Academic Choices Matter for Collegiate Student-Athletes

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Acknowledgements

To those who have unwaveringly stayed by my side and showed me the power of kingdom community, you were the difference. Thank you.

Abstract

As college athletics has grown during the last two decades, the National Collegiate Athletic Association (NCAA), the governing institution of college athletics in the United States, has renewed its focus on academic reform and the academic performance of student-athletes (Petr & McArdle, 2012). Athletic administrators and academic support units have started to exert a greater amount of control over student-athletes' academic lives. However, research with general samples of college students has suggested that having some degree of autonomy is important for academic performance. This raises questions about whether increased control (and reduced autonomy) is actually in the best interest of student-athletes' academic well-being. This study addresses these questions by asking whether perceived autonomy relates to grade point average (GPA) in a sample of 83 male and female college student-athletes and by exploring the potential mediating role of intrinsic motivation. Results of logistic regression analyses indicate that the more academic autonomy a student-athlete has, the more likely he or she will have a GPA of 3.0 or higher. Results do not, however, suggest that the effects of autonomy are mediated by intrinsic motivation, which raises questions about how and why autonomy is important for academic performance. Results are discussed in terms of implications for practitioners who work with college student-athletes to help improve academic performance.

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Chapter 1

Introduction and General Information

Introduction

The National Collegiate Athletic Association (NCAA), the governing institution of college athletics in the United States, has renewed its focus on academic reform and performance of its student-athletes during the past two decades (Petr & McArdle, 2012). From 1998 to 2008, more than half of the 73 largest athletic programs in the country increased their spending on academic support by more than 100% (Wolverton, 2008). Similarly, in order to incentivize head coaches to increase their attention on the academic performance of their student-athletes, the NCAA has instituted tangible penalties when certain academic benchmarks are not obtained for individual student-athletes and for teams as a whole. The most severe penalties include individual student-athletes and/or teams being denied the opportunity to compete in the postseason or loss of scholarships if benchmarks are not met (NCAA, 2014).

Head coaches often collaborate with and/or defer to a team's athletic academic advisor when deciding how much academic freedom will be given to a student-athlete and what details will accompany that decision. The details surrounding the completion of tasks such as homework, studying, and weekly preparation can become difficult and complex to arrange. Because the student-athlete has a litany of non-academic commitments that must be accomplished on any given day, such as conditioning, lifting weights, watching film, practicing, and rehabbing, sometimes academic advisors assign a

student-athlete's academic commitments, class, studying, and tutoring in a way that fits well for the schedule of the athletic department instead of the individual.

Although the scholastic study of college student-athletes has been prevalent over the last two decades (Gaston-Gayles, 2004; Jackson & Roberts, 1992; Killeya-Jones, 2005; McCormick & McCormick, 2006; Simons, Van Rheenen, & Covington, 1999; Yopk & Prentice, 2010) there remain two gaps in the literature. First, although the link between autonomy and academic performance (Garcia & Pintrich, 1996; Steele & Fullagar, 2008) and the link between motivation and academic performance (Gottfried, 1990; Lloyd & Barenblatt, 1984; Turner, Chandler, & Heffer, 2009) has been independently explored by researchers, the three constructs of autonomy, intrinsic motivation, and academic autonomy have not been examined together among college student-athletes in the same set of analyses. Second, researchers have not conceptualized or operationalized academic autonomy in a way that captures the unique demands student-athletes' time. The purpose of this study is to address these gaps by exploring how autonomy, intrinsic motivation, and academic performance relate in a sample of college student-athletes.

Theoretical Framework

Self-determination theory (SDT) states that competence, relatedness, and autonomy are three things that humans need in order to maximize growth, social development, and well-being (Ryan & Deci, 2000b). Because of this guiding principle, social context plays a large role in motivation, and empirically studying environmental factors surrounding people has been a large focus of SDT. According to Ryan and Deci

(2000), SDT influences three important outcomes. These mechanisms of self-determination theory through which individuals become self-determined can also be seen in the student-athlete population. The first outcome is intrinsic motivation. Intrinsic motivation influences a person's ability to want to learn (Ryan & Stiller, 1991) and "seek out novelty and challenges, to extend and exercise one's capacities, to explore" (Ryan & Deci, 2000b, p. 70). People sometimes conceptualize the amateurism (non-professional) status of college athletes as having intrinsic motivation because many argue that the sacrifices that student-athletes make do not equate to the compensation they receive.

The second important outcome is self-regulation. As people gradually move out of early childhood, intrinsic motivation tends to be less and less encouraged (Ryan & La Guardia, 2000). SDT states that people begin to regulate themselves according to their social environments and through the process of internalizing non-intrinsic motivators (Ryan & Deci, 2000a). This means that the older people become, the more they become influenced by non-intrinsic motivators such as money and recognition, as opposed to internal motivators such as the drive to learn. For example, if an individual's driving motivator to complete a task becomes money, then they have internalized a non-intrinsic motivator. This would not be considered a "good" thing because self-regulation focuses on intrinsic motivators. The discipline and self-regulation required for an athlete to excel on the college level is extremely high. Student-athletes are constantly self-regulating their behavior based on the expectations of coaches in their sport, their professors in the classroom, and their teammates on their teams.

The third important outcome is well-being. According to Ryan and Deci (2000b), "the fullest representation of humanity show people to be curious, vital, and self-motivated" (p. 68). Rath and Harter (2010) include physiological and psychological components when they define well-being; in order to fully capture well-being, both components must be met. While physical injuries such as broken bones or blows to the head may be apparent, the psychological needs are also important and should be addressed (Yang et al., 2007). Athletic departments around the country have nutritionists and athletic dining halls to manage what goes into the body of student-athletes. Strength and sports medicine trainers are on staff to attend to the muscles and joints of the body once that food enters. In recent years there has also been an increased focus in academic scholarship devoted to the mental health of college athletes (Armstrong & Oomen-Early, 2009; Beauchemin, 2014; Malinauskas, 2010), so that the psychological aspect of development can be addressed as well.

SDT illuminates how important it is to address personality and motivation when assessing human behavior (Ryan, Kuhl, & Deci, 1997). SDT has guided research that investigates why people behave the way that they do, and which environments encourage that behavior. A combination of traditional empirical methods and theory can enable practitioners of SDT to highlight how personality and motivation shape behavior (Ryan & Deci, 2000b). The following literature review reveals how using SDT can influence the environments of students by encouraging academic autonomy, academic performance, and intrinsic motivation.

Chapter 2

Literature Review

Academic Autonomy

Hackman and Oldham (1976) describe autonomy as "the degree to which the individual has independent discretion in determining the pace and process of the task" (p. 8). Autonomy is a key concept in self-determination theory (SDT) and it can be developed and encouraged, in addition to simply being understood (Ryan & Deci, 2006). In an educational context, autonomy is often studied as the focus of behavior and actions of teachers (Ciani, Middleton, Summers, & Sheldon, 2010; Garcia & Pintrich, 1996; Niemiec & Ryan, 2009; Steele & Fullagar, 2009), parents (Grolnick & Ryan, 1989; Turner, Chandler, & Heffer, 2009), and coaches (Amorose & Anderson-Butler, 2007) and the influences those behaviors have on students' academic performance in the classroom. Previous research has examined the relationship between facets of autonomy and motivation among young people at various educational junctures including middle school (Tsai, Kunter, Ludtke, Trautwen, & Ryan, 2008), high school (Amorose & Anderson-Butler, 2006; Ciani, Middleton, Summers, & Sheldon, 2010), and college (Garcia & Pintrich, 1996; Steele & Fullagar, 2008), and has found that autonomy appears to help foster academic performance.

Studies looking at various types of autonomy, specifically with college students in an academic setting, have yielded differing findings about the dimensions of well-being that may affect performance. Researchers Steele and Fullagar (2008) surveyed 61 male and 76 female (n = 137) college students at a Midwestern university to explore their

autonomy, flow, and academic engagement. Collectively, the students (89% White) spanned 38 majors and two honors programs. Students were emailed an invitation to participate in an online survey about their college experience and were directed to the online survey, if they accepted the invitation. Although this method did not provide an opportunity to collect a response rate, it did allow for the most anonymity for the students.

Autonomy was operationalized as their professor's support for autonomy in the class they enjoyed the most. Students completed the Learning Climate Questionnaire (Williams & Deci, 1996), which was comprised of 15 items asking students to use a 7-point rating scale to rate statements such as "I was open with the instructor during class" and "The instructor provided choices and options." Perceived Competence was measured using the Interviewing Competence Scale (ICS), which asked students five items regarding how effective they felt at interviewing. A 5-point rating scale was used for each item. Results indicated that although demographic variables were not significant, the professor support for autonomy was positively and significantly related to the students' perceived competence. In others words, the students who perceived their professors as providing more autonomous support had more perceived competence when completing the task at hand. This finding is important because competence leads to maintaining intrinsic motivation and the environments that maintain intrinsic motivation help promote greater engagement (Deci, Ryan, & Williams, 1996).

Similar to Deci, Ryan, and Williams (1996), Garcia and Pintrich (1996) concluded that increased motivation led to deeper levels of engagement, which led to

improved academic performance. Garcia and Pintrich (1996) studied the effects of autonomy on intrinsic goal orientation and performance in the college classroom. Their participants were 365 college students from four Midwestern institutions including two public institutions, a community college, and a small private four year college. Their sample came from ten classrooms, comprised of four social science (n = 124), three english (n = 79), and three biology (n = 162) classes. The sample was 41% male and 59% female. As a pre-test at the beginning of the semester, participants filled out The Motivated Strategies for Learning Questionnaire (MSLQ) which consisted of 55 cognitive strategies and 55 motivation items which were assessed on a 7-point rating scale from 1 (*not true of me*) to 7 (*very true of me*). Variables included task value, self-efficacy, test anxiety, metacognition, autonomy, and intrinsic goal orientation. Researchers conceptualized intrinsic goal orientation as "the degree to which the individual perceives herself [or himself] to be participating in a task for reasons such as challenge, curiosity, or mastery" (p. 480). Intrinsic goal orientation was measured using four items. At the end of the semester, the post-test MSLQ included 22 items that measured the participants' classroom experiences. Results showed that autonomy was most strongly related with intrinsic goal orientation and task value, and that the classrooms that allow autonomy will encourage more intrinsically motivated students, which will then lead to students' improved academic performance.

To summarize, previous research supports the idea that autonomy is important for different dimensions of academic well-being and enhanced performance. Having the ability to choose affects perceptions of autonomy and intrinsic motivation which

enhances self-motivation to complete a task, i.e. perform (Deci & Ryan, 1985). Deci and his colleagues (1991) explain that "various aspects of the social environment affect people's intrinsic motivation and autonomous self-regulation and in turn, the quality of their performance" (p. 332). For college athletes, choosing when and how they complete their academics is another facet of their autonomy. Because of their stringent schedules (attending meetings, practicing, studying, training, etc.), student-athletes operate in what Harris (1993) says is a small area where they are allowed to develop physically and emotionally, so it is important for autonomy to be intentionally included when possible.

Based on previous studies of a positive association between autonomy and academic performance (Grolnick & Ryan, 1989; Niemec & Ryan, 2009; Steele & Fullagar, 2008), the current study hypothesized that if there were a relationship between academic autonomy and academic performance in college student-athletes, it would be positive. In other words, more academic autonomy would be associated with a higher academic performance and less academic autonomy would be associated with lower academic performance. Autonomy is a key construct when considering academic performance; however, important questions remain about how and why these two variables have been so consistently related. One possibility is that autonomy influences academic performance by affecting levels of intrinsic motivation.

Intrinsic Motivation

When considering the academic performance of any student, motivation and its components, specifically intrinsic motivation, appears to consistently play a role. Ryan and Deci (2000a) state, "intrinsic motivation is defined as the doing of an activity for its

inherent satisfactions rather than for some separable consequence" (p. 56). Explanations of intrinsic motivation often include words such as mastery and exploration which help create feelings of enjoyment throughout a task (Ryan & Deci, 2000b). Over the past forty years research has become clear about how intrinsic or extrinsic motivation affects experience and performance. Scholars agree that intrinsic motivation positively relates to (Gottfried, 1990; Lloyd & Barenblatt, 1984) and predicts (Turner, Chandler, & Heffer, 2009) academic performance. This idea of mastery helps to create a challenge that stirs excitement instead of creating pressure and perceived threats (Elliot & Harackieicz, 1996).

Researchers (Benware & Deci, 1984; Turner, Chandler, and Heffer, 2009) have found that more intrinsic motivation has led to better academic performance with two separate studies with college students. Benware and Deci (1984) found that increased intrinsic motivation led to increased academic performance. They took 40 first year students from the University of Rochester's Introduction to Psychology course and explored whether students who learned actively or passively would have more intrinsic motivation to learn and actually learn more. These students were asked to review an article on brain functioning during an academic break. Upon their return two weeks later, these students were split into a control group (n = 21), which was told it would be tested on the material, and an experimental group (n = 19) which was told it would teach the material to another student. When students returned to the lab, they were given a 24 item test (definitions, multiple choice, fill in the blanks) over the material and were debriefed. Intrinsic motivation was operationalized by three dependent measures: 1) how interesting

subjects found the contents of learning the material (measured by a 10-point rating scale), 2) how enjoyable they found the experiment (measured by a 10-point rating scale), and 3) how much additional time they were willing to volunteer for the experiment (6-point rating scale from 0 to 5). Results indicated that those who learned in order to teach the material were more intrinsically motivated and had higher content scores than those who learned the material in order to be tested on it.

Turner, Chandler, & Heffer (2009) also found that increased intrinsic motivation led to increased academic performance in their sample of college students. They asked 92 male and 172 female (n = 137) undergraduate psychology students at a Southwestern university to complete instruments of academic motivation, self-efficacy and study skills, parenting styles present in the house they grew up in, and academic performance. The students were 67.8% White, 18.2% Hispanic, and 4.9% Black; and 68% of the sample was comprised of freshmen, 13.6% was comprised of sophomores, 9.5% was comprised of juniors, and 9.1% was comprised of seniors. Instruments were administered in groups ranging from 10 to 30 and lasted anywhere from 30 to 60 minutes. Intrinsic motivation was operationalized as the seven subscales from the 28 item Academic Motivation Scale-College Version (AMS-C) created by Vallerand and colleagues in 1992 that factored intrinsic motivation (IM) into three types: IM-to know, IM-to accomplish, and IM-to experience stimulation. In this study, IM-to know and IM-to accomplish were combined to create a mean score. Academic performance was operationalized as the self-reported grade point average of the student. Results indicated that intrinsic motivation was able to positively predict academic performance.

To summarize, previous research has suggested that increased intrinsic motivation is associated with improved academic performance and learning, in college students. Meanwhile intrinsic motivation often requires intentionality in creating supportive conditions where intrinsic motivation can flourish (Ryan & Deci, 2000b). Additionally, everybody does not have intrinsic motivation for the same things (Ryan & Deci, 2000a). For example, one student could have high intrinsic motivation to succeed academically, while another does not, and the same observation could be applied to student-athletes.

Autonomy and Intrinsic Motivation

As researchers have shown, autonomy (Steele & Fullgar, 2008) and intrinsic motivation (Benware & Deci, 2014), each have the ability to influence academic performance. However, autonomy has the ability to influence intrinsic motivation (Guay & Vallerand, 1997) and both are deeply rooted in choice. Hackman and Oldham (1976) describe autonomy as having "independent discretion" when approaching and completing a task (p. 8). Autonomy consists of having a choice in the circumstances in which people find themselves. Similarly, intrinsic motivation increases when choice is involved (Deci & Ryan, 1985). When people have the ability to determine what they would like to learn or what activity they would like to do, their innate "want to" participate increases.

Various researchers have found evidence supporting the fact that autonomy and intrinsic motivation have a common denominator of choice (Garcia & Pintrich, 1996; Guay & Vallerand, 1997; Deci & Ryan, 1985; Ryan & Deci, 2000). This provides additional support that autonomy and intrinsic motivation are connected. Guay and Vallerand (1997) found this in their sample of high school students. Students filled out

three scales that asked items pertaining to their beliefs about the autonomy of teachers, parents, and school administration. In addition, they completed two scales which assessed the perceived competence and autonomy of the school. Each scale consisted of three item which were measured on a 7-point rating scale ranging from 1 (*not agree at all*) to 7 (*completely agree*). Results showed that "perceived school competence and autonomy affect positively self-determined school motivation [intrinsic motivation]" (p. 211).

Garcia and Pintrich (1996) also found that autonomy positively influences motivation in their sample of college students. They concluded that autonomy produced more students who were motivated with a focus on mastery and learning, i.e. intrinsically motivated. Ryan and Deci (2000b) who use intrinsic motivation and autonomy as central pieces to SDT state that competence will not increase intrinsic motivation unless perceived autonomy is also present. As the above research has shown, choice is an important component of autonomy and an important component of intrinsic motivation.

Chapter 3

Materials and Methods

Current Study

Research has shown that increased autonomy and increased intrinsic motivation both have a positive effect on learning and academic performance. The literature also shows that autonomy has been found to have a positive influence on intrinsic motivation and both are deeply rooted in choice. Autonomy consists of having a choice in the circumstances in which people find themselves, while intrinsic motivation is said to increase when choice is involved. When people have the ability to determine what they would like to learn or what activity they would like to do, their innate "want to" participate increases.

Although scholars have looked at autonomy, intrinsic motivation, and academic performance, they have not considered the type of autonomy considered in this study or examined whether intrinsic motivation may function as a mediator. Moreover, scholars have yet to explore these constructs in a sample of college student-athletes. College student-athletes have separate experiences from normal college students and those differences should be taken into account. Because of the unique demands on their time, components of academic autonomy are different for a college student-athlete than they are for a normal college student. In this study, the relationship between academic autonomy and academic performance is explored in a sample of college student-athletes. Academic autonomy was conceptualized by considering activities that not only affect

student-athletes academically, but that also occur outside of the classroom including attending study hall, meeting with tutors, and setting an academic plan for the week.

In addition, it was also investigated whether intrinsic motivation acts as a mediator between academic autonomy and academic performance. In the literature, autonomy has been found to have a positive influence on intrinsic motivation/self-determined motivation (Guay & Vallerand, 1997) and intrinsic motivation has been found to have a positive influence on academic performance (Turner, Chandler, Heffer, 2009). These two findings lead to the belief that intrinsic motivation could serve as a mediator between academic autonomy and GPA. From this foundation two research questions were put forth.

Research Questions

RQ1: Is academic autonomy related to academic performance for college student-athletes and, if so, is this relationship positive or negative?

H1: The researcher hypothesized that there would be a positive relationship between academic autonomy and academic performance.

RQ2: If there is a relationship between academic autonomy and academic performance, is the relationship mediated by intrinsic motivation?

H2: The researcher hypothesized that there is a positive relationship between academic autonomy and academic performance and that this relationship is mediated by intrinsic motivation. Specifically, this hypothesis means that academic autonomy would increase intrinsic motivation; which in turn would increase academic performance.

Participants

The final sample included 83 college student-athletes and consisted of 36 (43.4%) women and 47 (56.6%) men from a large public Southeastern university in the US. Participants ranged in age from 18 to 22, and were on average 19.14 years of age (*SD* = 1.11). See Table 1 for additional participant demographic information. All tables and figures are located in the appendix.

Procedures

In February of 2014, student-athletes were invited to complete a questionnaire during the "check in" process of their weekly mentor meeting. All student-athletes who entered the building during the times that the researcher was present were invited to participate.

Mentor sessions began on the half hour from 2:00 p.m. to 10:00 p.m. on Sunday, from 7:30 a.m. to 10:00 p.m. Monday through Thursday, and 7:30 a.m. to 5:00 p.m. on Friday. The researcher was seated behind the check-in station where student-athletes were invited to participate in the survey. Upon checking into their appointment, student-athletes were invited to complete a brief questionnaire on their academic experiences. Participants returned the survey at the conclusion of their mentor sessions as they checked out of their appointment. One hundred twenty six student-athletes were invited to complete the pen and paper survey and 94 actually participated, leading to a response rate of 74.6%.

All items on the survey were self-reported so that participants could report their own attitudes and beliefs. After receiving IRB approval, informed consent to participate

was obtained prior to participants completing the survey. Although the consent form indicated that participants needed to be over the age of 18 to participate, five individuals under the age of 18 completed the survey. Data from these individuals was excluded from the analyses to ensure that the study conformed to ethical standards. Assortments of small packs of candy were given to participants as compensation for participation in the study.

Attention was given to ensure that student-athletes were not coerced into participation. It was made explicitly clear that their refusal to participate would not have negative ramifications for themselves from their academic counselors or their coaches. It was made clear that participation was voluntary and they could discontinue participation at any point.

Measures

Independent variables.

Academic autonomy was operationalized as the perceived amount of input that college student-athletes have in their academic support schedules. How, when, and where college student-athletes complete their academics outside of the classroom are key components of their academic autonomy. When they meet with tutors and when they set an academic plan for the week are both conceptualized as components of their academic autonomy over which student-athletes may or may not have control. Academic autonomy was measured using three items that were averaged to form an overall academic autonomy score. These three items were: “On a scale from 1 to 5, how much input do you feel you

have in determining and adjusting the following appointment times? (1) Academic Practice (Study Hall), (2) Mentor Sessions, and (3) Tutor Sessions." These three items had a Cronbach's alpha of .77 for this study. The average score across participants was 3.00 (SD = 1.11, range = 1-5).

Intrinsic motivation was defined as "doing of an activity for its inherent satisfactions rather than for some separable consequence" (Ryan & Deci, 2000a, p. 56). Intrinsic motivation was measured using the intrinsic motivation subscale of the *Academic Motivation Scale* (Vallerand et al., 1992). The intrinsic motivation subscale consisted of 12 items that were on a 5-point rating scale. All items began with the stem: "Why do you go to college?" and were followed by statements such as "because I experience pleasure and satisfaction" and "because my studies allow me to continue to learn about many things that interest me." Consistent with the original measure (Vallerand et al., 1992), these 12 items were averaged to form an overall intrinsic motivation score (α = .93). The average score for intrinsic motivation was 3.00 (*SD* = .85, *range* = 1-5).

Dependent variable.

Academic performance was defined and measured using the university grade point average. Participants self-reported their own grade point average. One item asked participants to select the range that captured their cumulative GPA and respondents could indicate one of six ranges. Seven respondents fell into the "4.0-3.50" category, 25 in the "3.49-3.00" category, 34 in the "2.99-2.50"

category, 14 in the “2.49-2.00” category, two in the “1.99-1.50” category, and one in the “1.49-1.00” category.

Small cell sizes, such as some of those above, can cause problems during data analyses. For example, small cell sizes reduces the ability to generalize findings and minimizes power for statistical tests (Morrow & Skolits, 2012). When presented with small cell sizes, there are three options available to correct these problems. One can (a) use a non-parametric analysis, (b) apply a more stringent alpha, or (c) collapse categories within a variable. Because of the desire to use a parametric analysis and not apply a more stringent alpha level to GPA, collapsing GPA categories was chosen. Multiple ways of combining categories were explored during preliminary analysis.

First, the collapse from six categories to four resulted in the following categories and number of respondents who fell into each: Seven participants in the “4.0-3.50” category, 25 in the “3.49-3.00” category, 34 in the “2.99-2.50” category, and 17 in the “2.49 or below.” Although this collapse helped with the cell sizes on the low end of the GPA distribution (bottom category went from 1 to 17), seven participants still remained in the high end of GPA category. This distribution prompted a collapse from four to three categories.

Second, the collapse from four categories to three resulted in the following distribution: Thirty two participants fell into the “3.00-4.00” category, 34 in the”2.99-2.50” category, and 17 in the “2.49 or below” category. After the

creation of three categories the literature was consulted to determine what grade benchmarks were consistently used in college athletics.

Third, the decision was ultimately made to use the academic benchmark of a 3.0 GPA in final data analyses because it is often used as a cutoff for academic distinction in college athletics (Atlantic Coast Conference, 2013; Big 12, 2014; Pac 12, 2012; Purdue Athletics, 2012; Southeastern Conference, 2014). This led to the collapse of the remaining three categories into two. The final categories consisted of 51 participants (61.4%) having a GPA that was 2.99 or below, and 32 (38.6%) participants having a GPA that was 3.0 or above.

Analysis Plan

RQ1

"Is academic autonomy related to grade point average for college student-athletes, and, if so, is it positive or negative?" The final sample excluded two participants who did not provide data on academic autonomy and four participants who were missing data on GPA, leaving a final sample of 83. Academic autonomy was entered into a hierarchical logistic regression as an independent variable, while GPA was entered as the dichotomous dependent variable. The significance level associated with the beta coefficient of academic autonomy determined if there was a relationship with GPA. In other words, if the significance associated with academic autonomy was less than .10, then there was a relationship between academic autonomy and GPA. Statistical significance for this study was set at $p \leq .10$ due to practical consequences and the plausibility of alternatives (Labovitz, 1968). This means the consequences for this study

are not immediately life threatening; therefore, a larger error rate can be tolerated. Additionally, these results are consistent with previous studies, and a larger error rate is more acceptable because results are not directly "opposed to existing theory and empirical evidence" (Labovitz, 1968, p. 220). Age and gender were entered (in Block 1) as statistical controls because correlation analyses suggested evidence of age and gender differences in GPA. Age was significantly correlated with GPA (r = -.44, p < .01). Gender was also significant, $\chi^2(1) = 4.06$, $p < .05$.

The direction of academic autonomy was determined by the sign of the beta coefficient. If academic autonomy returned a positive beta coefficient, then academic autonomy would have a positive relationship with academic performance. In other words, student-athletes would be more likely to have a GPA of 3.0 or higher for each unit increase in academic autonomy. If academic autonomy returned a negative beta coefficient, then academic autonomy would have a negative relationship with academic performance. This means student-athletes would be less likely to have a GPA of 3.0 or higher for each unit increase in academic autonomy. Simply stated, the more academic autonomy a college student-athlete were to have, the worse their academic performance would be.

RQ2

"If there is a relationship between academic autonomy and academic performance, is the relationship mediated by intrinsic motivation?" Mediation was tested using the Baron and Kenny (1986) approach by conducting a hierarchical logistic regression. Intrinsic motivation was entered as the hypothesized mediator and the

regression was created using three steps. First (in Block 1), gender and age were entered as control variables and GPA was entered as the dependent variable. Second (in Block 2), academic autonomy was added as an independent variable to examine whether academic autonomy was associated with GPA, while controlling for age and gender. The significance level of academic autonomy determined if there was a relationship with GPA. Additionally, the significance level of academic autonomy in step two would be compared to the significance level of academic autonomy in step three to determine if the addition of intrinsic motivation as a mediator had produced change. For mediation to be present the significance level in step three would have to be less than the significance level in step two (Baron & Kenny, 1986).

Third (in Block 3), intrinsic motivation was added to academic autonomy as a potential mediator of the relationship between academic autonomy and GPA. If the significance associated with academic autonomy were reduced in step three, then intrinsic motivation would be considered a mediator. To establish the complete mediation of intrinsic motivation between academic autonomy and GPA, the effect of academic autonomy on GPA while controlling for intrinsic motivation needed to be zero.

Chapter 4

Results and Discussion

Results

Research question one asked, "Is academic autonomy related to academic performance for college student-athletes, and, if so, is this relationship positive or negative?" Binary logistic regression was used to determine the directional nature of the relationship between academic autonomy and academic performance. Academic autonomy yielded a positive coefficient (β = .47) and the positive coefficient supports the hypothesis that the more autonomy a college student-athlete has, the better their academic performance. See Table 2 for additional information.

The second research question asked, "If there is a relationship between academic autonomy and academic performance, is it mediated by intrinsic motivation?" First, bivariate correlations for all variables in the sample (N = 83) were examined. Initial inspection of the correlation between intrinsic motivation and GPA (r = .01, p = .93) indicated that not only did intrinsic motivation not have a relationship with GPA, but it also did not mediate the relationship between academic autonomy and GPA. Despite these original findings, further analyses were conducted. See Table 3 for additional correlation information.

A binary logistic regression analysis with GPA as the dependent variable was conducted to determine which variables explained the most variance in GPA. First (in Block 1), the control variables (age and gender) were entered because both can have

potential impact on GPA. This model was significant, χ^2 (2, 83) = 19.74, p = .000. The Hosmer and Lemeshow statistic was examined because it shows if the actual values match values in the subgroups of the population in the model. The greater the p value is over .05, or the more non-significant the p value is, the more it shows that the model with the predictors is a better fit than a model with no predictors (Tabachnick & Fidell, 2013). The Hosmer and Lemeshow statistic, p = .89, was not significant, which confirms that gender and age add to the explanation of GPA. Nagelkere R^2, a goodness of fit statistic, was also examined because although it is a pseudo R^2, the Nagelkere R^2 shows the correlation between the model's actual and predicted values on a scale from -1 to 1 (Tabachnick & Fidell, 2013). Approximately 29% (R^2 = .29) of the variance in student-athletes' GPA was explained by age and gender. Additionally, 67.5% of the participants were correctly classified based on the control variables.

Second (in Block 2), academic autonomy was added. This model was significant, χ^2 (3, 83) = 25.52, p = .000. The Hosmer and Lemeshow Test, p = .83, was not significant. Together, approximately 34% (R^2 = .*34*) of the variance in student-athletes' GPA was explained by age, gender, and academic autonomy. Additionally, 72.3% of the participants correctly classified. Age remained significant, while gender did not.

Third (in Block 3), intrinsic motivation was added to test for mediation, and the model remained significant, χ^2 (4, 83) = 23.75, p = .000. The Hosmer and Lemeshow Test, p = .22, was not significant. Approximately 34% (R^2 = .34) of the variance in student-athletes' GPA was explained by age, gender, academic autonomy, and intrinsic motivation. Intrinsic motivation contributed less than .1% to the overall explained

variance in student-athletes' GPA. Additionally, 72.3% of participants were correctly classified.

In the final model (Block 3), age was significant ($p = .001$) and although academic autonomy was not significant at the .05 level, it was significant at the .10 level ($p = .06$). If the sample size increased, the p-value could have potentially dropped below .05 as power increased. After controlling for age and gender, student-athletes were 1.6 times more likely to be in the "3.0 and over" GPA category than the "2.99 and below" GPA category with each additional unit increase of academic autonomy. Additionally, due to the cross sectional nature of the data, alternate analyses were run with academic autonomy as the mediator and intrinsic motivation as the outcome variable. These analyses did not yield significant findings (analyses not shown).

Discussion

Previous research states that increased autonomy and increased intrinsic motivation have a positive effect on learning and academic performance. The literature also indicates that autonomy has been found to have a positive influence on intrinsic motivation and both are deeply rooted in choice. While autonomy consists of having a choice in the circumstances individuals find themselves in, intrinsic motivation is said to increase when choice is involved. When individuals have the ability to determine what activity they complete and how it is completed, their "want to" participate increases. Additionally, autonomy has been found to have a positive influence on intrinsic motivation/self-determined motivation and intrinsic motivation has been found to have a positive influence on academic performance. These previous findings lead to the belief

that intrinsic motivation could serve as a mediator between academic autonomy and GPA.

The evidence provided in this study lent support for the first hypothesis, which stated there is a positive relationship between academic autonomy and GPA, meaning that with every unit increase in academic autonomy, it is more likely that a student-athlete's GPA will be 3.0 or higher. However, the second hypothesis, which stated intrinsic motivation would serve as a mediator between academic autonomy and GPA, was not supported by the evidence. This means that intrinsic motivation does not have to be present in order for there to be a relationship between academic autonomy and GPA.

These findings relate to prior research in two ways. First, they reiterate the importance of autonomy in its relation to academic performance. The literature has consistently shown, for students from elementary school to college, that there is a positive relationship between autonomy and academic performance. This study confirms that premise because academic autonomy did have a positive relationship with GPA for college student-athletes. Second, contrary to prior research, results did not find academic autonomy to have an impact on intrinsic motivation or intrinsic motivation to have an impact on academic performance. Therefore, intrinsic motivation was not a mediator between academic autonomy and GPA.

Previous findings show autonomy to have a positive influence on intrinsic motivation and intrinsic motivation to have a positive influence on academic performance. The AMS instrument used to measure intrinsic motivation in this study

was not specifically designed for student-athletes, which potentially lead to the differences in these findings and previous research.

Implications

Findings suggest that practitioners who work with student-athletes should attend to the fact that academic autonomy does have a positive relationship with GPA. Although the magnitude of the relationship between academic autonomy and GPA was modest and needs to be replicated in studies with larger, more diverse samples of youth and that control for previous academic achievement, findings provide preliminary support for the idea that providing athletes with some degree of autonomy may have benefits for academic performance. Academic advising units, coaches, staff, administrations, and researchers can use these findings to prompt further research in this area. Increased research with multiple findings confirmed over several samples could impact policies and programming that have a positive influence on student-athletes and their academic performance.

Limitation and Future Directions

There are limitations associated with this research that should be taken into consideration. First, this study used a convenient sample. Convenience sampling can lead to the under representation or over representation of groups within the sample. In this study convenience sampling led to an oversampling of student-athletes who were underclassmen, which resulted in limited data about student-athletes who are upperclassmen. Future research could benefit from a more diverse sample and more demographic data. Due to the limited amount of demographic data, there is no way to

indicate whether these findings represent all college student-athletes. Additionally, this research used cross sectional data which only provides data for one point in time, instead of a longitudinal study which would provide more context around multiple periods of time.

Next, all data collected in this study is from a self-reported measure and there is no observational or objective data to corroborate what the student-athletes reported. Self-reported items have the potential for social desirability to influence how individuals respond to items. Student-athletes could have felt that specific answers were expected and responded accordingly. The next limitation included having GPA as the sole measure for academic performance. While GPA can be considered one measure of academic performance, there may be more encompassing conceptualizations of academic performance. Furthermore, in analyses GPA was treated as a dichotomous variable. The limiting scope of this variable could have affected results. Finally, although internal reliability was high, academic autonomy can be considered a limited measure because it is the average of three items.

The next limitation highlights the future direction of this research and that is the conceptualization of the study. Redesigning the study to examine the effect of high school academic performance on college academic autonomy for student-athletes could prove helpful for future researchers. While this study focused on the effect that academic autonomy had on GPA, perhaps a better conceptual design would look at the effect that high school GPA had on academic autonomy and the role of intrinsic motivation as a moderator. The amount of academic autonomy for student-athletes in college is often

dependent upon the level of previous academic performance, whether it be high school GPA or standardized test scores, and it can influence the amount of autonomy that coaches and academic advisors give their student-athletes once the students make it to the collegiate level. For example, the student-athlete who arrives to college with a 4.0 high school GPA, may be granted more academic autonomy than the student-athlete who arrives to college with a 2.2 high school GPA. For those student-athletes who have high levels of intrinsic motivation, academic autonomy could help improve their academic performance. These student-athletes could have an inner drive to succeed academically, that may be independent of the extrinsic motivation they receive as a student-athlete. For those who have low levels of intrinsic motivation, academic autonomy could serve as a detriment. The lessened amount of structure and control may hurt academic performance if the student-athlete's inner drive to succeed academically is not present. A longitudinal study, following student-athletes from high school through their transition to college sports and through their time at the collegiate level, could be used to explore these possibilities.

A final consideration for future research includes the constructs surrounding academic autonomy and academic performance. Although intrinsic motivation was not found to be a mediator between academic autonomy and academic performance in this study, it could be a moderator. Baron and Kenny (1986) report that a moderator is a third variable that has an effect on the direction and strength of the predictor and independent variable. In other words, if the relationship between the predictor and the outcome is significantly reduced without the presence of that third variable, that third variable can be

considered to have a moderator interaction. If intrinsic motivation was significant as a moderator, it would mean autonomy was helpful for those who have high levels of intrinsic motivation, but a detriment for those who have low levels of intrinsic motivation. In regards to the variables discussed in this study, future researchers can ask if the relationship between academic autonomy and GPA hold when a number of other variables are not present.

Chapter 5

Conclusion

As college sports grow on the national stage in America, the stakes continue to rise. Coaches are asked to win. In order to win they need their players to be academically eligible. In order to help ensure and encourage that their student-athletes are academically eligible, coaches often enact structure and control that is believed to help ensure academic success; however, this academic control does not necessarily lead to better academic performance. Practitioners should ensure that the decisions being made are best for the academic performance and well-being of the young men and women who compete for the public's entertainment.

This study has shown that females report higher GPAs then males and younger student-athletes report higher GPAs than older student-athletes (this can be due to the over inflation of GPAs early in their academic careers). However, once gender and age are controlled for, this study has shown that with the increase in a student-athletes' academic autonomy, they are more likely to be classified in the "3.0 and above" GPA category as opposed to the "2.99 and below" category. However, this study has not been able to definitively say what the link between academic autonomy and increased academic performance is. Previous research suggested that intrinsic motivation would be a strong link, but this study did not support this assertion. Additional research is needed to replicate or refute these findings.

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Appendix

Table 1

Descriptive Statistics (*n* = 83)

	%	Min.	Max.	Mean	SD
Female Gender	43.4				
Age (Years)		18	22	19.1	1.1
GPA $\geq$ 3.0	38.6				
Academic Autonomy		1.0	5.0	3.3	1.1
Intrinsic Motivation		1.0	4.9	3.0	.85

Table 2

Summary of Logistic Regression Analyses for Variables Predicting GPA (n = 83)

Block 1	B	S.E.	Sig	Exp(B)	95% CI	Nagelkere R^2
						.29
Constant	-.47	.23	.04**	.63		
Block 2	**B**	**S.E.**	**Sig**	**Exp(B)**	**95% CI**	**Nagelkere R^2**
						.34
Constant	15.94	5.66	.01**	8346170.14		
Gender	.68	.53	.20	1.97	[.70, 5.56]	
Age	-.96	.30	.00**	.38	[.21, .68]	
Academic Autonomy	.47	.25	.06*	1.61	[.98, 2.63]	
Block 3	**B**	**S.E.**	**Sig**	**Exp(B)**	**95% CI**	**Nagelkere R^2**
						.34
Constant	15.67	5.69	.01**	6370063.63		
Gender	.68	.53	.20	1.98	[.70, 5.59]	
Age	-.98	.30	.00**	.38	[.21, .68]	
Academic Autonomy	.47	.25	.06*	1.61	[.98. 2.64]	
Intrinsic Motivation	.16	.33	.64	1.17	[.62, 2.22]	

*Note: *p < .10 **p<.01, CI=Confidence Interval*

Table 3

Student-athlete reports of variables: Correlations

Variables	1	2	3	4	5
1. Gender	---				
2. Age	-.17				
3. 6Academic Autonomy	-.01	-.11			
4. Intrinsic Motivation	-.03	.10	.03		
5. GPA	.22*	-.44**	.25*	.01	---

**p<.05. **p<.01.*

Vita

Kendra Berry was born in Southwest Georgia and received her Bachelors of Arts in Sociology with a Concentration in Poverty Studies from Furman University located in Greenville, South Carolina. During her time at Furman, Berry was a student-athlete on the Women's Basketball team. After graduating from Furman, Berry went on to receive her Master of Arts degree in Management from Wake Forest University Schools of Business in Winston Salem, North Carolina. In 2016 Berry graduated with a Master of Science in Child and Family Studies from the University of Tennessee in Knoxville, Tennessee.