Understanding the Frequency of Academic Accommodation Use by College Student-Athletes with Disabilities

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ABSTRACT

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The transition from high school to college can be difficult for students with disabilities as they navigate new regulations for receiving and using academic support in their courses. Student-athletes with disabilities face additional obstacles to success including competing time commitments, negative stereotypes, and high performance expectations. In order to support these student-athletes academically, many Division I schools offer learning specialists to assess students' needs, develop academic interventions, and coordinate services, including students' use of academic accommodations. The current study used an online survey of student-athletes with disabilities to examine the following research questions: (1) Which academic accommodations do college student-athletes with disabilities receive most often? (2) How often do college student-athletes choose to utilize accommodations approved by their school in their courses? and (3) Which factors contribute to variation in accommodation use by college student-athletes with disabilities? Results indicated that student-athletes reported receiving accommodations for a less distracting environment for test-taking, extra time on exams, a copy of peer or professor notes, and the use of assistive technology. Across each of these accommodations, most student-athletes with disabilities reported using the support in every class/test or not at all. Regression analyses revealed student-athletes with disabilities in later years of college reported using the less distracting environment, extra time, and peer notes accommodations less often than student-athletes in earlier years of

college. Similarly, whether or not student-athletes with disabilities played revenue sports (football and basketball) uniquely contributed to the reported variation in use of extra time and peer notes accommodations. Class designation (STEM and social science) was only found to uniquely contribute to student-athletes' reported variation in use of the extra time accommodation. The implications of these findings, limitations of the study, and directions for future research are also discussed.

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APPROVAL OF THE DISSERTATION

This dissertation, "Understanding the Frequency of Academic Accommodation Use by College Student-Athletes with Disabilities", has been approved by the Graduate Faculty of the Curry School of Education in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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I dedicate this dissertation to my Allison.

Ask as many questions as others will allow; education is a noble pursuit.

Let this remind you to never give up on a goal, no matter how long it might take.

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CHAPTER 1

"Great moments are born from great opportunity. And that's what you have here tonight, boys. That's what you have earned here tonight- one game. If we played 'em 10 times, they might win nine, but not this game. Not tonight." – Herb Brooks, *Miracle*

INTRODUCTION

Transition Woes for Students with Disabilities

In 2004, the United States Congress passed the Individuals with Disabilities Education Act (IDEA) designed to improve the quality of education received by students with disabilities in the nation's public schools. Along with No Child Left Behind (NCLB, 2001), IDEA increased the level of school accountability and sought improved outcomes for students with disabilities upon graduation from high school.

At the high school level, IDEA (2004) grants support to students with disabilities in the form of academic accommodations. Accommodations are designed to level the playing field for students with disabilities without providing an advantage over their non-disabled peers. As such, accommodations are uniquely aligned with the needs of each student's disability and ultimately alter *how* students learn but not *what* they learn.

Accommodations for high school students with disabilities usually fall within two categories: instruction and assessment. Examples of instructional accommodations include presenting information in visual as well as verbal formats or providing written notes and reminders. Assessment accommodations include extended time on exams or a quiet environment for test-taking. Under IDEA (2004), the specific accommodations provided for each student with a disability are outlined in his/her Individualized

Education Plan (IEP) developed as a joint effort between general educators, special educators, parents, administrators, psychologists, and the student. While in elementary, middle, and high school, identification of students with disabilities and fulfillment of the supports outlined in a student's IEP are responsibilities of the school and the student's primary advocate are his/her parents. Students need to know very little about their disability and its effects on learning in order to receive a free and appropriate education (Brinckerhoff, Shaw, & McGuire, 1992; Brinckerhoff, 1993; Dalke & Schmitt, 1987; Skinner & Lindstrom, 2003).

The support of IDEA (2004), along with other cultural and technological changes, has increased the accessibility of college for students with disabilities. In 1996, only 14% of high school graduates with disabilities accessed college. That number rose to 45% in 2009, with approximately 11% of all undergraduate students reporting a disability in 2007-08 (NCES, 2012). While these numbers are encouraging, changes to the expectations of students with disabilities at the college level make the transition to postsecondary education difficult, even with IDEA's requirements of transition planning for all high school students.

At the postsecondary level, a change in the law governing support and accessibility provides the biggest hurdle for students with disabilities. Support parameters for these students are no longer guided by IDEA and are instead mandated by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (1990). Once in college, the system of support for students with disabilities changes from "one of entitlement to one of eligibility" (DaDeppo, 2009, p. 123), which begins by requiring students to self-identify to an on-campus office of disability services in order to

request specific services at their college or university. This step alone is extremely difficult without proper transition planning for students at the secondary level (Garrison-Wade, 2012), especially since postsecondary institutions are legally prohibited from requesting information regarding the disability status of students (Eckes & Ochoa, 2005; Vogel, 1982).

Once identified, students must then provide documentation of their disability to the office of disability services or an institutional contact person in order to request academic accommodations. The type of documentation required can vary by school with the cost for a new evaluation falling on the student, when needed (Madaus, Banerjee, & Merchant, 2011). This includes instances where documentation is out of date or when secondary schools used measures approved by IDEA, like Response to Intervention (RTI), to diagnose learning disabilities but these measures are not accepted by postsecondary institutions (Madaus et al., 2011). Non-disabled students who struggled at the secondary level and received informal accommodations are not legally eligible for the same types of assistance in college (Madaus, 2005). Students must not only provide evidence of a disability, but also demonstrate its effect on learning in order to receive postsecondary accommodations (Madaus, 2005). Since Section 504 and ADA are both laws aimed at eliminating discrimination, the legal focus of institutions is providing access for students with disabilities not an individualized approach to education (Eckes & Ochoa, 2005).

Some accommodations available at the postsecondary level mirror those provided in high school (ex: a copy of class notes, extra time on exams, etc.), but the quantity and quality of support services are variable across institutions (Mull, Sitlington, & Alper,

2001; Stodden, Whelley, Chang, & Harding, 2001). Section 504 and ADA do not require institutions to provide supports that alter a program or cause excessive financial burdens. Paired with an approach aimed at access instead of individual need, many postsecondary accommodations are presented to students as a "'menu of services' typically associated with a disability with little regard to other contextual factors" (Kurth & Mellard, 2006, p. 72).

Once accommodations are put in place it becomes the responsibility of the student to alert each of his/her professors to these additional supports and discuss the ways they will be carried out in each course. Unfortunately, many professors at the college level do not have knowledge of how to implement accommodations for students with disabilities, unlike their K-12 counterparts who receive training in special education (Eckes & Ochoa, 2005; Houck, Asselin, Troutman, & Arrington, 1992). General knowledge of legal responsibilities and the perception of support from the institution play a role in faculty provision of accommodations to students with disabilities (Zhang et al., 2009), as do faculty's own viewpoints on disabilities (Ginsberg & Schulte, 2008; Murray, Flannery, & Wren, 2008).

Taken together, these legal, identification, and accommodation changes at the postsecondary level require a significant amount of self-advocacy for students with disabilities to be successful. This can be difficult for students, not only because of the high levels of support they are used to at the secondary level, but also because of deficits in social skills and increased levels of anxiety found with some disabilities (Hoy et al., 1997; Kavale & Forness, 1996). The discrepancy between levels of responsibility for postsecondary students with disabilities and their preparedness for these expectations is at

the heart of both a lesser percentage of students with disabilities attempting college and completing college than their peers in the general population.

Additional Hurdles for Student-Athletes with Disabilities

The National Collegiate Athletic Association (NCAA) sanctions the athletic competition of over 460,000 student-athletes within its three divisions (NCAA, 2015g). More than 170,000 of these student-athletes attend Division I institutions, which is made up of approximately 350 member colleges and universities with over 6,000 athletic teams (NCAA, 2015d). The 120 athletic programs that usually generate the most national recognition are part of the Football Bowl Subdivision (FBS). In 2012, the median total revenue for these institutions was almost $56 million, with the median total generated revenue over $40.5 million, and the majority of the revenue coming from ticket sales and alumni contributions, as well as royalties and radio or TV contracts (Fulks, 2013). Compared to expense reports from the same year, only 23 programs had positive net generated revenues, with most expenses attributed to staff salaries and benefits and grants-in-aid for student-athletes (Fulks, 2013).

Academic regulations through the NCAA for athletic participation began in earnest in 1986 with the passing of Proposition 48, which required a 2.0 GPA and a score of 700 on the SAT to certify eligibility for play and practice (Orland, 2012; Pentimone, 1998; Petr & McArdle, 2012). Proposition 48 stemmed from both a renewed national focus on education standards following the publication of “A Nation at Risk” (National Commission on Excellence in Education, 1983) and several highly-publicized academic scandals, including the 1986 court decision in *Kemp v. Ervin* which found the university inappropriately fired a faculty member for blowing the whistle on the lower academic

standards of student-athletes at the University of Georgia (McKale, 1996). In 1992, following the call for further academic reforms (Knight Foundation, 1991), and the passing of national legislation requiring disclosure of student-athlete graduation rates and the finances of athletic departments, the NCAA enacted even stricter academic standards by developing Proposition 16 (Walker, 2005).

To currently be eligible for Division I athletic competition, practice, and/or scholarship when entering college, a student must meet four criteria outlined by the NCAA: 1) graduate from high school, 2) complete 16 core courses (distribution shown in Table 1.1), 3) earn a minimum grade-point average (GPA) in the core courses, and 4) earn a combined SAT or ACT score that meets the corresponding GPA on a sliding scale (as shown in Table 1.2; NCAA Eligibility Center, 2014). Other than the requirement of a high school diploma, eligibility criteria through the years has met substantial criticism (Freedle, 2003; Freedle & Kostin, 1990; Hishinuma & Fremstad, 1997; Pentimone, 1998; Petr & McArdle, 2012).

Table 1.1
Distribution of 16 Core Courses for NCAA Eligibility

Years	4	3	2	2	1 extra	4 extra
Subject Area	English	Math (Algebra1 or higher)	Natural or Physical Science	Social Science	Physical or Natural Science, English, or Math	Any prior category or Foreign Language, Comparative Religion, or Philosophy

First, opponents argue that including the results of standardized test scores in eligibility decisions is unfair to minority students and those that are underprepared (Pentimone, 1998). Research using differential item functioning (DIF) shows the SAT to

be both statistically and culturally biased, suggesting scores are not truly comparable between minority and majority groups (Freedle, 2003; Freedle & Kostin, 1990). SAT scores and grades combined are better predictors of academic success than any one measure alone, yet this model still impacts African Americans and students with low socioeconomic status (SES) more than members of majority groups (Petr & McArdle, 2012).

A second argument directly relates to the effects the use of these measurement tools have on the eligibility of student-athletes with disabilities. These students face similar disadvantages to other minority groups regarding standardized assessments. Even with the option to take the exams with approved accommodations, little to no empirical evidence exists regarding the use of various cutoff scores for students with disabilities. There is no guarantee the scale in place minimizes the number of potentially successful students with disabilities that are found ineligible by the NCAA (Hishinuma & Fremstad, 1997).

The eligibility of student-athletes with disabilities is also hindered by the core course requirements of the NCAA. Prior to the 1998 consent decree settlement between the United States Department of Justice and the NCAA, no courses marked remedial or designed for students with special needs were approved as counting toward the core course requirement for potential college athletes (Hishinuma, 1999; Naughton, 1997). As part of the decree, the NCAA now reviews these courses to ensure the "curriculum/instruction provides the same type of knowledge and skill as courses for students without disabilities" and includes an expert on learning disabilities when reviewing applications from student-athletes for a requirement waiver (Hishinuma, 1999,

p. 363). Students with disabilities also have the option to waive the full-time enrollment and progress toward degree requirements imposed on other student-athletes if recommended by the student's school based on the constraints of his/her disability (National Collegiate Athletic Association, 2013).

Changes over the last several decades have undoubtedly cracked the door to college athletics for students with disabilities as the NCAA continues to raise the academic requirements of high school student-athletes seeking initial eligibility. Students entering a Division I school following August 2016 must have a GPA of at least 2.300 as well as complete 10 of the 16 required courses prior to the start of his/her seventh semester of high school, with 7 from English, math, or natural or physical science (NCAA Eligibility Center, 2014). The use of a sliding scale for GPA and standardized test scores (see Table 1.2) reduces the weight of SAT/ACT scores in determining initial eligibility by lowering the required standardized test score as student GPA increases. A sliding scale benefits student-athletes in many minority groups, including those with disabilities (Petr & McArdle, 2012).

Along with these changes comes the ability for students to enter as an Academic Redshirt. Students who fall below the required 2.3 GPA on the sliding scale, but meet or exceed the current 2.0 GPA and standardized test requirements, can enter college as an Academic Redshirt beginning in August 2016 (see Table 1.2; Hosick & Sproull, 2012). Academic Redshirts may receive grant-in-aid and practice with the team, but are not allowed to compete in the first year of enrollment (NCAA Eligibility Center, 2014).

The Research Questions

Once student-athletes with disabilities meet NCAA eligibility standards and transition to college the question becomes: now what? What types of support do these students need in order to be successful? Unfortunately, the NCAA does not require member institutions to report specifically on the progress of its student-athletes with disabilities, so much of the data needed to illuminate their progress remains unknown.

Table 1.2

Examples from NCAA Division I Sliding Scale (beginning August 2016) with Academic Redshirts Highlighted

Core GPA	SAT	ACT
3.550 & above	400	37
3.300	500	44
3.000	620	52
2.750	720	59
2.500	820	68
2.300	900	75
2.000	1020	86

Adapted from NCAA Eligibility Center. (2014). *2014-2015 Guide for the college-bound student-athlete*. Retrieved from www.ncaapublications.com

Student-athletes at most Division I schools receive academic support in the form of tutoring and advisement, but these programs strive to maintain eligibility rather than mitigate deficits of those with disabilities (Walker, 2005). Therefore, despite additional athletic pressures and competing priorities, these students are left to rely heavily on the classroom accommodations designed to provide academic accessibility through ADA, though there is no available data on how often student-athletes choose to utilize these supports in their coursework or whether factors inherent to the student-athlete population affect that choice.

The Following Chapters

The following chapters take a closer look at the use of academic accommodations by NCAA Division I student-athletes with disabilities. Chapter 2 outlines the specific research questions of the current study and defines the types of disabilities reported most often in postsecondary education. It also looks closely at prior research on the usefulness of academic accommodations in the classroom, including which are provided most often at the college level, and how developments in academic support of athletes over the last decade strive to ensure access to these accommodations for student-athletes with disabilities. Chapter 3 provides the methodology of survey development used in the current study and the procedures for analyzing data on the utilization of academic accommodations by the student-athlete participants. Chapter 4 provides the results of the survey and Chapter 5 concludes the investigation with the implications of notable findings, limitations, and suggested areas of future research.

CHAPTER 2

Derice, a gold medal is a wonderful thing. But if you're not enough without one, you'll never be enough with one. -Irv, *Cool Runnings*

A REVIEW OF THE LITERATURE

Defining Disability at the College Level

The most common disabilities of students seeking support services in postsecondary institutions are learning disabilities (LD; Raue & Lewis, 2011). Learning disabilities are neurological disorders that affect the brain's ability to receive, process, store, and retrieve information (Cortiella & Harowitz, 2014). Students with LD most commonly experience difficulty in reading, writing, mathematics, or auditory or visual processing. Estimates suggest that LD affects 5% to 20% of the population (Pullen, Lane, Ashworth, & Lovelace, 2011).

Definitions for LD vary based on source. IDEA (2004) defines LD as:

> A disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculation. (Sec. 602 (30)(a))

As discussed in Chapter 1, IDEA (2004) mandates the support of students with disabilities in the nation's public schools. The definition provided by IDEA is important since many students with LD are identified and eventually diagnosed with LD through processes aligned with those criteria, including Response to Intervention (RTI) which uses students' responses to tiered evidence-based instruction to determine eligibility for special education services.

The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-V*) takes a broad approach to the definition of specific learning disorder.

> Specific learning disorder is diagnosed through a clinical review of the individual's developmental, medical, educational, and family history, reports of test scores and teacher observations, and response to academic interventions. The diagnosis requires persistent difficulties in reading, writing, arithmetic, or mathematical reasoning skills during formal years of schooling. Symptoms may include inaccurate or slow and effortful reading, poor written expression that lacks clarity, difficulties remembering number facts, or inaccurate mathematical reasoning. (American Psychiatric Association, 2013b).

This definition allows for diagnosis given inability to perform at an appropriate level based on age and intelligence followed by a closer look at specific characteristics. Students with LD may enter college with a diagnosis based on either definition, but must provide appropriate documentation of the impairment (Madaus et al., 2011) and demonstrate its effect on learning in order to receive support under ADA.

The same criteria regarding documentation hold true for students with Attention Deficit Hyperactivity Disorder (ADHD). ADHD is often discussed in tandem with LD, but it is actually a separate disability as diagnosed by the *DSM-V*. The most recent definition includes the following information:

> ADHD is characterized by a pattern of behavior, present in multiple settings (e.g., school and home), that can result in performance issues in social, educational, and work settings. … Symptoms [are] divided into two categories of inattention and hyperactivity and impulsivity that include behaviors like failure to pay close attention to details, difficulty organizing tasks and activities, excessive talking, fidgeting, or an inability to remain seated in appropriate situations. (American Psychiatric Association, 2013a)

Although the criteria for diagnosis remain mostly the same, the latest definition focuses on the diagnosis and care of individuals with ADHD into adulthood. This change is supported by longitudinal data that demonstrate the effects of ADHD do not diminish over time (American Psychological Association, 2013). Without a specific diagnostic

test for the disorder, ADHD as a disability category remains both misunderstood and controversial (Rooney, 2011). IDEA, for example, does not consider it as a separate disability category, so students must receive support through a diagnosis of Other Health Impairment (OHI). ADHD occurs in as many as a third of students diagnosed with LD (Cortiella & Harowitz, 2014), and compilations of prevalence rates estimate between 3% and 7% of the school-age population (Rooney, 2011). This comorbidity makes it important to distinguish between disability characteristics when discussing options for student support in postsecondary education.

Research presented by the National Center for Learning Disabilities shows students with LD enroll in postsecondary education at the same rate of 67% as their non-disabled peers (Cortiella & Harowitz, 2014). However, rates of students with LD who enroll in a two-year or community college are more than double that of the general population and the college completion rate of students with LD is only 41% compared to 52% for peers. Interestingly, the same set of data reports that only one in four (24%) students who receive special education services in high school inform their postsecondary institution of the disability. This suggests that current rates of 11% of college students reporting a disability are an underestimate of actual disability prevalence within the population (NCES, 2012).

The Student as the Gatekeeper to Services

As discussed in Chapter 1, students with disabilities pursuing postsecondary education receive support under ADA (1990) and Section 504 of the Rehabilitation Act of 1973. Unlike IDEA which guarantees an individualized, free, special education for students with disabilities at the K-12 level, ADA and Section 504 were designed to

prevent discrimination and promote access to services for persons with disabilities across multiple environments. As such, the responsibility for both identifying as a student with a disability at a college or university and providing proof of disability falls to the student.

This level of responsibility can be problematic for several reasons. First, 44% of parents of high school students with LD report that the school staff alone determine their student's transition goals while 81% of these students report participating only little to moderately in transition planning (Cortiella & Harowitz, 2014). These findings strongly suggest the need for an improved approach to planning life after high school that focuses on student goals and maximizes the knowledge and experience of school staff and outside professionals to ensure students with disabilities are prepared for the next steps. For example, 55% of students with LD reported the need for academic accommodations in postsecondary education as part of their transition plan, yet college representatives with knowledge of these procedures were only contacted by the school 26% of the time (Cortiella & Harowitz, 2014).

Increased student responsibility for securing educational supports can also be problematic for students with LD at the postsecondary level because, while 94% of students with LD receive supports during high school, only 17% of these students receive supports once transitioning to college (Cortiella & Harowitz, 2014). One of the main factors in this discrepancy is that only 24% of these students even consider themselves to have a disability, with the percentage of those identifying as nondisabled increasing to 69% over the eight years following high school graduation (Cortiella & Harowitz, 2014).

Lightner, Kipps-Vaughn, Schulte, and Trice (2012) investigated these reasons further by researching why 42 students with identified learning disabilities under IDEA in

high school chose to disclose their disability after beginning college. The researchers used a semi-structured interview designed from a phenomenological perspective to gather students' subjective experiences. Following a mixed-methods analysis, they found that 19% of students interviewed sought services prior to the start of classes or within the first few weeks of their freshman semester (early group). Twenty six percent contacted the disability services office later in their freshman year (later freshman group) and over half (55%) waited until after their freshman year to disclose their disability and seek services (late group).

Results of cumulative GPA mean comparisons found statistically significant differences between the three groups following the first semester of their sophomore year. Early group students reported first making contact with the disability services office because they wanted to receive accommodations or because someone else had arranged the meeting for them. Students in the later freshman and late groups all reported contacting the office for support following academic problems. The researchers found four major themes contributed most to student reasons for not making initial contact with the disability services office upon enrollment: a) lack of time, b) lack of knowledge, c) establishing an identity independent of disability status, and d) feeling that things were going well/lack of recognition that things were not going well.

When asked about transition programming, all students in the early group recalled receiving information about going to college and the availability of services through the disability office. The later freshman and late groups reported receiving less information during transition on both college orientation and their own disability. Only one student from the study could explain the legal differences in services for students with LD

between high school and college. Taken together, these findings help illuminate reasons why students with disabilities initially choose not to disclose information to postsecondary institutions and seek services under ADA and/or Section 504, many of them related to their lack of understanding of their disability and the available support systems.

Access to services for students with disabilities is also hindered by the increased responsibility placed on them to provide documentation of diagnosis. Policies in place across colleges and universities about the type of documentation needed to secure services are not uniform and variation also exists in data interpretation based on demographic characteristics of the university reviewer (Banerjee, Madaus, & Gelbar, 2015). While students identified through IDEA in K-12 education have Individualized Education Plans (IEPs) that provide a diagnosis, high school personnel are not required to update standardized test scores for students using adult-normed measures prior to their graduation (Cortiella & Harowitz, 2014). Thus, additional tests are often needed to provide "acceptable clinical documentation [that] validates the need to continue services based on the student's current level of function in the academic setting" (Wolf, 2001, p. 392). These tests can be expensive with the student bearing the financial burden (Madaus et al., 2011). This burden seems especially heavy given that the cost of education is the top reason cited by students with LD for not completing postsecondary degrees (Cortiella & Harowitz, 2014).

Academic Accommodations and Supports

Once students identify with the office of disability services at their institution and provide documentation of their disability, designated staff members review the

assessments and diagnosis to determine appropriate academic accommodations. Academic accommodations "include changes to instruction that don't significantly change the content or conceptual difficulty level of the curriculum" (Hallahan et al., 2009, p. 38). This type of support should not be confused with modifications, which involve amendments to content, materials, or assignments.

Accommodations provided for students with learning or attention disabilities are usually categorized as affecting either instruction or testing. Instructional accommodations include provisions such as a copy of professor or peer notes, use of assistive technology, or adapted texts. Testing accommodations include extended time for exams or a less distracting environment for test-taking.

Mull and colleagues (2001) reviewed the literature published between 1985 and 2000 that either recommended or described services for students with disabilities at the college level. The researchers found that all but one of the 26 articles reviewed described instructional adjustments or accommodations. Testing accommodations such as taped tests or tests read aloud, alternate test formats, or tests taken outside the classroom were recommended in 65% of the articles. Instructional accommodations such as assistive technology (77%), audio books or readers (69%), and assistance with note-taking (42%) were also highly recommended by the literature. Although the articles provided multiple recommendations for assisting postsecondary students with disabilities, only 31% of the studies discussed measures for evaluating the outcomes of these supports.

The National Center for Education Statistics (NCES; Raue & Lewis, 2011) conducted a study during the 2009-2010 academic year designed to better understand the support services provided to students with disabilities in a nationally representative

sample of over 1600 institutions. An overview of the types of accommodations offered and percentage of institutions offering each accommodation is presented in Table 2.1. Ninety-three percent of institutions report providing additional time as a testing accommodation, and other instructional accommodations like note-takers and adaptive technology are available at over 70% of degree-granting institutions.

Table 2.1
Percent of Institutions Enrolling Students with Disabilities that Provided Various Services or Accommodations

Accommodation	Percent of Institutions
Alternative exam formats	71
Additional exam time	93
Readers	62
Classroom note-takers or scribes	77
Faculty-provided written course notes or assignments	72
Adaptive equipment and technology	70
Audio textbooks/digitally recorded texts	66

From Raue, K., & Lewis, L. (2011). *Students with disabilities at degree-granting postsecondary institutions*. U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Cawthon and Cole (2010) examined whether the accommodations students with LD received in high school matched those they received in college. They recruited 110 participants through an undergraduate subject pool at a large, public university to take an online survey to investigate potential obstacles to postsecondary transition, level of student knowledge on disability and law, and approved accommodations. Researchers found a significant difference in the use of 9 of the 16 accommodations identified on the survey. However, the direction of the difference varied based on the type of accommodation. Students received assistive technology, alternate test formats, tutor support, and physical therapy more often in high school. Use of a classroom assistant,

extended time on exams, separate settings on tests, and individual counseling were all provided more frequently in college.

Another line of research on accommodations for students with disabilities in postsecondary schools focuses on the level of student satisfaction with their approved accommodations. Berry and Mellard (2002), for example, found that 88% of the students with disabilities in the community and technical colleges they surveyed were either satisfied or extremely satisfied with the accommodations provided to them. Additional mixed methods research by Kurth and Mellard (2006) on a similar population found that students rated their accommodations as effective 75% of the time, though reported effectiveness varied across type of accommodation.

Other studies support the findings that students with disabilities recognize the value of accommodations to their academic success (Skinner, 2004) and that satisfaction levels vary based on the specific accommodation in question (Reinschmiedt, Buono, Sprong, Upton, & Dallas, 2013). Reinschmiedt and colleagues (2013) surveyed 116 students receiving disability services at a postsecondary institution. Using a 5-point, Likert-type scale, they asked students to select their level of satisfaction with approved accommodations from 4-*extremely satisfied* to 1-*very dissatisfied*. Results indicated that students were most satisfied with accommodations for assistive reading technology, testing with accommodations, text conversion services, reader/writer/interpreter, and assistive listening technology. In contrast, students were least satisfied with academic advisement and counseling, assignment extensions/modifications, taped lectures, academic accommodation planning, tutorial support/one-on-one assistance, and classroom accommodations.

The ratings of overall satisfaction with accommodations by students with disabilities and the specific satisfaction with some accommodations over others could be due to several factors. First, accommodations at the postsecondary level are often criticized for working more as a "menu of services" than an individualized approach to access (Kurth & Mellard, 2006). Though the bulk of the research on accommodations focuses on students with LD or ADHD, it is important to remember that these are only two diagnosed conditions which receive accommodations through ADA and Section 504 in postsecondary education settings. Table 2.2 shows the percentage distribution of disabilities reported by degree-granting institutions (Raue & Lewis, 2011). Students with LD and ADHD account for almost 50% of the population of students seeking support for an identified disability. However, some accommodations are designed specifically for students with physical disabilities, impairments in hearing or vision, mental illness, or health impairments. The connection between students with these disabilities and their approved accommodations is usually clear, but the large variation in needs of students seeking support highlights the barriers that a "menu of accommodations" provides for students.

Second, variations exist not only between students, but also in how similar disabilities manifest within individuals. Thus, while two students may have the same disability diagnosis, the ways in which the disability affects learning and the accommodations the students find effective may differ. Third, not all courses at the college level are created equal and because of this variation may require different levels of skill in reading, writing, or analysis in order to be successful. Variations of diagnosis within and across students lead to multiple possibilities regarding accommodation

approval and use. This makes it difficult for educators and researchers to definitively answer questions regarding the effectiveness of accommodations as a resource for students with disabilities.

Table 2.2
Percentage Distribution of Disabilities Reported by Degree-Granting Institutions

Disability	Percent
Difficulty hearing	4
Difficulty seeing	3
Difficulty speaking or language impairment	1
Mobility limitation/orthopedic impairment	7
Traumatic brain injury	2
Specific learning disabilities	31
ADHD	18
Autism Spectrum Disorder	2
Cognitive difficulties or intellectual disability	3
Health impairment/condition, including chronic	11
Mental illness/psychological or psychiatric condition	15
Other	3

From Raue, K., & Lewis, L. (2011). *Students with disabilities at degree-granting postsecondary institutions*. U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Bolt and colleagues (2011) sought a deeper understanding of the use of accommodations by students with reading and writing-related disabilities in high school and college. The researchers recruited 55 student participants from 17 colleges and universities by enlisting the help of coordinators of disability services in contacting students directly via email. This procedure allowed the researchers to locate possible participants for the study without requesting confidential information regarding the disability status of students. Once selected, participants completed an online survey designed to answer the following research questions:

- Which of the several common accommodations do students with learning disabilities report using in high school and college settings?
- Among those who use them, how frequently do they report using them?

- How helpful do students perceive these accommodations to be in their high school and college settings?
- What are students' perceptions of factors that prevent their use of accommodations?
- What are students' perceptions of factors that facilitate their use of accommodations?

Over 38% of the participants in the sample reported receiving neither special education nor 504 plans in high school. Others received at least one or a combination of both service types, with 7.4% of the sample unsure of their high school services. Results for the first three research questions are displayed in Table 2.3. Students reported utilizing the same types of accommodations most often in high school and college: extended time, individual setting, and read aloud (by an assistant in high school and by a computer in college). More students reported using presentation, scheduling, and setting types of accommodations in college than in high school.

When asked how often they used approved accommodations, mean student responses for the majority of accommodations fell between "sometimes" and "always" for both high school and college settings. Mean responses regarding helpfulness of approved accommodations fell between "helpful" and "very helpful" for the majority of supports. Students identified the most helpful accommodations in college as extended time, individual setting, dictated response to scribe, and word processor with spell-checker.

The analysis of barriers to support perceived by students also yielded interesting results. Over 19% of those surveyed named themselves as a hindrance to using accommodations, citing embarrassment and failure to advocate as the main reasons. Almost 15% of respondents named teachers or professors as hindrances to their

Table 2.3
Accommodation Use According to Setting

	High school			College		
Accommodation	*n*	Average rating for use	Average rating for helpfulness	*n*	Average rating for use	Average rating for helpfulness
Presentation	24			28		
Read aloud by assistant	16	2.50	3.06	12	2.42	2.75
Read aloud by computer	3	1.33	1.67	18	2.28	2.28
Read aloud by tape recorder	14	2.14	2.93	7	2.57	2.57
Read aloud by videotape/DVD	2	2.00	1.50	1	1.00	1.00
Directions read aloud	13	2.85	3.38	8	3.25	3.38
Dictionary use	6	2.83	3.67	9	2.44	2.89
Large print	3	1.33	2.33	3	2.67	3.00
Scheduling	29			36		
Extended time	29	2.86	3.79	36	3.22	3.58
More frequent breaks	0	-	-	1	4.00	3.00
Setting	25			32		
Individual setting	19	2.42	3.32	28	3.25	3.54
Small group setting	7	2.71	2.71	8	2.75	2.13
Response	18			14		
Dictated response to a scribe	6	2.67	3.67	4	3.25	3.75
Dictate response to a tape recorder	2	3.00	3.50	3	1.67	2.33
Word-processor with a spell-checker	13	3.08	3.46	10	3.10	3.70

Note: *n* indicates the number of students who reported receiving a particular accommodation. Average ratings for frequency of use were determined based on the following scale: 1 = rarely, 2 = sometimes, 3 = often, and 4 = always. Ratings for helpfulness of an accommodation were based on the following scale: 1 = not helpful, 2 = somewhat helpful, 3 = helpful, 4 = very helpful.

From Bolt, S. E., Decker, D. M., Lloyd, M., & Morlock, L. (2010). Students' perceptions of accommodations in high school and college. *Career Development for Exceptional Individuals*, 088572881141509.

accommodation use and over 36% noted system-level issues like challenges with the disability services office, documentation/diagnosis, or issues using accommodations in a specific course or setting as barriers to utilizing accommodation supports. Analysis of student perceptions on factors that facilitate receiving accommodation support showed that almost 32% of respondents found the same system-level variables helpful and approximately 25% noted teachers or professors as individuals supporting their access.

The results of this study by Bolt and colleagues (2011) help clarify the relationships between variables affecting student use of accommodations at the postsecondary level. First, this study found that students use many of the same types of accommodations in high school and college, suggesting familiarity with accommodations and prior positive experiences at the secondary level may contribute to continued use in postsecondary institutions. This is important when considering possible student characteristics that affect variability of accommodation use in college. In the student sample used by Cawthon and Cole (2010), students reported a range of timeframes for first receiving their disability diagnosis. Those that were not identified until later in high school, or even once beginning college, may be at a disadvantage for using accommodations given their lack of disability knowledge and/or little to no prior accommodation experience.

Second, the study identified both the types of accommodations students are receiving and how often these accommodations are actually used. While the level of satisfaction students have with their approved accommodations is certainly a worthwhile question, data on satisfaction are more meaningful when paired with an estimate of how often students choose to utilize the accommodations that are in place.

Finally, students reported utilizing some accommodations more in college than in high school. This could be because the course content is actually more difficult or presented in a different way at the postsecondary level. Another explanation for this result is that some students are not able to utilize any accommodations in high school due to a late diagnosis. Student reports also suggest that even though an accommodation is provided to a large number of students it may not be used as often as other provisions approved infrequently. As a whole these findings provide support for the idea that student utilization of accommodations can vary based on the characteristics of the student and his/her disability, their prior experiences with accommodations in high school, and the content or expectations of a course. Thus, understanding accommodation use requires studying the relationships between many different variables.

The Student-Athlete Experience

In 1905, President Teddy Roosevelt called for reform in college athletics following a total of 330 football fatalities between 1890 and 1905 (Zimbalist, 2001). Although it began with a single crew race between Harvard and Yale, college athletics had become both incredibly popular and incredibly dangerous. Thus, the National Collegiate Athletic Association (NCAA) was formed to provide oversight and regulate competition.

It is not surprising that college student-athletes are unique compared to their peers. Increased time demands for student-athletes lead to a rigid scheduling of competing commitments (Jolly, 2008). These students must balance practice, training, team meetings, travel, and competition in addition to the regular academic demands and social opportunities. In an NCAA-funded national survey of Division I student-athletes

at 18 universities, approximately 68% of respondents stated they would have liked to spend more time on educational opportunities, and over 70% reported missed educational opportunities (internships, research projects, study abroad, etc.) due to athletics participation (Potuto & O'Hanlon, 2006). The same survey data found that 69% of student-athletes reported that athletics participation prevented them from taking courses of interest and half of those felt that the consequence was acceptable. Jolly (2008) suggests that tightly-regimented schedules set by others may cause extreme stress and depression in some student-athletes.

Developing a personal identity can also be difficult for student-athletes. "For many student-athletes, the identity as *student* takes a backseat to the identity as *athlete*" (Watt & Moore, 2001, p. 13). Hinkle (1994) reports that many students who play college sports associate their life roles with athletics, and Potuto and O'Hanlon (2006) found that almost 62% of student-athletes at least somewhat agree to viewing themselves as an athlete more than a student. This identity is no doubt shaped by the amount of time spent practicing and competing in sport, as well as the fact that many athletes, especially those on scholarship, attend a specific school based on athletic opportunity as well as educational opportunity. An identity determined by sport performance can also be challenging considering the level of anxiety attached to consistent evaluation by others and unreasonable expectations from coaches (Hinkle, 1994).

Student-athletes are well known on campuses and many are public figures (Weiss, 2011). As such, their behaviors can perpetuate stereotypes held by faculty regarding athletes' academic performance or intelligence (Watt & Moore, 2001). Steele and Aronson (1995) researched the role of stereotypes and intellectual performance in

African Americans. They postulate that stereotype threat exists when a person sees their behavior as conforming to a known stereotype, making it more likely that they accept the stereotype as a characteristic of themselves. Stone (2012) provides a good overview of the perceptions of student-athletes found in previous research. While there are a few positive stereotypes regarding hard work and busy schedules, prior research shows that there is a wide range of negative stereotypes about student-athletes, including that they are unmotivated, underprepared, not intelligent, enrolled in easy courses or majors, more likely to be involved in criminal activity, and more likely cheat on exams and receive grading leniency due to eligibility (Stone, 2012). The tendency for student-athletes to identify more as athletes than students makes the knowledge of these negative stereotypes dangerous to their perception of self and feeling of belonging (Watt & Moore, 2001). In a study of student-athlete performance on a challenging math test, Yopyk and Prentice (2005) found that student-athletes performed worse and had lower self-regard when primed with their athlete identity than their student identity.

Unfortunately, many negative perceptions held by faculty or the general public develop from their personal experience or highly-publicized scandals that support that portrayal. Jolly (2009) provides one example of a faculty member who was inclined to suspicion regarding all work done by student-athletes after she found out a basketball player had cheated in her course. The recent scandal within the University of North Carolina (UNC) made many question the academic integrity of student-athletes and the NCAA (Wainsten, Jay, & Kukowski, 2014). A comprehensive investigation of the allegations revealed that over 3,000 UNC students, many of them athletes, received grades for courses that required little to no academic work. Academic misconduct by

student-athletes and the receipt of extra benefits are just two of the numerous NCAA violations which led to harsh sanctions for Syracuse University, including a post-season ban of competition, suspension of the head basketball coach for 9 games in the upcoming season, and the retraction of wins from over five previous seasons (Armstrong, 2015).

Academic Support for Student-Athletes

The stakes are high for colleges and universities regarding the academic success of their student-athletes. One way the NCAA tracks student-athlete progress is through the Academic Progress Rate (APR). APR is a team-based metric which focuses on the retention and eligibility of scholarship student-athletes each term. In order to be eligible for post-season competition, teams must reach a minimum APR score. Multiple levels of penalties also exist for schools that fail to reach the required APR score, including limited practice hours, additional competition restrictions, coaching suspensions, reduced financial aid, and restricted NCAA membership (NCAA, 2015a).

The NCAA also tracks the Graduation Success Rate (GSR) for each school. The GSR represents a percent of Division I scholarship student-athletes who graduate college. In an effort to present the most accurate possible data, both the APR ranking and the GSR account for certain variables unique to the student-athlete population. For instance, unlike the federal graduation rates, the GSR does not count student-athletes who transfer to another institution against the first school's graduation rate if they are academically eligible at the time of transfer (National Collegiate Athletic Association, 2015b).

Even as the NCAA approves stricter initial eligibility standards, Division I schools continue to admit some student-athletes whose academic skills are well below the average of their peers at the institution (Wolverton, 2008). The pressure to compete

athletically is so high that the question for many universities becomes how to support the academic achievement and continued eligibility of student-athletes once they arrive at college and are met head-on by academic and athletic demands. By the end of a student-athletes' second year, s/he must have completed 40% of the required degree coursework in order to be eligible for athletic competition (NCAA, 2015e). These amounts increase to 60% following the third year of coursework and 80% after the fourth year. While students are given five years to graduate while receiving athletic grant-in-aid, they must earn at least 6 credit hours each semester and meet GPA requirements set by the institution.

Over the last 10-15 years, schools have increased academic support services provided for student-athletes, many above those provided by the institution to the student body in general (Wolverton, 2008). This includes new building spaces to support athletic academic services, some with price tags topping $15 million, and departmental budgets averaging over $1 million each year for the largest Division I schools (Wolverton, 2008). In a recent survey of athletic directors and counselors, researchers found that over 88% of institutions reported having a physical space on campus dedicated to academic support for student-athletes with 78% of institutions reporting a dedicated computer facility (NCAA Research, 2009). Survey data from over 114 institutions in 2005 shows that 95% of athletic departments report offering academic advising services and 83% report offering tutorial services to student-athletes (Leslie-Toogood & Crenshaw). Other areas of possible academic support include career counseling, course scheduling, mentoring, study hall, and laptop or technology services, all reported by over 60% of the schools

surveyed. This data is supported by more recent surveys of athletic directors at Division I schools (Butterworth & Rich, 2013).

Support for Student-Athletes with Disabilities

Along with academic counseling and tutoring services, many athletic departments now offer learning specialists to support the progress of student-athletes with disabilities. Applying the population estimates (5% to 20%) of students with LD to the number of student-athletes in Division I institutions (170,000) renders an estimated 8,500 to 34,000 student-athletes with LD in this division alone. Estimated numbers of Division I student-athletes with ADHD range from 5,100 to 11,900 when applying population estimates, though the comorbidity of these disorders suggests high overlap.

Over 50% of athletic academic support offices provide services specific to students with LD and these numbers continue to increase (Butterworth & Rich, 2013; Leslie-Toogood & Crenshaw, 2005; NCAA Research, 2009). Wolverton (2012) reports that one in five big-time athletic programs created new learning specialist positions between 2011 and 2012. Although job responsibilities differ across institutions, most learning specialists are responsible for teaching study strategies and skills, as well as time management and organization, to student-athletes with disabilities (Weiss, 2011).

Weiss (2011) outlined the development of one Learning Assistance Program (LAP) at a large, Division I university. The learning specialist designed the program to improve self-determination, self-management, and technology skills of student-athletes with disabilities. A major part of the learning specialist role involved serving as a liaison between the campus's disability services office and student-athletes with disabilities. The learning specialist also developed individualized support plans for each student designed

to help students transition to college then establish independence. Based on the positive outcomes of the participants involved in Weis's LAP, she concluded that learning specialists with knowledge about instruction and progress monitoring can help student-athletes with disabilities transition successfully.

Bethel, Biffle, and Scragg (2012) surveyed learning specialists across the country to get a better understanding of specific job responsibilities and develop professional standards for the field. Based on the responses of 53 institutions, the researchers developed nine standards for learning specialists as a means to both define the profession and evaluate performance. The standards are outlined below:

1. Assessment: Professional learning specialists assess individual students' learning needs to identify potential learning challenges, determine effective educational interventions, and make referrals for further assessment when appropriate.

2. Intervention: Professional learning specialists develop and implement effective educational interventions and teach research-based learning strategies in accordance with individual students' needs.

3. Student Evaluation: Professional learning specialists monitor and evaluate individual students' learning progress and make data-based recommendations for further academic support.

4. Service Coordination: Professional learning specialists effectively coordinate learning-related services with external providers in accordance with students' learning needs.

5. Organization: Professional learning specialists maintain a comprehensive system for documenting and reporting students' learning needs and progress.

6. Communication: Professional learning specialists communicate clearly and consistently with academic counselors, coaches, and other service providers regarding students' learning needs and progress.

7. Student Engagement: Professional learning specialists establish and maintain high expectations for students while also providing the encouragement and constructive feedback students need to feel supported.

8. Program Evaluation: Professional learning specialists develop measures for evaluating their learning program's overall effectiveness and demonstrating its value to the broader student-athlete academic support program.

9. Professional Development: Professional learning specialists take initiative to learn and improve on the job, by remaining informed about advances in learning sciences and actively participating in professional organizations related to the field. (Bethel et al, 2012, p. 2)

These professional standards for learning specialists are the most comprehensive review of an ever-increasing position within athletic academic support. According to these criteria, learning specialists do more than simply provide instruction on study skills and strategies. The position requires the ability to conduct assessment and evaluation of both student progress and the programs developed to increase their success. Learning specialists are also responsible for coordinating services for student-athletes with disabilities, and this includes collaboration with an office of disability services to receive academic accommodations.

In order to achieve the recommended professional standards of Assessment, Evaluation, and Coordination, learning specialists must determine students' academic needs and understand their use of classroom accommodations. While learning specialists routinely receive this information verbally during student meetings, research is lacking on a larger scale regarding whether student-athletes with disabilities actually utilize their approved accommodations in the classroom. There is no denying that this student population faces unique challenges to academic success. As offices of athletic academic support continue to focus on how to serve these student-athletes with disabilities, further research is required on the use of academic accommodations in order to improve current practices and better-define learning specialists' professional responsibilities.

CHAPTER 3

Daniel: You mean there were times when you were scared to fight?
Miyagi: Always scare. Miyagi hate fighting.
Daniel: Yeah, but you like karate.
Miyagi: So?
Daniel: So, karate's fighting. You train to fight.
Miyagi: That what you think?
Daniel: [pondering] No.
Miyagi: Then why train?
Daniel: [thinks] So I won't have to fight.
Miyagi: [laughs] Miyagi have hope for you.

- *The Karate Kid*

METHODS

Purpose and Research Questions

The purpose of the current study was to gain a better understanding of the frequency with which Division I student-athletes with disabilities utilize approved academic accommodations in the classroom. The study also aimed to determine whether any demographic factors inherent to student-athletes contribute to variability in the use of the accommodations. Some demographic factors - like year in school, scholarship status, sport type, class type, and use of prior accommodations - were relevant based on prior research discussed in Chapter 2. Thus, the study took an investigative approach to understanding the role of these demographics on the use of academic accommodations by student-athletes with disabilities. The study focused on the following research questions:

1) Which academic accommodations do college student-athletes with disabilities receive most often?

2) How often do college student-athletes choose to utilize accommodations approved by their school in their courses?

3) Which factors contribute to variation in accommodation use by college student-athletes with disabilities?

Answers to these questions can help guide the work of learning specialists and other academic affairs personnel to support the unique needs of this population. Athletic departments across Division I sports invest valuable resources in psychoeducational assessments, tutoring, and personnel in order to ensure student-athletes with disabilities receive the support they need to be successful in the classroom. Ultimately, it is a first step in determining whether learning specialists and academic staff are approaching their support of student-athletes' classroom accommodations in an effective manner.

Research Design

I used an online survey in order to reach an identified population of student-athletes with disabilities. Appendix A contains the survey in its entirety. I created the survey using Qualtrics, an online software that provides professional survey development without advanced knowledge of computer coding. The survey contained a combination of single answer, multiple-answer, close-ended, and open-ended questions designed to gather the information presented in Table 3.1 from respondents. I considered each of the criteria of Tailored Survey Design from Dillman, Smyth, & Christian (2009) during development as well as experiential knowledge of student-athlete behavior and characteristics.

Social Exchange Theory

Social exchange theory provides a framework for understanding why people decide to complete surveys and is thus applicable to survey design. In order for potential respondents to voluntarily participate they must believe that their actions will produce a positive return for others, that the rewards of participation outweigh the costs (Blau,

1964). Dillman first applied this theory of social exchange to survey design and continues to expand its application as more information on factors that affect nonresponse becomes available (Dillman et al., 2009). The current study focused on Dillman and colleagues' (2009) suggestions for increasing benefits of participation, decreasing costs of participation, and establishing trust with participants.

Table 3.1
Student-Athlete Accommodations Survey Data Categories

Demographic	• University • Gender • Race/Ethnicity • Employment status
Athletic	• Athletic team • Scholarship status
Academic	• Cumulative high school GPA • Year in school • Class type • Current course enrollment • Current cumulative GPA • Other useful academic resources
Accommodation	• Prior use of accommodations in K12 education • Current approval for academic accommodations • Accommodations used in each course • Frequency of accommodation use • Reasons for not using any approved accommodations

Increasing benefits of participation. I sought to increase respondent perceptions of benefits for participation by noting the types of information requested in the initial email to student-athletes and the reasons why responses to the survey were important. This type of explanation was essential since the study provided no tangible rewards for participation. For student-athletes with disabilities, the survey data inform academic support staff when making decisions on future programming and departmental practices. Understanding that the survey data will directly affect the experience of

student-athletes like themselves should positively impact their perceived benefits of participation.

The survey design incorporated positive regard for respondents by providing the personal contact information of the researcher for potential questions. Respondents also received an automated message after submission of the survey thanking them for their time. Reminder emails sent to student-athletes regarding the survey stressed the limited amount of time to participate as well as the fact that others had already submitted responses. I designed the survey and specific questions to be easy to follow and visually interesting in order to further increase participation rates.

Decreasing costs of participation. Without a tangible incentive to respond, I focused closely on ways to decrease the costs of participation to survey respondents. Because the survey was housed on the internet, participants could respond anywhere they had an internet connection, including on computers, tablets, or mobile devices. The Qualtrics software provided tools to ensure questions were mobile-friendly both practically and aesthetically. Time is a precious commodity to students, especially student-athletes, so I ensured the survey took no more than 10 to 15 minutes to complete, which closely aligns or is shorter than surveys distributed to student-athletes by the NCAA (NCAA, 2015c). The survey began with a few short, easily-answered questions to get respondents involved and increase the chances they would participate in more lengthy questions gauging their frequency of accommodation use across courses. Finally, the survey limited the chance of identification by ensuring all participants were contacted only through their learning specialist and all responses were confidential. Although the survey requested some sensitive information surrounding disability, I excluded any

queries that did not directly provide data needed to answer the research questions. Also, I assured participants in their initial communication that no efforts would be made to identify them based on demographic data.

Establishing trust. It is the responsibility of the researcher to gain the trust of respondents as they have no way of knowing that the survey will result in the suggested benefits (Dillman et al., 2009). Each student-athlete received the request to complete the survey from his/her learning specialist or academic support staff member. The current study established legitimacy by using an individual known to respondents to distribute the survey link. Use of professional survey design software also boosted credibility of the survey and allowed for true confidentiality of all responses.

Tailored Survey Design

Successful surveys require development that tailors the design and procedures to the questions being asked and the specific population of participants. The Tailored Design Method (Dillman et al., 2009) focuses on increasing benefits for respondents, decreasing costs, and establishing trust across all facets of survey creation and implementation. A tailored survey design requires all individual aspects to work together since "whether an action evokes a sense of cost, reward, or trust is related to how it interacts with other features of the system, not just how it appears in isolation" (p. 34). With this framework in mind, Table 3.2, taken from Dillman and colleagues (2009), displays the features of the survey design, and I describe each in relation to the current study below.

Survey Mode

The current study used an internet survey sent to student-athletes via email. While the internet poses gaps in coverage with the general population, it is effective at reaching college students since much of their daily communication takes place through that medium (Dillman et al., 2009). Student-athletes receive email addresses through their universities and communicate with academic affairs staff through email messages. The internet also minimizes the financial resources needed to reach a large sample of the targeted population.

Sample

Participants in this survey were postsecondary Division I student-athletes with disabilities. Division I of the NCAA is comprised of approximately 350 public and private schools in 31 conferences, further divided based on football sponsorship. Schools that sponsor football identify as members of the Football Bowl Subdivision (FBS) or the Football Championship Subdivision (FCS), with all other sports identifying as just Division I. The targeted population for this survey had an identified disability according to ADA and received academic accommodations in postsecondary coursework. The survey directions for learning specialists requested dissemination to current student-athletes only, but there is no way to guarantee former athletes or those not enrolled during the semester data was collected did not participate in the survey.

Table 3.2
Features of the Survey Design that can be Tailored to the Situation

Survey mode	• Choice of mode or any combination of modes
Sample	• Type of sample (random, stratified, etc.) • Number of units sampled
Contacts	• Number of contacts • Timing of initial contact and between contacts • Mode of each contact • Whether each contact will be personalized • Sponsorship information • Visual design of each contact • Text or words in each contact
Incentives	• Type of incentive • Amount or cost of incentive • Whether to provide before or after the survey is completed (pre or post)
Additional Materials	• Whether to provide them at all • Type of materials (brochures, pamphlets, research reports, etc.) • Visual design of the materials • Text of the materials
Individual Questions	• Topic (sensitive, of interest to the respondent, etc.) • Type (open vs. closed) • Organization of information • Text or wording • Visual design
Questionnaire	• Topics included • Length (duration, number of pages/screens, number of questions) • First page or screen • Visual design and layout of pages/screens • Organization and order of questions • Navigation through the questionnaire

From Dillman, D. A., Smyth, J. D., & Chrsitian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method.* Hoboken, NJ: Wiley.

Eight of the 23 schools contacted for participation in this study rank in the top 50 universities nationally, with 74% ranking in the top 100 (U.S. News and World Report, 2015). Athletically, the schools support competition in a total of 25 different sports. All but one school contacted for participation finished in the top 1/3 of the 2014-2015 Learfield Sports Director's Cup standings, determined by each school's finish in up to 10

men's and 10 women's sports (NACDA, 2015). While 15 of the 23 schools contacted for participation in the study are in the Atlantic Coast Conference (ACC) variability in the level of athletics and academics across schools, conferences, and the country suggests a highly heterogeneous sample population. As a first line of inquiry, the study initially limited the sample frame to one athletic conference (ACC) in the spring 2015 semester in an effort to include all schools in the actual survey sample and ultimately increase the generalizability of the results. Due to limited participation and response rates, however, a second attempt to disseminate the survey in the fall 2015 semester included contact with all but one of the original ACC schools as well as 8 additional institutions. Table 3.3 provides the 23 institutions contacted for participation, semesters they were contacted, and their Learfield Sports Director's Cup and U.S. News and World Report rankings.

Contacts

In order to improve the credibility and anonymity of respondents, I utilized the learning specialists or another academic support staff members at each university to disseminate survey information to their population of student-athletes with identified disabilities. Learning specialists are responsible for supporting student-athletes with disabilities and routinely ask them similar questions to those in the survey regarding their use of accommodations. This method of contact eliminated the need for each university to disclose the disability status of its student-athletes or to send the questionnaire to all student-athletes at each university in hopes of reaching the targeted population. It also helped eliminate coverage error as learning specialists already have a complete list and

Table 3.3
Schools Contacted for Participation

School	Spring 2015	Fall 2015	Director's Cup Ranking	U.S. News Ranking
Arkansas		✓	16	129
Boston College	✓	✓	70	30
Clemson	✓	✓	57	61
Duke	✓	✓	20	8
Florida State	✓	✓	11	96
Georgia Tech	✓	✓	72	36
James Madison		✓	135	7*
Louisville	✓	✓	29	168
Louisiana State		✓	15	129
Miami	✓	✓	55	51
Michigan		✓	19	29
Michigan State		✓	34	75
NC State	✓	✓	27	89
Ohio State		✓	7	52
Notre Dame	✓	✓	10	18
Pittsburgh	✓	✓	96	66
Syracuse	✓	✓	47	61
Texas Tech		✓	40	168
Central Florida		✓	86	168
North Carolina	✓	✓	5	30
Virginia	✓	✓	6	26
Virginia Tech	✓	✓	35	70
Wake Forest	✓		90	27

*Denotes a regional ranking

contact information for each student-athlete with a disability at their universities. While the survey did not contain a sponsor, sending email communication via the learning specialist connected the request with someone known to the student-athletes. This method of dissemination also helped to reduce the possibility that the email would be flagged as spam in student inboxes. While the anonymity of student-athletes who received the survey made it impossible for me to send individual and personalized emails to each recipient, emails were addressed to student-athletes by school (ex: UVA student-athlete).

The design for the current study included at least one contact by phone or in-person with each learning specialist or academic support staff member to explain the purpose of the study and request his or her participation in disseminating the survey (Appendix B). Within a week of the initial conversation, I sent each learning specialist an email containing the initial contact message for his or her individual group of student-athletes with disabilities (Appendix C). This email alerted students to the purpose of the survey and covered all information related to consent. In my first conversation with learning specialists I requested they contact me after disseminating the survey to their groups of students. If I had not heard from a school within 48 hours, I followed up with an additional contact by phone or email to request their timely follow through.

A week after dissemination of the survey, each learning specialist received an email follow-up for student-athletes thanking those who completed the survey and once again requesting participation from others (Appendix D). One week later, I sent a final reminder email using the same process but varied the language and included the information that the survey would close the next day (Appendix D). Due to the focus on anonymity in the research design, I was unable to determine who had not yet completed the survey, so the final reminder included another line of thanks to those who had already submitted responses. All contact messages sent via email contained language that was brief, informative, and easy to understand. Each email had the heading *Student-Athlete Survey* to immediately alert recipients to the purpose of the correspondence.

The exact number and frequency of recommended contacts with participants in survey research depends on the specific population and questions asked (Dillman et al., 2009). The current study focused on the use of accommodations in students' courses for

one semester. Since the survey included questions about the use of both testing and classroom accommodations, I timed the release of the questionnaire to coincide with the weeks surrounding the end of the spring 2015 academic semester and the middle of the fall 2015 academic semester. The survey was open to participants for a period of at least two weeks. This provided enough time for two reminders, each with similar but slightly varied content in an attempt to increase response rates. Two weeks also allowed enough time to receive responses from each school and as many student-athletes as possible despite varying academic calendars across institutions.

Incentives

The current study provided no tangible incentives to participants. Without knowing the names or contact information of the targeted student-athletes, it was impossible to provide an incentive for participation prior to their completion of the survey. Despite the logistical and monetary limitations to providing a token of appreciation, the emails sent to recipients contained the purpose of the survey and plans to use the data to improve the support of student-athletes with disabilities in the future. This information provided an incentive and increased benefits of participation.

Additional Materials

I did not provide additional materials to survey participants for several reasons. First, as an emerging field of research, there were no prior data or findings thought to build participant trust or increase benefits of survey completion. Second, the expected benefits of providing such material did not outweigh the costs of production. Third, much of the survey design focused on eliminating the costs of participation to the student-athlete sample. Since time is such a precious commodity to this particular group,

additional reading material might have increased the time needed for student-athletes to engage with the survey, and thus, decreased the final response rate.

Individual Questions

Dillman and colleagues (2009) outline both the basics to writing good survey questions as well as criteria for developing specific question types. The current survey made questions easy to understand by providing simple and familiar words as well as examples, when needed (ex: class mnemonics). I developed the survey questions by first determining what factual or demographic information would be needed to answer the research questions. I then developed complete sentences to request this information one question at a time.

Due to the nature of the research, most questions in the current study were close-ended. Care was taken to provide all possible, mutually-exclusive choices and ensure the technical accuracy of terminology. Many questions, like those requesting information on sport or scholarship status, used a nominal scale. I used radio buttons for questions with only one possible answer and square check boxes for multiple-answer questions. This consistency across the survey served as a visual cue to the participants regarding which type of answer was needed. Although dropdown menus require less initial space on the screen, respondents are not able to see all possible answers immediately. To improve clarity of questions and possible responses I listed all choices whenever possible.

All questions regarding frequency of accommodation use utilized a unipolar ordinal scale with four categories. Questions regarding the use of testing accommodations used the scale: Every test, More than half the tests, Less than half the tests, Never. Questions regarding the use of classroom accommodations used the scale:

Every class, More than half the classes, Less than half the classes, Never. Any additional accommodations provided by respondents used a scale of Always, Most of the time, Some of the time, and Never. I fully labeled scales for each question to improve reliability and validity of responses and chose equally-spaced scalar response categories. The scale appeared to participants in one row with equal spacing between categories beginning with the most positive response.

Only a few survey questions were open-ended. Participants provided their own list of classes in marked boxes as well as any additional accommodations for which they received accommodations in each of these courses. This style of question allowed for more personalization of the survey as a whole and eliminated the omission of accommodation types due to researcher error. Two other open-ended questions asked respondents to further explain why they feel academic accommodations have not been helpful in their coursework and what other supports they may have found helpful. I designed the answer spaces for open-ended questions relative to the size of the anticipated response, so smaller spaces appeared for class names than for an explanation of helpful supports. Each answer space for the list of academic classes contained a label to reinforce the information requested.

Questionnaire

Following the guidelines of Dillman et al. (2009), I organized the questions into a functional questionnaire within the Qualtrics program. I began with brief directions then intentionally chose a first page of questions that applied to all participants. This decreased participant discouragement and increased the chances that all would continue with the survey.

I placed questions with similar content on a page together in order to create a natural and expected flow for participants. Visually, all questions appeared in white outlined boxes on a grey/blue background to assist student-athletes with processing the layout and organization of the survey. I purposefully chose a layout that avoided visual clutter and placed no more than three questions on each page. A progress bar at the top of the screen allowed participants to see what percentage of the survey they had already completed and blue forward/back buttons at the bottom of each screen allowed participants to progress to the next page or return to previous questions. Respondents were allowed to begin the survey at one time and return later to complete it.

Many elements of the survey were designed to personalize the experience for respondents and make questions easier to answer. For example, questions regarding approved accommodations in a particular course included the exact name of the course provided by the student in a previous question and the name of the disability services center changed to appropriately match the chosen university of each student. This type of personalization required not only matching responses to prior information provided by the respondent, but also including questions applicable to all participants if a respondent chose not to answer one of the related survey questions. Only questions that were absolutely necessary for the advancement of the survey required a participant response, and those that could potentially cause discomfort were placed at the end of the survey. Once the survey was complete, respondents received a message thanking them for their participation and providing my personal contact information for any questions.

While developing the survey I received feedback from my dissertation committee as well as two researchers at the University of Virginia's Center for Survey Research. I

completed several variations of the survey and made changes following the feedback received at each meeting. I weighed the sometimes conflicting opinions of survey experts with my own knowledge of the student-athlete population and recommendations from researchers such as Dillman at al. (2009) before deciding on a final survey design. The Qualtrics software also provided information regarding the compatibility of the survey questions on mobile devices, which I prioritized due to the frequency with which student-athletes check email and communicate with others through that medium.

As a final step in developing the questionnaire I asked three student-athletes with disabilities, known to me personally based on my current employment, to take the survey and provide feedback. This step ensured that the internet link worked appropriately, the questions and layout were easy to understand and follow, and that the survey took the anticipated time to complete. Based on their responses, I made several changes to the survey design. All criteria used to develop questions or the questionnaire helped to diminish measurement error in the final product. The final questionnaire and research design received approval from the Institutional Review Board at the University of Virginia prior to the start of the study.

Data Analysis

Prior to answering the research questions I organized descriptive statistics of the sample. These data included the distribution of the sample within most of the demographic, athletic, academic, and accommodation categories provided in Table 3.1.

Research Question 1: Which academic accommodations do college student-athletes with disabilities receive most often?

I answered this question by calculating the frequency with which student-athletes reported receiving the academic accommodations included in the survey. These categories were: 1) a less distracting environment for test-taking, 2) extra time on exams, tests, or assignments, 3) a copy of peer or professor notes, and 4) assistive technology. Respondents also had the opportunity to provide two additional accommodations. I hypothesized that testing accommodations, a less distracting environment and extra time, would be used most often based on the findings of prior research (Raue & Lewis, 2011). Data for the first research question were provided as both the number of student-athletes reporting each type of academic accommodation for any class and the number of actual classes across student-athletes for which an accommodation was granted.

Research Question 2: How often do college student-athletes choose to utilize accommodations approved by their school in their courses?

I used a series of frequency tables to answer the second research question. Frequency tables provide the instances of each response for use in comparison and are appropriate for use with categorical and ordinal variables like those in the survey. Approved academic accommodations, and student-athletes' decisions to use them, vary based on course. Thus, the number of courses in which student-athletes report receiving specific academic accommodations and how often they choose to use them were the foci for the second research question.

Though prior research has investigated students' level of satisfaction with accommodations as well as their beliefs regarding effectiveness, little is known about how often students choose to use the accommodations approved by their school. Thus, I investigated the second research question by comparing the level of use (Never, Less than

half the time, more than half the time, Every time) in the number of classes for which student-athletes reported receiving each of the four accommodations. I also developed bar graphs to demonstrate the percentage distribution of use in the classes provided by respondents.

Research Question 3: Which factors contribute to variation in accommodation use by college student-athletes with disabilities?

In order to answer the third research question, I ran a multiple linear regression for the use of each approved accommodation (Less distracting environment, Extra time on exams, Peer notes, Assistive technology) in classes provided by the respondents. Though the question was largely investigative due to limited research in the area, I used prior findings to determine which independent variables to include from the survey.

First, I hypothesized that the revenue status (revenue vs. non-revenue) of student-athletes would contribute to variability in use of accommodations. Since many student-athletes on revenue-generating teams (football and basketball) are well known on campus, they may choose not to use accommodations to avoid embarrassment, or choose to use accommodations regularly to avoid the perpetuation of negative stereotypes regarding athlete performance (see Bolt et al., 2011; Stone, 2012).

Second, I hypothesized that whether student-athletes received an athletic scholarship would contribute to variability in accommodation use. Student-athletes who receive athletic scholarships may be less likely to utilize accommodations given that their identity is stronger as an athlete than a student (see Potuto & O'Hanlon, 2006; Watt & Moore, 2001). However, the pressure associated with maintaining scholarship money

and academic eligibility for competition may lead to increased accommodation use by scholarship student-athletes across their courses.

Third, prior research strongly suggests that students with familiarity with academic accommodations prior to college will utilize accommodations more than those who do not receive approval for accommodations until college (see Bolt et al., 2011; Cawthon & Cole). Thus, I hypothesized that use of prior accommodations in elementary, middle, or high school would also affect the variability of accommodation use by student-athletes in college courses.

Fourth, I hypothesized that the type of course in which student-athletes are enrolled would contribute to variability in use of accommodations. Bolt and colleagues (2011) found variability in accommodation use across courses due to system-level variables related to course type. Also, traditionally more difficult courses in math and science may prompt student-athletes to use accommodations. Or, students with disabilities in reading or writing may use accommodations most often in classes that are dependent on application of these skills.

Finally, I hypothesized that year in school would contribute to variability in accommodation use in the reported classes. Student-athletes in their first year of college may be more likely to utilize accommodations in their courses in order to achieve early academic success. However, older student-athletes could use accommodations more often as they experience academic success and find need for them in courses with advanced content.

Prior to analysis, I examined the assumptions of multiple linear regression relative to my dataset. Multiple linear regression assumes a) linear relationships between the

dependent variables and independent variable, b) independence of errors, c) homoscedasticity, d) collinearity, and e) normality (Pedhazur, 1997).

As a final analysis of accommodation variability, I analyzed the reasons student-athletes reported not using approved accommodations in their individual courses. This data is presented as both frequencies of responses across all reported classes and as qualitative anecdotes provided by respondents.

CHAPTER 4

You've got to remember now: You fight great, but I'm a great fighter. - Apollo Creed, *Rocky III*

RESULTS

Respondent Demographics

Before answering each research question, I compiled the demographic data of survey respondents. During the spring semester of data collection, the learning specialists or directors of the 15 schools in the Atlantic Coast Conference (ACC) received requests for participation via phone and email. Five schools verbally agreed to participate, one declined participation, and eight failed to respond to the request. Of the five schools that agreed to participate, only three (Notre Dame, Virginia, and Virginia Tech) distributed the survey link to their student-athletes during the requested timeframe.

During the fall semester of data collection, 14 of the original 15 schools targeted for the survey received requests to participate, as well as eight additional Division I universities. Of these, three distributed the survey request to student-athletes (James Madison, Syracuse, and Virginia). A total of 50 student-athletes responded to the survey across both semesters. After review of the data, I removed 16 respondents due to incomplete surveys. Two additional respondents reported not receiving academic accommodations and were also removed. Since one school distributed the survey both semesters (Virginia), I cross-checked the respondent demographics and found two identical demographic responses. I removed the first of these responses from the dataset

to avoid the possibility of multiple responses from the same individual. Of the 19 total responses removed from analysis, only three were from the fall semester data collection.

Table 4.1 provides the demographic characteristics of the final survey sample by school. A total of 31 student-athletes participated, with twice as many female (n = 21) as male (n = 10) respondents. Seventy-four percent of respondents identified as white (n = 23), and over 80% (n = 25) reported participating in non-revenue sports. For the purposes of this study, I identified basketball and football as revenue sports and all other sports selected by respondents (fencing, field hockey, golf, lacrosse, soccer, volleyball, swimming, tennis, track and field) as non-revenue, though this can vary by institution. The majority of participants received some amount of athletic scholarship (n = 24), with 39% receiving full scholarships. Respondents represented a near even distribution of first or second year students (n = 17) and third or fourth year students (n = 13). Approximately 45% of the sample received a cumulative high school GPA of 3.5 or above (n = 14), while 41% of those beyond their first college semester reported a cumulative GPA above 3.0 (n = 12). When asked about receiving accommodations in former levels of education, 61% (n = 19) of respondents reported receiving accommodations prior to starting college. Only two respondents reported employment outside of their athletic and academic commitments.

According to data from the 2014-2015 academic term, 63% of Division I student-athletes identified as white, 47% identified as female, and approximately 79% participated in non-revenue sports (NCAA, 2015f). The survey sample closely aligned with the distribution of revenue to non-revenue student-athletes, but had overrepresentation of female students and those who identified as white. Similarly,

scholarship student-athletes were also overrepresented in the sample, as only 53% of Division I student-athletes received some level of athletics aid according to 2014 NCAA recruiting statistics (NCAA, 2014). With the exception of 6 participants from James Madison University, all other survey respondents represented ACC schools. In 2014, the ACC led all other Autonomy 5 conferences in the U.S. News and World Report rankings of "Best Colleges" with the best average rank of member institutions, over half of all member institutions ranked in the top 50 colleges, and 7 member schools in the top 35 (ACC, 2015). Twenty respondents in the study sample (65%) attended either Notre Dame or Virginia, both with rankings in the top 26 colleges (U.S. News and World Report, 2015).

Statistical Analyses

Research Question 1: Which academic accommodations do college student-athletes with disabilities receive most often?

I answered the first research question by examining the frequency with which participants reported receiving specific accommodations in each of their courses. It is possible for students to receive approval for different accommodations in each course based on content and the specific characteristics of his/her disability. As such, I asked respondents to first report their enrolled course load for the semester in question and then select the approved accommodations which they receive in each course. The sample of 31 respondents provided a total of 137 courses, with 84% of respondents (n = 26) providing 4 or more courses for an average of 4.42 courses per respondent.

Table 4.1
Sample Demographics by School

	James Madison	Notre Dame	Syracuse	Virginia	Virginia Tech	Total
N =	6	4	1	16	4	31
Gender						
Male	2		1	7		10
Female	4	4		9	4	21
Race/Ethnicity						
White	4	4		13	2	23
Black or African American	2			3	2	7
Other			1			
Sport						
Revenue	2		1	2	1	6
Non-revenue	4	4		14	3	25
Scholarship Status						
Full	3	2		5	2	12
Partial	2	1		7	2	12
None	1	1	1	3		6
N/A				1		1
Year in School						
First	2	1	1	2		6
Second	2	2		6	1	11
Third	2			3	2	7
Fourth				5	1	6
No response		1				
High School GPA						
≥ 3.5	2	3	1	8		14
3.0 to 3.49	2			4	2	8
2.5 to 2.99	1			3	2	6
2.0 to 2.49	1					1
1.5 to 1.99						
< 1.5						
Do not remember/no response		1		1		
College GPA						
≥ 3.5					1	1
3.0 to 3.49	2	2		7		11
2.5 to 2.99	1	2		4	1	8
2.0 to 2.49	3			4	1	8
1.5 to 1.99						
< 1.5						
In first semester			1	1		2
No response					1	1
Prior Accommodations						
Yes	4	3	1	10	1	19
No	2	1		6	3	12
Employment						
Job				2		2
No Job	6	4	1	14	4	29

Table 4.2 provides the number of student-athletes who reported receiving 1) a less distracting environment for test-taking, 2) extra time on exams, tests, or assignments, 3) a copy of peer or professor notes, or 4) assistive technology for at least one course. While respondents were given the option to provide additional approved accommodations for each course, no other accommodations were reported. Table 4.3 displays the same frequency of accommodation approval by class rather than student-athlete.

Table 4.2
Approved Accommodations by Student-Athlete

Accommodation	Student-Athletes (*n* = 31)	Percentage
Less Distracting Environment (LDE)	25	80.6
Extra Time (ET)	31	100
Peer Notes (PN)	23	74.2
Assistive Technology (AT)	5	16.1

Table 4.3
Approved Accommodations by Class

Accommodation	Classes (*n* = 137)	Percentage
Less Distracting Environment (LDE)	102	74.5
Extra Time (ET)	130	94.9
Peer Notes (PN)	91	66.4
Assistive Technology (AT)	17	12.4

Results indicate that the most common approved accommodation is extra time on exams, tests, or assignments. Every student-athlete reported receiving extra time in at least one course. Over 80% of student-athlete respondents reported receiving a less distracting environment for test-taking as an accommodation in at least one course, while 74.2% reported receiving a copy of peer or professor notes. Only 5 student-athletes received assistive technology accommodations (16.1%), a percentage noticeably smaller than that of the other three accommodation types.

Analysis of approved accommodations by course demonstrates similar results. Of the 137 enrolled courses provided by respondents, student-athletes reported receiving extra time on exams, tests, or assignments in approximately 95% of them (n = 130). Since all student-athletes reported receiving the extra time accommodation, the slightly lower percentage of the approved accommodation presented by class indicates that some student-athletes received extra time in some courses and not in others. A less distracting environment (74.5%), peer notes (66.4%), and assistive technology (12.4%) followed extra time in approval percentage by class.

Research Question 2: How often do college student-athletes choose to utilize accommodations approved by their school in their courses?

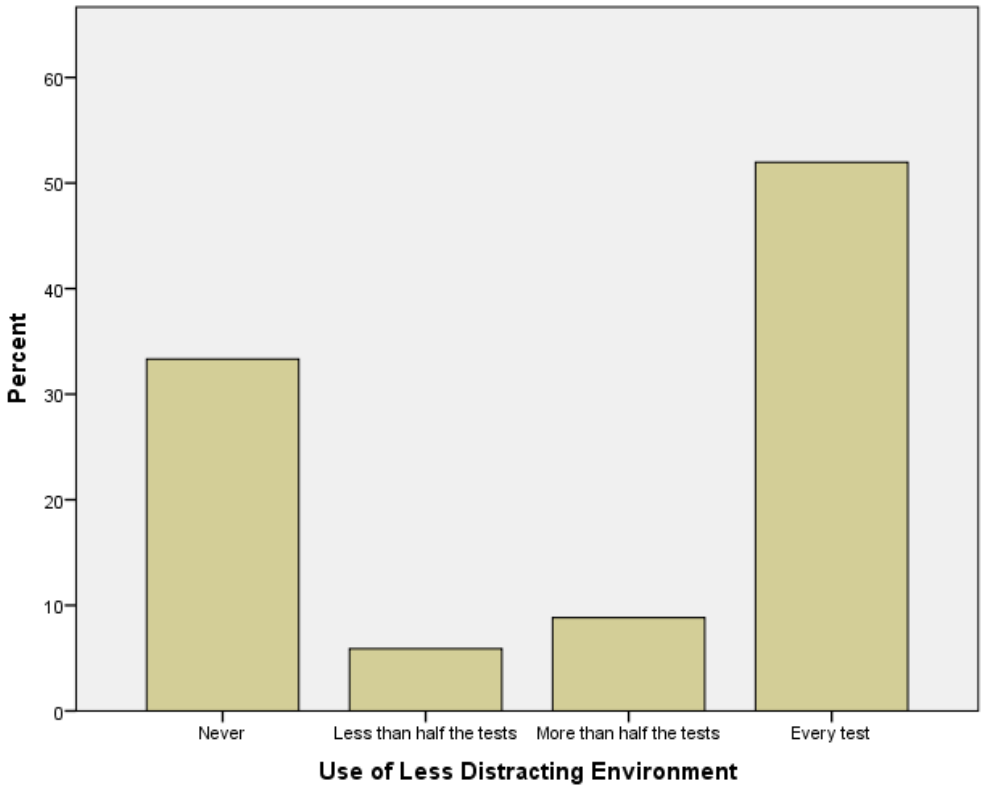
I created a frequency table and bar graph for each accommodation type in order to represent how often student-athletes who are approved for academic accommodations in a course choose to use the accommodation. Table 4.4 and Figure 4.1 display the frequency at which respondents reported using a less distracting environment for test-taking. Of the 102 classes in which a student-athlete received the accommodation, respondents reported always using a less distracting environment for tests in 53 classes, approximately 52%. An additional 14.7 % (n = 15) of respondents reported occasionally using the accommodation (less or more than half the tests), while respondents reported never using a less distracting environment for tests in over 33% (n = 34) of the classes in which it was approved.

Table 4.5 and Figure 4.2 display the frequency with which respondents reported using extra time on exams or tests in the classes for which it was approved. While the percentage of classes in which respondents reported using the accommodation on every

Table 4.4
Frequency of Less Distracting Environment Accommodation Use

Use	Classes (*n* = 102)	Percentage
Never	34	33.3
Less than half the tests	6	5.9
More than half the tests	9	8.8
Every test	53	52.0

Figure 4.1
Use of Less Distracting Environment Accommodation in Approved Classes

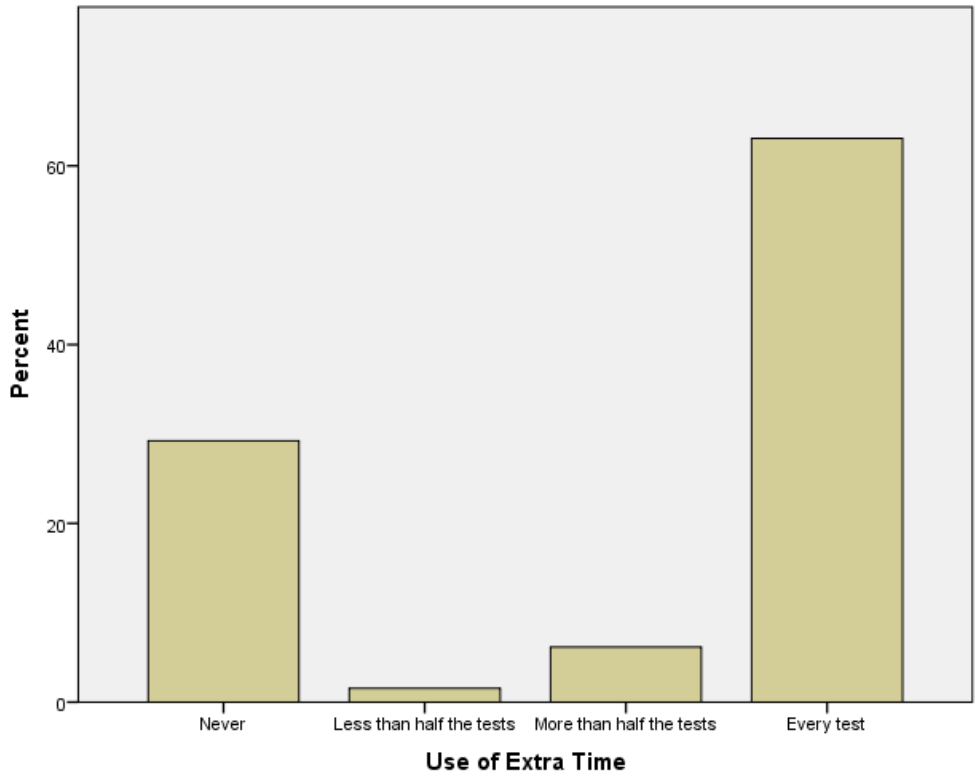


test (63.1%) was 11 percentage points greater than that of a less distracting environment, the total percentage of classes in which respondents reported never using the extra time accommodation (29.2%) was only 3 percentage points lower. Thus, although respondents reported using extra time more often than a less distracting environment on every test for which it was approved, the percentage of classes in which student-athletes reported never using the accommodation remained relatively the same.

Table 4.5
Frequency of Extra Time Accommodation Use

Use	Classes (*n* = 130)	Percentage
Never	38	29.2
Less than half the tests	2	1.5
More than half the tests	8	6.2
Every test	82	63.1

Figure 4.2
Use of Extra Time Accommodation in Approved Classes

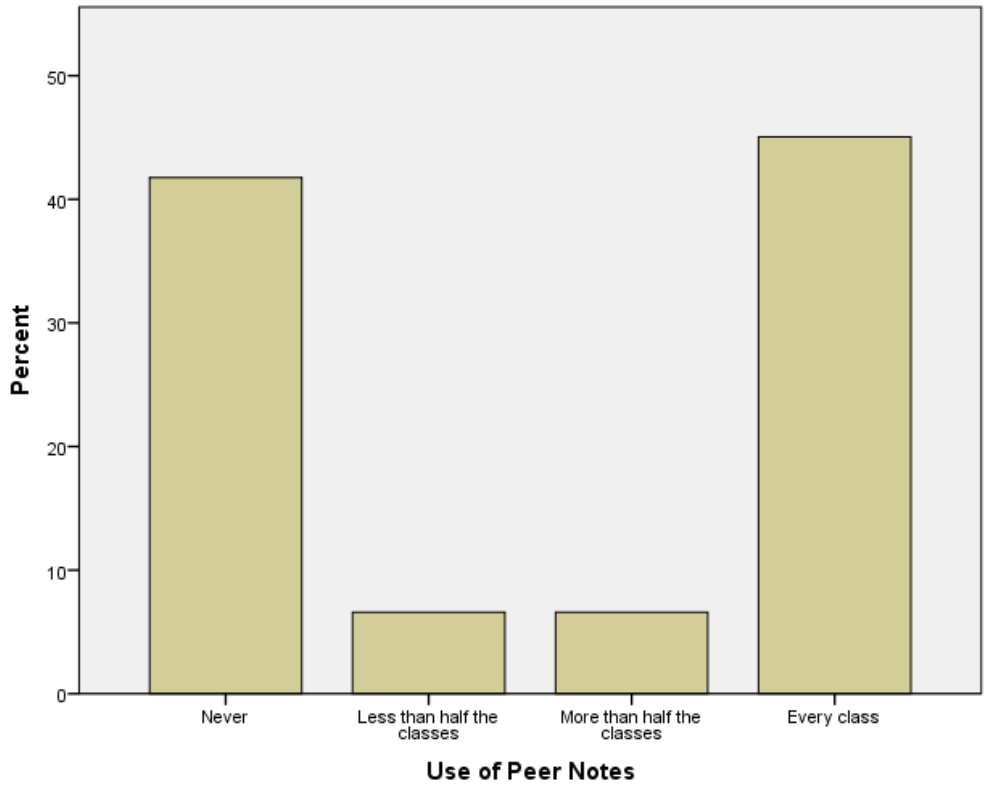


The frequency with which student-athlete respondents reported using the approved peer notes accommodation is displayed in Table 4.6 and Figure 4.3.

Table 4.6
Frequency of Peer Notes Accommodation Use

Use	Classes (n = 91)	Percentage
Never	38	41.8
Less than half the classes	6	6.6
More than half the classes	6	6.6
Every class	41	45.1

Figure 4.3
Use of Peer Notes Accommodation in Approved Classes



Like both a less distracting environment and extra time for tests, the majority of respondents (86.9%) used the accommodation in either every class or none of the classes in which it was approved. Unlike the prior accommodations discussed, however, the percentage of classes in which respondents reported never using peer notes (41.8%) and the percentage of classes in which respondents reported always using peer notes (45.1 %) was almost evenly distributed between the two categories.

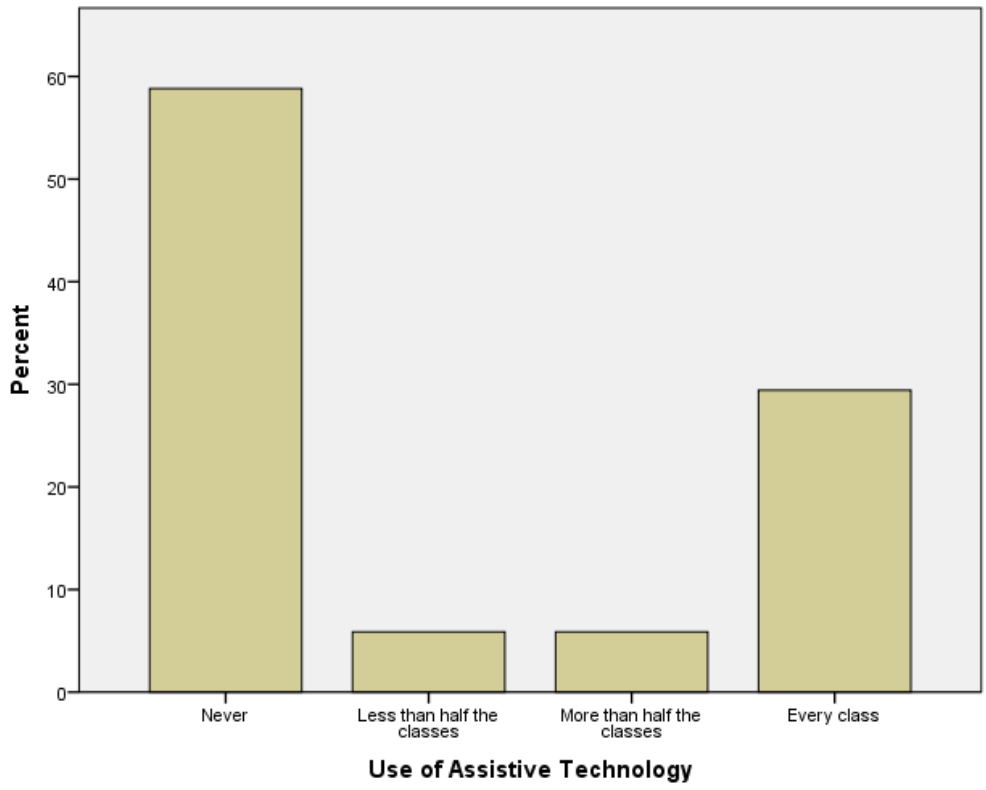
Assistive technology was used least often for the courses in which it was approved, as displayed in Table 4.7 and Figure 4.4. Unlike the other three accommodations discussed, the majority of respondents reported never using the accommodation in approved classes (58.8%). Respondents indicated using the accommodation intermittently for only 2 courses (11.8%), and for every class in the remaining 29.4% of courses.

Table 4.7
Frequency of Assistive Technology Accommodation Use

Use	Classes (n = 17)	Percentage
Never	10	58.8
Less than half the classes	1	5.9
More than half the classes	1	5.9
Every class	5	29.4

Figure 4.4

Use of Assistive Technology Accommodation in Approved Classes



Research Question 3: Which factors contribute to variation in accommodation use by college student-athletes with disabilities?

I used a multiple linear regression for each approved accommodation to answer the third research question. After analyzing the responses to the first two research questions, I omitted the assistive technology accommodation from the third question analysis due to the small number of student-athletes who reported receiving the accommodation and thus the limited number of class data available to analyze.

Survey data on reported use of accommodations for each class did not meet all assumptions of a multiple regression model. Since the data used for analyses represent academic courses rather than student-athletes, class data are clustered based on respondent. For example, one student-athlete respondent could provide between 1 and 6 points in the dataset. Thus, the collinearity of the independent variables makes it difficult to develop reliable inferences about their effects individually. Although the dataset violates several assumptions, regression models are generally considered more robust than other statistical analyses to these violations, though care should be taken when interpreting results (Pedhazur, 1997). Since the aims of the current study were largely investigative, I used the results of the regression analyses as informative for suggesting appropriate variables for future lines of research, but noted the limited ability of these analyses to appropriately explain variation in student-athlete use of accommodations.

Model summaries for multiple regression analyses of each accommodation with course type, year in school, prior accommodation status, revenue status, and scholarship status entered as coefficients are provided in Table 4.8. R^2 values ranged from .378 for less distracting environment to .439 for peer notes, suggesting that the coefficients

account for 38% of the variation in student-athletes use of the less distracting environment accommodation, 42% of variation in extra time accommodation, and 44% of variation in the use of peer notes. These values – and ultimately the remaining analyses of the models – were interpreted cautiously given that the clustering of classes by student-athlete respondents violates random assignment of the data and leads to smaller standard error estimates.

Table 4.8
Model Summaries for Accommodations

Accommodation	*R*	R^2	Adjusted R^2	Std. Error of the Estimate
Less distracting	.615	.378	.331	1.125
Extra time	.649	.421	.388	1.060
Peer notes	.663	.439	.391	1.104

I analyzed the significance of each model through the *F* statistic and associated probability values. The results for separate accommodations are provided in Tables 4.9, 4.10, and 4.11. Analyses indicated that the variability in use accounted for by the grouped coefficients was significant for all three accommodation models ($p < .05$), suggesting the results are unlikely due to chance.

Table 4.9
Test of Significance for Less Distracting Environment Model

	SS	df	Mean Square	*F*	Significance
Regression	71.572	7	10.225	8.083	.000
Residual	117.635	93	1.265		
Total	189.208				

Table 4.10
Test of Significance for Extra Time Model

	SS	df	Mean Square	*F*	Significance
Regression	98.915	7	14.131	12.571	.000
Residual	136.015	121	1.124		
Total	234.930	128			

Table 4.11
Test of Significance for Peer Notes Model

	SS	df	Mean Square	*F*	Significance
Regression	78.381	7	11.197	9.180	.000
Residual	100.019	82	1.220		
Total	178.400	89			

I further analyzed the unique contribution of each coefficient holding all other independent variables constant. These results are displayed in Tables 4.12, 4.13, and 4.14. I dummy coded the course type coefficient to specify whether each class was humanities, social science, or STEM, and also analyzed the unique contribution of year in school, use of prior accommodations, participation in revenue vs. non-revenue sports, and scholarship to the overall variance accounted for in the model using the *t* statistic. Since the analysis of these variables was investigative, I used Bonferroni corrections for more conservative significance levels to control for Type I error (Mundfrom, Perrett, Shaffer, Piccone, & Roozeboom, 2006). With the inclusion of 7 independent variables, I considered each variable's contribution significant at the $p \leq .007$ level ($p = .05/7 = .007$).

Table 4.12
Coefficient Significance for Less Distracting Environment

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Significance
Constant	2.209	1.105		1.999	.048
STEM	.782	.362	.236	2.158	.033
Social Science	.910	.343	.314	2.650	.009
Humanities	-.014	.354	-.005	-.040	.968
Year in School	-.580	.125	-.479	-4.656	.000
Prior Accom.	.687	.278	.247	2.469	.015
Revenue	-.375	.396	-.100	-.946	.347
Scholarship	.231	.223	.123	1.038	.302

Table 4.13
Coefficient Significance for Extra Time

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Significance
Constant	4.239	.634		6.686	.000
STEM	.948	.296	.273	3.198	.002
Social Science	.739	.264	.255	2.799	.006
Humanities	-.145	.271	-.048	-.537	.593
Year in School	-.549	.103	-.470	-5.344	.000
Prior Accom.	.270	.221	.096	1.222	.224
Revenue	-1.029	.254	-.306	-4.056	.000
Scholarship	.205	.169	.113	1.208	.229

Results for a less distracting environment indicated that year in school (t = -4.656, p <.007) significantly contributed to variation in student-athletes' reported accommodation use in classes while all other coefficients were constant. Interestingly, the negative standardized regression coefficient of year in school (β = -.479) indicates that student-athletes in later years of college utilize the less distracting environment accommodation less than those in earlier years, assuming a linear relationship between the two variables.

STEM course categorization (t = 3.198, p <.007) and social science course categorization (t = 2.799, p <.007) were significant unique contributors to the variation in use of extra time accommodations by student-athletes. Student-athletes' year in school also significantly contributed to the variance with a negative relationship between year in school and frequency of accommodation use (β = -.470, t = -5.344, p <.007). While prior use of accommodations did not demonstrate a unique contribution to variance in the use of extra time, results did indicate a significant negative relationship between student-athletes who play revenue sports and the use of this accommodation (β = -.306, t = -4.056, p <.007).

Table 4.14
Coefficient Significance for Peer Notes

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Significance
Constant	4.370	.730		5.989	.000
STEM	-5.91	.380	-.152	-1.557	.123
Social Science	.318	.321	.101	.992	.324
Humanities	-.428	.325	-.138	-1.318	.191
Year in School	-.522	.146	-.426	-3.579	.001
Prior Accom.	.169	.272	.059	.622	.536
Revenue	-1.244	.294	-.385	-4.233	.000
Scholarship	.474	.240	.246	1.976	.051

Analyses of coefficients for use of peer notes suggested no unique contribution of class type to this accommodation (t_{STEM} = -1.557, p > .007; t_{SS}= .992, p > .007; t_{HUM} = -1.318, p > .007). Year in school (β = -.426, t = -3.579, p <.007) and revenue status of sport (β = -.385, t = -4.233, p <.007) once again demonstrated unique, significant negative relationships with student-athletes' use of the peer notes accommodation. Humanities courses, use of prior accommodations, and scholarship status provided no

significant contribution to the variance in use of any of the three academic accommodations.

In order to guide questions for future research, I also examined the reasons why student-athletes reported not using academic accommodations in their classes. Frequencies of student-athlete selections provided by the survey are outlined in Table 4.15. Of the 31 survey respondents, 21 provided reasons for not using approved accommodations for at least one course. The most frequent response for not using academic accommodations was the belief of student-athletes that they did not need the accommodation in order to succeed. The second most frequent response was that student-athletes had previously used accommodations but did not find them helpful. Only two student-athletes (in 3 classes) selected that they were concerned with peer knowledge regarding their use of accommodations.

Table 4.15
Frequency of Reasons for Not Using Accommodations

Reason	Responses
I do not think I need to use accommodations to succeed.	27
I do not want my peers to know that I use accommodations.	3
I used accommodations previously and did not find them helpful.	16
I am too busy to work with the professor on using my accommodations.	1
I do not want my professor to know that I need accommodations.	1

Student-athletes were given the opportunity to provide additional reasons for not using approved accommodations in their individual courses. Most anecdotal responses were related to characteristics of a specific course. For example, one student reported that “all the assignments are take home papers” while another did not use testing accommodations because “the tests are very short.” Several students reported that the lecture materials were provided online, so classroom accommodations like peer notes

were not necessary. One student reported not utilizing assistive technology as an accommodation because the "professor does not allow recording lectures, [so] we agreed that it will not be necessary with the use of peer notes" while another said his/her professor denied the use of a less distracting environment. Finally, two students reported not using testing accommodations because they liked to take tests with their class, citing the benefits of competitive testing environment alongside peers and the ability to ask questions of the professor during the exam. Overall, only 6 student-athletes reported that they did not find their accommodations helpful in their coursework this semester.

CHAPTER 5

You're 5 foot nothin', 100 and nothin', and you have barely a speck of athletic ability. And you hung in there with the best college football players in the land for 2 years. And you're gonna walk outta here with a degree… In this life, you don't have to prove nothin' to nobody but yourself. And after what you've gone through, if you haven't done that by now, it ain't gonna never happen. – Fortune, *Rudy*

DISCUSSION

The purpose of the current study was to better understand the frequency of academic accommodation use by college student-athletes with disabilities. The study used an online survey to collect data from student-athletes representing 5 Division I universities to investigate 1) which accommodations respondents reported receiving most frequently, 2) how often respondents reported using approved accommodations in their current coursework, and 3) whether subject type, scholarship status, sport revenue status, year in school, and/or use of prior accommodations significantly contributed to variation in student-athletes' use of academic accommodations across courses.

Summary of Findings

Research Question 1: Which academic accommodations do college student-athletes with disabilities receive most often?

Results indicated that all Division I student-athletes with an identified disability who responded to the survey reported receiving extra time on exams, tests, or assignments in at least one course, and over 80% of respondents reported receiving a less distracting environment for test-taking. Almost two-thirds of respondents reported receiving a copy of peer or professor notes from each class. Assistive technology was the

least approved accommodation, with only five student-athletes reporting the option to use this accommodation in their coursework.

Research Question 2: How often do college student-athletes choose to utilize accommodations approved by their school in their courses?

This research question considered the frequency of accommodation use reported by student-athletes for each of their courses. The most striking finding for this question was that student-athletes largely reported using each approved accommodation either Always or Never. Across the four accommodations, rates of intermittent accommodation use fell at 14.7%, 7.7%, 13.2%, and 11.8% for a less distracting environment, extra time, peer notes, and assistive technology respectively. These results suggest that student-athletes generally take either an all or nothing approach to accommodation use and rarely vary their decision to use accommodations across tests or class periods within a specific course.

Research Question 3: Which factors contribute to variation in accommodation use by college student-athletes with disabilities?

Results of prior research on college students with disabilities, the use of academic accommodations, and the characteristics of student-athletes suggest that the type of class in which students enroll, year in school, prior use of accommodations, athletic scholarship money, and participation in revenue sports could all uniquely contribute to variation in student-athlete use of approved academic accommodations. Multiple regression analyses from the current study found that the type of courses in which a student enrolls (STEM and social science) contributes to the variation in use of extra time accommodations and anecdotal student survey responses supported this finding. Across

all three accommodation types, student-athletes' year in school was found to have a negative relationship with use of accommodations. Playing revenue sports (football or basketball) demonstrated a significant negative relationship with the use of both extra time on exams and peer notes, but whether student-athletes previously utilized academic accommodations prior to college or received athletic scholarship money did not uniquely contribute to the variation in use of accommodations.

Implications

Results of the current study support those of prior research regarding the types of accommodations received by students with disabilities at the college level (see Bolt et al., 2011; Raue & Lewis, 2011). More student-athletes with disabilities reported receiving testing accommodations (a less distracting environment and extra time) than instructional accommodations (peer notes and assistive technology) in their courses. None of the student-athletes included in the current study provided additional accommodations beyond the four prompted in the survey question, despite the probability that differences exist in the diagnosed disabilities of the sample. While this does not necessarily mean that other accommodations are not provided to student-athletes based on individual characteristics, it does suggest that similarities exist across institutions in the types of accommodations considered for students.

Though the consistency of available accommodations across students within an institution may eliminate the option of a personalized approach to services, it could provide a more standard approach to accommodation use across classes. With a limited number of accommodation options across students, it may be easier for both professors and students to gain a clear understanding of their responsibilities from a legal and

institutional perspective. For example, if multiple students are approved to receive extra time on exams, institutions could adopt a protocol for students and professors to follow when using this accommodation for each course. These procedural guidelines might make it easier for students to approach professors regarding the need for extra time as the process for securing and utilizing the accommodation would look similar across courses.

Limited accommodation options might also make it more likely that professors are familiar with an accommodation and can identify how to provide the requested support considering the specific nuances of each course. With extra time, for example, professors would need to consider the anticipated length of an exam and whether classroom reservations allow for students to simply continue working after their classmates are done, or if additional space and proctors are needed. Theoretically, an individualized list of accommodations based on disability may seem appropriate to best support student needs, but a standardized approach that makes it easier for students to access accommodations consistently may be more practical.

A standardized approach to accommodations across courses could also help learning specialists better prepare student-athletes with disabilities for the expectations surrounding the use of academic accommodations. This could include reviewing the protocol with students for requesting accommodations from professors and prepping student-athletes for conversations with their instructors on expectations and procedures for accommodation use in specific courses. The assessment, evaluation, and intervention roles of the learning specialist might allow student-athletes to receive personalized support without an individualized list of accommodations. Instead of focusing solely on matching accommodations to student needs, the learning specialist could instead work

with student-athletes to review their performance and develop an individualized approach to using each accommodation that matches students' strengths and weaknesses.

Analyses of accommodation use show that most student-athletes take an all or nothing approach to using an academic accommodation in a particular course. This trend appeared across the less distracting environment, extra time, peer notes, and assistive technology accommodations studied in the current research. Results show that student-athletes report using a less distracting environment, extra time on exams, and a copy of peer notes for most of the classes in which they are approved. Overall, these results are encouraging for learning specialists who often spend much time and effort on ensuring student-athletes with disabilities have the correct documentation and have followed appropriate university procedures to access accommodation supports.

The percentage of courses in which student-athletes reported never using approved accommodations, however, is disconcerting. Across the four accommodations reviewed in this study, student-athletes reported never using the approved support in an average of 40% of their courses. This finding is particularly troubling considering the assessment and evaluation roles of the learning specialists supporting the academic progress of these student-athletes with disabilities. It cannot be assumed that all the respondents failed to fully consider the benefits of using an accommodation before deciding to forego the support in a course. However, it is likely difficult for learning specialists to accurately evaluate student-athlete performance if students choose to never use their approved accommodations. Without student-athletes at least attempting course requirements while using accommodations, the true benefits and effectiveness of accommodations may never be known.

Interestingly, reviewing both anecdotal and prompted responses of student-athletes who chose not use accommodations regularly in a particular course showed that both students' beliefs about their need for accommodations and specific characteristics of the course in question contribute most often to these decisions. For most classes, student-athletes reported that they did not need to use an accommodation in order to succeed or had previously used accommodations and not found them helpful. This suggests that prior success or failure when using accommodations could play a role in whether some student-athletes choose to utilize the support again in the future. Also, student anecdotal responses indicate that the expectations of some courses do not align with the use of an approved accommodation. This is true of classes that do not require exams, those with shorter exams, and courses for which professors provide video lectures or class notes to all enrolled students, not just those with disabilities.

Assistive technology was not only reported as the least frequent of approved accommodations but also the least utilized by student-athletes in their courses. This is not necessarily surprising, however, as the time and resources required to utilize assistive technology accommodations usually exceed those of the other accommodations studied. In order to receive all books in audio format, for example, students must download and learn new electronic software as well as work closely with the office of disability services to locate, upload, or create textbook files in the required formats. However, other accommodations, like peer notes or extended time, require little effort on the part of the student-athlete. Peer notes are usually delivered directly to students by email and after confirming with professors that extra time is granted, student-athletes can often decide whether or not to use the accommodation while actually taking an exam.

Though the analyses of factors that affect variability in accommodation use conducted in the current study should be interpreted very cautiously, several of the findings warrant further discussion. The first is that class designation seems to play a role in students' decisions to use only the extra time accommodation. Whether classes were identified as STEM or social science uniquely contributed to the variation in student-athletes' use of this testing accommodation. These findings could be due to the specific characteristics of these courses, like more quantitative, timed exams in lieu of papers, or even students' perceptions of the difficulty level of these subject areas compared to the humanities. Class designation, however, did not uniquely account for variance in student-athletes' reported use of a less distracting environment or peer notes.

It is surprising that class designation was not a unique contributor to the variation in student use of a less distracting environment for exams, since it is in the same category of testing accommodations as extended time. Students anecdotally reported, however, that one reason they disliked taking exams outside the regular classroom was the inability to contact the instructor for questions during the test. Questioning the professor during the exam could be an important support for students in courses which they perceive as more difficult, and thus the benefits of leaving the room for a quieter environment might not outweigh the costs.

The insignificant contribution of class designation to students' reported use of the peer notes accommodation could reflect the ease with which students can receive peer notes or a variation of interpretations for what it means to actually use this type of accommodation. Unlike testing accommodations where use is clearly defined (ex: either using extra time or not), students may have different understandings for what it means to

make use of a copy of class notes from others. Some students, for example, may define using peer notes as simply receiving them from the disability center. Others, however, could define use as comparing peer notes to their own class notes, identifying and reviewing missed concepts, and/or rewriting notes to include all relevant material. This possible variation in interpretation of peer notes is an important consideration for learning specialists, as well, since simply downloading or reading a copy of others' notes may not be as beneficial to student learning as more interactive and comparative reviews of the class material.

Interestingly, year in school was a statistically significant contributor to student-athletes' use of a less distracting environment, extra time, and peer notes. The negative relationship between the variables suggests that as students get older and progress through school, they utilize academic accommodations less often. Once again, these findings are not concrete given that data on classes were clustered by student-athletes. However, it does suggest a trend regardless of accommodation type. Based on the responses student-athletes provided about their choices to not use accommodations, perhaps students' prior experiences guide their decision to utilize the support as they progress through college coursework. This could mean that as students become more self-aware and knowledgeable of their disability and individual strengths and weaknesses they are better able to appropriately decide when and how to use accommodations. An alternate and less optimistic explanation, however, might be that students in later years of college see less benefit to accommodation use based on their prior successes or failures. This explanation is concerning because the effects of students' disabilities on academic tasks do not disappear, yet they choose not to use available supports, possibly because

they feel they do not need accommodations to succeed or they have not found them helpful in the past.

The support of the learning specialist, and other academic support personnel, could also help explain the significant contribution of student-athletes' year in school to the variation in use of accommodations. It is possible that learning specialists focus most of their attention on student-athletes in their first and second year of college in order to help them transition successfully and remain eligible for athletic competition. The professional standards for learning specialists suggest they support coordination of services and evaluation of student needs (Bethel et al., 2012). But, while these services logistically support students' use of accommodations, they could also impose an additional level of accountability and follow through on the part of the student. As student-athletes demonstrate their ability to remain eligible and achieve the necessary level of academic success independently, the amount of support, guidance, and follow-up provided by the learning specialist likely diminishes, leaving the student-athletes with disabilities to make their own decisions regarding use of accommodations.

Finally, only one factor unique to student-athletes provided any additional contribution to variation in accommodation use. Athletes who participated in revenue sports (football and basketball) reported using the extra time and peer notes accommodations less often than those in non-revenue sports. Only a small number of students reported not using accommodations due to either peer or professor knowledge, but the role of both an athlete's personal identity and broader recognition by others should not go unexplored given these findings. For example, students who participate in revenue sports may identify more as an athlete than student and thus choose to focus on

their performance on the field over the classroom. Revenue sport student-athletes could also be easily recognizable on campus, making it difficult for them to request or use additional support without others noticing. Since many revenue sport student-athletes also receive athletic scholarships, they may hesitate to use accommodations for fear of being viewed as stereotypically inadequate or unable to meet the college's academic expectations. The findings from this study support that beyond revenue status, the profile of approved accommodations and frequency of use for student-athletes mirrors that of other college students with disabilities.

Limitations

Despite contact with 23 Division I universities, only 5 agreed to contact their student-athletes with disabilities as part of this research. Limited participation affected the eventual sample size of 50 respondents, with only 31 remaining for final data analysis. In order to protect the identities of student-athletes with disabilities, the research design used learning specialists or other support staff members at each university as a distribution mechanism for the survey. While this was a convenient way to reach the intended population, sending information to survey participants through a third party made it impossible to ensure that the intended recipients received contact or follow-up. I was also unable to determine a response rate for the survey, severely limiting the generalizability of the findings.

Due to the limited number of responses during the initial semester of research, I conducted a second round of data collection. This limited the interpretations of the data as responses were not indicative of participant behaviors at a single point in time. To minimize the effect of multiple points of data collection, I timed the second distribution

to occur surrounding midterm exams of the fall semester as the first distribution fell in the final weeks of the previous spring semester. One of the participating schools distributed the survey both semesters so it was impossible to ensure there were not multiple responses from the same individual students, though care was taken to review the responses by date and remove at least one response from individuals with the same identifying demographics.

A final significant limitation to the current research was the use of a clustered dataset for analysis. Most analyses were completed with data on classes, but student-athlete respondents each provided multiple classes to the dataset. While the largely investigative nature of this study made it possible to conduct initial analyses noting the violation of assumptions, the significant contributions of the independent variables included in analysis can only be used as potential guidance for future research.

Directions for Future Research

The findings of the current study provide several avenues of potential interest for future research. First, future research should explore whether student-athletes with disabilities experience higher levels of academic success when provided with individualized plans for support. The current research supports previous findings that the accommodations approved for most students with disabilities are very similar across student characteristics and disability type. While this may help students identify and learn their responsibilities for using accommodations across classes, students reported not using accommodations because they were inappropriate for the class type or the course requirements. Further research into more individualized plans and approaches for

accommodation use could broaden the available options for learning specialists and other academic support staff.

Second, future research should examine the instructional role of learning specialists in building practical skills and knowledge for student-athletes beyond academics. While accessing academic accommodations is important for student-athletes with disabilities, learning specialists have a unique position to support a student's understanding of his/her disability and build self-advocacy and communication skills in a student-athlete as s/he navigates the accommodations process. Future research may find these skills to be transferrable, so that a learning specialist's time supporting a student-athlete results in future gains and success for the student beyond the immediate approval or use of accommodations.

Third, the data used in the current study made it difficult to effectively identify the unique contribution of factors specific to student-athletes in variation of accommodation use. Future research should compare factors like student-athletes' levels of athletic identity and accommodation use in order to identify any relationship. Using a larger sample of student-athletes with disabilities from across Division I schools would also allow for examination of the contribution of factors specific to institutions in the variability of students' accommodation use. Given that some student-athletes in the current study reported never using specific academic accommodations, future research could examine the academic outcomes of similar students to determine if decisions not to use accommodations are detrimental to success. Research comparing the frequency and use of accommodations between student-athletes and non-student athletes may also illuminate further population-specific factors that contribute to variability.

Finally, the limited provision and use of assistive technology by student-athletes with disabilities in the current research suggests further investigation is needed on the various accommodations within this category. Specifically, researchers should focus on whether the benefits and frequency with which students use the accommodation outweigh the costs of providing the support service. These include not only the monetary costs to institutions, but also the time that managing assistive technology requires of students and support staffs.

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APPENDIX A

ACCOMMODATIONS SURVEY FOR ACC STUDENT-ATHLETES WITH DISABILITES

Page 1

This survey is designed to gather information on student-athletes and their use of academic accommodations in the classroom. All responses are completely confidential. You may stop the survey at any time and return later to finish. Please answer each question to the best of your ability.

Which college or university do you currently attend?

▼

What is your current year in school?

- First
- Second
- Third
- Fourth
- Fifth or greater
- Graduate School

What is your gender?

- Male
- Female

Page 2

In which sports do you participate at the NCAA Division I level? You may choose more than one, if applicable. Do not include club level or intramural.

- [ ] Baseball
- [ ] Basketball
- [ ] Cheerleading
- [ ] Cross Country
- [ ] Dance
- [ ] Fencing
- [ ] Field Hockey
- [ ] Football
- [ ] Golf
- [ ] Gymnastics
- [ ] Ice Hockey
- [ ] Lacrosse
- [ ] Pistol
- [ ] Rifle
- [ ] Rowing
- [ ] Sailing
- [ ] Skiing
- [ ] Soccer
- [ ] Softball
- [ ] Swimming & Diving
- [ ] Synchronized Swimming
- [ ] Tennis
- [ ] Track & Field
- [ ] Volleyball
- [ ] Wrestling

Do you currently receive any athletic scholarship money from your college/university?

- ( ) Full Scholarship
- ( ) Partial Scholarship
- ( ) No Scholarship
- ( ) Not Applicable

Page 3

Every college has a process by which students with disabilities or other special needs receive academic accommodations. Do you receive academic accommodations through your school's Office of Disability Services?

- ○ Yes
- ○ No

Page 4

Please list each of the classes in which you are enrolled this semester. You may use the course mnemonic or name (Example: HIST 200, PHYS 1020, Spanish, Sociology of the Family, etc.) Leave any extra class spaces blank. If you have more than 6 classes this semester, please list those you find most challenging.

Class 1 _____

Class 2 _____

Class 3 _____

Class 4 _____

Class 5 _____

Class 6 _____

Page 5

Please check all of the academic accommodations that are approved for you to use in your Sample class this semester.

- ☐ A less distracting environment for test-taking
- ☐ Extra time on exams or tests
- ☐ A copy of peer or professor notes
- ☐ Assistive technology (ex: audio books, speech to text software, digital recorder, etc.)
- ☐ Other _____
- ☐ Other _____
- ☐ I am not approved for any academic accommodations in this course.

Page 6

How often do you use the following accommodations in your Sample class?

	Every test	More than half the tests	Less than half the tests	Never
A less distracting environment for test-taking	○	○	○	○
Extra time on exams or tests	○	○	○	○

How often do you use the following accommodations in your Sample class?

	Every class	More than half the classes	Less than half the classes	Never
A copy of peer or professor notes	○	○	○	○
Assistive technology (ex: audio books, speech to text software, digital recorder, etc.)	○	○	○	○

How often do you use the following accommodations in your Sample class?

	Always	Most of the time	Some of the time	Never
Sample	○	○	○	○

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For what reasons do you choose *not* to use approved accommodations in your Sample class? Select all that apply. If other, please specify.

- ☐ I do not think I need to use accommodations to succeed.
- ☐ I do not want my peers to know that I use accommodations.
- ☐ I used accommodations previously and did not find them helpful.
- ☐ I am too busy to work with the professor on using my accommodations.
- ☐ I do not want my professors to know that I need accommodations.
- ☐ Other

Page 8

Overall, have your academic accommodations been helpful in your coursework this semester?

- Yes
- No- Please explain.

Are there any other types of support that you have found helpful with your coursework this semester?

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Did you previously receive classroom accommodations at any of these levels of education? Select all that apply.

- [ ] Elementary
- [ ] Middle/Junior High
- [ ] High School
- [ ] No previous accommodations
- [ ] I do not remember or do not choose to answer.

What is your current cumulative college/university grade point average (GPA)?

- ( ) 3.5 or higher
- ( ) 3.0 to 3.49
- ( ) 2.5 to 2.99
- ( ) 2.0 to 2.49
- ( ) 1.5 to 1.99
- ( ) below 1.5
- ( ) I have not yet completed my first semester.
- ( ) I do not choose to answer.

What was your cumulative high school grade point average (GPA)?

- ( ) 3.5 or higher
- ( ) 3.0 to 3.49
- ( ) 2.5 to 2.99
- ( ) 2.0 to 2.49
- ( ) 1.5 to 1.99
- ( ) below 1.5
- ( ) I do not remember or do not choose to answer.

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The following questions are for statistical purposes only. You are not required to answer.

Do you consider yourself to be Hispanic/Latino?

- ○ Yes
- ○ No

What is your race? You may select more than one.

- ☐ White
- ☐ Black or African American
- ☐ American Indian
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ Other

Do you have employment outside of your responsibilities as a student-athlete during the school year?

- ○ Yes, only in the off season.
- ○ Yes, only when my sport is in season.
- ○ Yes, I work both semesters.
- ○ No

Final Page

Thank you for completing this survey. Your responses are valuable for better understanding the academic needs of student-athletes. Please contact Shelly Lovelace at 434-243-3597 or slovelace@virginia.edu with any questions.

APPENDIX B

LEARNING SPECIALIST TELEPHONE SCRIPT

Hi! This is Shelly Lovelace, Learning Specialist at the University of Virginia. How are you today?

Great! I'm calling because I'm conducting a research study directly related to our roles as learning specialists and the ways in which we support student-athletes who utilize academic accommodations. I'm interested in learning how often student-athletes use the accommodations they are granted in their courses and if any factors play a role in this variability. I know we work hard to ensure these supports are available to our student-athletes with disabilities and often request this type of information from them individually. However, I'm unaware of any larger research that's attempted to compile this data.

I've developed a survey for dissemination to Division I student-athletes with approved accommodations. This research has been approved by the IRB at UVA and the results will be used to complete my doctoral dissertation.

I'm asking for your assistance with disseminating the survey to eliminate a breach of their confidentiality. Within the week, I'll send you an email explaining the research to the student-athletes with the survey link attached. I ask that you simply forward it to your student-athlete population who receive academic accommodations and alert me via email or phone once it is sent out.

It is important to remember that their participation is totally voluntary and all of their responses will remain anonymous. I'll also ask that you forward a few reminder emails as the closing date for the survey nears. There is no obligation for your participation or your athletes', but your assistance would be greatly appreciated so this survey can reflect as many Division I schools and student-athletes as possible. I will be sure to alert you if the results of this study are presented at an upcoming conference or receive publication.

Do you have any questions? Will you be willing to forward the survey to your student-athletes?

Here is my contact information if you have any more questions in the coming weeks.
Shelly Lovelace
434-243-3597
slovelace@virginia.edu

Thank you so much for your time and I look forward to working with you.

APPENDIX C

INITIAL STUDENT-ATHLETE EMAIL CONTACT

Hi student-athlete!

I would like to request your participation in an online survey designed to determine which academic accommodations student-athletes use in the classroom and how often they utilize these supports. Your responses will be very helpful to academic support staff in understanding which supports you find beneficial and how to best serve other student-athletes like yourself in the future.

The survey will ask you to answer demographic questions related to both your athletics and academics. You will also be asked to provide information on your use of classroom accommodations. You can skip any question that makes you feel uncomfortable. The survey will take approximately 10 minutes to complete and can easily be accessed on your mobile device or computer using the link below. Your access to the survey will last for two weeks.

There are no anticipated risks in this study. There are no direct benefits to you for participating but results will help inform athletic staffs on ways to support student-athletes with accommodations in the future. Your participation in this study is completely voluntary and you can quit the survey at any time without penalty.

The information that you provide in the survey will be completely confidential. Your name and other identifiers, like your IP address, will not be collected or linked to the data. Because of the nature of the data, it may be possible for the researcher to deduce your identity; however, there will be no attempt to do so and your data will be reported in a way that will not identify you.

Please follow this link to access the survey.

Your participation is greatly appreciated!

If you have questions about the study, please contact :	If you have questions about your rights in the study, contact:
Shelly Lovelace John Paul Jones Arena- PO Box 400838 University of Virginia- Charlottesville, VA 22904 434-243-3597 slovelace@virginia.edu Paige Pullen, Ph.D.- Faculty advisor PO Box 400273 University of Virginia- Charlottesville, VA 22904 434-243-5502 pcp4k@virginia.edu	Tonya R. Moon, Ph.D. Chair, Institutional Review Board for the Social and Behavioral Sciences One Morton Dr Suite 500 University of Virginia, P.O. Box 800392 Charlottesville, VA 22908-0392 Telephone: (434) 924-5999 Email: irbsbshelp@virginia.edu Website: www.virginia.edu/vpr/irb/sbs

APPENDIX D

STUDENT-ATHLETE REMINDER EMAILS

Reminder 1

Hi [School] Student-Athlete,
Recently you received the following email requesting your participation in an online survey designed to better understand use of academic accommodations by student-athletes. Thank you to those of you who have already completed the survey! If you have not yet had time to submit your responses, you can find the link below along with the original message containing further information. Thank you for your help!

[Original email copied here.]

Reminder 2

Hi [School] Student-Athlete,
I realize your time is limited, but hope you are willing to complete the survey via the link below if you have not done so already. Your participation is so greatly appreciated and I thank you if you have already submitted your responses! If not, this is a final request as the survey will close tomorrow. You can find the link below along with the original email containing further information. Your help is so valuable and I thank you again for your willingness to respond.

[Original email copied here.]