9893	250.375	193.05	186.25

Figure 2-b. Means and Medians by Sub-Category

CATEGORY	MEANS					MEDIANS				
	1.1.1	1.1.2	2.1.1	2.1.2	2.2.1	1.1.1	1.1.2	2.1.1	2.1.2	2.2.1
ACADEMIC	83.5	56.70769	42.66667	83	21.875	83.5	57	40	83	23
ATHLETIC	65.5	59.17308	0	0	3.5	65.5	61.5	0	0	0
WORK	5	0	49.66667	0	60.625	5	0	46	0	67.25
SOCIAL	37.5	80.45385	69.16667	98	248.375	37.5	68	65.5	98	123.5
TOTAL HOURS LOGGED	191.5	196.3346	161.5	181	334.375	191.5	194.6	169	181	225.5

Figure 3. Summary of Results

	ACADEMIC	ATHLETIC	WORK	SOCIAL
U1	24.5	0	104.5	87
U2	87.5	112	7.5	27
U	24.5	0	7.5	27
U_{CRIT}	26	26	26	26
ACCEPT OR REJECT H₀	Reject	Reject	Reject	Accept

Figure 4: Summary of Results (Undergraduate Only)

	ACADEMIC	ATHLETIC	WORK	SOCIAL
U1	21.5	0	48.5	36
U2	34.5	56	7.5	20
U	21.5	0	7.5	20
U_{CRIT}	9	9	9	9
ACCEPT OR REJECT H₀	Accept	Reject	Reject	Accept