A Quantitative Analysis of Collegiate Athletic Involvement and Academic Achievement among Sport Management Students

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Abstract

Within the last several decades, more attention has been focused on the academic success of college athletes. It has been documented from several studies that high school athletes perform better academically than their non-athlete peers (American Sports Institute, 1995; Brand, 2007; Dilley-Knoles, Burnett, & Peak, 2010; Foltz, 1992; Fox, Barr-Anderson, Neumark-Sztainer, & Wall, 2010; Slear, 2005). However, at the collegiate level, this heightened academic achievement trend among student-athletes is not so clear. Lapchick often releases data regarding graduation rates among a select group of highly achieving teams in certain sports but not much exists in the way of a comparison of academic achievement by using student Grade Point Averages (GPA) as a measuring tool. This study examines the academic success of student-athletes by comparing the achievement of various athletic teams with students enrolled in a particular set of classes at a Division I institution. Also, in accordance with the time management explanation of student-athlete success (Byrd & Ross, 1991), GPA comparisons are conducted between athletes and non-athletes using in-season athletic hours and working hours as a level comparable variable from which to examine. Several interesting patterns emerged from the data suggesting that although time commitments among athletes and non-athletes may have somewhat of a positive effect on academic achievement, it is not necessary significant.

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Introduction

Over the last decade there has been an increased interest in the correlation between participation in athletics and success in the classroom for middle school, high school, and even college students. It has been determined in several different studies that junior high and high school athletes tend to perform better academically than their fellow classmates who do not participate in extracurricular athletics (Fox, et al., 2010; Miller, Melnick, Barnes, Farrell, & Sabo, 2005). These studies have identified a variety of possible explanations such as time management skills, therapeutic effects of physical activity, being involved in a team setting, and increased accountability as possible answers (Fox, et al., 2010; Miller, et al., 2005). However, little attention has been devoted to academic achievement amongst collegiate athletes within a particular field of study, more specifically sport management.

Purpose of the Study

The purpose of this study is to determine if a correlation exists between athletics and increased academic performance at the collegiate level. More specifically, the desire is to determine if students that participate in collegiate extracurricular athletics perform, on average, better academically than their counterparts who do not participate in sports. An examination will also be conducted determining the academic achievement levels among different sports along with exploring the time management theories presented by Fox, et al. (2010) and Miller, et al. (2005).

Research Questions

Do student athletes at the collegiate level perform better academically (based on GPA) than their student peers who do not participate in athletics?

In what sports are the highest achieving student athletes participating?

Do working hours among student-athletes and non-athletes have an effect on GPA or a direct correlation between each other?

Hypotheses

Hypothesis 1: Despite previous findings that middle and high school athletes perform better than their non-athlete peers, collegiate athletes within sport management will have lower self-reported Grade Point Averages.

Hypothesis 2: Football and men's basketball players will have the worst self-reported grade point averages while female soccer players will have the highest self-reported grade point averages as seems to be a recent trend (Twaro, 2009).

Hypothesis 3: In a comparison regarding the time requirements of athletes and non-athletes in regards to their individual sports and work requirements, that non-athletes will have higher GPAs in the majority of time grouping categories.

Variables and Key Terms

While most of the studies deal with extracurricular activities or extracurricular sports, every author may have a different definition. For some of the authors these terms refers only to traditional sports like football, basketball, baseball, soccer, softball, volleyball, track and field, and wrestling. Other authors will use these terms to include activities like drama, choir, and chess team. Generally, extracurricular activities will be all-encompassing while extracurricular sports will only cover the main sports.

The difficulty is that these understandings of the definitions are not always the same from author to author. Some authors may not be very clear on their definition of either extracurricular activities or extracurricular sports. The literature is filled with both of these terms and misinterpreting the author's intended meaning can cause the results of the article to be misrepresented. One must carefully examine the context of each phrase in the literature to determine its true meaning.

A term that will be used frequently throughout this research is Grade Point Average (GPA). While this may seem like a basic concept, especially given the academic setting that this research is taking place, it is still wise to make sure that all readers are of the same mindset when discussing academic achievement. For the sake of this research, GPA is defined as "a quantitative measure of academic record….on a scale from 0.0 to 4.0" (Fabio, 2010).

For the sake of extending clarification, it may be necessary to determine what parameters made the author classify a student as an athlete. For the purpose of this research, an athlete will defined as a student who has participated in one or more semester of intercollegiate athletics. To be classified as an Intramural Athlete or Club Athlete, the student must have participated in one or more seasons (generally one semester) of athletic competition.

Literature Review

Throughout the extent of the literature a handful of themes emerged. Several of the themes were established early on and then as a chronological progression ensued, new trends emerged that were based upon some of the older themes. After time, a general acceptance of most of the key points came about. In general, researchers were getting the same results from both qualitative and quantitative research.

Grade Comparison between Athletes and Non-Athletes.

While research regarding academic achievement among high school students has been common over the years, only more recently has there been a direct focus on sport participation and academic achievement. It was often thought that sports were not as important as academics or even that athletic participation hindered academic achievement (American Sports Institute, 1995). In the early 1990s, the American Sports Institute began an initiative called Promoting Achievement in School through Sport (PASS). The PASS program sought to improve the mindset of educators regarding athletics and also set out to implement its specific learning objectives. To prove the validity of the PASS program, the American Sports Institute conducted a three year study concerning the correlation between their program, athletic involvement, and academic success among high schools (American Sports Institute, 1995).

The study took place during the 1991-1992, 1992-1993, and 1993-1994 academic school years. Several interesting results came from this study which began to change educators' perceptions about athletics and its role in academic settings. Fifty-eight percent more students who were enrolled in the PASS program increased their academic grades than the control group over one academic year. When compared to the control group, over twice as many students in the PASS program increased their scores by a full letter grade. The control group students had fifty-three percent more of its members grades go down during the school year when compared to students in the PASS program. PASS student-athletes were eighty-seven percent more likely to regain their eligibility than those students in the control group. Students involved in the PASS program were twenty percent less likely to lose their eligibility over the course of the study than the control group. The study ended with the conclusion that athletic participation actually increases academic achievement among physically-oriented high school students (American Sports Institute, 1995).

Recent research has shown that there is an ever increasing pressure on student-athletes at the collegiate level. They are pushed to excel athletically and academic success can take a back seat so long as the athlete is maintaining their eligibility. However, it was determined that athletic participation actually increased academic achievement, which was measured by GPA (Dilley-Knoles, et al., 2010) . It was also determined by Foltz (1992) that athletes performed better in-season than they did out-of-season. Dilley, et al., (2010) determined that at their particular institution of research Women’s Volleyball, Women’s Cross Country, and Women’s Tennis had the highest GPA among intercollegiate sports. This goes along with a gender theme which will be discussed in a later section.

Research concerning academic achievement and athletic involvement has even been examined at the middle school level. In research conducted in the Minnesota area, middle school boys, high school boys, and high school girls who participated in athletics were determined to have higher grades than their peers who did not. The only category where athletic involvement did not seem to have a positive academic affect was among middle school girls (Fox, et al., 2010).

According to David McDonald, History Department Chair at the University of Wisconsin and current oversight member of the Wisconsin Athletic Department, football players at most large scale schools have the same grades and graduation rates as the rest of the student body (Greenberg, 2008). The correlation between grades and athletic involvement extends to even nontraditional sports such as swimming. Slear (2005) discusses how athletic involvement, even in a non-typical sport like swimming, leads to greater academic achievement at the high school and collegiate levels.

Lapchick (1989) discusses in length about the culture surrounding high school sports. He addresses the "Pass to Play" mandate which prevents high school athletes from participating in school sponsored athletic events if they do not meet eligibility requirements. Lapchick even goes so far as to break down the athletic eligibility guidelines for each state. While Lapchick is more known of late for his work on graduation rates among NCAA Division I football bowl teams and basketball March Madness teams, this work concerning high school athletes is full of information as well.

Myles Brand, former president of the NCAA from 2003-2009, presented information to convince the general public that collegiate-student athletes performed better than their non-athlete peers and also had higher graduation rates. According to Brand, in 2005, student-athletes who were entering a Division I college, on average, had a 0.07 higher GPA and scored 33 points better on the SAT than the general student population entering Division I institutions. Brand also states that among Division II schools athletes had an eight percent higher graduation rate than the general student population (this of course begs the question of why Brand did not address Division I graduation rates). In addition, Brand addresses the sentiment that football and basketball players are the worst achieving student-athletes. Brand presents that Black, male football players had a twelve percent higher graduation rate than all Black, male students. For White, male football players the graduation rate was the same as all White, male students. When it comes to basketball, Brand maintains that Black, male basketball players have a five percent higher graduation rate than the rest of the Black, male student population (Brand, 2007).

Gender and Race

Dilley-Knoles, et al., (2010) determined in their research that female student-athletes from one particular collegiate institution achieved a 0.511 point higher GPA than the male student-athletes at that institution. Research among high school athletes shows that females who participate in athletics report higher grades than those who do not participate in athletics. This confirms that females athletes seem to achieve the best academically (Miller, et al., 2005).

Race also plays a factor in the athletic involvement and academic achievement query. Miller, et al., (2005) discovered that black, female athletes performed worse academically than other races. Miller, et al., attributed this to black, female athletes labeling themselves as “jocks” but the debate can still be made that it had more to do with race than personal labels.

Time Management

As is the case with every person, student-athletes have a limited amount of time in their day. For athletes, this limited amount of time can be more severe than people engaging in other activities or professions. Athletes must juggle many different responsibilities with not much in the way of time. For this reason, athletes must have excellent time management skills (Byrd & Ross, 1991). Student-athletes are not afforded the luxury of being able to waste time by playing video games or simply “goofing off,” they must focus on their homework and study when they have the time allotted otherwise the work will not get done. This forces student-athletes to finish homework and study in a timely manner.

Student-athletes are under immense pressure to excel athletically, academically, and socially. If a student-athlete does not have good time management skills, then not only will their grades suffer, but all areas of their life will begin to deteriorate. Given this holistic approach, it is not unreasonable to say the overall success of a student-athlete is greatly contingent on their ability to practice good time management skills.

Support Groups

Although not quite as common at the middle school and high school levels as the college level, support groups of all varieties are found at the various levels. These groups help cater to the athlete's busy schedule and many of the people involved in running these groups understand the academic pressures on student-athletes. From the research, it appears that academic support programs are not a 'one size fits all' item; male student-athletes may need a different type of program in order to achieve academic success. It is likely improbable that a general model of a male and female academic support program may be developed. However, it is worth noting that these academic support groups immensely help student-athletes when it comes to academic achievement (American Sports Institute, 1995; Byrd & Ross, 1991; Dilley-Knoles, et al., 2010; Miller, et al., 2005).

Academic support services are often fraught with one on one tutors and special help. The groups are also generally only for student-athletes. While many may construe this as an unfair advantage or privilege over the general student population, it must be mentioned that all students have access to tutoring help and support groups. These services may not cater to specific populations, such as athletes, and may not be structured the same but they are still an available resource. The difference in perception occurs because student-athletes are generally forced by coaches to attend academic support groups or study halls while the average student will not have someone showing him all of the resources available and pushing him towards utilizing those resources.

School Identification

Student-athletes tend to have a significantly higher identification rate with their schools than the general student population. Students have a social identity which they must maintain. It is generally seen that teenagers in a high school setting will fall into certain roles. For some of these students, they fall into the role of being a jock or athlete. It becomes their identity and they cannot exist apart from it, at least in their own mind. This sense of identity is intensified by being on an athletic team. Teams are identified by their school name which means a lot is on the line when student-athletes compete. Student-athletes know that if they lose eligibility then they are letting their school down. This can create a lot of pressure but at the same time it builds a natural incentive for the student-athlete to do well in school to maintain their eligibility (Marsh, 2003).

Consequently, there are several arguments that can be made here. The first is that this pressure may only push the student-athlete to do the bare minimum to maintain eligibility as they do not find their identity in their academic achievement but rather their athletic achievement. This point can be countered with the logical progression that most student-athletes are intelligent enough to know that they must leave themselves a GPA buffer in case they perform unexpectedly bad on a certain test or assignment. It can also be argued that the student-athlete may have performed even worse had he not been an athlete and, therefore, meeting the minimum eligibility requirements is an improvement over what would have been the student’s achievement (a valid and substantiated position given the research addressed earlier).

The second issue raised would be whether or not the pressure levied against these student-athletes is fair or right. This is more a question of morality and the answer may vary from person to person. However, it is not unreasonable to say that pressure is an inherent part of athletic involvement. There is pressure to perform on the field, pressure to practice adequate time management, and pressure to succeed academically, along with any personal, family, or situational pressures that may arise. Apart from coercion from family or school personnel, there is no reason why a student cannot decide that he does not want to participate in athletics anymore. If the pressure is too much, the athlete can generally remove himself from the activity. While this does not directly answer the ethics of whether or not the pressure is fair or right, it gives guidelines as to how the pressure can be avoided if necessary.

Ethics and Human Relations

IRB Approval

In accordance with university policy and general standards of research within an academic institution, the research study was submitted to the University's Institutional Review Board (IRB) for review and approval. Submitted within the proposal was the survey, along with the complete logistics of the study from start to finish. Because the university's IRB process can take many months, it was requested that the study receive a truncated exemption since the study had to be wholly completed within a three month period. Since the nature of the study was on a relatively small scale and there was no significant possible harm to participants, the study was granted expedited approval.

Ethics and privacy were a main concern of the researcher. There were numerous steps that were taken to ensure the privacy of the participants was not violated. All surveys were anonymous. No names were attached to any surveys and this request was made clear to all participants. The surveys were all mixed together in a folder which prevented the ability for the researcher to go back later and find a particular survey for a particular person. The only surveys that were separated from the rest were ones that were flagged for unclear responses, and these were only pulled after being initially mixed in with the general pool of surveys and were themselves mixed together in a folder with other flagged surveys.

No one was forced to complete the surveys and participation was completely voluntary. There were no repercussions for not participating in the study, only random prize incentives for those who did participate. This is addressed in the Data Collection Method Section. Student rosters were printed off from each Sport Management class and students' names were checked off of the roster sheet as they turned in their surveys. This kept the surveys anonymous but allowed documentation of participants for the random prize drawings. The three prizes given away were two $10 gift cards to Chick-fil-A and a $20 gift card to iTunes.

Other than demographical information, no personal information was collected on the surveys. Participants were asked to provide their age, gender, race, academic rank, home state, major, and minor within the demographic section. It was the concern of the researcher that it would be possible to trace surveys back to select individuals if their survey answers were unique. For example, if a survey respondent listed Alaska as his home state and stated that he was 'American Indian or Alaska Native' and participated in Men's Lacrosse, it would be easy to determine who this respondent actually was given the lack of male students from Alaska that play lacrosse. However, after discussing it with the research committee, it was determined that nothing else could be done to realistically make the surveys any more anonymous. The surveys would only be in the hands of the researcher and if someone really wanted to trace the survey back it would be possible in most studies, especially those of the qualitative nature.

Data Collection Method

The data for this research were gathered in the form of a survey administered to students taking Sport Management classes at a Division I institution. Surveys were given to all students in these Sport Management classes regardless of whether or not they were Sport Management majors. The survey was on a single sheet of paper, front and back. Three types of data were gathered from the surveys: demographic information was collected to look for certain trends, information from the questions that were directly related to the current research, and information that reflected the effectiveness of the University's Department of Sport Management which can be used to direct further assessment research.

The surveys were handed out over the course of seven days. Careful planning was conducted to make sure that all classes were given the survey and that all students would have the opportunity to participate. Faculty members for the classes were very helpful in allowing time for the surveys to be handed out and the researcher to speak about the logistics of the survey and the confidentiality of the data.

All surveys were anonymous which was addressed in the Ethics and Human Relations Section. The surveys were voluntary but most students were in "assessment mode" since the administering of the surveys happened to coincide during a time when the university was undergoing its own assessment procedures including a specific assessment day. It is the researcher's belief that this helped foster an environment of "survey compliance" which led to an extremely high return rate. As an incentive to increase participation rates, the students were told that three random students who completed the survey would win prizes. To maintain the anonymity of the research, students' names were checked off a separate sheet when they returned their surveys. No names were attached to the surveys and all of the surveys were mixed together from the different classes.

The original intent was that surveys would be distributed at the beginning of a class period and then collected the next time the class met. For example, surveys for Tuesday/Thursday classes were administered on Tuesday with the intention of collecting the surveys on Thursday. Then on Thursday, surveys would be distributed to those who missed class during the initial handout and would then be collected the following Tuesday, a seven day cycle in all. For Monday/Wednesday/Friday classes, surveys were distributed on Monday with collection occurring on Wednesday. Surveys for those missing class on Monday were handed out after the Wednesday collection and then collected on Friday. This allowed full participation, even among those who missed a class due to illness, sport travel, or other reasons.

Despite the researcher’s intentions, surveys ended up being returned much quicker than anticipated. Most respondents returned their surveys on the same day it was administered. Given the researcher’s office’s close proximity to the Sport Management classrooms, it is not difficult to see how this could occur. Some faculty members even finished class early and allowed students time to complete the surveys. While this did not intrude on the voluntary aspect of the survey participation, it did foster an atmosphere that encouraged completion of the surveys.

In total 255 surveys were handed out. The goal of the researcher was to achieve a 66% survey return rate. In each class, students who had not yet received the survey were asked to raise their hands and were consequently given a survey. While this method was obviously not perfect, it was designed to ensure that students who were enrolled in multiple Sport Management classes were not given the survey twice as this would distort the statistics. Based on the amount of surveys handed out (255) and the number of students in the Sport Management Program (314) the researcher does not think duplicate surveys are of concern at all. Of the 255 surveys distributed, 220 were returned for an 86.27% completion rate. This completion rate is well above the researcher’s target mark.

Data Analysis Procedures

Data Entry

Data was entered solely by the researcher. Survey data was entered in three main groupings as survey collection occurred. Demographic information was pre-coded and entered in coded formation. Information was entered into a single Microsoft Excel Spreadsheet. This allowed easy sorting of the data even after the analysis had been run. Once all of the data had been entered into the spreadsheet, the spreadsheet was then imported into the Statistical Program for the Social Sciences (SPSS) where statistical analyses were run.

Coding

Data was coded in two different stages. Before data entry began, demographic data was coded to make data entry easier and more efficient. Standard coding was used for responses such as Yes=0 and No=1. Not all data was pre-coded because there was no possible way to know what all of the responses would be for every question. Once all of the data was entered into the spreadsheet, coding was conducted for each category. To implement the coding on the spreadsheet, each column or question was grouped by responses and the ‘Find and Replace’ feature on Excel was used to replace all of the various text answers with their new corresponding code.

High school and college extracurricular activities and sports each received their own code. Since most respondents participated in multiple sports or extracurricular activities, there were strings of code in these cells. Due to the researcher's unfamiliarity with the SPSS program, it was not discovered until data analysis began that SPSS could not process strings of code. It was at this point that individual high school extracurricular activities and sports could not be examined individually but simply by whether or not a student participated in extracurricular activities or sports in high school. As for college sports participation, fortunately only one athlete participating in intercollegiate sports was on more than one team. Instead of coding each individual intramural sport which would consequently lead to string of code, all intramural sports were recoded to 99. This eliminated all strings of code but one remaining respondent who participated in both Cross Country and Track and Field. Since the respondent was the only Cross Country participant, it was determined, after consulting with a committee member, that Cross Country would just be included with Track and Field for the sake of coding.

Flagged Responses

During the course of the data entry, several surveys were flagged due to unclear answers or missing information. The researcher then sat down with a member of his committee and reviewed each of the flagged responses. All of the surveys were counted even if they were missing some responses or certain responses were unclear. For unclear responses, the committee member and the researcher worked to determine the intention of the answer.

For most flagged answers, the issue was that the response was not a numerical value. For example, the question was asked of athletes "How many hours a week do you spend engaged in team or group activities such as practices, conditioning, or games <u>*mandated by the team*</u> for in-season and out-of-season?" An example of flagged response would be an athlete who answered "a lot" or "most of my time" to either the in-season or out-of-season category. Since this study is quantitative in nature and anonymous, no follow up questions can be asked to determine how much time is "a lot." It was determined by the researcher and the committee member to nullify answers where no finite quantitative response could be inferred.

For participants who left demographic or other important questions blank on their survey, their answers were deemed with a "no response" classification and were included in the survey pool. If a white male who plays basketball did not circle the male classification on the survey, his overall answers would still be contributed to the pool but he would not be a part of certain subsets. For example, if the researcher isolated male basketball players versus female basketball players, the previous respondent would not be included in this analysis because the survey answer did not fall into either the male or female category, even though he is a basketball player.

Research Design

During the conceptualization of this research study, it was originally anticipated that t-tests would be able to be used for the research analysis. However, once surveys were created and data began to come in, it became evident that a simple t-test would not be complex enough for the type of analysis that was desired. Since a t-test is only used on the mean scores of two groups (Gall, Gall, & Borg, 2005), it was necessary to use an analysis of variance. An analysis of variance can be used to "determine the likelihood that the differences between the three mean scores occurred by chance, in other words, that they are chance values generated by drawing repeated samples from three populations having identical scores" (Gall, et al., 2005).

A One-Way Analysis of Variance (ANOVA) is “a way to test the equality of three or more means at one time by using variances” (Jones, 2011). The main concept of an ANOVA is that variability or differences within the sample group will reflect variability in the means of different testable aspects of the group (Motulsky, 1999). Generally, within a One-Way ANOVA, the null hypothesis is that all of the population means are equal (Jones, 2011). The general equation for a One-Way ANOVA is $y_{ij} = \alpha_{.j} + \varepsilon_{ij}$ (MathWorks, 2011). The One-Way ANOVA works perfectly for this study due to the fact that it can compare multiple levels of just one factor (National Institute of Standards and Technology, 2010).

Sampling

The sample chosen for this study were undergraduate students enrolled in Sport Management classes for the Spring 2011 semester. The sample is not limited to only Sport Management majors; however, it can be safely said that Sport Management majors made up the majority of the sample. It can also not be said that all Sport Management majors were captured in this sample. There were students who were declared Sport Management majors who were not enrolled in a Sport Management class for the Spring 2011 semester or were enrolled in a Sport Management internship or practicum class which does not regularly meet and was not able to be included in the sample. The majority of the sample is comprised of white males. This was unavoidable given the parameters of the research since white males make up the majority of students in the Department of Sport Management.

Of the 220 respondent, 183 were males (83.2%), 33 were females (15.0%), and 4 did not answer the question (1.8%) (Appendix A, Table 1, Chart 1). This high ratio of males to females was anticipated and is not unexpected given that sport management degree programs typically have a much higher proportion of men than women.

Of the 220 respondents, 168 classified themselves as White (76.4%), 35 as Black (15.9%), 5 as Hispanic (2.3%), 2 as Native Hawaiian or Pacific Islander (0.9%), 2 as Asian (0.9%), 1 as American Indian or Alaska Native (0.5%), and 3 as Other (1.4%) (Appendix A, Table 2, Chart 2). These ethnic or race categories were garnished from the 2010 United States Census and are the same race categories as what was on the official census (United States Government, 2011). Once again, the high percentage of Whites who participated in the study is consistent with overall college attendance figures for race (Lewin, 2006).

The average age of the study participants was 20.6 years of age with the median age being 21. The range was 13 years with the youngest student participant being 17 years of age and the oldest being 30 years of age. Of the 220 respondents, only 2 did not supply an age (Appendix A, Table 4).

Not unexpectedly, the state in which the highest number of survey participants labeled as their home state was Virginia (73 or 33.2%), followed by North Carolina (25 or 11.4%), Maryland (17 or 7.7%), Pennsylvania (16 or 7.3%), and Florida (13 or 5.9%). Besides the United States, survey participants were also from the Bahamas, South Africa, Canada, and Trinidad & Tobago (Appendix A, Table 5). Seeing as how the university being examined is located in the state of Virginia, it is reasonable to expect that the highest number of survey participants would be from Virginia and surrounding states.

The vast majority of participants were Sport Management majors. Since the target segment was Sport Management classes, these results are all but a given. Data is included from students who were majoring in something other than Sport Management or who had not declared at all. The top five majors were Sport Management with 171 students (77.7%), Kinesiology with 12 students (5.5%), Undecided with 9 students (4.1%), along with Business, Exercise Science, and Religion each with 4 students (1.8% each).

Student participants were asked to provide their academic class (Freshman, Sophomore, Junior, or Senior). There were 48 Freshmen (21.8%), 44 Sophomores (20.0%), 51 Juniors (23.2), 76 Seniors (34.5), and 1 non-response (0.5%) (Appendix A, Table 6, Chart 3). These figures were actually somewhat surprising. It was anticipated that there would be more Freshmen since the 200 level classes have over double, in some cases even triple the capacity of most upper level classes. Also, given the fact that retention rates at universities are rarely 100%, this number seemed a bit peculiar. One thing to keep in mind was that this was an anonymous, self-reported survey and students may have a tendency to place themselves a class ahead in their academic pursuits from where they truly are. Another possibility is that there may be Freshmen who are declared Sport Management majors but are working on General Requirement Courses and not enrolled in any Sport Management classes for the Spring 2011 semester.

Results

High School Participation Rates

Of the 220 survey respondents, 215 (97.7%) participated in high school sports or extracurricular activities. Only 5 (2.3%) did not participate in any type of extracurricular activity in high school.

College Participation Results

A significant number of survey takers participated in collegiate athletics whether it be intercollegiate participation, intramurals, or student managing. Among students that reported participating in a college sport, 76 (34.4%) were involved in intramurals. The second and third highest sports participated in were football with 23 participants (10.4%), and Men's Club Hockey with 8 participants (3.6%)(Appendix B, Table 1).

Job Results

Subjects were asked "Do you have a job that you are currently working at?" to determine their status of employment during a typical semester. Since the surveys were administered in early April, the semester was still in full swing making the *currently* part of the question apply to during a school year or semester. Students reported that 66 (30%) currently had a job, 115 (52.3%) did not currently have a job, and 39 (17.7%) were seasonally employed but not currently working (Appendix B, Table 2, Chart 1). This breaks down to a little less than one-third of Sport Management students are working during a typical semester in addition to the course load.

Of the 105 students who responded that they currently had a job or had a seasonal job, 70 responded when asked "How many jobs are you currently working?" Of those 70 respondents, 54 (77.1%) said they currently had 1 job, 15 (21.4%) said they currently had 2 jobs, and 1 (0.5%) said that they currently had 3 jobs (Appendix B, Table 9).

Grade Point Averages

In the survey, students were asked to supply their college GPA. Detailed instructions were given on how to obtain their GPA using the university's Automated Student Information

Services Tool (ASIST). Although arguably the most important category, the GPA question was unanswered the most of any survey question. A total of 18 respondents did not supply their GPA. Of the 202 respondents that did supply their GPA, the mean GPA was a 2.8799 on a 4.00 point scale. The highest GPA reported was a 4.0 and the lowest reported GPA was a 1.0. Given the time and effort required to log onto the ASIST System and navigate to the correct page to discover one's GPA, it was predicted that there would be a bundle of GPAs as students would just estimate or guess their GPA instead of actually looking it up. This appeared to be the case as GPA bundles occurred around the 2.5, 3.0. 3.5 marks. Although it would have been ideal to verify survey takers' GPAs, this was simply unfeasible due to privacy issues. Despite these self-reported GPA bundles, because of such a large sample size, the number of respondents who were not in any bundles, and the standard deviation being .592964, that any abnormal or incorrect responses will have been balanced out in the large data field (Appendix B, Table 6).

Grade Point Average in Relation to the General Population

By Race

Due to reasonable prudence, it is important to understand that GPA results by race at this particular university are under the limitation that the majority of students enrolled are White. However, it should also be taken into consideration that this is not uncommon from what is typical at other universities (Lewin, 2006). It is common that the majority of students on a college campus are white males (United States Government, 2006). However, when examining the Asian, Hawaiian, and Hispanic categories, it is worth noting that due to the smaller number of people who identified themselves as each of those races, skewness is a distinct possibility (Appendix B, Table 5, Chart 2).

By Gender

As with race, the gender category in relation to GPA also has some limitations. This was most certainly anticipated before research ever began. The surveys were administered to students enrolled in Sport Management classes. Sport Management classes tend to be dominated by males (Brunner, 2003). The reasons why are outside the scope of this report and can be examined in another study. Therefore, logically, more males than females will be represented in this study and by a wide margin as well. This does not make the data any less credible as a significant number of females are still represented in the data which ensures the prevention of skewed results.

As for the results, the mean GPA for females was 3.038 and for males it was 2.845 (Appendix B, Table 6, Chart 3). It should be noted that this is only amongst those enrolled in Sport Management courses. Also, it can be argued that the 0.19 difference in GPA is not necessarily significant. On a typical 10 point grading scale this statistical difference would only account for less than one-fifth of a letter grade. While this difference is not significant, it is worth noticing.

Grade Point Average in Relation to Athletic Participation

By Sport

Two different analyses were conducted regarding sport. The first was on the comparison of GPA within all extracurricular activities and sports reported on the surveys as having been participated in. The second is a look at just the typical major sports within an athletic program.

When comparing all extracurricular activities and sports, one sport immediately stands out as having the highest GPA, even across multiple levels. Club Men's Soccer had the highest mean GPA with a 4.0 (Appendix C, Table 1, Chart 1). The fault in this particular category lies in that only person reported that they played Club Men's Soccer and Men's Soccer is not a Club Sport at this institution. Therefore, one can only assume that it is either a transfer student who played Men's Club Soccer before coming to Liberty or the respondent gave a falsified answer.

To counteract the single participant in Club Men's Soccer, the mean GPA of all soccer categories is still, by far, the highest. Of the top five GPA sports, soccer holds four of the spots. The top GPA's were Men's Club Soccer – 4.0, DIII Women's Soccer – 3.94, DIII Men's Soccer – 3.7, Men's Soccer – 3.5, and Club Field Hockey – 3.5.

There are several things that need to be said about this data. First, it must be understood that without a doubt these results are skewed. Most of the categories in the proceeding chart contain only one respondent. Secondly, of the top three sports, all of them were participated in at a previous institution since this university is a Division I university. Thirdly, it is not surprising that two Division III programs made the list. Division III schools do not offer athletic scholarships. Athletes must either earn academic scholarships or pay for tuition out of pocket. This causes many Division III athletes to be simply playing for the love of the game. It also lends to the deduction that Division III athletes may tend to have higher GPAs since the only scholarships they can obtain are academic (Woods, 2006). The five lowest sport or extracurricular GPA's were: Club Men's Lacrosse – 1.93, Wrestling – 2.0, Club Women's Hockey – 2.49, Club Men's Hockey – 2.5, and Band – 2.52.

Again, as was the case with the highest sport/extracurricular activities' GPAs, skewness was a factor, but not as much so in this category. Just the worst sport, Club Men's Lacrosse, had only one respondent. If the single Club Men's Lacrosse player is combined with the four Women's Lacrosse players who participated in this study, the mean GPA would raise significantly. However, doing this would cause two complications for legitimacy. The first consideration would be that Men's Lacrosse is a Club Sport and Women's Lacrosse is a Division I Sport. Also, combining one male with four females after having just seen that females had a higher mean GPA would also hurt comparison validity.

By Major Sports

In the interest of practicality, the researcher took a more in depth look at the main college sports. As a criteria to be included in this grouping, the sport could not be a Club or Intramural Sport and had to have more than two participants from the survey. In addition, to be classified as a major sport, the sport has to be a traditionally revenue-generating sport or be a sport with higher attendance numbers compared to other intercollegiate sports. The only sport that would generally be considered a main college sport that was represented in the survey data but not included in this category is Golf. The reason for this exclusion was that Golf only had one survey participant and that GPA was the lowest of all the sports, demonstrating skewness.

Among the major sports, Men's Soccer had the highest GPA with a mean GPA of 3.5 (Appendix C, Chart 2). This coincides with the previous results concerning all sports. The lowest GPA sport was Wrestling with a mean GPA of 2.0. Despite the initial hypothesis that Women's Soccer players would have the highest self-reported GPAs, it is actually Men's Soccer players who have the highest self-reported GPAs followed by Track and Field / Cross Country (3.21) and Women's Soccer (3.18). Also, the hypothesis that Football and Men's Basketball players would have the worst GPAs only proved to be half correct. While Wrestling was by far the worst, Football was also at the bottom (2.73), along with Softball (2.86) who beat out Men's Basketball by only 0.09 points for the bottom three honors.

By Number of In-Season Hours

One of the main purposes of this study was to examine the time management argument that is often heard as a justification of an athlete's lower GPAs. This argument can be confusing because it is used as both a justification for positive and negative outcomes. In high school, it is often argued that student-athletes must have excellent time management skills. They have to sit in class all day, go to practice or a game, come home, eat, and do homework. All of this must be completed within a reasonable timeframe to allow the student-athlete to get plenty of sleep to do it all again the next day. The argument is then made that one of the reasons why high school student-athletes have higher GPAs is because they do not have time to "goof off" and play videogames. They have to practice time management skills to complete everything and stay eligible (Byrd & Ross, 1991).

However, the same argument is then molded and used to explain a completely different outcome in college athletes. Proponents of college athletic reform often state that student-athlete's grades suffer because of the immense workload they are under. They claim that student-athletes generally are engaged in team required activities more than the NCAA limit of 20 hours per week. In addition, the student-athletes must attend classes, do homework, study, maintain a social life, all while allowing enough time for sleep. They claim that because of these immense time constraints, student-athletes' GPAs and social lives are struggling. The counter-argument is often made that many within the general student population that are not athletes have to work the same amount of hours as athletes spend on their own sports, if not more. The argument then delves down into the debate of whether or not to pay college athletes. While it is not the goal of this research study to solve the debate of whether or not to pay college athletes, it is the goal of this research to at least shed light on one piece of the argument.

Based on the data, there really does not seem to be a trend between increased hours involved in a particular sport and academic achievement (Appendix C, Table 2, Chart 3). While the data does seem to indicate that past the 35 hour mark that GPAs tend to fall off, there is a verification that the more hours a student-athlete is involved in sports, the lower his GPA. The GPA means for the two ranges 35-39 Hours and 40+Hours coincide with 10-14 Hours and 5-9 Hours categories. Between 15-35 Hours, the GPA means are relatively similar in each category. The only overtly interesting statistical category is the 0-4 Hour range. GPAs in this category were much higher than the other categories and would indicate that more free time is better for academic performance. However, a realistic perspective on this would dictate the realization that only between 0-4 hours of work for a team is unrealistic for most sports. The data does make a case for the Time Management argument in that as the workload increased, the mean GPA typically increased to a point with the exception of two categories. Once the point of overload was reached (anything greater than 35 hours), Time Management could be deemed extremely difficult and GPAs dropped. In reality, the best conclusion to draw from this particular data set is that there does not seem to be a trend in In-Season Hours Spent Participating on a Sport and GPA.

Grade Point Average In Relation to Working Students

Based on the data discussed previously, 105 students reported that they had jobs. The average number of hours worked per student per week was 23.08 (Appendix C, Table 3).

By Number of Jobs

The analysis regarding the correlation between the number of jobs a student works and their academic achievement is extremely interesting. One might assume that the more jobs a student works, the worse their GPA would be on a sliding scale. Although it is possible to have three different jobs in which only five hours a week are worked at each job, this is highly unusual and it would follow logic that the more jobs a student has, the less time they have to study and complete school work.

Despite these initial premonitions, the data is quite is clear that as the number of jobs a student works increases, so does their GPA, to a certain point (Appendix C, Table 4, Chart 4). Students who worked zero jobs had a mean GPA of 2.852 while those that worked one job had a mean GPA of 2.898. Continuing the trend, those who worked two jobs had an even higher mean GPA of 3.086. At this point the data becomes inconclusive. Only one respondent reported having three jobs and there were no students who had any more than three jobs. While the GPA for the one student with three jobs was 2.600, a significant drop from those with two jobs, this cannot be construed as a good representation of the student population that works three jobs since there was only one respondent. This particular student’s GPA could be an anomaly or accurately represent the general student population working three jobs. There really is no way to tell without a larger sample size of students working three jobs.

By Hours Worked

When examining the data regarding GPA and the correlation with number of hours a student worked, an interesting trend emerged. On average, as a student's amount of hours worked increased so did their GPA to a certain point (Appendix C, Table 5, Chart 5). This appears to be similar to the trend involving the number of in-season hours an athlete participated in their sport and their corresponding GPA. With the slight exception of the 15-19 hour range, as the number of hours increased the GPA either stayed the same or increased until the 35 hour mark. What is worth noting is that the 35 hour mark is the same level where athlete's GPAs also began to decrease. For educators, this 35 hour mark is certainly worth an examination as educators may be able to encourage their students not to work over 35 hours if possible as it will likely lead to a decreased GPA.

While it may seem surprising initially that once again the more hours a person works the better their GPA to a point, this seems to be an emerging theme. This also contributes to proving the time management theory (Byrd & Ross, 1991) discussed in the literature review. Although an increased number of work hours would seem to take away from study time for students, it seems to have not only a counterbalancing effect, but also an overwhelming positive effect on academic achievement. Both the general student population and student-athletes are forced to implement time management skills as their time commitments increase. This prevents all students from wasting time and gives them set parameters to complete their sport or job duties as well as their academic requirements.

Another possible explanation for this phenomena deals with the type of people that fall into this category. It would not be prudent to not delve into the possibility that the statistics may need to be looked at in reverse. The analysis to this point has looked at the correlation of hours worked for a sport or a job and its relationship on academic achievement or GPA. However, it may not be this simple. The number of hours worked may not actually have a direct effect on GPA. Instead, GPA may have an effect on the number of hours worked. More precisely, GPA may be a barometer of the student. Indicatively, GPA may be a descriptive factor of the type of person that is participating in this study.

To put it into an example, look at things from an inductive perspective. A student that has a 4.0 GPA is invariably a good student. Conclusions can be automatically drawn from their GPA. They are likely a smart person and responsible, the type of person that people would trust or have the opinion that they will be very successful in life. Because this 4.0 student has a good GPA, they may have been raised to be a responsible person and self-sufficient or at the least aware of what is needed to succeed in life such as a stable financial basis. For this reason, the student obtains a job during the semester to help provide a monetary basis to live on or to help establish there self for the future. They are aware that they must continue to excel academically so they do not take on a full-time job, but one that provides enough hours to make it worth their trouble.

In the previous example, the student’s GPA is not 4.0 because they work. The student works because their GPA is 4.0, more specifically because they are smart. The 4.0 GPA is an indication of their intellect. They understand the need for fiscal responsibility and work because of it. While there is no way to infer this type of scenario from the data to confirm this possible explanation for the data results, it is still a feasible possibility. It would not be prudent to simply ignore this possibility and not bring to light its viability. Also, while this may be a plausible scenario within the analysis of hours worked for non-athletes and their GPA, this scenario does not make as much sense when it is applied to athletes, the number of hours spent on their particular sport, and their GPA. A 4.0 student does not usually pick up football because it is good for their wellbeing. They must have the talent and ability to do so and it is unlikely that they can just pick up a sport. Also, it does not make much reasonable sense for a typical student to begin playing a sport, other than for the health benefits and possible intrinsic value. In this case, the student would be more likely to simply participate in intramural athletics.

Comparison between the Number of In-Season Hours for Athletes and Number of Hours Worked for Non-Athletes

The final statistical analysis is a comparison of two previous analyses. The debate is often heard around sport management circles that college athletes must endure a difficult life due to the time commitment that it takes to play college sports. The argument is also made at times that college athlete's GPAs suffer because of the large time commitment that sports involve. This inevitability degrades into a conversation about whether college athletes should be paid. Opponents of this line of sympathetic reasoning counter with the validity of all the regular students who work jobs but do not get scholarships. It is often argued that it is just as hard for them, if not harder than student-athletes have it. While this is certainly not the scope of this report, it is a goal of this data analysis to shed light on the argument that collegiate student-athletes have it much harder than the general, working student population and its consequent effect on academic achievement.

Due to the nature of the questions asked within the survey and the subsequent coding of the raw data, it is possible to draw a precise comparison between the GPAs of collegiate student-athletes versus the GPA of non-athlete, working students. The amount of hours spent practicing or playing a sport and the amount of hours spent working are able to be compared in a direct manner.

With the comparison, only one category cannot be compared, the 0-4 hour category (Appendix C, Chart 6). The reason for this is that there were no students from the general population that reported working 0-4 hours in a typical week. This is not surprising as most jobs, even part-time positions, require each employee to work more than just four hours in a week. It is, however, unusual that seven student-athletes would respond that they only participate in organized team activities 0-4 hours a week. Based on practices and games, this would seem to be an impossibility. For these two reasons the 0-4 hour range will be excluded in the analysis.

An examination of the data shows an overwhelming trend. Among the eight work hour categories examined, six (75%) of them saw working, non-athlete students have higher GPAs than the in-season athletes. Within the two categories that athletes outperformed non-athletes, the difference was not overly significant in either category. In the 20-24 hour range athletes' GPA was higher by 0.08 points and in the 40+ hour range the athletes' GPA was higher by 0.03 points. The largest statistical different in any category came in the 30-35 hour range in which working non-athletes reported a 0.64 point higher GPA.

This particular analysis appears to disprove the argument that student-athletes are achieving higher GPAs than those non-athlete students who are working the same number of hours. However, as was presented previously, one cannot overlook the possibility that these results do not represent that being a student-athlete is tougher, but rather is more indicative of the type of people that are athletes and the type of people that hold jobs while in college. It would appear, however, that using the time commitment excuse to explain poor grades in student-athletes is essentially, a subterfuge. Non-athlete students who are working the same number of hours are able to achieve higher GPAs. Stress is present in every job whether the "job" is a sport or it is an actual job that is utilized by a student to help support themselves during their college education. Future studies may delve in a sport psychology direction by examining how job stress, whether athletic or an actual job, affects academic achievement.

Another possibility that cannot be overlooked is that the self-reported in-season hours of athletes may have been inaccurately reported. Most student-athletes know that in accordance with NCAA regulations, they are not supposed to spend more than 20 hours a week involved in team activities. Even though the surveys were completely anonymous, some athletes may have still felt the need to put down what should be the right answer and not necessarily what the actual answer was. To help alleviate privacy concerns an analysis of the number of in-season hours worked by sport was not conducted. It is very possible that a student-athlete engaged in 30 hours a week of team activities only put down 20 hours a week because he knew that answer was what the NCAA would expect and would also keep his coach out of trouble. Because of this, the chart may actually shift causing completely different results. The evidence for this possibility may be the fact that the most common response for the amount of in-season hours was the 20-24 hour range (n=15). This could be athletes putting down the 'right' answer or it simply could be an accurate answer. It is also not unfeasible to think that coaches would use all of the 20 hours allotted to them by NCAA each week. Therefore, there really is no way to truly know whether the answers may be accurate or not.

Limitations

Although the researcher did the best that he could to eliminate limitations within the study, some foreseen limitations were impossible to avoid and other limitations arose from unforeseen circumstances. One limitation was the sample size. The sample was limited to students who were enrolled in Sport Management courses, at only one institution, during only one semester. Although a lot of athletes are enrolled in Sport Management courses, not all athletes are and some sports went underrepresented in the study. Also, it is not unreasonable to assume that most Sport Management students have some sort of certain commonality that caused them to choose Sport Management classes.

Within the sample size limitation were two additional sample issues. The number of respondents for each collegiate sport and race were limited. Within collegiate sports, there was a smattering of respondents participating in various sports but some were not accounted for in the data. As for race, there was a high amount of white and black survey respondents. Although not unexpected as addressed previously, it still leads to other races being underrepresented in the study, although not necessarily in a disproportional manner in comparison to general college enrollment figures by race.

A limitation also presented itself in regards to athletes not knowing what constitutes as team mandated activities. Athletes were asked to report the average number of hours per week that they spent in mandated team activities. This issue was discovered when several athlete participants asked for a clarification on what the preceding question specifically referred to. Some athletes may think game travel is a mandatory team activity and should be counted to team activity hours while others know that is actually inaccurate. In addition, some athletes may participate in an activity such as film study, but are doing so in a voluntary manner. Coaches are not requiring this film study session but players are participating in it anyways. Along these same lines, although an activity may be labeled as voluntary by a coach, in reality, the coach is coercing the player to participate in the voluntary activity. Whether or not a player reports these typed of hours as mandated or voluntary will differ from athlete to athlete.

Along the lines of the previous paragraph, athletes may not be reporting accurate hours on purpose or because of negligence. An athlete may simply not know how many hours they participate in mandated team activities a week therefore they guessed the hours in what may be a horribly inaccurate manner. On the other hand, many athletes know that they are only supposed to be required to engage in 20 hours of mandated team activities each week. While the athlete may actually be engaging in more than 20 hours per week of mandated team activities, they know what the correct answer should be, regardless of whether or not it is the actual answer. It is not unreasonable to assume that an athlete engaging in 30 hours per week of mandated team activities would report only 20 hours per week to keep his coach from getting in trouble.

Similar to the issues with athletes self-reporting their mandated in-season hours, working non-athletes may not actually know how many hours per week they are working. Although this is less likely to occur than an athlete not knowing their mandated in-season hours, it still occurs. It is likely that a survey respondent simply gave a rough guess at the number of hours they work per week and the actual number may be quite different.

One limitation that was planned for was students not looking up their GPA. Since it would violate the privacy of the survey participants to validate self-reported GPAs, it was not possible to confirm GPA answers. All of the GPA answers were self-reported. Detailed instruction were given on the survey itself (Appendix D) that guided students in a step by step process to obtain their actual, current GPA. However, since most surveys were completed more quickly than expected and during class time, it is reasonable to assume that a good number of self-reported GPAs were approximations and not completely accurate.

Students who participated on multiple intercollegiate athletic teams provided a potential problem and limitation. Since SPSS cannot analyze strings of data, students who participated in more than one intercollegiate sport would only be able to have one sport counted without a drastic and extensive restructuring of the analysis format. This only ended up being a limitation for one survey participant. Since the survey participant participated in both Track and Field and Cross Country and was the only respondent to indicate intercollegiate participation in Cross Country, Cross Country was grouped together with Track and Field within the recoding process.

Originally each intramural sport was individually coded and entered into the SPSS program. However, due to SPSS's inability to analyze strings of data, the researcher was left with only two options. The first option was to create a separate column in SPSS for every single intramural sport participated in and then use a sort feature to run analysis for each column, one at a time. Although this was physically possible, do the time constraints of this study, it was not a realistic possibility. The second option was to simply group all intramural sports together. After consulting with a committee member, a researcher advisor, and an SPSS expert, it was determined that this was the best course of action given the situation.

Some students did not realize that the survey was front and back despite being told so. This led to several surveys only being completed on the first page and not the second. While most of the second page was simply assessment data for the researcher, the question that asked students to report their GPA was also on the back.

An additional limitation is in regards to non-specific answers. While it can be argued that a answer that conveys imprecise knowledge of a statistic is better than a rough approximation, this still led to undefined answers. Some examples of this were responses such as “a lot” or “all week” in which non-numeric answers were given to questions that asked for a numeric response. In this case, those particular answers were thrown out rather than trying to assign a numerical value to an inexact qualitative answer.

The final limitation was that of the background of the researcher himself and the process by which the thesis proposal, process, research, writing, and defense were conducted. As this is the first major research project that the researcher had conducted, flaws conducting the methodology, statistical analysis, and conclusions could be expected. This was amplified by a number of different factors. The first was a lack of education and available resources regarding use of the SPSS Program and statistical analysis procedures and conclusions. While all attempts were earnestly made in trying to validate all of the data, methodology, and conclusions, it is the opinion of the researcher that this is certainly not the most structurally rigorous and sound study. The second is involving the process. As the researcher was the first student to go through the graduate program and consequently the first to conduct a thesis study, no guidelines or expectations were in place. Several times steps in the research process were skipped or performed incorrectly due to not knowing the process. This may have compromised the data collection and analysis phases. It is the opinion of the researcher that although the study and thesis are fairly solid, there are certainly areas of improvement that are apparent and minor flaws that might be found upon stringent examination of the thesis study.

Conclusion

After analyzing the data several conclusions can be made regarding the initial hypotheses made. Hypothesis 1 proved to be true. Although previous studies have found that middle and high school athletes perform better than their non-athlete peers, collegiate athlete within sport management did not perform better than non-athlete peers in regards to self-reported GPAs. Hypothesis 2 proved to be partly correctly. While it was anticipated that football and men's basketball players would have the lowest GPAs and female soccer players would have the highest, wrestling and football actually had the worst and Men's Soccer, not Women's Soccer, had the highest self-reported GPAs. Men's Basketball was just 0.09 points away from the bottom and Women's Soccer had the second highest self-reported GPAs. Hypothesis 3 proved to be inclusive. Although, when looking at the specific numbers, working non-athletes had higher GPAs than athletes when it came to time commitment grouping in six of the eight time comparison categories, the results are not statistically significant. Overall, there appears to be credence to this hypothesis when compared against the data analyses, yet the results are simply insignificant. It can be said that based on the research conducted in this study, the main idea of the number of occupied or working hours among non-athlete students is not a determining factor in regards to academic achievement, more specifically GPA. The statistical insignificant results of the ANOVAs surrounding this hypothesis could lead to a potential area of future research to confirm these findings.

Future Studies

Although it is the opinion of the researcher that the data analysis was most certainly comprehensive concerning the topic and the raw data, there are undoubtedly areas that future research can explore. The first potential area of research would be surrounding Hypothesis #3. The ANOVAs returned statistically insignificant results, despite the presuppositions and hypothesis of the researcher. A study of similar nature, replicating the used methodology would help to confirm or dispute these findings.

As mentioned previously, sport psychologists may be able to create a study based on the affect stress levels have on academic achievement in athletes versus non-athletes. Another possible research area might involve looking more extensively into the backgrounds of student-athletes and working non-athlete students to find out if work or time management skills are really having no effect on GPA and rather it is simply the type of students and their background that determine their future academic success. Another research possibility is to conduct this same study but on a much larger scale. This current study was only able to look at individuals enrolled in one department's courses at one institution during only one semester. While the sample size was fairly large, it could benefit from expanding to other departments, other universities, and over a bit more of an expanded time period.

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Appendix A – Demographic Data and Correlations

Table 1

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	183	83.2	84.7	84.7
	Female	33	15.0	15.3	100.0
	Total	216	98.2	100.0	
Missing	System	4	1.8		
Total		220	100.0		

Chart 1

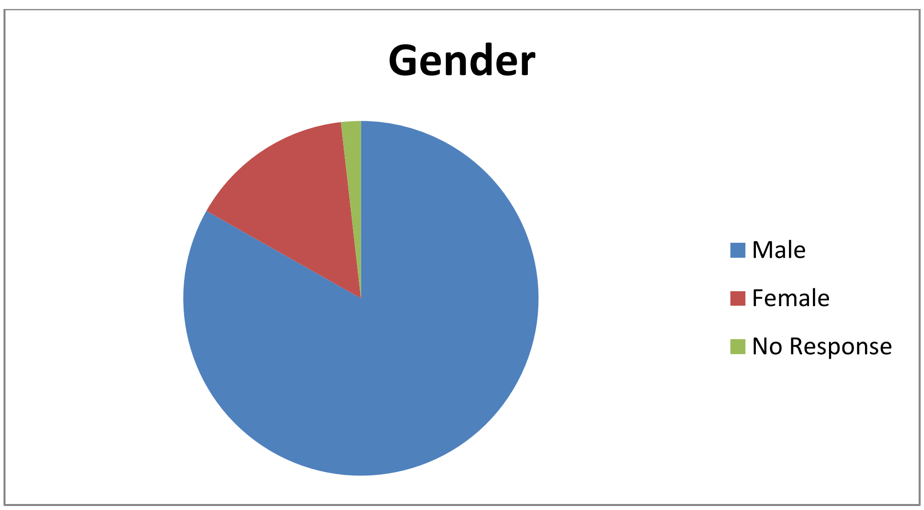


Table 2

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Gender	6.227	215	.000	.153	.10	.20
GPA	69.031	201	.000	2.8798515	2.797590	2.962113

Table 3

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	168	76.4	77.8	77.8
	Black	35	15.9	16.2	94.0
	Indian	1	.5	.5	94.4
	Hawaiian	2	.9	.9	95.4
	Hispanic	5	2.3	2.3	97.7
	Asian	2	.9	.9	98.6
	Other	3	1.4	1.4	100.0
	Total	216	98.2	100.0	
Missing	System	4	1.8		
Total		220	100.0		

Chart 2

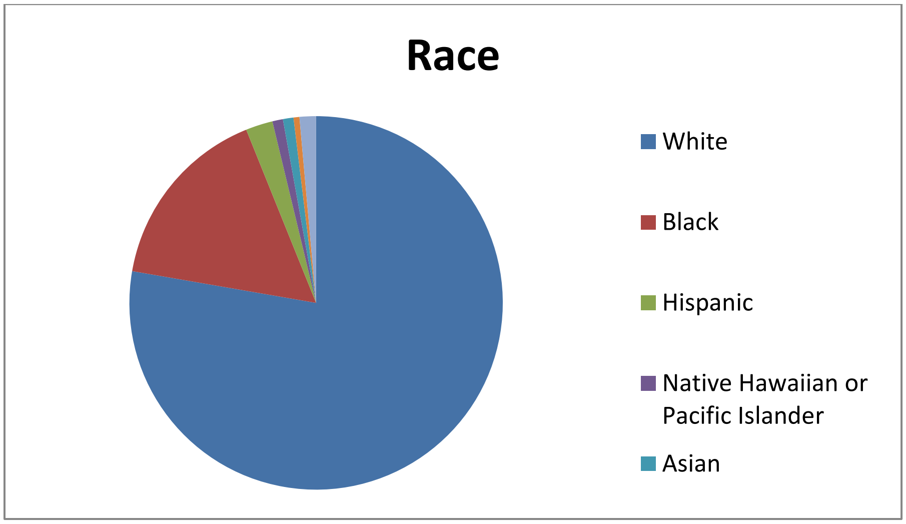


Table 4

Race * Gender Crosstabulation

Count

		Gender		Total
		Male	Female	
Race	White	138	27	165
	Black	30	5	35
	Indian	1	0	1
	Hawaiian	2	0	2
	Hispanic	4	1	5
	Asian	2	0	2
	Other	3	0	3
Total		180	33	213

Table 5

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Race	5.667	215	.000	.421	.27	.57
GPA	69.031	201	.000	2.8798515	2.797590	2.962113

Table 6

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17	1	.5	.5	.5
	18	20	9.1	9.2	9.6
	19	40	18.2	18.3	28.0
	20	50	22.7	22.9	50.9
	21	49	22.3	22.5	73.4
	22	35	15.9	16.1	89.4
	23	14	6.4	6.4	95.9
	24	6	2.7	2.8	98.6
	25	2	.9	.9	99.5
	30	1	.5	.5	100.0
	Total	218	99.1	100.0	
Missing	System	2	.9		
Total		220	100.0		

Table 7

State Participants and GPAs

GPA

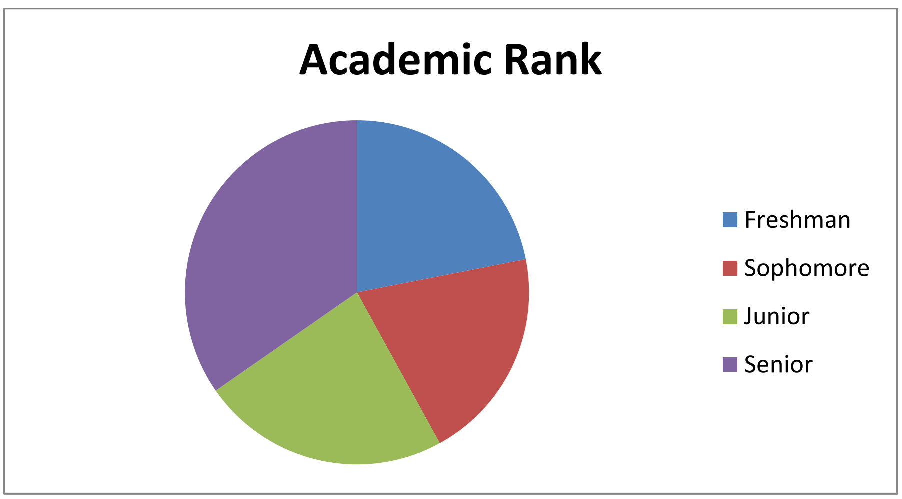
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
AZ	1	2.000000	.	.	.	.	2.0000	2.0000
CA	3	3.036667	.5701169	.3291572	1.620418	4.452916	2.4000	3.5000
CO	1	3.400000	.	.	.	.	3.4000	3.4000
CT	1	3.940000	.	.	.	.	3.9400	3.9400
DC	1	2.000000	.	.	.	.	2.0000	2.0000
FL	13	2.726923	.7025594	.1948549	2.302371	3.151475	1.0000	3.6000
GA	3	2.500000	.0000000	.0000000	2.500000	2.500000	2.5000	2.5000
IL	2	3.025000	.3181981	.2250000	.166104	5.883896	2.8000	3.2500
IN	3	2.956667	1.0351006	.5976156	.385334	5.527999	1.9300	4.0000
KY	2	3.600000	.5656854	.4000000	-1.482482	8.682482	3.2000	4.0000
MA	3	3.066667	.8621678	.4977728	.924923	5.208410	2.3000	4.0000
MD	17	2.921765	.5539092	.1343427	2.636971	3.206559	1.8600	3.9600
ME	1	1.720000	.	.	.	.	1.7200	1.7200
MI	5	3.278000	.5185750	.2319138	2.634104	3.921896	2.5000	3.8000
MO	1	3.000000	.	.	.	.	3.0000	3.0000
NC	24	2.775833	.5605193	.1144155	2.539147	3.012520	1.0000	3.6700
NJ	5	2.442000	.4817883	.2154623	1.843781	3.040219	1.8800	3.0000
NY	11	3.063636	.5311548	.1601492	2.706802	3.420471	2.0000	4.0000
OH	5	3.050000	.4401136	.1968248	2.503527	3.596473	2.3300	3.5000
Ontario	4	2.687500	.2796873	.1398437	2.242455	3.132545	2.3200	2.9800
PA	14	3.045000	.6035249	.1612988	2.696535	3.393465	2.1200	4.0000
Saskatchewan	1	2.650000	.	.	.	.	2.6500	2.6500
SC	1	2.630000	.	.	.	.	2.6300	2.6300
South Africa	1	3.100000	.	.	.	.	3.1000	3.1000
TN	2	2.700000	.2828427	.2000000	.158759	5.241241	2.5000	2.9000
Trinidad & Tobago	1	3.500000	.	.	.	.	3.5000	3.5000
TX	5	2.996000	.7463779	.3337904	2.069249	3.922751	2.2800	3.9000
VA	65	2.846615	.5999044	.0744090	2.697966	2.995264	1.0000	4.0000
WI	1	2.820000	.	.	.	.	2.8200	2.8200
WV	1	3.800000	.	.	.	.	3.8000	3.8000
WA	2	3.130000	.6081118	.4300000	-2.333668	8.593668	2.7000	3.5600
Total	200	2.884150	.5937939	.0419876	2.801352	2.966948	1.0000	4.0000

Table 8

Academic Rank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Freshman	48	21.8	21.9	21.9
	Sophomore	44	20.0	20.1	42.0
	Junior	51	23.2	23.3	65.3
	Senior	76	34.5	34.7	100.0
	Total	219	99.5	100.0	
Missing	System	1	.5		
Total		220	100.0		

Chart 3



Appendix B – Activities, Race, and Gender Considerations

Table 1

College Sports

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Band	3	1.4	1.9	1.9
	Baseball	6	2.7	3.7	5.6
	Men's Soccer	2	.9	1.2	6.8
	Club Women's Crew	2	.9	1.2	8.0
	Club Field Hockey	1	.5	.6	8.6
	Club Men's Crew	1	.5	.6	9.3
	Club Men's Lacrosse	1	.5	.6	9.9
	Club Men's Hockey	8	3.6	4.9	14.8
	Club Men's Volleyball	2	.9	1.2	16.0
	Club Paintball	1	.5	.6	16.7
	Club Men's Soccer	1	.5	.6	17.3
	Club Women's Soccer	1	.5	.6	17.9
	Club Women's Hockey	2	.9	1.2	19.1
	DIII Football	1	.5	.6	19.8
	DIII Women's Soccer	1	.5	.6	20.4
	DIII Men's Soccer	1	.5	.6	21.0
	DII Men's Soccer	1	.5	.6	21.6
	Football	23	10.4	14.2	35.8
	Golf	1	.5	.6	36.4
	Men's Basketball	4	1.8	2.5	38.9
	Student Managers	7	3.2	4.3	43.8
	Softball	1	.5	.6	44.4
	Track and Field / CC	1	.5	.6	45.1
	Women's Basketball	3	1.4	1.9	46.9
	Women's Lacrosse	4	1.8	2.5	49.4
	Women's Soccer	3	1.4	1.9	51.2
	Wrestling	2	.9	1.2	52.5
	Intramurals	76	34.4	46.9	100.0
	Total	160	73.3	100.0	
Missing	System	59	26.7		
Total		219	100.0		

Table 2

Job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	66	30.0	30.0	30.0
	No	115	52.3	52.3	82.3
	Seasonal	39	17.7	17.7	100.0
	Total	220	100.0	100.0	

Chart 1

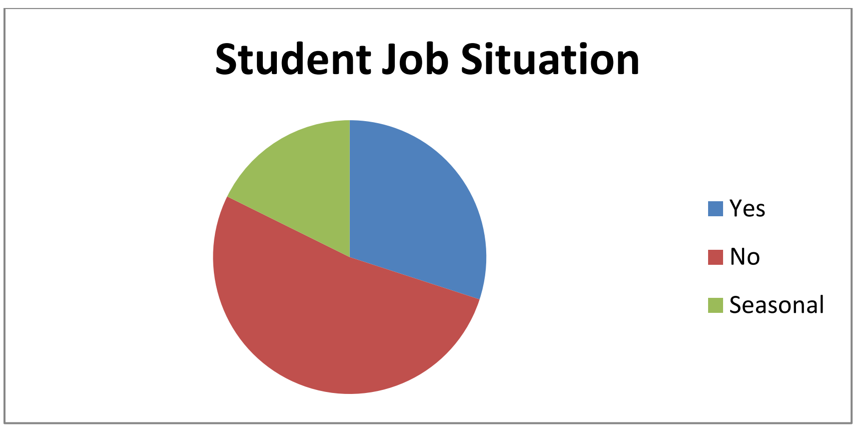


Table 3

# of Jobs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	54	24.5	77.1	77.1
	2	15	6.8	21.4	98.6
	3	1	.5	1.4	100.0
	Total	70	31.8	100.0	
Missing	System	150	68.2		
Total		220	100.0		

Table 4

Statistics

GPA

N	Valid	202
	Missing	18
Mean		2.879851
Median		2.890000
Std. Deviation		.5929264
Range		3.0000
Minimum		1.0000
Maximum		4.0000
Percentiles	25	2.500000
	50	2.890000
	75	3.235000

Table 5

Race

GPA

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
White	156	2.930705	.5804649	.0464744	2.838900	3.022510	1.0000	4.0000
Black	32	2.673750	.5178974	.0915522	2.487028	2.860472	1.5600	3.9000
Hawaiian	2	2.800000	.4242641	.3000000	-1.011861	6.611861	2.5000	3.1000
Hispanic	5	2.980000	1.2070626	.5398148	1.481234	4.478766	1.0000	4.0000
Asian	2	2.350000	.2121320	.1500000	.444069	4.255931	2.2000	2.5000
Other	2	2.200000	.2828427	.2000000	-.341241	4.741241	2.0000	2.4000
Total	199	2.876131	.5945125	.0421439	2.793022	2.959239	1.0000	4.0000

Chart 2

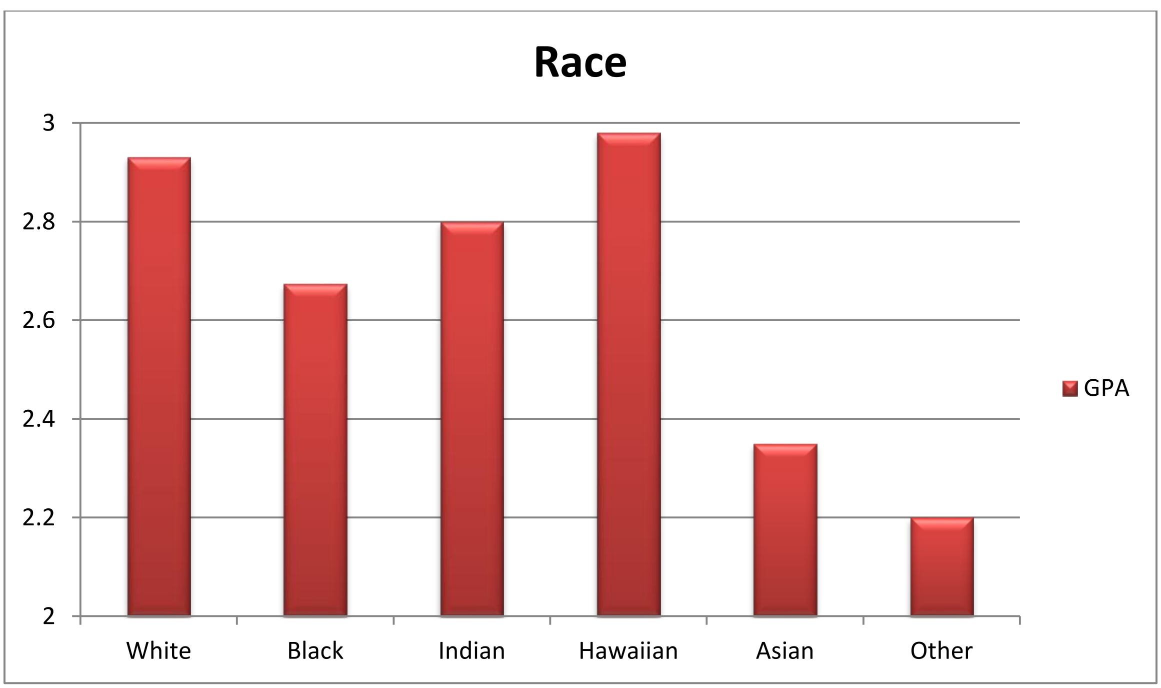


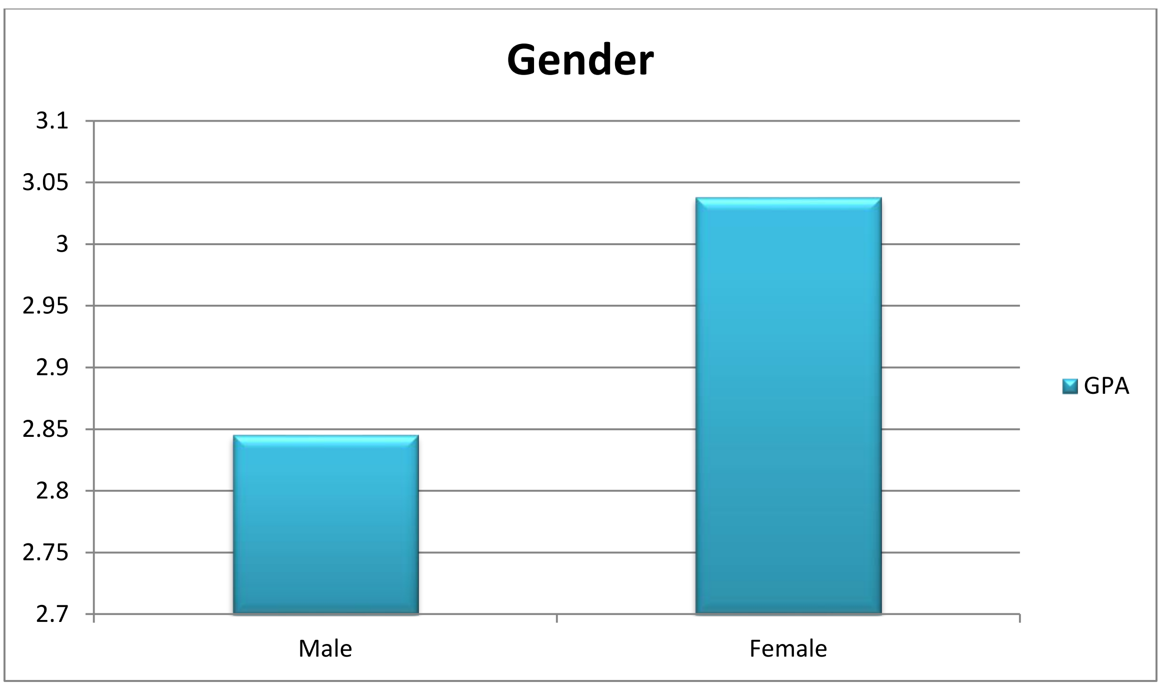
Table 6

Gender

GPA t-test

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Males	166	2.845241	.6021041	.0467323	2.752970	2.937511	1.0000	4.0000
Females	32	3.038125	.5217924	.0922407	2.849999	3.226251	1.8600	4.0000
Total	198	2.876414	.5929182	.0421369	2.793317	2.959511	1.0000	4.0000

Chart 3



Appendix C – Sports, Involvement Hours, and GPA

Table 1

GPA by Sport

GPA

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
Band	3	2.516667	.4186088	.2416839	1.476785	3.556549	2.2700	3.0000
Baseball	6	2.963333	.6445050	.2631181	2.286967	3.639700	2.3000	3.6700
Men's Soccer	2	3.500000	.0000000	.0000000	3.500000	3.500000	3.5000	3.5000
Club Women's Crew	2	2.565000	.7566043	.5350000	-4.232820	9.362820	2.0300	3.1000
Club Field Hockey	1	3.500000	.	.	.	.	3.5000	3.5000
Club Men's Crew	1	3.250000	.	.	.	.	3.2500	3.2500
Club Men's Lacrosse	1	1.930000	.	.	.	.	1.9300	1.9300
Club Men's Hockey	6	2.500000	.7848567	.3204164	1.676343	3.323657	1.0000	3.2000
Club Men's Volleyball	2	2.700000	.4242641	.3000000	-1.111861	6.511861	2.4000	3.0000
Club Paintball	1	2.560000	.	.	.	.	2.5600	2.5600
Club Men's Soccer	1	4.000000	.	.	.	.	4.0000	4.0000
Club Women's Soccer	1	2.980000	.	.	.	.	2.9800	2.9800
Club Women's Hockey	2	2.485000	.2333452	.1650000	.388476	4.581524	2.3200	2.6500
DIII Football	1	2.820000	.	.	.	.	2.8200	2.8200
DIII Women's Soccer	1	3.940000	.	.	.	.	3.9400	3.9400
DIII Men's Soccer	1	3.700000	.	.	.	.	3.7000	3.7000
DII Men's Soccer	1	2.880000	.	.	.	.	2.8800	2.8800
Football	19	2.734737	.5098842	.1169755	2.488981	2.980493	2.0000	4.0000
Golf	1	2.660000	.	.	.	.	2.6600	2.6600
Men's Basketball	4	2.875000	.8539126	.4269563	1.516235	4.233765	2.0000	4.0000
Student Manager	6	2.986667	.3612017	.1474600	2.607609	3.365725	2.5000	3.5000
Softball	1	2.860000	.	.	.	.	2.8600	2.8600
Track and Field / CC	1	3.210000	.	.	.	.	3.2100	3.2100
Women's Basketball	3	3.143333	.3855299	.2225858	2.185624	4.101043	2.8500	3.5800
Women's Lacrosse	4	3.000000	.5099020	.2549510	2.188632	3.811368	2.5000	3.7000
Women's Soccer	3	3.176667	.8352445	.4822286	1.101804	5.251529	2.3300	4.0000
Wrestling	2	2.000000	.1697056	.1200000	.475255	3.524745	1.8800	2.1200
Intramural Sports	73	2.980000	.6023611	.0705010	2.839459	3.120541	1.0000	4.0000
Total	150	2.913333	.5962226	.0486814	2.817138	3.009528	1.0000	4.0000

Chart 1

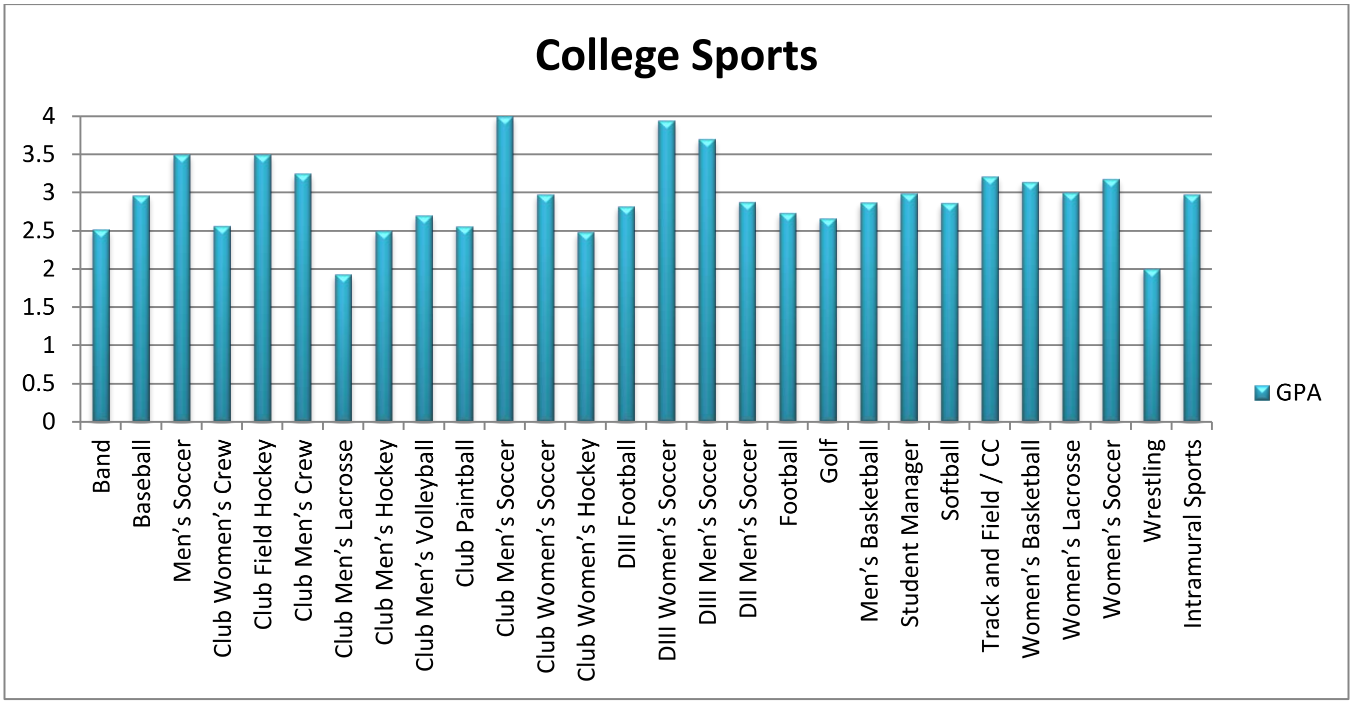

College Sports
4
3.5
3
2.5
2
1.5
1
0.5
0
GPA
Band
Baseball
Men's Soccer
Club Women's Crew
Club Field Hockey
Club Men's Crew
Club Men's Lacrosse
Club Men's Hockey
Club Men's Volleyball
Club Paintball
Club Men's Soccer
Club Women's Soccer
Club Women's Hockey
DIII Football
DIII Women's Soccer
DIII Men's Soccer
DII Men's Soccer
Football
Golf
Men's Basketball
Student Manager
Softball
Track and Field / CC
Women's Basketball
Women's Lacrosse
Women's Soccer
Wrestling
Intramural Sports

Chart 2

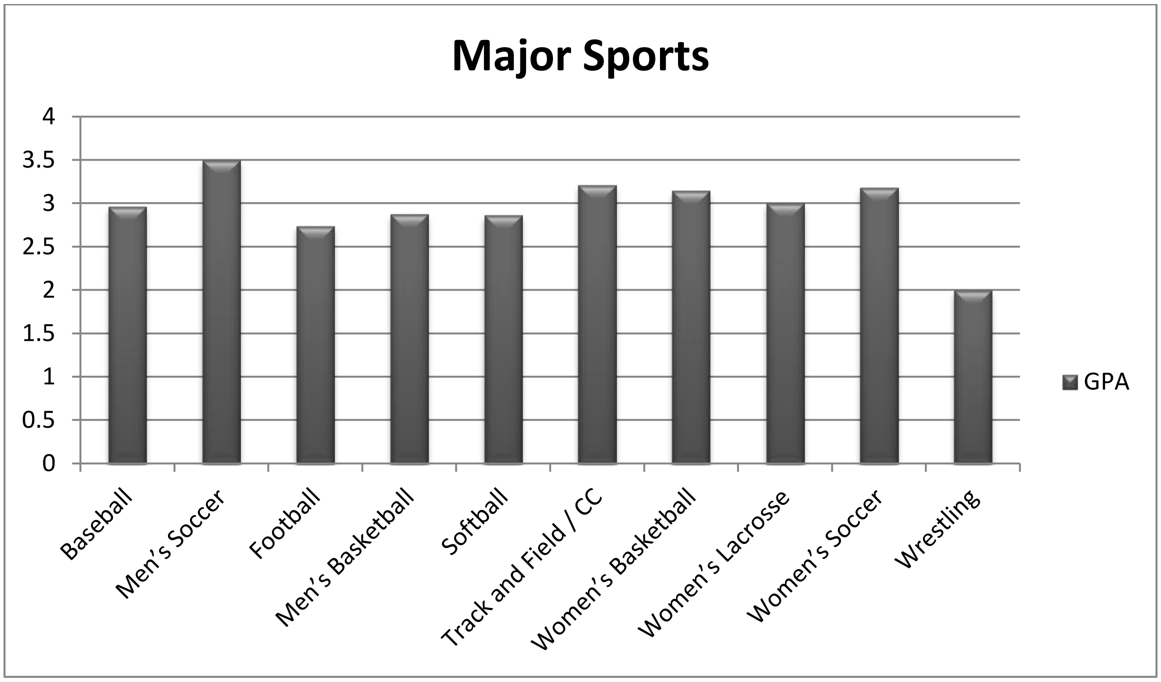

Major Sports
4
3.5
3
2.5
2
1.5
1
0.5
0
GPA
Baseball
Men's Soccer
Football
Men's Basketball
Softball
Track and Field / CC
Women's Basketball
Women's Lacrosse
Women's Soccer
Wrestling

Table 2

GPA by In-Season Hours

GPA among Athletes

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0 – 4 Hours	7	3.232857	.5538265	.2093267	2.720653	3.745061	2.2700	3.9400
5 – 9 Hours	3	2.576667	.3682843	.2126290	1.661798	3.491536	2.3300	3.0000
10 – 14 Hours	8	2.308750	.7132509	.2521723	1.712457	2.905043	1.0000	3.2000
15 – 19 Hours	8	2.920000	.4675468	.1653028	2.529121	3.310879	2.3200	3.7000
20 – 24 Hours	15	3.004667	.6013303	.1552628	2.671661	3.337672	2.1500	4.0000
25 – 29 Hours	9	2.971111	.3816230	.1272077	2.677770	3.264453	2.4000	3.6700
30 – 35 Hours	7	2.997143	.4115707	.1555591	2.616503	3.377782	2.5000	3.5800
35 – 39 Hours	2	2.250000	.3535534	.2500000	-.926551	5.426551	2.0000	2.5000
40+ Hours	6	2.596667	.5911571	.2413389	1.976285	3.217048	2.0000	3.4000
Total	65	2.847077	.5822766	.0722225	2.702796	2.991358	1.0000	4.0000

Table 3

Test of Homogeneity of Variances for In-Season Hours

GPA

Levene Statistic	df1	df2	Sig.
.533	8	130	.830

Table 4

ANOVA for In-Season Hours

GPA

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		3.523	8	.440	1.229	.287
	Linear Term	Weighted	.566	1	.566	1.580	.211
		Deviation	2.957	7	.422	1.179	.319
Within Groups			46.563	130	.358		
Total			50.086	138			

Chart 3

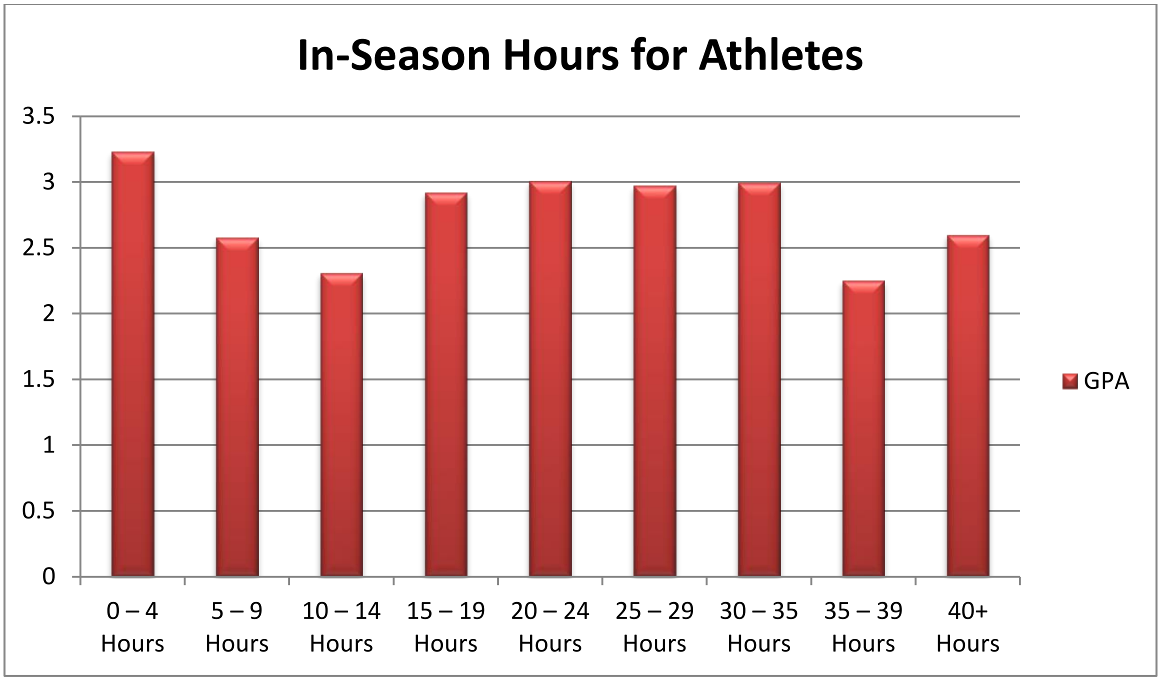


Table 5

Statistics

Hours

N	Valid	66
	Missing	155
Mean		23.08
Median		20.00

Table 6

GPA by Number of Jobs

GPA

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0	137	2.852847	.5802205	.0495716	2.754816	2.950878	1.0000	4.0000
1	49	2.897959	.6262720	.0894674	2.718073	3.077845	1.0000	4.0000
2	15	3.086000	.6106530	.1576699	2.747832	3.424168	2.3600	4.0000
3	1	2.600000	.	.	.	.	2.6000	2.6000
Total	202	2.879851	.5929264	.0417182	2.797590	2.962113	1.0000	4.0000

Table 7

Test of Homogeneity of Variances for Number of Jobs

GPA

Levene Statistic	df1	df2	Sig.
.437[a]	2	198	.647

Groups with only one case are ignored in computing the test of homogeneity of variance for GPA.

Table 8

ANOVA for Number of Jobs

GPA

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		.832	3	.277	.786	.503
	Linear Term	Unweighted	.036	1	.036	.101	.751
		Weighted	.458	1	.458	1.300	.256
		Deviation	.373	2	.187	.529	.590
Within Groups			69.832	198	.353		
Total			70.664	201			

Chart 4

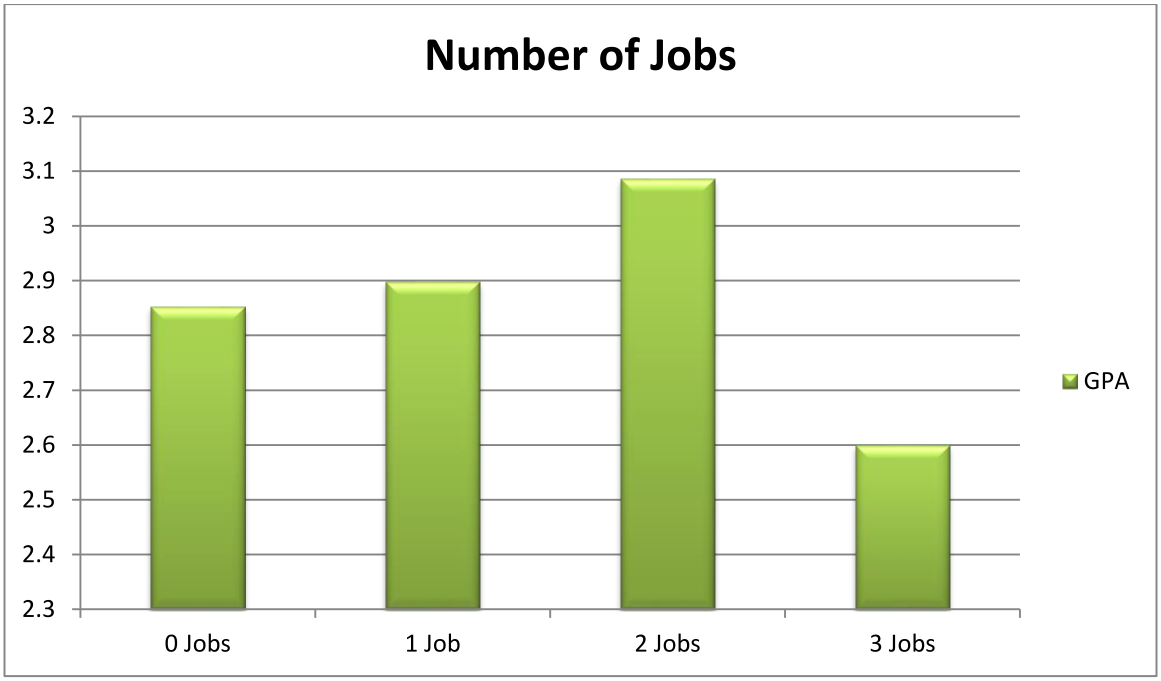

Number of Jobs
3.2
3.1
3
2.9
2.8
2.7
2.6
2.5
2.4
2.3
0 Jobs
1 Job
2 Jobs
3 Jobs
GPA

Table 9

GPA by Number of Work Hours

GPA among Non-Athletes

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
5-9 Hours	5	2.792000	.8026955	.3589763	1.795322	3.788678	1.5600	3.8000
10-14 Hours	10	2.903000	.6845769	.2164822	2.413283	3.392717	1.7200	3.9000
15-19 Hours	11	3.060000	.4388850	.1323288	2.765153	3.354847	2.5000	3.9600
20-24 Hours	10	2.927000	.4209790	.1331253	2.625850	3.228150	2.3300	3.8000
25-29 Hours	10	3.060000	.5155580	.1630337	2.691192	3.428808	2.4400	3.9000
30-34 Hours	6	3.636667	.6826322	.2786834	2.920288	4.353045	2.2800	4.0000
35-39 Hours	4	2.725000	.3201562	.1600781	2.215560	3.234440	2.5000	3.2000
40+ Hours	6	2.568333	.5575093	.2276022	1.983263	3.153404	2.0000	3.6100
Total	62	2.978226	.5890045	.0748036	2.828647	3.127805	1.5600	4.0000

Table 10

Test of Homogeneity of Variances for GPA by Number of Work Hours

GPA

Levene Statistic	df1	df2	Sig.
.662	7	54	.703

Table 11

ANOVA for GPA by Number of Work Hours

GPA

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		4.262	7	.609	1.946	.080
	Linear Term	Unweighted	.012	1	.012	.038	.845
		Weighted	.002	1	.002	.007	.933
		Deviation	4.260	6	.710	2.269	.050
Within Groups			16.900	54	.313		
Total			21.163	61			

Chart 5

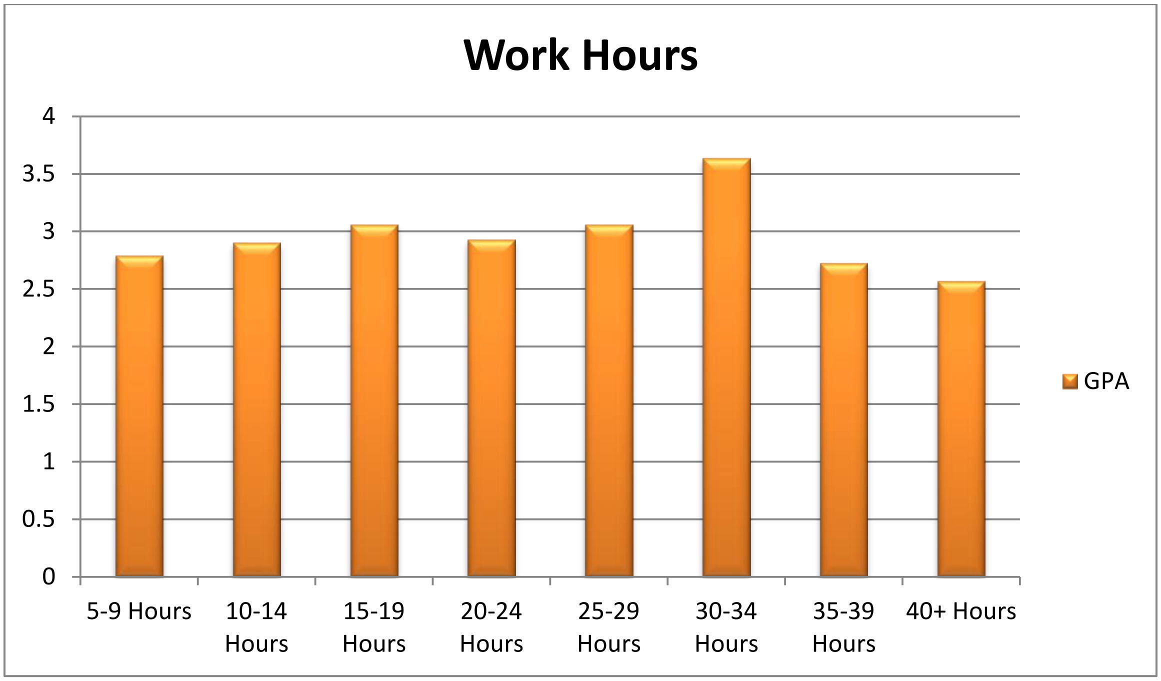
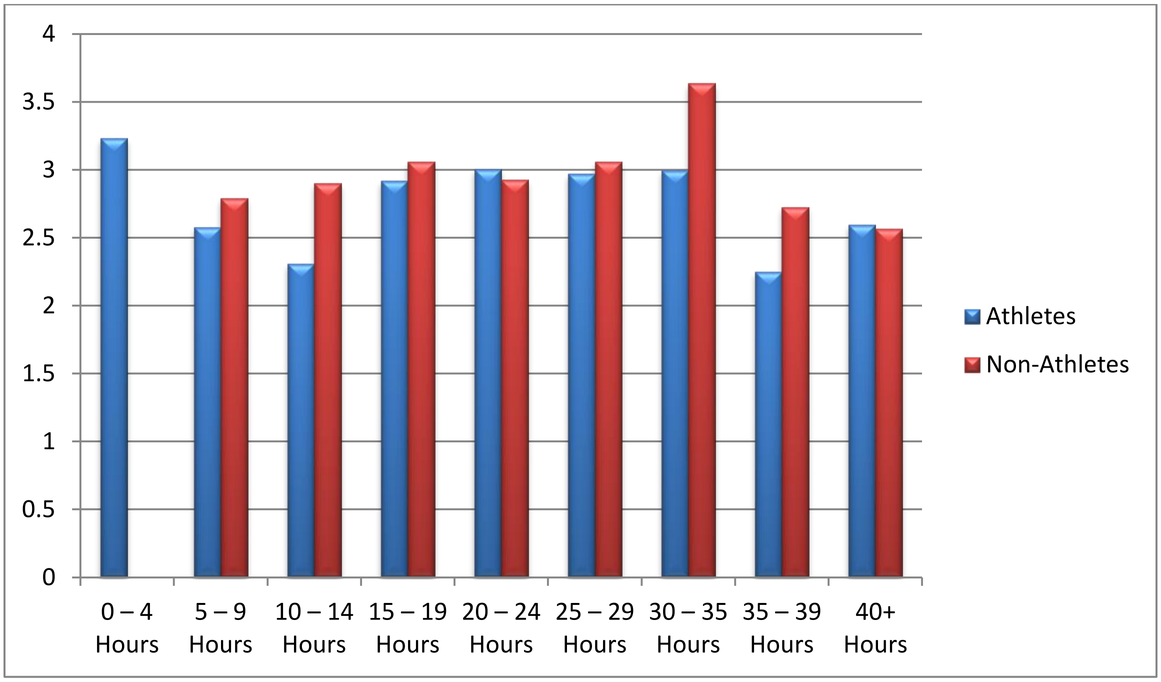

Work Hours
4
3.5
3
2.5
2
1.5
1
0.5
0
5-9 Hours
10-14 Hours
15-19 Hours
20-24 Hours
25-29 Hours
30-34 Hours
35-39 Hours
40+ Hours
GPA

Chart 6


4
3.5
3
2.5
2
1.5
1
0.5
0
0 – 4 Hours
5 – 9 Hours
10 – 14 Hours
15 – 19 Hours
20 – 24 Hours
25 – 29 Hours
30 – 35 Hours
35 – 39 Hours
40+ Hours
Athletes
Non-Athletes

Appendix D – Survey Questions

Age:____________

Gender:

□Male □Female

Race:

□White □Native Hawaiian or Pacific Islander

□Black or African American □Hispanic

□American Indian or Alaska Native □Asian

□Other

Major:____

Minor:____

Home State:_____________________________

What is your academic rank (Freshman, Sophomore, Junior, Senior)?____

What is your absolute favorite sports team (college, amateur, or professional)?__________________________________

Did you participate in athletics or extracurricular activities in High School? Yes No

If yes, what sport(s) or extracurricular activities did you play or participate in and how many years for each? (*during high school only*)____

____

Did/Do you currently participate in college athletics or extracurricular activities? Yes No

If yes, what sports or activities do you participate in and how many years for each? (*during college only*) Please designate between NCAA Division I, II, or III sports, club sports, intramural sports, and extracurricular activities.____

____

How many hours a week do you spend engaged in team or group activities such as practices, conditioning, or games *mandated by the team* for in-season and out-of-season?

In-Season:__________________________ Out-of-Season:________________________

How many hours a week do you spend practicing or engaging in your sport or activity *on your own* (not required by the team or group)?____

Do you have a job that you are currently working at? Yes No No, I have a Seasonal Job (Camp Counselor, etc)

How many jobs are you currently working?_______________________________________

On average, how many hours per week do you spend working *during the school year*?______________________

What is your current Grade Point Average (GPA)?______________________________

To find your GPA, go to www.liberty.edu and click on "Student Login" at the top. Click on "Assist" on the left side of the page. Enter your Username and Password and click the "Go" button. Click on "Student." Click "Student Records." Click "Academic Transcript." For "Transcript Level" select the "Undergraduate" option and then click the "Submit" button. Scroll down to the very bottom of the page and look at the last row titled "Overall." Your GPA will be the last number in this row. It will have the format of #.## such as 2.35 or 3.40

Which Sport Management Courses are you currently enrolled in?____

____

What other majors did you consider?____

On a scale of 1-10 with 10 being the most satisfied and 1 being the least satisfied, how satisfied are you with your decision to major in Sport Management?

1 2 3 4 5 6 7 8 9 10

If you could do it all over again, would you still choose to major in Sport Management?

Yes No Maybe N/A

On a scale of 1-10 with 10 being the most enjoyment and 1 being the least enjoyment, how much have you enjoyed your time in the Sport Management Program?

1 2 3 4 5 6 7 8 9 10

On a scale of 1-10 with 10 being the most difficult and 1 being the easiest, what number value would assign the difficulty of the Sport Management Program at Liberty in comparison to other degree programs at Liberty?

1 2 3 4 5 6 7 8 9 10

On a scale of 1-10 with 10 being the best and 1 being the worst, what number value would you assign for the quality of the faculty of the Sport Management Program at Liberty in comparison to other degree programs at Liberty?

1 2 3 4 5 6 7 8 9 10

In comparison to other programs (majors) at Liberty University, would you say the Sport Management Faculty are better, worse, or the same in terms of quality?

Much Better Slightly Better Same Slightly Worse Much Worse

Which Sport Management class have you learned the most from and the least from?

Most Learned:______________________________ Least Learned_______________________________

What sport would you like to work in (if applicable)?____

What segment within sports would you like to work in (Marketing, Sales, Finance, Administration, Sport Agent, Ticketing, Psychology, Coaching, etc)?____