ABSTRACT

Title of dissertation:	THE RELATIONSHIP OF SELF-DETERMINATION SKILLS, USE OF ACCOMMODATIONS, AND USE OF SERVICES TO ACADEMIC SUCCESS IN UNDERGRADATE JUNIORS AND SENIORS WITH LEARNING DISABILITIES
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Students with disabilities are entering colleges and universities across the nation in ever-increasing numbers, with the greatest percentage being students with learning disabilities (LD). Yet, students with disabilities often do not graduate from college at the same rate as students without disabilities. Self-determination is an important skill for students to possess as they navigate a more complex academic environment in which they are required to make decisions independently. Having effective services for students with LD is crucial to their academic success. Students with LD were recruited through College and University contacts maintained by the student disability offices. Seventy students from eight institutions (all 4-year institutions, which included four independent colleges and four state universities), responded to an online survey, completing measures about their grade point average (GPA), use of accommodations, use of related services, and their skills as measured by the Self-Determination Student Scale. Results indicated that

there was a significant, positive relationship between self-determination and GPA, such that self-determination reliably predicted GPA in this sample. However, no relationship was found between use of accommodations and GPA or between use of services and GPA, as many students reported selectively utilizing accommodations and services, which was interpreted to indicate developing self-determination. Recommendations for how campus disability offices might assist students in the development of self-determination skills are discussed and implications for future research academic success are presented.

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ACCOMMODATIONS, AND USE OF SERVICES TO ACADEMIC SUCCESS IN
UNDERGRADUATE JUNIORS AND SENIORS WITH LEARNING DISABILITIES

by

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Dedication

This work is dedicated to my children, Jonathan David and Amisa Simone. You two are the light of my life and a sure sign of the love between your father and me. You both were born during my completion of this dissertation, which at first seemed like such a challenge. However, I soon saw that it was a blessing, for you two remind me everyday that what is most important never changes. You two also became motivation for me to put aside any excuses and work whenever I could to finish this project. Being at home with you full-time is the hardest job I have ever had, but, by far, the most fulfilling.

My desire has been to nurture you as you are and to teach you what you need to know in preparation for who you will become. I hope you cultivate a love of learning and never stop allowing yourself to be taught. Empower yourself through education; it is the leverage for your future. In addition, remember that teachability requires humility; it is indeed the pathway to strength and influence! Go and change your generation! Remember Psalm37:5-Commit your way unto the Lord. Trust also in HIM and HE shall bring it to pass!

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CHAPTER ONE: Introduction

Students with disabilities are entering colleges and universities across the nation

in ever-increasing numbers, with the greatest percentage being students with learning

disabilities (subsequently referred to as LD) (Lock & Layton, 2001; Skinner, 1998;

Wolanin & Steele, 2004). According to a 2003 report from the National Center for

Education Statistics, students identifying as a person with a disability for the 1999-2000

academic year comprised nine percent of all undergraduates. This percentage increased to

11 percent of all undergraduates for the 2003-2004 school year (United States

Department of Education, 2006). While the number of students with LD attending

college is increasing, students with LD often do not graduate from college at the same

rate as students without disabilities (Madaus & Shaw, 2006; Murray, Goldstein, Nourse,

& Edgar, 2000). Research examining what helps college students with LD to persist until

conferred a degree is scarce and lagging behind current trends; therefore, institutions of

higher education must figure out what students with LD need to succeed academically so

that the institutions can properly support these students during their matriculation (Getzel,

2008).

Murray and colleagues (2000) studied the postsecondary school attendance and

completion rates of students with LD who graduated high school in 1985 and 1990.

Students with LD (n=168) were compared to students without disabilities (n=315). The

authors found that students with LD were less likely than students without disabilities to

have attended any postsecondary institution. In addition, when students with LD pursued

postsecondary education, they were more likely to have attended training programs or

community colleges whereas most of their non-disabled peers attended 4-year colleges.

Five years after high school graduation, almost 81% of students with LD had not graduated from a postsecondary educational institution compared to 64% of students without disabilities. At the ten year mark, 56% of students with LD had not graduated from a postsecondary educational institution compared to 44% of students without disabilities. The authors also investigated differences between students with LD and non-disabled students regarding employment status and income, but no significant differences were found.

In an article on retention and college students with disabilities, Belch (2005) wrote "attendance on campus does not equate to earning a degree" (p. 5). Indeed, the study by Murray and colleagues demonstrated this fact. Retention studies often focus on a student's adjustment to the college environment during the first year, yet adjustment to college can be complicated by having a disability. Belonging, involvement, and purpose are traditional retention concepts for all students. Belonging is the sense that you matter. Involvement describes co-curricular or extra-curricular events. Purpose is evident when students have goals and plans on how to meet those goals.

Other concepts which contribute to retention specifically for students with disabilities are self-determination and universal design. Self-determination refers to knowing your strengths and weaknesses as a student and being able to communicate what those are to others. For students with disabilities, knowing which accommodations would be helpful, and requesting those accommodations are also a part of acting in a self-determined manner. Universal design for learning (UDL) seeks to make the curriculum accessible to the greatest number of students, which often includes using multiple formats of presentation (textbooks, online resources, lectures) or assessment (papers,

presentations, tests). Belch asserted that, "institutions of higher education have a responsibility to provide appropriate support that allow these students [with disabilities] to persist in earning a college degree and prepare for a meaningful career" while noting that "interestingly, many of the strategies that are useful in meeting these goals are equally as effective with students without disabilities" (p. 12).

Supporting college students with LD requires knowledge and application of effective interventions which often are intended to level the playing field for these students. Therefore, crucial to their success is having appropriate support services (Wolanin & Steele, 2004) since students with disabilities are more likely to have less positive results post high school graduation than youth without disabilities (Benz, Lindstrom, & Latta, 1999). Overall, students with disabilities are less likely to graduate high school, are more often unemployed or underemployed, and are more likely to make less money than their non-disabled peers (Blackorby & Wagner, 1996). Although most students with disabilities report a desire to pursue postsecondary education, many of them never enroll in college (Madaus & Shaw, 2006; Murray et al., 2000). While some students with disabilities enter college as many as three years later than students without disabilities (Wolanin & Steele, 2004), many of those that do enroll often do not complete their college education (Madaus & Shaw, 2006; Murray et al., 2000). In fact, attainment of a college degree greatly affects employment rates, and even more so for persons with disabilities (Stodden, Whelley, Chang, & Harding, 2001). Persons with disabilities who earn a college degree are employed and paid at levels similar to those without disabilities (Madaus & Shaw, 2006).

It is important for postsecondary educational institutions to consider how to

support students with LD for academic success which contributes to their overall life success. Success for college students with LD has been associated with use of academic accommodations and disability related services (Allsopp, Minskoff, & Bolt, 2005; Alster, 1997; Rath & Royer, 2002), students' self-concept and perceptions of social support (Cosden & McNamara, 1997), students' self-determination (Sarver, 2000) and acceptance from instructors (Murray & Wren, 2003). Institutional support for students with disabilities is most often offered as academic classroom accommodations and services offered and endorsed by an Office of Disability Services as a result of the Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973.

Disability Service offices (also popularly known as Office for Students with Disabilities or Disability Resource Center) arrange for and sometimes provide academic accommodations to students with disabilities, as well as encourage their social development and engagement in the nonacademic aspects of the collegiate environment. Disability Service (DS) offices offer a variety of services, which include, but are not limited to: academic accommodations (extended testing time, note taker, reader for exams, private testing space, use of a computer for exams, interpreting services for deaf or hard-of -hearing students, audio books for students who are blind, have dyslexia or might otherwise benefit from listening to, rather than reading, a text, etc.), mentoring/coaching, and advocacy. Having support from the DS on campus can influence how students with disabilities feel about themselves and their confidence in their academic abilities (Cosden & McNamara, 1997).

Navigating the college environment requires social skills, self-advocacy, and self-determination (Layton & Lock, 2003; Page, Holland, Rand, Gartin, & Dowling, 1981;

Stodden et al., 2001; Wolanin & Steele, 2004). Self-advocacy is also helpful to students with disabilities not only socially with peers, but in communicating with instructors, faculty and staff at the university (Dukes & Shaw, 2008). In fact, self-advocacy has been considered a crucial element of student success, along with such concepts as self-determination and self-empowerment (Brinckerhoff, 1993; Field, 1996). The lack or underdevelopment of self-determination skills is thought to be one reason why students with disabilities are less successful at the postsecondary educational level (Izzo & Lamb, 2003; Stodden et al., 2001).

Rationale for the Study

The rationale for this study rests upon several tenets. First, there has been an increase in the number of students with LD enrolling in postsecondary educational institutions, yet these students are often less likely than their non-disabled peers to experience success in college/university (Benz et al., 1999; Blackorby & Wagner, 1996; Lock & Layton, 2001; Skinner, 1998; Wolanin & Steele, 2004). Several legislative acts, such as the Americans with Disabilities Act (1990), the ADA Amendments Act of 2008, and the Rehabilitation Act of 1973, have contributed to the increase noted above by prohibiting discrimination and ensuring equal access for persons with disabilities.

Second, in the college environment, equal access for students with LD is commonly facilitated by the use of academic accommodations, including extended testing time, and other services including individual coaching and study skills training. Several studies have shown that without academic accommodations, students with LD perform much more poorly on tests and achieve poorer end-of-semester grades than their peers without disabilities (Alster, 1997; Trammell, 2003). This is ironic given students

with disabilities report self-perceptions of working harder and longer than other students without disabilities to succeed academically (Denhart, 2008; Field, Sarver, & Shaw, 2003). However, with accommodations, students with disabilities perform at a level equal to their non-disabled peers when all other variables related to college success, such as Scholastic Aptitude Test (SAT) score, and demographic variables (age, gender, ethnicity, language background) are controlled (Alster, 1997; Trammell, 2003). Thus, accommodations play a crucial role in maximizing the academic performance of students with disabilities.

Experts suggest that some students with LD do not register with DS and even those that choose to register often do not use their assigned accommodations because: 1) they do not want to be perceived as "different" from any other student without LD; 2) they would prefer not to be labeled and want to avoid any stigma associated with having a disability; 3) they want to succeed without using their accommodations; 4) they think they will be perceived as attempting to cheat; or 5) they are unsure about how to use their accommodations (Denhart, 2008; Getzel, 2008; Hadley, 2006; Madaus, Gerber, & Price, 2008; Troiano, 2003).

Research has documented that accommodations help students with LD to perform better academically and studies have examined the availability of accommodations; however, how students utilize their accommodations and/or other available services from DS has not been investigated as thoroughly (Allsopp et al., 2005; Alster, 1997; Runyan, 1991). Also, it is not clear why some students with LD do not use accommodations at the college level. Experts have speculated the reasons, but there is no empirical research

which has provided evidence regarding how students with LD use or why they do not use their accommodations and services.

This lack of evidence in the literature exists for several reasons. First, students with LD transitioning from high school to college often do not realize the change that occurs in what is expected of them (Hadley, 2004; Wolanin & Steele, 2004). In high school, accommodations and services for students with 504 plans or Individualized Education Programs (IEP) are mandated by law and the school is obligated by law to provide these services to students. Given students' status as minors, teachers and parents often take a more active role in constructing and implementing the IEP used to guide the education of every student with a disability. Students often do not attend the IEP meetings nor do they play an active role in such meetings, not fully participating at the same levels as their parents and teachers (Brinckerhoff, 1994; Field et al., 2003).

Conversely, at the college/university level, students are considered adults and must make academic decisions for themselves. College students with LD must be more proactive in pursuing and obtaining needed accommodations. Students must self-identify as a person with a disability and present documentation of their disability (Brinckerhoff, Shaw, & McGuire, 1992). This documentation must meet strict verification standards. Often the standards to qualify as a student with a disability in college are more rigorous than the standards at the secondary educational level. These differences between high school and college may account for the reason that some university students with LD do not register with DS (Dalke & Schmitt, 1987; Tincani, 2004).

Additionally, in an environment where students must make decisions independently, self-determination is an important skill set for students to possess as they

navigate a more complex academic environment. Self-determination is evidenced when a person knows his/her strengths and weaknesses, can plan actions, evaluate options, make and act upon decisions, and adjust as necessary during this process (Field & Hoffman, 1994; Malian & Nevin, 2002). Self-determination is a critical set of skills which experts suggest has an influence on success at the college/university level and in adult environments; however, students often do not learn self-determination in high school or in college (Brinckerhoff, 1993, 1994; Brinckerhoff et al., 1992; Dukes & Shaw, 2008; Field et al., 2003; Foley, 2006; Stodden et al., 2001).

As a third point, persons with LD have previously been found to lack self-determination skills. Self-determination has been written about in the literature and implied in the legislation to be important to the quality of life and overall success of persons with disabilities (Bremer, Kachgal, & Schoeller, 2003; Field et al., 2003; Wehmeyer & Schwartz, 1997). In the college environment, where students not only pursue higher learning and prepare for their future careers, but also live and interact socially with their peers, faculty and other university staff, self-determination is a critical skill to obtain (Adams, 2007; Field, 1996; Sarver, 2000). Dukes and Shaw said, "self-determination is emerging as an evidence-based practice and is one of the keys to success in adult environments" (2008, p. 107). However, there is little evidence of the relationship between self-determination and college success for students with LD.

Transition, the process of moving from high school to college or work for students with disabilities, has best highlighted the need for students with disabilities to possess and exercise self-determination to ensure that their rights are protected, that they are accommodated as needed, and that they reach their intended goals. Self-determination

has been postulated as a skill set necessary for development across the lifespan, not just at critical adolescent moments (Mellard & Hazel, 1992). In addition, research on persons with disabilities has demonstrated the role of self-determination in career decision-making, work satisfaction, and tenure (Breeding, 2008; Brinckerhoff et al., 1992; Izzo & Lamb, 2003). Theories of self-determination have been proposed and operationalized into curriculum with actual measures developed, primarily with a secondary school focus; however, there is a lack of research investigating these concepts with those same students, years later, in college (Bremer et al., 2003; Field, 1996). A significant gap exists in the literature such that many resources are directed into transition planning and program planning at the postsecondary educational level, yet we do not know if self-determination is as important in the college environment as is postulated by theory.

The fourth tenet important to this study is that of college success, as measured by grade point average (GPA). GPA has been used widely as a measure of academic success at the college level. Other measures of academic success include SAT score, number of credits attempted and completed toward the goal number of credits needed for graduation, and persistence in one's chosen major (Allsopp et al., 2005; Sarver, 2000; Trainin & Swanson, 2005; Trammell, 2003). GPA is used as an "objective" means by which to compare the academic performance of students to one another or one student to him/herself at different points in time. GPA is also frequently a criterion for admission to the university, a criterion for awarding scholarships and for continuance and matriculation at the university. GPA has been used as a screening tool for hiring in the workplace for recent college/university graduates (Walters, 1995). Employers may believe that success in the college environment will transfer to the work environment. In

the academic environment, GPA is a standard variable included in research with college/university students as participants. GPA is used in the current study because: it is the most popular measure of academic success, it is easily accessible, and it provides an objective and efficient means of comparison between students and other studies measuring college success. Therefore, the current study seeks to understand the relationship between self-determination skills, use of accommodations, use of services, and college success, as measured by GPA, for undergraduate juniors and seniors with LD registered with their campus DS.

Summary of Key Research Findings

Self-determination has been postulated as a key skill set for students with LD. Much of the literature on self-determination has been theoretical, with empirical studies focused on participation in the IEP process (Brinckerhoff, 1994; Field et al., 2003). For example, Field and Hoffman (1994) formulated a model of self-determination, as have other researchers, and these models have become the basis for curricula and instructional materials, primarily focused on the secondary education student. This is important as Wehmeyer and Schwartz (1997) found that high school students who were self-determined were more successful than their non-self-determined peers. Those self-determined students were employed more often and earned more per hour than their peers who lacked self-determination. At the postsecondary level, Sarver (2000) found a positive relationship between self-determination and GPA for university students with LD. This is one of the only studies of its kind, linking self-determination with academic success, as measured by GPA.

Accommodations and services are important in closing the achievement gap

between students with LD and their non-disabled peers. Rath and Royer (2002) and Stodden et al. (2001) have reported on the most commonly used accommodations and services for students with LD. While legislation mandates reasonable accommodations, research findings have been somewhat contradictory on the issue of effectiveness of accommodations. The work of Alster (1997) and Runyan (1991) have demonstrated that extended testing time was an effective accommodation for students with LD. Conversely, Keim, McWhirter and Bernstein (1996) and Trammell (2003) found no significant relationship between accommodations such as extended testing time and GPA. In other words, testing accommodations did not produce a higher GPA. However, this one type of accommodation is not the only accommodation or other support offered to students with LD. There are also other accommodations and services provided or arranged by the DS office on campus which are thought to be of some benefit to students with LD.

Common services available to students with LD include study skills, organizational coaching, and note-taking training. These services have been studied for their effect on GPA. Allsopp et al. (2005) found that the GPAs of students with LD and ADHD increased after utilizing such services. While the literature has documented the need for self-determination skills to be explicitly taught to students with disabilities, it is unclear how self-determination skills might influence academic success for college students with LD. We also do not know if there is a relationship between self-determination and academic success and if that relationship is mediated by use of accommodations and services.

Statement of the Problem

The problem is that we do not know which factors are important to college success for students with LD and if these factors are related. This study investigated some of the factors (such as accommodations and services) believed to be important to college success for students with LD. The question is: is there a relationship between self-determination, use of academic accommodations, and use of other related services, and college success, as measured by grade point average (GPA), for undergraduate juniors and seniors with LD who are registered with their campus DS? While enrollment of students with LD at postsecondary educational institutions across the nation has increased, the graduation rate of these students is still significantly lower than that of their non-disabled peers. This gap is important as a college degree is associated with greater employability and a higher income. So, students with LD who do not earn their college degree are at risk for poorer life outcomes. Factors related to the academic success of students with LD must be investigated to identify strategies that might improve college outcomes.

Why is this Problem Interesting?

My interest in this topic was born out of my work as the customer service coordinator and counselor at a DS office at a large, public, research-intensive, state university over a three-year period. I met with students who presented with various disabilities, most often learning disabilities and/or ADHD, but also psychiatric disabilities and physical/medical disabilities. What I observed was that students were often ill-prepared to navigate the waters of a university environment. They were frequently unable to describe their disability, or their strengths and weaknesses, and often were

anxious about talking to instructors about their disability and necessary academic accommodations for their success. Those students who were able to articulate their disability and their strengths and weaknesses, seemed to be more confident when talking with me and did not express many concerns about talking with instructors.

These observations led me to search the literature to see if any previous research had investigated this issue. Indeed, the literature described the importance of self-advocacy and self-determination for students with disabilities (Brinckerhoff, 1994; Field, 1996; Hadley, 2006; Layton & Lock, 2003; Lock & Layton, 2001; Sarver, 2000; Skinner, 1998). The relationship between these concepts and academic success had been postulated, but empirical research supporting this relationship was lacking. Previous research also investigated the use of accommodations and academic success. Using accommodations was found to help students with LD to achieve academic success (Alster, 1997; Finn, 1998). Several researchers also underscored the connection between a lack of self-advocacy and self-determination skills and poorer academic outcomes for college students with learning disabilities (Field et al., 2003; Sarver, 2000). Yet, no studies have examined the relationship between self-determination, use of accommodations, and use of services and academic success for students with LD. Suggestions for future research and implications for practice have included fostering self-determination and self-advocacy skills in students with disabilities, increased funding for transition programs and support at the postsecondary level, and more research on effective interventions regarding academic success for students with LD (Getzel, 2008; Izzo & Lamb, 2003).

The current study seeks to extend previous research by investigating academic

success, as measured by GPA, in students with LD and comparing GPA with self-determination skills, use of academic accommodations, and use of services. Previous studies have attempted to link the use of disability services and accommodations with GPA (Trammell, 2003) while other studies have investigated the relationship between self-determination scores and GPA (Sarver, 2000). However, never was use of accommodations and use of services included as a mediating factor in understanding the relationship between self-determination and academic success as measured by GPA.

This relationship, which has previously been overlooked, is important for several reasons. First, studies about students with disabilities transitioning to college or work and independent living environments have identified psychosocial adjustment, (i.e. self-determination), academic development (i.e. accommodations, GPA), and college/community orientation (services) as important to the transition process for the success of students with disabilities (Gartin, Rumrill, & Serebreni, 1996). Second, several studies (Malian & Nevin, 2002) have found that one component of self-determination is knowing when and who to ask for help when help is needed. Accommodations are a form of help for students with LD. Self-determination involves asking for accommodations; therefore, we need to test the relationships between these variables. This study was unique in that it investigated use of accommodations and use of services as a mediator between self-determination and academic success.

Definition of Terms

For clarity, the following terms are defined as they are used in this study. The Individuals with Disabilities Education Act (IDEA) 2004 defined learning disabilities as:

Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.

Self-determination is "evidenced when individuals with disabilities are observed to exercise choices as they make meaningful decisions related to the quality of their life circumstances (e.g., home, school or work, community)" (Malian & Nevin, 2002, p. 68). Exploring options, goal setting, decision making, communication skills, communicating for self, using humor, risk taking, and initiating actions are all considered behaviors of self-determination; therefore, self-determination is not one finite skill, but a set of skills. In other words, there are components of self-determination which include cognitive skills, communication skills, and one's behavior. Self-advocacy is often considered one component of self-determination. For students with disabilities, self-determination can be summarized as simply knowing one's own strengths and weaknesses, and being able to ask for accommodations when necessary (Durlak, Rose, & Bursuck, 1994; Field, 1996).

Use of accommodations refers to the academic accommodations approved by and provided by the Disability Service. Students implement DS approved accommodations in their courses and/or academic program. Accommodations are individualized for each student with a disability. Accommodations include, but are not limited to: Extended Testing Time (time and a half or double time), Note-taking, Reader/ Scribe, Computer, Audio Books, and Interpreter/C-Print/CART. C-Print and/or CART are captioning services, where spoken word is instantly translated into text with the use of a computer. Use of accommodations is measured by: specifically, which accommodations students

report having ever used; and in general, by the frequency students report using accommodations in their courses.

Use of services means college students' accessing and implementing services either provided by or arranged for by the Disability Service. This includes, but is not limited to: accommodation implementation, academic coaching (time management, organization, study skills, etc.) and help talking with instructors. Students report, specifically, the services that they have ever used, as well as, in general, the effectiveness of services. This study specifically examined academic coaching and help taking with instructors. The general effectiveness of services also serves as a proxy for use of services.

Academic success is understood to mean doing well and progressing toward a degree in the academic environment. While academic success has many indicators such as number of credits earned, grade point average (GPA), or class ranking, etc., in this study, academic success is measured by cumulative GPA.

Research Questions and Hypotheses

Several research questions and hypotheses were formed. For undergraduate juniors and seniors with LD registered with their campus disability service in state universities and independent colleges:

1. Is there a relationship between self-determination skills and college success as measured by GPA?

    H1: No relationship will be found between students' self-determination scores and their cumulative GPA.

2. Does the use of accommodations impact college success as measured by

GPA? Does the use of services impact college success as measured by GPA?

H2: No relationship will be found between students' use of

accommodations and their cumulative GPA.

H2a: No relationship will be found between students' use of services and

their cumulative GPA.

3. Is there a relationship between use of accommodations and self-

determination? Is there a relationship between use of services and self-

determination?

H3: No relationship will be found between students' self-determination

scores and use of accommodations.

H3a: No relationship will be found between students' self-determination

scores and use of services.

4. How do self-determination skills, use of accommodations, and use of services

interact to affect college success, as measured by GPA?

H4: No relationship will be found between self-determination, use of

accommodations, use of services, and cumulative GPA.

5. Does the use of accommodations mediate the impact of self-determination

scores on college success as measured by GPA? Does the use of services

mediate the impact of self-determination scores on college success as

measured by GPA?

H5: Use of accommodations will not mediate the relationship between

self-determination and cumulative GPA.

H5a: Use of services will not mediate the relationship between self-

determination and cumulative GPA.

Significance of the Study

      This study has significance and relevance to high school and college students, parents and families, special educators, school counselors, college/university disability support office personnel, rehabilitation counselors, and college/university faculty, staff and administrators. As previously stated, self-determination, while an important skill for students with disabilities, is often not taught to students at either the high school or college levels. Students who lack self-determination are often regarded as less prepared for postsecondary education than those who have this skill (Brinckerhoff, 1994; Field et al., 2003; Layton & Lock, 2003; Mellard & Hazel, 1992). The current study provides evidence that supports the development of self-determination skills for academic success in college students with LD.

      The results of this study are important in program planning and evaluation (by educators, counselors, DS staff and administrators) for students with LD at both the high school and college levels. High schools might include direct instruction in self-determination skills in the transition planning for students, as well as education about accommodations in college. Colleges and universities might also address self-determination skills within the individual and group counseling offered at Counseling Centers or through educational courses. DS offices could also directly address these skills with students during the students' registration appointments and during any subsequent contact with students with LD. With increased skills in self-determination, college students with LD might better "direct and manage their education and ultimately their careers" (Getzel, 2008, p. 214).

Further, the results of this study highlight areas in which students and parents can discuss strategies for identifying needed resources and using such resources (like DS) to maximize academic success. Brinckerhoff et al. (1992) wrote that "it is important to bear in mind the financial, emotional, and psychological costs to students with learning disabilities if they are eligible for admission but are at risk for failure" (p. 419). In this respect, this study has significance for college admissions offices and persistence/ retention studies. Colleges and universities must plan for the complete academic success of students with disabilities, meaning not just admission, but matriculation and graduation as well.

Chapter two presents a review of the literature relevant to the study. Chapter three discusses the methodology of the study. Chapter four details the results of the study and chapter five provides a discussion of those results.

CHAPTER TWO: Review of Related Literature

The purpose of this chapter is to review the literature on interventions, self-determination, use of academic accommodations, and use of services for college students with LD. Each section provides information related to answering the research questions: Is there a relationship between self-determination skills and college success as measured by GPA? Does the use of accommodations impact college success as measured by GPA? Does the use of services impact college success as measured by GPA? Is there a relationship between use of accommodations and self-determination? Is there a relationship between use of services and self-determination? How do self-determination skills, use of accommodations, and use of services interact to affect college success, as measured by GPA? Does the use of accommodations mediate the impact of self-determination scores on college success as measured by GPA? Does the use of services mediate the impact of self-determination scores on college success as measured by GPA?

Background on Disability and Education

Historically, a postsecondary education was not an option for a person with a disability (Johnson, 2003; Shaw, 2001; Smart, 2001). If a person had a disability, he or she was thought of as unable to learn and inferior to a person without a disability. There was no legal protection for persons with disabilities because they were seen as incapable of caring for themselves; therefore, they were treated in a paternalistic way (Johnson, 2003; Smart, 2001). The advocacy efforts of many persons with disabilities, along with their parents, led to the passage of many laws to benefit persons with disabilities and encourage their inclusion and continued participation in society-at-large (Johnson, 2003). A greater societal understanding of disability and the importance of work also influenced

the passage of legislation to ensure access for persons with disabilities to every sphere of life.

After many injustices experienced by persons with disabilities, a national effort was undertaken to establish civil rights for this population during the 20th century. Given the need for equal protection against discrimination under the law, several legislative acts (e.g., The Individuals with Disabilities Education Act [IDEA] and the Americans with Disabilities Act [ADA]) were passed to ensure access for persons with disabilities to most sectors of society: education, employment, transportation, and housing.

The Legislation

The Education of All Handicapped Children Act (subsequently referred to as EHCA, 1975, Public Law 94-192) was signed into law to insure the right to a "free appropriate public education in the least restrictive environment" for children with disabilities 3-21 years of age (Woody, 1994). Special education and related services would be provided free of charge and each child would have an Individualized Education Program (IEP). Students with disabilities were to be educated alongside their non-disabled peers if such placement was the most appropriate environment. In 1984, the Developmental Disabilities Act (Public Law 98-527) determined that employment be considered as the primary, desired outcome of education for students with disabilities. This act prompted a focus on career development for students with disabilities to help them transition into the work world.

In 1990, the EHCA amendments renamed the law the Individuals with Disabilities Education Act (IDEA). It mandated that transition services be put in place by age 16 to

support a child with a disability in moving from school and adolescence into independent living as an adult. In section 300.29 of IDEA, transition services were defined as,

> A coordinated set of activities for a student with a disability that is designed within an outcome-oriented process, that promotes movement from school to post-school activities, including postsecondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation.

IDEA was meaningful in several ways. First, IDEA increased the scope of transition services to include not just education and career, but also independent living. Concepts such as self-determination and self-advocacy became part of the transition process. Although self-determination was not mandated in this legislation, it was implied as a crucial component to the transition process, given whatever services provided are to be based upon the individual student's needs, strengths, interests and preferences. Secondly, IDEA emphasized the need for transition activities to be a coordinated set of activities. An interdisciplinary team was to be established including the student, the parents, general education teachers, special educators, and community service agency providers. Such coordination of services was intended to make the transition process more seamless for students and parents. IDEA is the law which governs primary and secondary educational experiences for students with disabilities.

In 2004, IDEA was reauthorized and the definition of transition was updated. Section 300.43 of IDEA 2004, states that transition services are,

> designed to be within a results-oriented process, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child's movement from school to post-school activities, including postsecondary education, vocational education, integrated employment (including supported employment); continuing and adult education, adult services, independent living, or community participation; is based on the individual child's needs, taking into account the child's strengths, preferences, and interests; and includes instruction, related services, community experiences, the development of employment and

other post-school adult living objectives, and, if appropriate, acquisition of daily living skills and functional vocational evaluation.

Other changes to IDEA that occurred in 2004 affected the assessment and evaluation requirements. School districts are not required to completely re-evaluate students every three years. This change may disadvantage students with LD who must present current (within the last three years) documentation to obtain accommodations at the postsecondary level (Madaus & Shaw, 2006). In addition, changes present in IDEA (2004) may lead to the discrepancy model (a difference between performance and verbal intelligence), no longer serving as the standard for identifying the presence of a learning disability (Madaus & Shaw), in favor of other, research-based, methods such as response to intervention. In this method, students are given opportunities to respond to interventions in their main classrooms before being tested and diagnosed as having a learning disability. Such a change in the process of identifying a learning disability would necessitate changing the tests which are utilized to confirm the presence of a learning disability. However, unless universities change their documentation requirements, students classified as having a learning disability at the secondary educational level, may not have adequate documentation to receive accommodations and services at the postsecondary level (Madaus & Shaw).

IDEA (2004) also mandated that students are provided with a Summary of Performance (SOP) upon their exit from high school. Madaus and Shaw (2006) detail examples of the SOP being used in various states across the nation, although IDEA (2004) left states to determine the format of what should be included in the SOP. The SOP examples from various states cover areas such as a student's postsecondary goals, strengths and weaknesses, and preferences. The documentation used to arrive at a

diagnosis of LD is also included in the example SOPs as are lists of accommodations, modifications, and assistive technologies utilized at the secondary level. This information would be of great value to the student with LD moving into the college or university environment seeking to obtain needed accommodations and services.

Different laws are in effect for students with disabilities in the postsecondary educational environment. IDEA is an educational law, while ADA, the law applicable in the postsecondary environment, is a civil rights law (Janiga & Costenbader, 2002). Civil rights laws such as Section 504 of the Rehabilitation Act of 1973 dictated that no institution receiving Federal funding can discriminate against persons with disabilities. Furthermore, the institution must provide reasonable accommodations and program accessibility. The Americans with Disabilities Act of 1990 (ADA) was written to end the "isolation, segregation and discrimination against persons with disabilities" (Woody, 1993, p. 71). The ADA addressed employment, public services, public accommodations, telecommunications, and miscellaneous provisions in an effort to make society accessible for persons with disabilities to lead full, productive lives engaged in the world of work and independent living just like persons without disabilities.

Recent amendments to the ADA (ADAA, 2008) have increased the scope of protection for persons with disabilities. With these amendments, the definitions of disability and major life activities are interpreted more broadly. For example, reading and communicating (key areas of impairment for persons with LD) were not originally considered major life activities in the ADA of 1990. However, with the 2008 amendments, reading and communicating are now included as major life activities.

In August 2008, a reauthorization of the Higher Education Opportunity Act

(HEOA) was signed into law (National Center for Learning Disabilities, 2008). This act further expands the educational opportunities for college and university students with disabilities, particularly with regards to academic accommodations, educational facilities, teaching methods (universal design), recruitment for admission, and retention during matriculation for increased graduation rates.

The above laws ensure equal opportunity for persons with disabilities just like the access that persons without disabilities enjoy. These laws and the reasonable accommodations they mandate help to close the achievement gap between students with disabilities and students without disabilities. In particular, for youth with disabilities, particularly minority youth, the percentage of those who go to college after high school or transition successfully into the work world has been significantly lower than that of students without disabilities (Luecking & Fabian, 2000; Murray et al., 2000). In particular, students with learning disabilities have not met with the same success in the college environment as students without disabilities (Cosden & McNamara, 1997; Getzel, 2008). Students with LD often do not graduate from college at the same rates as their peers without disabilities (Murray et al., 2000).

Theoretical Foundation

The current study draws on a psychiatric rehabilitation theory of case management articulated by William Anthony and colleagues. Anthony, Forbess, and Cohen (1993) wrote simply that success and satisfaction, in chosen environments, is determined by skills and supports. While the population these authors highlight is significantly different from the participants in this study, the tenets of their theory are applicable for understanding how to support students with LD as they pursue success in a

college environment. Two of those tenets include: persons with disabilities can learn skills, and that there is a positive relationship between skills and outcome. This study focused on these two tenets, postulating that there is a positive relationship between self-determination skills and the outcome of academic success as measured by GPA, and that when such skills are explicitly used, college students with LD benefit academically. As Anthony et al.'s theory is applied to this study, academic <u>success</u> (GPA) might be determined by self-determination <u>skills</u> and the use of accommodations and services which might be considered environmental <u>supports</u>.

Considering all of the above, self-determination, use of accommodations, use of services, and college success, as measured by GPA, are important concepts to investigate in a college population of students with LD who are registered to receive accommodations and services from DS. Several researchers have underscored the importance of understanding how motivational factors, like self-determination, affect GPA and use of services, as well as how support services are associated with academic success, as measured by cumulative GPA (Denhart, 2008; Finn, 1998; Keim et al., 1996; Sarver, 2000). The current study seeks to replicate past research findings, as well as extend previous research by postulating that use of academic accommodations and services mediates the relationship between self-determination and academic success, as measured by GPA.

Research Process

A search was conducted of multiple databases using the key words "self-determination," "college students," "learning disabilities," "postsecondary education," "disabilities," "disability," "accommodations," and "interventions." Databases searched

included Academic Search Premier, Education Abstracts, Education Research Complete, ERIC, Family & Society Studies Worldwide, Professional Development Collection, PsycArticles, Psychology and Behavioral Sciences Collection, PsycInfo, Social Work Abstracts, and SocINDEX with Full Text, and Teacher Reference Center. These searches returned a myriad of articles about college students with learning disabilities. However, lacking enough empirical, current articles, a follow-up search was conducted using the periodicals most likely to contain desired articles. This electronic search included the *Journal of Learning Disabilities, Journal of Postsecondary Education and Disability, Learning Disability Quarterly, Exceptional Children* and the *Journal of Educational Psychology*. After reading each article and scanning the references, several more articles containing empirical studies were obtained. Another search was conducted using subjects such as "higher education," "teaching methods," and "instructional effectiveness." Over 95 articles and other resources were utilized in this study.

Transition

Transition studies have investigated the importance of self-determination as students with disabilities prepare to enter the postsecondary educational institution of their choice. As described by Gartin et al. (1996), The Higher Education Transition model includes psychosocial adjustment, academic development, and college and community orientation as key areas to address for students to be successful in the transition process. Psychosocial adjustment includes self-advocacy, problem-solving, and social skills. More specifically, self-advocacy and communication are important psychosocial skills for students with disabilities transitioning to the college environment. Academic development includes accommodations, goal setting, and college services.

Students need study skills and information regarding obtaining classroom accommodations. College and community orientation includes college orientation, college resources and activities and campus support groups. For students with disabilities to be successful in the postsecondary educational environment, this three-pronged approach which addresses every area of their lives: social, academic and community, is necessary preparation for the transition to college (Gresham & Elliott, 1989).

Integrating all of these areas, Hughes and colleagues (1997) questioned teachers and found several strategies which fulfilled the goals of transition: developing support in the environment and increasing student competencies. What these authors found as most important was teaching self-management to the students, providing opportunities to learn and practice social skills and decision making, and identifying student strengths and areas needing more support.

Adjusting to the campus community at large is a task for all new, incoming college students. However, this adjustment can be even more difficult for students with LD who must often seek out additional services for their success in the collegiate environment. Wilson, Getzel, and Brown (2000) surveyed students with disabilities and interviewed faculty at a state university to uncover how the postsecondary campus climate might be enhanced for students with disabilities. Student participants reported needing faculty to partner with them in regards to classroom accommodations. In other words, students thought their academic success was influenced to some extent by the faculty member's sensitivity to and awareness of the disability, regardless of the support received by students from the disability office. Interestingly, faculty reported a desire to have greater input regarding academic accommodations and modifications. In another

study (Denhart, 2008), college students with LD reported their reluctance to request accommodations from faculty due to student perceptions that faculty did not have an adequate awareness of LD.

In a mail survey of 74 college service coordinators in New York, Janiga and Costenbader (2002) found that extended time on tests and note-takers were offered by more than 75% of the institutions surveyed. The focus of the study was on postsecondary coordinators' satisfaction with transition services and preparation based on their interactions with students with LD using accommodations and services at the postsecondary level. College service coordinators were most satisfied that students requesting accommodations and services had current assessments (within last three years) conducted by their high school. Coordinators were least satisfied with students' self-advocacy skills, the level of information students received from high school staff prior to college enrollment about available services in college, and the documentation the high schools provided on the specific accommodations students needed for academic success. Janiga and Costenbader stated,

> High school transition teams need to provide students with a better understanding of their strengths and weaknesses and of the specific accommodations they need. Career counseling, social skills training, and the development of self-awareness and self-advocacy skills need to be a part of every transition plan for students with LD who seek postsecondary education.

> With more knowledge of their disabilities, students would be better able to explain their needs for specific learning and testing modifications to professors. (p. 467)

Various methods have been found to be effective for increasing the academic performance of students with LD. College students with LD can be supported for academic success through classroom accommodations, peer support groups, and self-

advocacy training (Layton & Lock, 2003; Mellard & Hazel, 1992).

Self-Determination

 Self-determination has become an important topic within the field as students with disabilities transition into adulthood and enters either the workforce or postsecondary education (Bremer et al., 2003; Field et al., 2003; Madaus et al., 2008). Malian and Nevin wrote that "self-determination is evidenced when individuals with disabilities are observed to exercise choices as they make meaningful decisions related to the quality of their life circumstances (e.g., home, school or work, community)" (2002, p. 68). Self-determination requires that the person with a disability utilizes decision-making skills in a way that is significant to his or her life. Unfortunately, many youth with disabilities and LD specifically, lack self-determination and are often unaware of how to reach their stated goals. In other words, students lack knowledge of their own strengths and weaknesses such that they can make accurate self-assessments and communicate well with others (Trainor, 2007). Not only does this lack of self-determination have an effect on student success in the college environment (Getzel, 2008), but also in the work world (Izzo & Lamb, 2003).

 Field and Hoffman (1994) developed a model of self-determination, as applied to persons with disabilities. In the process of developing this model, the authors reviewed the literature using descriptors such as self-advocacy, assertiveness, empowerment, choice-making, and competence. Through a series of interviews, the authors found that their model would be most complete if it included both internal factors as well as behavior. For example, attitude and confidence were considered internal factors, while it was acknowledged that others can support or hinder one's self-determination.

Furthermore, developing skills to act in a self-determined manner was considered a critical part of the model. The authors observed students with and without disabilities to understand which behaviors were associated with self-determination. The results indicated that exploring options, goal setting, decision making, communication skills, communicating for self, using humor, risk taking, and initiating actions were all considered behaviors of self-determination. Interestingly, only risk-taking was significantly different between students with disabilities and students without disabilities. These results provide an understanding of self-determination as a life skill, applicable for students without disabilities and for students with disabilities in particular.

The model Field and Hoffman (1994) proposed begins with knowing yourself and valuing yourself. This includes knowing strengths, weaknesses, needs and preferences, options and deciding what is important to you. Valuing yourself includes knowing your rights and responsibilities and taking care of you. When knowing and valuing yourself interact, the next thing that is possible is for the individual to plan. This includes setting goals, planning actions to meet those goals, and anticipating the results of one's actions. After planning, the next step is to act. To act means to take risks, communication, access resources and support, negotiate with others and be persistent. After acting, one will experience the outcomes and learn. Actual outcomes can be compared to expected outcomes, actual performance can be compared to expected performance, and success can be realized or adjustments can be made as necessary. As success or adjustments occur, this cycle starts again with knowing yourself and valuing yourself. In this way the authors posited that the actions interpreted as self-determination also produce more self-determined behavior.

A hallmark of self-determined behavior for a college student with LD is being able to state his need for supports and accommodations (Field, 1996). In fact, for students who enter and complete an undergraduate degree, they commonly have some level of self-determination skills and a lack of these skills can be a significant obstacle to completing their degree (Finn, Getzel, & McManus, 2008). Field reviewed several models of self-determination, each with a different focus. The Field and Hoffman (1994) model was described as being focused on individual beliefs, knowledge and skills. The second model (Wehmeyer 1992, as cited in Field, 1996) focused on self-determination as an outcome indicative of progression to adulthood. Yet a third model (Mithaug, Campeau, & Wolman, 1994, as cited in Field, 1996) focused on self-determination as a self-regulatory process and the fourth model Field described was based on an ecosystems perspective (Abery, 1994, as cited in Field, 1996). Curricula and instructional strategies to increase self-determination in youth with LD were also reviewed. Field concluded that although the specifics of each model differ, overall, the general concepts addressed in each model are the same and the importance of self-determination for youth with disabilities could not be overstated.

In a review of the literature on self-determination, Malian and Nevin (2002) wrote about two additional models of self-determination, besides the Field and Hoffman model. Lehman, Deniston, Tobin, and Howard (1996) focused on assessment, planning and strategy implementation for youth with disabilities in the transition process while Martin, Marshall, and Maxson (1993) focused more on advocacy, self-advice and system advocacy for students in transition. In conjunction with a program for transitioning students, these authors highlighted decision making, independent performance, self-

evaluation and adjustments as components of how students learn to self-advocate and be self-determining, which is absolutely crucial in the college environment.

A key component of self-determination is the ability to communicate about one's learning disability. Axelrod and Zvi (1997) studied how thirty-three university students with LD described their disability. These authors asked five professionals in the field of learning disabilities to rate the degree of agreement between the students' descriptions of their LD and the description attached to the formal diagnosis of LD. What they found was that only one-third of the students' descriptions agreed with the professional diagnosis. In other words, two-thirds of the students were unable to describe their disability accurately. Being able to describe one's disability accurately is a key first step in self-advocating. Furthermore, Axelrod and Zvi compared the ten students who agreed most with the diagnosis against the ten students who disagreed most with the diagnosis and the only significant variable of difference between the groups was GPA. The students' age, months elapsed since their professional evaluations, and intelligence/achievement scores had no relationship with the agreement ratings. This study provides significant support for the current study: it highlights that a relationship exists between students' knowing information about their disability, students' being able to communicate accurately to others about their disability and the students' GPA.

Communicating with others and having high social competence can be reflected by one's ability to seek help when help is needed. Hartman-Hall and Haaga (2002) investigated self-esteem, perception of disability and help-seeking in 86 students with LD (73 were undergraduates and 12 were graduate students). Approximately 30% of the participants were also diagnosed with ADHD in addition to having LD. Participants

completed measures about self-esteem and perception of academic and social skills.
They also reported on their perception of disability and experience of help-seeking.
Students responded to written stimuli depicting an instructor's response to a student
asking for academic accommodations rating how positive or negative the instructor
reacted. They also listened to advertisements about the academic support service
available on campus and rated how willing they were to go to the support office. This
was the major dependent variable.

Several findings were significant. Many of the students were already using the
academic support service. Students who had ADHD in addition to LD reported a lower
self-esteem. Unexpectedly, help-seeking was not related to severity of LD. Those
students with a positive self-perception of LD were more willing to seek help than
students with a negative self-perception of LD. Students were more willing to seek help
when they read a positive instructor response than when the instructor's response was
negative. For students with LD, seeking and receiving help may have an effect on their
academic success, particularly GPA.

As applied to postsecondary education, a self-determined student needs several
skills, namely: "an awareness of academic and social strengths, weaknesses, and
compensatory strategies; the ability to express such awareness; an awareness of service
needs and appropriate accommodations; and the ability to request information, assistance,
and accommodations when appropriate and necessary" (Durlak et al., 1994, p. 51). These
authors investigated whether eight high school students with LD could learn and later
utilize the skills enumerated above through direct instruction. Along with other
measures, students completed the Assertiveness Scale for Adolescents (33 items), the

Self-Awareness checklist (10 items) and the Self-Advocacy checklist (16 items).

Instruction took place twice weekly for 30 minutes each session or once weekly for 40-50

minutes over an academic year. Seven skills were taught: asking for clarification of

lecture material in class, informing an instructor of one's learning disability, scheduling a

meeting with an instructor to talk about accommodations, asking permission to use a tape

recorder in lecture, securing approval from instructor for a note taker, asking for help in

the library, and scheduling a meeting with someone outside of class for help with a

course. The results indicated a 40% increase in these seven skills after direct instruction.

The authors concluded that "repeated practice of self-determination skills relating to self-

awareness, self-advocacy, and assertiveness is essential if students with learning

disabilities are to demonstrate these skills in post-high school environments" (p. 57). In

addition, other research has shown that self-determined students in high school were

more successful than their non-self-determined peers (Wehmeyer & Schwartz, 1997).

Sarver (2000) hypothesized a relationship between self-determination and GPA

for college students with LD. Over 80 students completed the Self-Determination

Student Scale (SDSS; Hoffman, Field, & Sawilowsky, 1996) which measured how

students thought and felt about being self-determined or having self-determination. The

scores from this measure were compared to students' GPA and the results indicated that

there was a positive, statistically significant relationship between self-determination and

GPA.

Miller (2002) studied resilience in university students with LD. This qualitative

study consisted of 10 participants who were receiving services from an academic support

center on campus. Each participant was interviewed regarding their memories of their

elementary and secondary school experiences. Results indicated that self-determination was one of the consistent themes which emerged and served to delineate students who were resilient from those who were not considered resilient.

Similarly, in a focus group study Thoma and Getzel (2005) found that students with disabilities considered self-determination as "important to their success in college and/or university settings" (p. 237). These authors utilized the Wehmeyer model of self-determination, which includes problem-solving skills, learning about oneself (and one's disability), goal-setting, and self-management. Thirty-four students participated and described learning their self-determination skills most frequently through trial and error, from peers and mentors, and from being taught by their parents.

A recent study conducted by Anctil, Ishikawa, and Scott (2008) investigated how self-determination influenced students' academic identity development. Participants with LD who were registered to receive academic accommodations through the disability resource center at their university completed a survey which included the Student Self-Determination Scale and the Self-Determination scale. Then, selected students were interviewed about self-determination and their academic experiences. The authors found that persistence, competence, career decision-making and self-realization were components of self-determination which could then predict students' success in transitioning to postsecondary education.

Disability Services/Use of Accommodations

The Disability Service (DS) is an office on campus where students register to receive academic accommodations as protected under the Americans with Disabilities Act and the Rehabilitation Act of 1973 (ADA, 1990). As stated by Egly, Leuenberger,

Morris and Friedman, "even when rights and privileges are mandated by law, it is the responsibility of the individual to protect and exercise those rights and privileges" (1987, p. 6). Students desiring academic accommodations must first identify themselves as a person with a disability. At many institutions registered DS students are provided with a letter to distribute to instructors which details their academic accommodations. At other institutions, the DS sends the accommodations letter to the student's instructors directly. The accommodations letter charges instructors to work with students with disabilities for their academic success. Skinner (1998) concluded that such support from the institution was "essential" for students, and students felt confident that their requests were more credible with a letter from the DS (p. 281-2).

Students are then required to follow-up with instructors to ensure they receive their accommodations. In providing the accommodations letter, the DS office has set the expectation for students to communicate directly with instructors, using the letter as a conversation opener to discuss the accommodations. Many DS offices also seek to raise awareness of disability across the campus community; however, granting accommodations is the primary goal of DS as academic accommodations help to close the achievement and accessibility gap between students with disabilities and students without disabilities.

Rath and Royer (2002) reviewed the literature on disability services for college students. From their review, six categories emerged: assistive technologies and programs, program modifications, therapy and counseling, strategy training, direct academic assistance, and interventions designed to strengthen weak academic skills. Each category is detailed below. Most of the studies addressed the first five categories

which focus on how the college or university can accommodate the student with LD. However, the last category focuses on what the student can do to compensate for his/her LD. This is the most empowering strategy of all, and perhaps the one which will be most effective because it guarantees success for the student in any environment (Rath & Royer).

Rath and Royer (2002) described each category of support for college students with LD. Assistive technologies and programs include audio books and the use of readers, either live or via computer programs. Program modifications include extended testing time, alternative test formats (such as fill in the blank instead of multiple choice), alternative test response formats (such as oral tests instead of written tests), a lighter course load (12 credits per semester as opposed to 15 or more credits), and substitutions and waivers for required classes (often foreign language and math). Therapy and counseling include individual counseling or coaching and/or group counseling. Strategy training is used to teach test-taking strategies, organization, study skills, problem-solving methods and note-taking strategies. Direct academic assistance often refers to tutoring and remediation. Interventions designed to strengthen weak academic skills specifically target basic reading and math comprehension and fluency.

Runyan (1991) studied the effects of extra time for 16 students with LD and 15 students without LD. The students were given the Nelson-Denny Reading Comprehension Test and the time taken to complete the test was measured. Results indicated that students with LD read at a slower rate and took longer to finish the exam than students without LD. When students with LD were given extended time, they completed significantly more of the exam correctly and performed at the same level as

students without LD under normal time. There was no significant difference between the performance of students without LD when taking the test under normal time and extended time conditions. Runyan concluded that extra time was necessary for students with LD because these students had to reread the passage multiple times before answering the question. This study demonstrated the need for extra time for students with LD, although the small sample size was a major limitation.

Alster's (1997) study demonstrated how accommodations are effective for community college students with LD. In fact, accommodations allow students with LD to perform at their best, on par in achievement with students who do not have LD. Alster measured the performance on an algebra test of 44 students with LD to 44 students without LD. When all students were given the same amount of time to complete the test, students with LD scored significantly lower than their non-disabled peers. However, when given additional time, students with LD performed at a similar level to students without LD. The additional time helped to improve the academic performance of students with LD. Students without LD demonstrated an improved academic performance with additional time, although not as significant an increase as seen in the students with LD.

Requesting accommodations is a necessary step towards actually receiving accommodations. In a study of 50 college students with disabilities, Palmer and Roessler (2000) investigated the effects of eight hours of self-advocacy and conflict resolution training. Participants completed measures and were audiotaped in a role play requesting accommodations. Those students who received the training demonstrated more self-advocacy behaviors and conflict resolution behaviors than those who were not

specifically trained. The trained students also reported more knowledge of their accommodation rights and responsibilities and greater self-efficacy in regards to requesting accommodations.

Compensation strategies, such as learning study skills along with accommodations, have been studied for their impact on success in college for students with LD. Reis, McGuire, and Neu (2000) interviewed 12 high-ability college students to determine how they compensated for their LD. These researchers believed that self-advocacy, self-awareness, and self-monitoring were "essential" for these students to be successful (p. 125). The results indicated that students used a variety of compensation strategies which included study skills, time management, organization and various classroom accommodations like extended testing time, note-taking and audio books. The authors highlighted the importance of self-awareness to academic success as all of the students used similar strategies, yet each student personalized the strategies according to what worked best for him or her.

Trainin and Swanson (2005) studied the achievement of college students with LD to determine how these students compensated for their disability. It was hypothesized that students with LD may compensate for their disability through the use of metacognitive strategies and help-seeking. Twenty students with LD and 20 students without LD participated in the study. Students completed measures for working memory, semantic processing, reading identification and comprehension, metacognition strategy use and help seeking behavior. Students also completed a demographic form, on which GPA was collected. Results indicated that while students with LD scored lower on the memory, processing, identification and comprehension measures, they were as motivated

as their non-LD peers. Students with LD also used strategies more often and sought help more frequently than their non-LD peers. Trainin and Swanson considered this behavior to reflect more effective self-regulation by the students with LD.

Academic accommodations in the classroom are only one aspect of support offered by most college or university DS offices. DS offices usually offer a variety of services, which include but are not limited to: academic accommodations (extended testing time, note taker, reader for exams, private testing space, use of a computer for exams, interpreting services for deaf or hard of hearing students, audio books for students who are blind, have dyslexia or might otherwise benefit from listening to, rather than reading, a text, etc.), mentoring or coaching, and advocacy. Mentoring or coaching is available on an individual basis or in a group setting. Coaching involves periodic check-ins between the student and a DS counselor to discuss the student's progress in each course. These sessions generally include some instruction in time management, problem-solving, and role-playing, which is particularly helpful for students with disabilities who often lack such skills (Field et al., 2003). When students role-play how to approach instructors to discuss their academic accommodations, the student is learning critical self-advocacy and self-determination skills (Lock & Layton, 2001). Therefore, accommodations are usually implemented in the classroom, but other services are offered at DS as well, hence the delineation between accommodations and use of services.

Yet, both accommodations and services are important components of success for students with disabilities in the postsecondary education environment. Getzel and Thoma (2008) found that 34 students with disabilities who participated in a focus group interview thought getting accommodations from DS, and using services on campus

available to all students, were "absolutely essential to staying in college" (p. 81).

Wolanin and Steele (2004) found that part-time schedules, assistive technology, tape recording of lectures, note-taking, audio books, extended time, private testing space, and course substitutions were common accommodations for students with LD and some education institutions offered personal counseling, individual tutoring and support systems, above and beyond the typical accommodations.

In a study of two and four-year postsecondary educational programs, Stodden et al. (2001) surveyed 650 disability support coordinators regarding the types of accommodations and services their educational institutions provided to students. These researchers found that the most commonly offered support was test accommodation. Other frequently offered supports included note takers, counseling, advocacy assistance, and help with organization and study skills. This study underscores which accommodations and services are most frequently offered to students with disabilities. However, this study extends the research by investigating students' reported use of accommodations, use of services, and the impact these variables have on academic success, as measured by GPA.

Academic Success

The academic success of college students with LD has been a concern in the field for some time now. In an effort to highlight empirical reports on academic success for students with LD, Hughes and Smith (1990) conducted a review of the literature. They divided their discussion by content areas: levels of intellectual functioning, reading achievement, math, written expression and foreign language. What Hughes and Smith uncovered was that college students with LD are of average or above average

intelligence, as determined by the Wechsler Adult Intelligence Scale, a standard in the field. However, students with LD, by definition, show a discrepancy between their verbal intelligence and performance intelligence. Many times the discrepancy is such that performance intelligence is much lower than verbal, often due to reading difficulties. Reading comprehension and reading rate are the most cited areas of reading in which college students with LD struggle. Hughes and Smith rightly point out that this is no small matter given the volume of reading assigned and required in almost any college level course.

According to Hughes and Smith's (1990) review, math is another main area of challenge for college students with LD. Problems with basic computation make math and math-related subjects complicated for students with LD. Spelling is the most often cited difficulty in the area of written expression. Students with LD made twice as many spelling errors as students without LD, due to letter reversals and dropped or omitted letters. When experiencing problems in one's primary language, it is easy to understand the frustration potentially associated with learning a foreign language. This is a real issue for students with disabilities because most universities have a foreign language requirement. Without assistance in reading, math, and writing, students with disabilities would continue to remain far beyond their non-disabled peers.

Keim et al. (1996) explored the relationship between academic success and university accommodations. The participants were students with LD who were registered with the University's disability service. One hundred twenty-five students reported on their use of academic advisement, time spent in the computer laboratory, hours spent in tutoring, number of test accommodations, and cumulative GPA. In this study test

accommodations included a reader and/or scribe, extended testing time, private testing room, calculator, and a tape-recorded exam, although not all students utilized all available testing accommodations. GPA is frequently used as a measure of academic success and often determines student status at universities (full or part-time, academic probation or honors, etc.; Allsopp et al., 2005; Trainin & Swanson, 2005; Trammell, 2003). Class year (freshman, sophomore, junior, senior) was a part of the analyses of covariance used to interpret the data.

Results indicated that low use of advisement and more time spent in the computer lab were related to higher cumulative GPAs. No relationship was found between class year and advisement, or between class year and computer use, or between class year and tutoring, or between class year and test accommodations. Tutoring and test accommodations were not significantly related to higher cumulative GPAs. Keim and colleagues concluded that "motivational factors [might] influence the pursuit of support services," which should be the direction of future research (1996, p. 508). While these findings do not support this study's hypotheses, it is important to note that this relationship between accommodations and GPA has been previously explored and that other factors were thought to play a role in help-seeking behaviors of students.

Murray and Wren (2003) attempted to predict GPA for college students with disabilities from various cognitive (Weschler Adult Intelligence Scale or the Weschler Intelligence Scale for Children-Revised), academic (The Nelson-Denny Reading Test, Wide Range Achievement Test-Revised), and attitudinal (the Survey of Study Habits) indicators. What they found was that teacher acceptance, a variable from the Survey of Study Habits, was significantly correlated with GPA and only the full scale intelligence

score predicted GPA. The authors repeatedly emphasized that other factors, not included in their study, must predict or have an effect on college GPA. Although the sample size (n = 84) was a major limitation, these researchers argued that the study had important implications for school personnel to "teach nontraditional skills that may enhance the long-term potential of youth" (p. 414).

Trammell (2003) investigated how the use of academic accommodations may have positively influenced college students' end-of-semester grades. The types of accommodations highlighted in this study were: extended testing time, tape recording lectures, private testing space, and audio books. Students were divided into three groups by disability category: LD only, ADHD only, and LD plus ADHD. Sixty-one participants completed measures related to the types of accommodations they used, and their GPAs and Verbal SAT scores were collected from official college records. Students with LD were found to have the lowest SAT scores but requested the most accommodations out of all three groups. There was no significant improvement in GPA as a function of frequency of use of accommodations.

In another study, use of DS services was found to have a positive effect on student GPA. Allsopp and colleagues (2005) focused on course-specific strategies for college students with LD. Forty-six participants were given a learning needs questionnaire to determine the areas for intervention (organization, test-taking, study skills, note-taking, computer competency, reading or writing). Then each student met with a strategy instructor for 1-2 hours per session, 1-3 times per week, for at least one semester to work on strategies for a specific course. Some students elected to continue with tutoring for a second semester. Strategies were customized for the individual student and may have

included using advanced organizers, note cards, time management training or

paraphrasing for note-taking. Students' GPA increased significantly during and after the

intervention as compared to their GPA for the previous semester. Students who

continued with the intervention for a second semester showed even more improvement

than those students who only received one semester of the intervention. Those students

who were able to use the strategies independently experienced a more significant increase

in GPA as compared to students who did not use the strategies on their own. The

improvement in GPA was so significant that it moved some students from "probationary

status" to "good standing". This study supports the link between learning strategies

(usually one of the services offered by DS offices) and improved academic achievement

as measured by GPA.

Linking Concepts

College is a social environment. Students are considered adults and as such are

expected to demonstrate responsible behavior, effective decision making, time

management, and be able to speak on their own behalf to others such as instructors,

administrators and peers. Mellard and Hazel have referred to this as an expectation in

postsecondary settings of "a higher level of individual functioning and social

responsibility" (1992, p. 251). These behaviors fall within the realm of social skills

necessary for success in life overall and students with disabilities often perform these

skills more poorly than their peers who do not have disabilities (Gresham & Elliott, 1989;

Mellard & Hazel, 1992; Wolanin & Steele, 2004). Furthermore, students who lack these

skills are often judged as ill-prepared for the college environment (Brinckerhoff, 1994;

Layton & Lock, 2003) as "college requires more self-determination than is expected of

students in secondary schools" (Field et al., 2003, p. 340).

Additionally, while accommodations are legally protected and provided to students who identify as having a disability, providing accommodations alone does not ensure academic success for students with disabilities. Students also need to learn compensatory strategies and study skills. In fact, students with LD have identified self-understanding, traditional accommodations, writing assistance, organization strategies, and visual strategies as important skills and supports to overcoming barriers in an academic setting (Denhart, 2008). However, non-academic factors play an important role in academic success for students with disabilities. Being able to advocate for self is a necessary skill in the college environment (Foley, 2006; Troiano, 2003).

The component elements of self-determined behavior, according to Wehmeyer and Field (2007) are: choice-making skills, decision-making skills, problem-solving skills, goal-setting and attainment skills, self-regulation/self-management skills, self-advocacy and leadership skills, positive perceptions of control, efficacy, and outcome expectations, self-awareness, and self-knowledge. As special educators, Wehmeyer and Field emphasized the importance of students with disabilities developing all of these skills which are critical for their academic success and overall positive life outcomes. The components Wehmeyer and Field identified are higher order thinking skills. In this study those skills were measured by the subscales of knowing yourself, valuing yourself, planning, acting, and experiencing outcomes and learning from them, on the Self-Determination Student Scale. While researchers have postulated the importance on self-determination skills, even college students with LD have themselves identified self-advocacy and self-determination as crucial coping strategies and skills in the

postsecondary educational environment (Troiano, 2003), particularly when students with

LD do not feel as confident about their academic performance as students without LD

(Cosden & McNamara, 1997).

Summary of Related Literature

There have been contradicting results in the research regarding the effectiveness

of accommodations and services on academic success, as measured by GPA, for students

with LD. Indeed, Stodden et al., (2001, p. 191) said,

> The provision and use of postsecondary educational supports and services are
> rarely grounded in theory or documented by empirical data. As a result, little is
> know about the effectiveness of postsecondary educational supports, particularly
> as we consider the diversity of types of disabilities and of postsecondary
> programs. The situation is further complicated by a lack of consensus about how
> to define and measure "successful" outcomes of educational support provision.

Researchers have measured the frequency of use of accommodations and services and

correlated that with GPA (Allsopp et al., 2005; Keim et al., 1996; Trammell, 2003);

however, the use of accommodations and services has not previously been considered as

a mediating factor between self-determination and GPA.

This study focused on undergraduate juniors and seniors with LD. First year

students and sophomores were eliminated purposefully, as many of them are still in the

process of adjusting to campus and their course requirements. Furthermore, as previously

stated, getting admitted into an institution of higher education is not the problem for

students with LD; graduating from that institution is the challenge (Madaus & Shaw,

2006; Murray et al., 2000). Thus, juniors and seniors were chosen because these students

may provide information about what has helped them to persist through their

undergraduate education.

Therefore, given the contradictory results of the research findings and the

importance of this problem, this study investigated the relationships between GPA, self-determination, use of accommodations, and use of services. This study is unique in that use of accommodations and use of services were used a covariant, in a mediation model, to see if these variables interacted with self-determination to affect GPA. The next chapter details this study's methodology.

CHAPTER THREE: Methodology

The purpose of this study was to investigate the relationship between self-determination, use of academic accommodations, use of services, and college success, as measured by GPA, for undergraduate juniors and seniors with LD who are registered with their campus DS. This chapter describes the methodology employed in this study to answer the following research questions:

For undergraduate junior and senior college students with LD registered with a campus DS:

1. Is there a relationship between self-determination skills and college success as measured by GPA?

2. Does the use of accommodations impact college success as measured by GPA? Does the use of services impact college success as measured by GPA?

3. How do self-determination skills, use of accommodations, and use of services interact to affect college success, as measured by GPA?

4. Does the use of accommodations mediate the impact of self-determination scores on college success as measured by GPA? Does the use of services mediate the impact of self-determination scores on college success as measured by GPA?

Research Design

This research study is based on self-report, online survey methodology. This design was chosen because it is an effective way to collect data when the researcher is interested in variables that are known most intimately only to the participants. Furthermore, comparable studies have used surveys to examine academic success in

students with LD. The independent variables are the students' disability (LD), self-determination skills, use of accommodations, use of services, and other demographic variables. The dependent variable is college success as measured by the students' GPA.

Study Setting

Participants were undergraduate junior and senior students with a documented LD registered with the DS at eight colleges and universities across four states in the Eastern United States. According to The Carnegie Foundation for the Advancement of Teaching, four of the institutions were state universities, one of which was a Historically Black College or University (HBCU). Four were private institutions, one of which was a Catholic college (see Table 1). Email was the primary means of recruitment for the study. Flyers, including information regarding the study and contact information for the researcher, were also posted at the Disability offices. Potential participants were estimated from the number of undergraduate LD juniors and seniors registered with the DS at the institution. Actual participants include the number of respondents from that institution.

Table 1

Characteristics of Institutions for Study Setting

Site	Control	Type	Total Number of Students	Potential Participants	Actual Participants
1	Public	Research, Very High Activity	34,933	235	28
2	Public	Research, High Activity	15,329	80	17
3	Public	Master's, Larger Programs	9,688	390	7
4	Public	Doctoral, Research, HBCU	6.891	30	4
5	Private	Master's, Larger Programs, Catholic	6,156	44	4
6	Private	Master's, Smaller Programs	1,685	40	2
7	Private	Bachelor's	2,349	35	6
8	Private	Bachelor's	2,166	60	2

Registration

For a student with a disability to receive accommodations, the student must first

identify himself to the DS. Then the student must provide documentation of his disability

from the appropriate professional (therapist, psychologist, physician, etc.) to the DS

office. According to the Association on Higher Education and Disability (AHEAD), the

documentation is considered current within three years of the student being tested, if the

student is under 18 years old. For students who were tested at age 18 or above, the

documentation is current for five years. The student will then have a registration

appointment to review the documentation with a counselor and register for the

accommodations which were recommended in the documentation and which seem

appropriate given input from the student. The list of approved accommodations is

generated in letter format for students to present to their instructors, teaching assistants,

academic advisor, and any other party the student decides should have access to such information. This registration process is similar for all institutions of higher education (Wessel, Jones, Markle, & Westfall, 2009).

Accommodations

   Accommodations approved and provided by the DS are individualized for each student. Accommodations include, but are not limited to: Extended Testing Time (time and a half or double time), Note-taking, Reader/ Scribe, Computer, Audio Books, and Interpreter/ C-Print/CART. Interpreters use American Sign Language to visually communicate to students what is verbally communicated in the classroom. C-Print and/or CART are captioning services, where spoken word is instantly translated into text with the use of a computer.

Services

   Services are supports and interventions other than accommodations either provided by or arranged for by the DS. These services are available to all students registered with DS. This includes, but is not limited to: accommodation implementation, academic coaching (time management, organization, study skills, etc.) and help talking with instructors. Mentoring or coaching is available on an individual basis or in a group setting. Coaching involves periodic check-ins between the student and a DS counselor to discuss the student's progress in each course. These sessions generally include some role-playing. When students role-play how to approach instructors to discuss their academic accommodations, the student is learning critical self-advocacy and self-determination skills (Lock & Layton, 2001). Therefore, accommodations are usually implemented in the classroom, but other services are offered at DS as well, hence the

delineation between accommodations and services. In this study, two specific services are investigated: academic coaching and help talking with instructors.

Participants

The participants of this study were 70 undergraduate juniors and seniors who attended an Eastern United States college or university during the 2009-2010 academic year and were registered with the DS at their institution as a person with LD. This sample included a diversity of participants: Sixty percent of participants reported their culture as Caucasian (n=42), over 14% chose African-American (n=10), 10% chose Latino (n=7), nearly 6% reported as Asian (n=4), nearly 6% reported their ethnicity as other (n=4), and the remaining percent either chose Native American (n=1) or declined to disclose their cultural background (n=2). Over 77 percent of participants were female (n=54), while the remaining 15 participants (21%) were male and 1 participant chose not to answer the gender question. These participants varied in age (18 years old to 51 years old) with a mean age of 25 years. Just over half of the participants classified themselves as seniors (53%, n=37), while the rest reported their class status as a junior (47%, n=33). Most participants reported being diagnosed with a disability while in elementary school (39%, n=27) or college (37%, n=26). Only 17 participants (24%) were diagnosed either in high school (n=11) or middle school (n=6). More than half of the participants had more than one disability (n=38). Juniors and seniors were chosen because they have had sufficient experiences in college to use their self-determination skills, academic accommodations, and services as supports for their academic success. Furthermore, these students may provide additional information about what has helped them to persist through their undergraduate education. For example, most students at universities are

required to declare a major by the end of their sophomore year (or once they have completed 60 credits). Choosing a major may demonstrate self-determination because choice of major is usually based on strengths and interests (Probst, 2005). Transitioning first year students often rely on the skills they have learned in high school and often need time to adjust to the collegiate environment.

<div align="center">*Instruments*</div>

Demographic Questions

Participants were asked to provide information regarding their age, gender, class standing, racial/ethnic background, type of disability, and age at which they were diagnosed with a disability. They were also asked to identify their major and whether they transferred to their current institution (see Appendix A). This instrument was developed for this research study and pilot tested prior to data collection.

Use of Accommodations and Use of Services

Participants answered 16 questions about their use of accommodations and use of disability services on campus (see Appendix B). Thirteen questions were descriptive, two questions asked students to rate the effectiveness of accommodations and services, and one question was open-ended.

Six questions about accommodations included lists of specific accommodations for which students were eligible and which specific accommodations students had ever used. Students answered questions regarding the frequency of their use of and need for accommodations in general, as well as they rated the overall effectiveness of accommodations for their academic success. Participants were also asked to specify their reasons for not using accommodations. Three questions about services included: a list of

specific services students had ever used, a question about their reasons for not using

services, and a question asking students to rate the overall effectiveness of services for

their academic success. Effectiveness of services was served as a proxy variable for use

of services in general. The open-ended question asked students: "What would you

recommend that Disability Services and/or the University do to help incoming first year

students with learning disabilities to be successful academically?"

This instrument was developed for this research study based on related literature

and pilot tested prior to data collection. For the purposes of testing the hypotheses, use of

accommodations was measured by participants' responses to "In general, I use my

accommodations:" (answer options: in all of my courses, in most of my courses, in some

of my courses, in a few of my courses, not at all). In testing the hypotheses, use of

services was measured by "Check the services from DS other than accommodations that

you have ever used."

Self-Determination Student Scale (SDSS)

This 92-item measure was developed by Hoffman, Field, and Sawilowsky in

1996, based on Field and Hoffman's (1994) model of self-determination (see Appendix

C)[1]. This model contains five components: know yourself (16 items), value yourself (15

items), plan (20 items), act (25 items), and experience outcomes and learn (16 items).

Each item is a statement participants answer as "That's me" or "That's <u>not</u> me." One

such item is: "I can be successful even though I have weaknesses." The SDSS was

normed on 251 youth ages 15-22, half of whom had disabilities, and found to be

internally consistent and reliable with a Cronbach's alpha of .91 for the scale. For each

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[1] Dr. Field granted permission for this measure to be made available for download for educational and
research purposes from the University of Oklahoma website.

subscale, the Cronbach's alpha was: know yourself (.70), value yourself (.13), plan (.66), act (.32), and experience outcomes and learn (.70). This measure, while developed for use with high school students, was used previously in a study with university students with LD (Sarver, 2000) and the scale reliability was roughly the same (.9131) as compared to the consistency when normed.

All instruments were combined into one survey and presented online sequentially.

Pilot Test

A pilot test was conducted online prior to the full administration of the online study. Pilot tests are a helpful way to verify that the survey questions are easy to read, understandable, and relevant to the participants. In addition, pilot testing often identifies any typographical errors, redundancies, or vague questions.

All instruments were pilot-tested with a group of five graduate students, two of whom had disabilities. These participants, after indicating their informed consent, were asked to write down the time they started and ended the study questionnaires, so that total completion time could be ascertained. The average length of time for completion of all instruments was 35 minutes. Furthermore, participants were asked to provide their opinions on whether any questions should be eliminated or modified and whether any questions were unclear, confusing, or inappropriate. Based on the feedback from the pilot testers, several questions were modified for clarity. The pilot testers also indicated that they found the survey accessible for use with assistive technology, such as screen readers.

Procedure

Several college and university DS offices were contacted to assist with participant recruitment. Potential participants were recruited through the listservs used by each

college or university DS (see Table 1 above). A total of eight institutions were sampled.

Each DS keeps a database of all the students who have registered with their office. On

each listserv are all the currently registered students of DS.

One large, state university DS office has approximately 1000 registered students.

Students with LD comprise the largest number of DS students, totaling 469, about 31% of

the total DS student population.[2] However, this study recruited only juniors and seniors.

So, if equal numbers of students with LD are represented in each class year,

approximately 235 juniors and seniors were eligible for the study from that large, state

institution. Another institution, a small private college, had a population of 44 juniors

and seniors with disabilities registered with their office. However, information was not

available regarding how many of those 44 students had LD. Information regarding the

number of potential participants varied for each recruiting site. Some programs reported

the total number of students with disabilities registered with their DS office. Other

programs reported the number of juniors and seniors, regardless of disability type. Still

other programs reported the number of students with LD, regardless of class status. Given

this, calculating the potential pool of participants is difficult. Studies cited in the literature

review have been conducted with an average of 77 participants (for example, 33

participants in Axelrod & Zvi, 1997; 86 in Hartman-Hall & Haaga, 2002; 94 in Layton &

Lock, 2003; 84 in Murray & Wren, 2003; 88 in Sarver, 2000), so 77 was the targeted goal

for participation.

Participants received an email (Appendix D), forwarded from the researcher by

their DS office, inviting them to participate in the study. Only students registered with

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[2] The percentages do not always correspond to the actual number given significant overlap between disability categories.

the DS office as a person with LD received the email. In the email was a link directing them to the online survey at www.surveygizmo.com. The online presentation of the study provided for access to a greater number of participants, given students could complete the study anytime of day or night, at their leisure. Having the study online also ensured data were entered correctly, and that students remained anonymous such that any answers could not be matched to an individual participant.

At the survey website, participants were first presented with the informed consent (see Appendix E). Participants could not proceed to the survey without agreeing to the informed consent. The consent assured that their answers would be kept confidential. Then, questions were presented page by page, in sections, one after the other, with a completion bar at the bottom of the page informing participants how much of the study they had completed and still had to complete. This progress bar also functioned as a tool to keep participants' interest. Given the online presentation of the surveys, only the survey questions were visible to participants.

Each person completed basic demographic information, information about their use of accommodations and services, and the Self-Determination Student Scale. Participants were then thanked for completing the survey. Those undergraduates who participated in the online study could choose to be entered into a drawing for a $50 gift certificate to Amazon.com. To protect the confidentiality of their study responses, participants were asked to send an email to mhphd_umd_dec09@yahoo.com with their name and mailing address to be entered into the drawing. Two gift certificates were given away from a random drawing of study participants. Winners were emailed a confirmation with the gift certificate number and PIN for online use at Amazon.com.

To ensure the highest response rate possible, follow-up correspondence is usually sent to potential participants (Gore-Felton, Koopman, Bridges, Thoresen, & Spiegel, 2002). Therefore, a follow-up email was sent through the listserv two weeks after the initial email to further prompt non-responders to complete the survey. A second reminder was sent via email three weeks after the initial email. There was no way to guarantee follow-up emails were sent to potential participants at every site.

Hypotheses

Several hypotheses were investigated in this study.

H1: No relationship will be found between students' self-determination scores and their cumulative GPA.

H2: No relationship will be found between students' use of accommodations and their cumulative GPA.

H2a: No relationship will be found between students' use of services and their cumulative GPA.

H3: No relationship will be found between students' self-determination scores and use of accommodations.

H3a: No relationship will be found between students' self-determination scores and use of services.

H4: No relationship will be found between self-determination, use of accommodations, use of services, and cumulative GPA.

H5: Use of accommodations will not mediate the relationship between self-determination and cumulative GPA.

H5a: Use of services will not mediate the relationship between self-

determination and cumulative GPA.

Each hypothesis was rejected if a correlation at the .05 level of significance was found. The analyses were completed using SPSS version 18. Chapter four presents the results of these analyses and the discussion appears in chapter five.

CHAPTER FOUR: Results

The questions posed in this study involved examining the relationship between

self-determination, use of academic accommodations, use of related services, and college

success, as measured by GPA, for undergraduate juniors and seniors with LD who are

registered with their campus DS. This chapter is divided into three sections. Each section

presents the results of the data analysis to examine the research questions. First, the

internal consistency of the measures is reported. This section also discusses the treatment

of missing data. Second, the demographics of student participants are reported. Third, the

results of the analyses regarding the hypotheses are presented.

Internal Consistency of the Measures

Several instruments were used in this study. One was the Self-Determination

Student Scale (SDSS), which has been used extensively in previous research. The other

measures were created for the study. The results of the SDSS instrument were subjected

to analysis using Cronbach's alpha to determine the measure's reliability (see Table 2).

The internal consistency of the SDSS in this study was .905. In Sarver's study (2000) the

internal consistency was .9131.

Table 2

Internal Consistency

Scale	# of Items	Cronbach's Alpha	Sarver (2000)
SDSS-Total	92	.905	.9131
Know Subscale	16	.486	.5265
Value Subscale	15	.763	.6206
Plan Subscale	20	.638	.6330
Act Subscale	25	.777	.8560
Experience Outcomes and Learn Subscale	16	.643	.5654

The Use of Accommodations and Services instrument included items which used various metrics; therefore, the Cronbach's alpha severely underestimates the reliability or consistency of these items, a situation which may be exacerbated by the small sample size. So, a usage scale was created composed of several variables from this measure for more power in analyzing the data. The frequency of students' use of accommodations and the frequency of their need for accommodations, both measured on a 5-point scale, were combined with students' report of the effectiveness of accommodations for their academic success and the effectiveness of services for their academic success, both of which were measured on a 4-point scale. The responses from the 4-point scale were recoded to correspond with the 1st, 2nd, 4th, and 5th points on the 5-point scale and then a variable was computed which gave the mean of these scale items. After calculating the correlations between these target variables (ranging from .581 to .709), the usage scale achieved a Cronbach's alpha of .814.

Missing Data

The online survey link was visited by 158 persons. Of those, 52 persons abandoned the survey without answering any questions, leaving a potential 106 respondents. Of those 106 respondents, 36 partially completed the survey. The falloff report shows 17 of those persons exited the survey directly after the consent on page one. The remainder exited the survey within the first 6 pages, leaving the majority of the survey (a total of 18 pages) incomplete and their data, therefore, unable to be analyzed. However, 70 participants fully completed the survey, for a completion rate of 44.3%. Participation was encouraged through incentives for participation and completion, and a progress bar indicating how much of the study was complete and how much remained to

be answered. In addition, the study materials were pilot tested successfully. Informal feedback from various recruiting sites indicated potential participants found the survey to be too long (although this may not account for the total number of persons who abandoned the survey without answering any questions). The response rate is unable to be calculated as recruitment involved various anonymous means: email, flyers, and word of mouth, which cannot correctly estimate the potential pool of participants. However, the percentage of participants who responded (n=70) as compared to the targeted minimum goal (n=77) is nearly 91%.

Demographics of Participants

Seventy students completed this survey (see Table 3). The majority of participants identified as Caucasian (60%) and female (77%). Participants ranged in age from 18 to 51 years old with a mean age of 25.19 years. Just over half of the students were seniors. While all participants identified as having a learning disability (many of which were diagnosed during elementary school or college), over half of the participants had more than one disability (n=38). The most common secondary disability was psychological, for example depression and/or anxiety.

Almost all participants (95.7%) reported having a registration letter from Disability Services and distributing that letter to some of their course instructors and TAs (87.1%). Students who responded to this survey had been enrolled at their institution for an average of 6.29 semesters (SD= 4.17) and these participants had used accommodations or other services for over 4 semesters (M=4.67, SD=3.48).

Table 3

<u>Demographics of Participants</u>

Variable	n	%
Age	Mean=25.19 (SD=7.74)	n/a
Gender	Male=15	21.4%
	Female=54	77.1%
	Prefer Not to Answer=1	1.4%
Class Status	Junior=33	47.1%
	Senior=37	52.9%
Cultural Identification	Caucasian=42	60%
	African-American=10	14.3%
	Latino=7	10%
	Asian=4	5.7%
	Pacific Islander=0	0%
	Native American=1	1.4%
	Other=4	5.7%
	Prefer Not to Answer=2	2.9%
Age of Disability Diagnosis	Elementary School=27	38.6%
	Middle School=6	8.6%
	High School=12	17.1%
	College=25	35.7%
Type of Other Disabilities	None (LD only)=32	45.7%
	Psychological=10	14.3%
	ADD/ADHD=7	10%
	Multiple=7	10%
	Physical=6	8.6%
	Neurological=5	7.1%
	Medical=3	4.3%

Analysis Regarding Self-Determination Student Scale

The range of the total SDSS score was from 33 to 87. The mean SDSS score for

this sample was 72.74 with a standard deviation of 11.237. The highest obtainable score

on the SDSS is 92. Thus, the self-determination scores for participants in this study fell

within the upper range of self-determination, at the 78th percentile. Sarver (2000) reported

a mean SDSS of 78.93 with a standard deviation of 10.64 for college students with LD.

Grade Point Average of Participants

Students in this study reported an average GPA of 3.19 (SD=.53), which equals a

"B" average. The range of GPAs was from 1.8 to 4.0. More than two-thirds of the

students earned a "B" average or better.

Participants' Group Differences

Analyses were conducted to see if differences existed among demographic

variables in self-determination, GPA, frequency of use of accommodations, or

effectiveness of services. There were no significant differences in self-determination,

GPA, use of accommodations, or use of services by gender or by cultural background.

However, the Native American participant reported the lowest GPA, the lowest self-

determination, the highest use of accommodations, and the highest use of support

services. There was a significant difference in self-determination by class status (t (68) =

-2.39, p = .02), with a higher SDSS score in seniors, but no differences were seen by

class status for GPA, use of accommodations, or use of services (see Table 4).

Table 4

Differences by Class Status of Participants

	Junior (n=33)		Senior (n=37)	
	Mean	*SD*	*Mean*	*SD*
GPA	3.14	.58	3.23	.49
SDSS*	69.45	13.44	75.68	7.92
Use of Accommodations	3.91	1.23	3.97	1.26
Effectiveness of Services	2.61	1.14	2.89	1.15

*p<.05

There was a significant difference in self-determination by age of disability

diagnosis (F (3, 66) = 2.754, p = .049). Those diagnosed in middle school reported the

lowest self-determination scores, while those students diagnosed in elementary and high

school or college reported more similar self-determination scores. However, given such a

small number in the middle school category, it is difficult to draw conclusions about

these differences. In addition, no significant differences were seen by age of disability for

GPA, frequency of use of accommodations, or effectiveness of services (see Table 5).

Table 5

Differences by Age of Diagnosis of Participants

	Elementary School (n=27)		Middle School (n=6)		High School (n=12)		College (n=25)	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
GPA	3.24	.41	2.93	.47	3.01	.58	3.28	.62
SDSS*	73.74	10.03	60.67	15.03	73.17	12.60	74.36	9.70
Use of Accommodations	3.81	1.36	4.67	.52	3.25	1.42	4.24	.97
Effectiveness of Services	3.11	1.09	2.50	1.05	2.17	1.12	2.72	1.17

*p<.05

Analysis Regarding Use of Accommodations

The most common accommodation that students were eligible for was extended

testing time (94.3% of students), followed by note-taking and use of a computer. Fewer

students reported that they were eligible to use Audio books, reader/scribe, and

interpreter/C-Print/CART. Over 24% of participants were eligible for another,

unspecified accommodation. Participants also reported the accommodations they had

ever used. Extended testing time was the most frequently used accommodation (87.1% of

sample) followed by computer and note-taking (see Table 6). Overall, students reported

being eligible for accommodations, but actually used those accommodations less often.

Table 6

Participants' Use of Specific Accommodations

Accommodation	Eligible For (n)	Eligible For (%)	Ever Used (n)	Ever Used (%)
Extended Testing Time (time and ½ or double time)	66	94.3%	61	87.1%
Note-taking	33	47.1%	17	24.3%
Computer	23	32.9%	19	27.1%
Audio Books	15	21.4%	9	12.9%
Reader/Scribe	6	8.6%	2	2.9%
Interpreter/C-Print/CART	1	1.4%	1	1.4%
Other (unspecified)	17	24.3%	11	15.7%

Participants also responded about their general use of accommodations in their

courses. Most students used their accommodations either all of the time (91-100%) or

most of the time (61-90%) in their courses and reported needing their accommodations

about as much (see Table 7).

Table 7

Participants' General Use of and Need for Accommodations in Courses

Frequency	Use* (n)	Use (%)	Need** (n)	Need (%)
In all of my courses (91-100% of the time)	31	44.3%	25	35.7%
In most of my courses (61-90% of the time)	20	28.6%	27	38.6%
In some of my courses (31-60% of the time)	7	10%	10	14.3%
In a few of my courses (1-30% of the time)	8	11.4%	7	10%
Not at all (0% of the time)	4	5.7%	1	1.4%

*M=3.94, SD=1.24 **M=3.97, SD=1.02

The difference between use of and need for accommodations was calculated. Just

over 68% of participants used their accommodations as much as they reported needed

them, while over 17% used their accommodations more than they needing them and over

14% reported needing their accommodations more than they actually used them. Over 75% of participants rated accommodations at least somewhat effective as a contributor to their academic success (see Table 8).

Table 8

Effectiveness of Accommodations

	n	**%**
Not at all	4	5.7%
A little	12	17.1%
Somewhat	16	22.9%
A lot	38	54.3%

Students were asked why they did not use their accommodations. Nearly 16% of participants reported wanting to try succeeding without using their accommodations and almost 13% reported not needing accommodations to succeed. Another 11% did not want to be perceived as someone who takes unfair advantage, while 7% of respondents did not want others to know they have a disability, and 4% of participants reported it would take too much time to use accommodations.

Analysis Regarding Use of Services

Twenty-nine participants (41%) reported not using any DS services (see Table 9), while 14 participants (20%) had used both academic coaching and help talking with instructors. One-third of participants rated DS services "a lot" effective as a contributor to their academic success (see Table 10).

Table 9

Participants' Use of Specific Services

Service	Ever Used (n)	Ever Used (%)
Academic Coaching	26	37.1%
Help Talking with Instructors	24	34.3%
Other (unspecified)	10	14.3%
None	29	41.4%

Table 10

Effectiveness of DS Services

	N	%
Not at all	14	20%
A little	14	20%
Somewhat	17	24.3%
A lot	25	35.7%

Students were also asked why they did not use services. Over 21% reported that they did not need other services to succeed while nearly 19% said they wanted to try succeeding without using services. Only 3% of students did not use services because they did not want others to know they had a disability while 10% said it would take too much time to use services.

Students' Recommendations

Students were asked one open-ended question: "What would you recommend that Disability Services and/or the University do to help incoming first year students with learning disabilities to be successful academically?" All 70 participants responded and several participants made multiple comments (n=74). Their ideas included: helping students with time management and study skills, streamlining the process of registering for and obtaining accommodations, and increasing funding and staffing for the DS office. These responses were coded into 15 themes which were then grouped by similarity into

four categories: skills and strategies, increase resources, other support, and nothing (see Table 11).

Two persons coded the open-ended question and agreed 100% on the number of comments. They differed on the thematic coding, resulting in a 50% rate of agreement. The first coder was the researcher. The second coder was an undergraduate without a disability, who was unfamiliar with the DS office, or procedures to receive accommodations and services. A 75.7% rate of agreement was achieved on the four categories.

Responses such as "the most important thing a student can do is self-advocate" or "have study coaches there to help them" were coded into the themes of self-advocate and study skills, respectively. These themes were combined into the category of skills and strategies, recommendations which focused on how students might meet their own needs. Students reported that resources could be increased. In other words, DS offices could use more staff, more money, or more advertisement. Some responses included: "let them know what services are available to help them" and "have an orientation for all the students with disabilities" which focused on what the university could do to better meet the needs of students with LD. Several comments: "get more instructors and TAs informed about the students with disabilities" and "have a mentor to show them the resources" reflected a need for the student disability office to provide other support involving individual mentoring, reaching out to parents, and educating the campus community about disabilities in the classroom. Eight students did not have any recommendations. Four students said the disability office should only continue to do what they do.

Table 11

Students' Recommendations

Category	Number of Comments per Theme
Other Support (31)	Individual Attention or Mentor=14 Streamline Process at DS=9 Educate Faculty about Disabilities=5 Involve or Communicate with Parents=1 Change Format of Evaluations in Course=1 Change Name of Disability Service=1
Increase Resources (23)	More Information about DS=11 More Advertisement about DS=7 More Money for DS=3 More Staff at DS=2
Nothing (12)	Nothing, Not sure=8 Continue what is already being done=4
Skills and Strategies (8)	Self-Advocate=4 Study Skills=2 Time Management=2

Interactional Analyses of Hypotheses

H1: No relationship will be found between students' self-determination scores and their cumulative GPA.

Pearson correlation coefficients, appropriate when analyzing two continuous variables, were calculated for self-determination scores and cumulative GPA. A significant, positive, moderately strong relationship was found between the SDSS and GPA (r (70) = .478, $p < .01$). Thus, this hypothesis was rejected. In general, the higher the self-determination score, the better the participant's GPA.

H2: No relationship will be found between students' frequency of use of accommodations and their cumulative GPA.

Pearson correlation coefficients were calculated for the frequency of use of accommodations and cumulative GPA, given both were continuous variables. Use of accommodations was measured by frequency of use, based on students' report

of the percentage of time they used accommodations in their courses (i.e., all, most, some, a few, or none). No relationship was found between frequency of use of accommodations and GPA (r (70) = .019, p = .875). This hypothesis was supported. Therefore, it does not appear that there is a relationship between students' use of accommodations and GPA.

H2a: No relationship will be found between students' use of services and their cumulative GPA.

Two specific services were highlighted in this study: academic coaching and help talking with instructors. To determine if there was a relationship between academic coaching and help talking with instructors, a Pearson correlation coefficient was calculated. A significant, positive relationship was found between academic coaching and help talking with instructors (r (70) = .317, $p < .01$), yet reliability for a scale containing academic coaching and help talking with instructors was low (Cronbach's alpha of .481). Therefore, these two services were analyzed separately.

Participants reported if they had ever used each service, which formed two groups: ever used academic coaching, and ever used help talking with instructors. Analysis of variance is used to compare groups to one another. The relationship between academic coaching (yes/no) and GPA was insignificant when subjected to analysis of variance (F (1,68) = 1.312, p>.05). The relationship between help talking with instructors (yes/no) and GPA was insignificant as well when subjected to ANOVA (F (1,68) = 1.156, p>.05).

Also, participants rated the effectiveness of DS services to their academic success.

Pearson correlation coefficients, helpful when analyzing two continuous variables, were calculated for effectiveness of services and cumulative GPA. No relationship was found between effectiveness of services and GPA (r (70) = -.105, p = .386). These results support the hypothesis. Thus, it does not appear that there is a relationship between students' use of services: academic coaching or help talking with instructors, and GPA or between students' rating of effectiveness of services and GPA.

H3: No relationship will be found between students' self-determination scores and frequency of use of accommodations.

Pearson correlation coefficients are appropriate for analysis when investigating the relationship between two continuous variables. So, a Pearson correlation coefficient was calculated for self-determination scores and frequency of use of accommodations in all, most, some, a few, or none of students' courses. No relationship was found between self-determination scores and frequency of use of accommodations (r (70) = -.022, p = .857). However, the mean SDSS for participants who reported not using their accommodations at all (63.50, SE=9.836) was much lower than the means of participants who used their accommodations in a few of their courses (77.38, SE=3.928), in some of their courses (74.29, SE=3.249), in most of their courses (74.55, SE=1.711), or in all of their courses (71.23, SE=2.191). Thus, students' self-determination scores and their use of accommodations are not related.

H3a: No relationship will be found between students' self-determination scores and use of services.

Two services were highlighted in this study: academic coaching and help talking with instructors. The relationship between use of academic coaching (either yes or no) and self-determination was insignificant when subjected to analysis of variance (F (1,68) = 1.549, p>.05). The relationship between help talking with instructors (either yes or no) and self-determination was insignificant as well when subjected to ANOVA (F (1,68) = .505, p>.05). Analysis of variance is helpful for comparing groups to one another.

Pearson correlation coefficients, useful in understanding the relationship between two continuous variables, were calculated for self-determination scores and effectiveness of services, a proxy for use of services. No relationship of significance was found between self-determination scores and students' rating of effectiveness of services (r (70) = -.043, p = .723). However, participants who reported that services were not at all effective for their success also had the highest reported self-determination scores (F (3,66) = 3.410, p<.05). Thus, there was not a relationship between self-determination and effectiveness of services.

H4: Self-determination, use of accommodations, and effectiveness of services will not predict cumulative GPA.

Multiple regression was run to see if self-determination, frequency of use of accommodations, and effectiveness of services might reliably predict GPA. When all variables of interest are measured continuously, multiple regression is an appropriate test to use in analysis of the relationship between variables. A relationship was found between self-determination, frequency of use of accommodations, effectiveness of services, and GPA (F (3,66) = 6.979, p<.05).

Therefore, this hypothesis was rejected. However, self-determination was a

stronger predictor of GPA than use of accommodations or effectiveness of

services (see Table 12), as self-determination was significant in the model (p =

.000), yet use of accommodations was insignificant (p = .522) as was

effectiveness of services (p = .331).

Table 12

Interactional Model: Prediction of GPA from Self-Determination, Use of
Accommodations, and Effectiveness of Services

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.568	.428		3.664	.000
	Total SDSS	.023	.005	.475	4.426	.000
	Frequency of Use of Accommodations	.032	.050	.075	.644	.522
	Effectiveness of Services	-.053	.054	-.115	-.980	.331

a. Dependent Variable: GPA

H5: Use of accommodations will not mediate the relationship between self-determination

and cumulative GPA.

Multiple regression was used to determine the impact of self-determination on

predicting cumulative GPA after use of accommodations was entered as a

mediating factor. Because all the variables of interest were continuous, multiple

regression is an appropriate analysis to conduct. The R^2 of the model which

included self-determination and GPA was .229. With use of accommodations in

the model the R^2 was .230, an insignificant change in the proportion of variance

which was explained (see Table 13). Therefore, use of accommodations was

excluded from the model and this hypothesis was supported. Use of

accommodations did not mediate the relationship between self-determination and

cumulative GPA. In fact, given the lack of correlation at the primary level

between use of accommodations and GPA, and use of accommodations and self-

determination scores, use of accommodations can reasonably be dropped from the

model.

Table 13

Use of Accommodations as a Mediating Variable

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1 (Constant)	1.485	.419		3.541	.001	.648	2.323
Total SDSS	.023	.005	.479	4.467	.000	.013	.033
Frequency of Use of Accommodations	.013	.046	.030	.277	.783	-.079	.105

a. Dependent Variable: GPA

H5a: Effectiveness of services will not mediate the relationship between self-

determination and cumulative GPA.

Multiple regression was used to investigate the relationship between self-

determination and cumulative GPA, with effectiveness of services as a mediating

variable. When all the variables of interest are continuous, multiple regression is

an appropriate analysis. The R^2 of the model which included self-determination

and GPA was .229. When effectiveness of services was included in the model the

R^2 was .236, an insignificant change in the proportion of variance which was

explained (see Table 14). Effectiveness of services did not mediate the

relationship between self-determination and cumulative GPA. Thus, this

hypothesis was supported. In fact, given the lack of correlation at the primary

level between effectiveness of services and self-determination, and effectiveness

of services and GPA, effectiveness of services can reasonably be dropped from

the model.

Table 14

Effectiveness of Services as a Mediating Variable

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1 (Constant)	1.659	.403		4.122	.000	.856	2.462
Self-Determination	.023	.005	.475	4.442	.000	.012	.033
Effectiveness of Services	-.039	.050	-.085	-.792	.431	-.138	.060

a. Dependent Variable: GPA

CHAPTER FIVE: Discussion

This study investigated the relationship between self-determination, use of academic accommodations, use of related services, and college success, as measured by GPA, for undergraduate juniors and seniors with LD who are registered with their campus DS. A discussion of the results is presented in this chapter and the implications of this study are highlighted. Limitations of the study are also discussed and recommendations for future research are presented.

Self-Determination and GPA

A significant positive, relationship was found between self-determination and cumulative GPA, as expected. Participants with higher self-determination scores also had higher grade point averages. This result is consistent with Sarver (2000), who found a statistically significant, positive relationship between self-determination scores and GPA for college students with LD. In addition, previous research has found that self-determined students with disabilities are more successful than their peers with disabilities who have lower self-determination skills. Self-determined high school students with LD were rated by their teachers as having higher self-awareness and self-advocacy, and rated themselves as possessing higher assertiveness than those students lacking in self-determination skills (Durlak et al., 1994). Additionally, self-determined high school students with mental retardation or LD were employed more frequently and earning money more per hour than their peers who were not as self-determined a year after graduation (Wehmeyer & Schwartz, 1997). Therefore, being successful, either having a high self-determination score or a high GPA, in the college environment, requires higher-order cognitive processing skills, such as critical thinking, problem solving, and decision

making. This author speculates that this overlap in the skills necessary for success serves as one explanation of the relationship found in this study between self-determination and GPA.

Use of Accommodations, Use of Services, and GPA

A positive, significant relationship was expected between use of accommodations, use of services, and cumulative GPA. The analysis revealed no relationship of significance between frequency of use of accommodations, effectiveness of services (as a proxy for use of services), and GPA. In fact, previous research has produced conflicting results regarding the relationship between use of accommodations, use of services, and GPA. While a number of studies have shown a positive effect of use of accommodations and services on GPA (Allsopp et al., 2005; Alster, 1997; Runyan, 1991), several others (Trammell, 2003; Keim et al., 1996) did not find a significant relationship between accommodations and GPA. In these studies, use of accommodations and use of services were defined in various ways, different from how they are defined in this study.

There are numerous possible explanations. First, the relationship between use of accommodations and GPA may be accommodation specific. Extended testing time may have more of an impact on GPA than having a note-taker. Alster (1997) investigated the impact of extended testing time on an individual algebra test, but not a semester's GPA or cumulative GPA. This is an area of research which has not previously been explored. So, understanding the impact of utilizing specific accommodations on students' GPA is an area for further research. Secondly, there are other factors besides use of accommodations and use of services, not included in the scope of this study, which might influence GPA: IQ, SAT scores, or high school GPA (Coyle & Pillow, 2008). Further, it

may be that a student's perception of the accommodation or service as helpful, rather than the student's actual use of accommodations and/or services, is what impacts GPA. For a student, just knowing that she has extra time, if needed, may counteract any anxiety surrounding her test performance. In other words, students may not always use their accommodations, but having the accommodations available may help students mentally focus on the test material as opposed to the potential roadblock of whether or not they will complete the exam. Also, students may not need to use their accommodations in every course. Course expectations and requirements vary. Students may not have opportunity to use their extended testing time accommodations in the courses where they are evaluated by a take-home exam or presentations. Students may use their accommodations as needed, not just because they are provided. Finally, it is possible that students have developed other strategies to help themselves academically, other than depending on accommodations and services from the Disability office, which agrees with previous research (Reis at al., 2000). This independence is, in fact, quite desirable, as it may reflect high self-determination, in that students do not want to be over-accommodated; they want to do what they are able to do without additional, potentially unnecessary, support.

Furthermore, use of services is difficult to quantify. The services targeted in this study (academic coaching and help talking with instructors) cannot be interpreted by frequency. Services, unlike accommodations, generally do not directly map onto a particular course or exam. Academic coaching and help talking with instructors are global skills and strategies which support personal development and academic success. Therefore, effectiveness of services acted as a proxy for use of services. Those who

reported that services were "not at all" effective for their academic success also reported the highest GPA. Keim et al. (1996) also found that students with lower levels of advisement reported higher GPAs. So, it may be that students do not find services effective as a contributor to their academic success, and thus, they do not use services. As an example, only 5.7% of respondents indicated that accommodations were not at all effective as a contributor to their academic success, while 20% said services were not at all effective for their academic success. In addition, these studies differ in how use of accommodations and use of services are defined.

Underutilization of Accommodations and Services

In this study there was a gap between the accommodations students were eligible for and the accommodations they actually used (see Table 6). In fact, while 95.7% of participants had a letter from Disability Services detailing their eligible accommodations, only 87.1% distributed this letter to their instructors. When students were asked why they did not use their accommodations, the greatest percentage reported wanting to try succeeding without using their accommodations. Also participants said they did not need accommodations to succeed, did not want to be perceived as someone who takes unfair advantage, did not want others to know they have a disability, or that it would take too much time to use accommodations. These comments, which echo previous research (Wilson et al., 2000) reflect that while students are eligible for accommodations, many do not want to use accommodations, although they reported needing their accommodations and generally found accommodations to be an effective contributor to their academic success.

Similarly, students reported that they did not need other services to succeed and

many others said they wanted to try succeeding without using services. Only a few students did not use services because they did not want others to know they had a disability while some said it would take too much time to use services. Forty-one percent of participants reported never using services. However, over half of participants rated services as either somewhat effective or "a lot" effective as a contributor to their academic success. It seems that students may assign value differentially to accommodations and services such that accommodations seem more necessary than services and this differential value is reflected in students' use of accommodations versus their use of services.

It may be that assessments of what students are eligible for are inaccurate, or perhaps students do not need their accommodations in all courses given the variability in course structure and expectations. Collectively, these responses regarding underutilization of accommodations and services may reflect students' view of accommodations and services as support reserved for emergency situations. In other words, students may turn to their accommodations and related services only after experiencing trouble in a course. Such trouble could include a low exam score, falling behind in their work, or any other unwanted, negative academic evaluation.

It is also possible that students do not use accommodations and services because they never intended to do so. It may be that parental involvement, rather than student interest or self-identified need, facilitated the registration appointment with DS. Well-meaning parents often help students get situated on campus, but as students revealed, they often want to succeed on their own without assistance or support.

Stigma

Students may experience discomfort with their disability and proactively reject the persistent stigma attached to having a disability. Students may not use their accommodations because they have been stigmatized in the past. For example, if instructors or teaching assistants ask all "DS students" to meet them at the end of class, this action violates the students' confidentiality regarding their disability status. In addition, students may think that instructors do not understand their disability well enough, so they do not use their accommodations to avoid awkward situations with faculty (Denhart, 2008). Given how participants reported not wanting to be perceived as someone who takes unfair advantage, nor did they want others to know they had a disability, this blatant disregard for their privacy may contribute to the stigma students may feel and therefore influence whether or not they use their accommodations and other services. The perception or actual occurrence of stigma was not explored in this study, but investigating the role of stigma in an academic context may provide useful information regarding how students with disabilities are treated in the University environment, which may influence their use of accommodations and services.

Lack of Self-Determination

The underutilization of accommodations and services may reflect a lack of self-determination and self-acceptance in students with LD. Students who may not accept their disability status as a part of their identity might also reject labeling themselves with a disability and pursuing assistance for persons with disabilities. Such a student might not register with the disability service on campus, virtually guaranteeing little or no access to accommodations and services. Then, such a student might not perform well academically

which might negatively impact his self-determination. The instrument used in this study was based on the Field and Hoffman (1994) model with five subscales: knowing yourself, valuing yourself, planning, acting on your plan, and experiencing outcomes and learning. Field and Hoffman concluded that these behaviors are interpreted as self-determined behavior while simultaneously producing even more self-determined behavior. It is possible for a participant to score higher on one scale than another, which indicates a lack of balance between the subscales, and therefore, the components of self-determination. For students who report not using accommodations and services, they may know themselves well and value themselves, yet fail to plan and act as successfully as needed. While this lowers their overall self-determination score, it specifically highlights areas where intervention might be helpful.

Prediction of GPA

It was anticipated that self-determination, use of accommodations, and use of services would reliably predict cumulative GPA. The analysis showed that only self-determination reliably predicted GPA. As stated above, previous research has produced conflicting results regarding the impact of use of accommodations and services on GPA. One explanation may be how GPA was measured. This study measured cumulative GPA, whereas other researchers have used end of semester GPA (Trammell, 2003). Therefore, a single semester GPA could be high or low depending upon several factors (courses taken, class status, etc.), whereas cumulative GPA provides a more accurate view of the student because it is an average of multiple semesters over time.

This author also speculates that accommodations and services did not reliably predict GPA because there are significant differences between accommodations and

services. Accommodations, such as extended testing time, have an immediate and clear impact on success. Students with LD who use extended testing time are often able to finish exams that they would otherwise not complete if tested for the same amount of time as their peers without disabilities. When graded on a sum total test, finishing an exam provides the opportunity for a higher score than if that test were only partially complete. Services, however, often target skills and strategies for students to use (Rath & Royer, 2001). Over time, when such skills and strategies are applied, students tend to be more successful (Palmer & Roessler, 2000; Reis et al, 2000). There is also a difference between developing skills and actually using those skills. But, this cannot often be seen as readily as a grade on a specific test. Skills and strategies take time to develop, implement, and fine-tune. Thus, students may use services less often than they use accommodations, as services do not provide instant feedback on performance.

Another possibility is that the services targeted in this study are not essential to academic success. In other words, academic coaching and help talking with instructors may not be what students need in order to succeed. There was no measure of students' skills in the current study; however, future researchers might consider what skills (maybe time management, test-taking strategies, or decision-making) students need in order to succeed academically.

Furthermore, according to the Anthony et al. (1993) model, on which this study was based, success is composed of skills and support. Accommodations were postulated to function as support, and more specifically University support. Services, may also be support, but were thought to focus on skills, specifically personal skills. In other words, the difference between accommodations and services from a student's perspective may

be "what I do" (services) as opposed to "what I received or what is provided to me" (accommodations). This may explain why there are conflicting results regarding the impact of use of accommodations or use of services on GPA. Students may feel varying degrees of control over use of accommodations and use of services; therefore, self-determination, something within personal control, may be a greater predictor of GPA. It may reflect students' desire to take credit for their GPA, particularly when it is high, rather than to assign credit for their success to anything else. As mentioned previously, use of services was measured by students' ratings of effectiveness of services, which may not be equivalent to a description of use of services as focusing on skills, as postulated by the Anthony et al. (1993) approach.

This study explored whether use of accommodations and use of services would mediate the relationship between self-determination and cumulative GPA. Previous research had not addressed the relationships noted in this paragraph; therefore, these expected outcomes were part of the unique contribution this study makes to the literature. However, use of accommodations and use of services did not mediate the relationship between self-determination and cumulative GPA. Self-determination was such a strong predictor on its own that use of accommodations and use of services had a very small impact on GPA. Therefore, neither use of accommodations nor use of services proved to mediate the relationship between self-determination and GPA. Again, it may be that other variables, not included in the scope of this study, might mediate the relationship between self-determination and GPA. Further exploration of the role of accommodations and services in impacting GPA for students with LD in a collegiate setting is needed.

Students' Recommendations Regarding Academic Success

This study included one open-ended question, which was included to ascertain what else might be related to self-determination and academic success for undergraduates with LD. Previous research has investigated what students believe helps them to succeed in college (Finn, 1998). Respondents were asked what they might recommend Disability Services and/or the University do to help incoming first year students with LD to be successful academically. Over 25% of participants thought the DS needed more advertisement about the assistance available at their office and that DS also needed to provide more information to students about available services. The use of technology, for example, podcasts available through the DS website, might facilitate DS in providing more information. Similarly, 20% of respondents said that DS should offer or provide some type of individual attention, like a mentor, for each incoming first-year student with LD. Individual mentors might help students with disabilities in multiple ways. A mentor could help a student identify how to use his accommodations for each course, while collecting feedback from the student regarding the effectiveness of using his accommodations. Additionally, an individual mentor might integrate services into each contact with the student. For example, students meet with their academic advisor usually only once a semester for the purpose of selecting courses for the upcoming semester. However, if a student with LD met with a DS mentor regularly (every 2 weeks or once a month), the student could receive academic coaching in every meeting as well as role-play talking with his instructors about his accommodations which might increase self-determination and bolster GPA.

Beyond Self-Determination: Self-Efficacy

The underutilization of accommodations and services revealed in this study perhaps should not be interpreted in a negative light. Students who do not use accommodations and services may be more self-determined and successful because they have developed strategies outside of and apart from what is offered by the campus DS. The major contribution of this study to the literature may be that students have figured out what they need to be successful in the college environment. In the disability field, researchers and professionals think students should make use of their accommodations and services, yet this study reflected that students, who want to do well, may have developed self-determination in that they have selectively decided how much they need to use accommodations. Perhaps use of accommodations and use of services should not be used as the only measuring stick for academic success in students with LD. There is some evidence of this.

Hartman-Hall and Haaga (2002) found that help-seeking was not related to severity of LD. Trainin and Swanson (2005) thought students with LD were more effective self-regulators because they selectively used strategies and help-seeking behaviors. This self-regulation may be reflected in the concept of self-efficacy. In addition, Parker and Boutelle (2009) found college students associated self-determination with academic coaching and described coaching as impacting their self-efficacy more than accommodations. Bast (2008) found self-determination and hope were significantly related as reported by adolescents with cognitive disabilities. Therefore, self-determination, hope, and self-efficacy may be what future research needs to concentrate on in attempting to understand how students with LD achieve academic success and

utilize accommodations and services.

Self-efficacy, originally theorized by psychologist Albert Bandura, is the perception that one can achieve desired goals. Simply put, self-efficacy says, "I can do it." The self-determination skills investigated in this study (knowing yourself, valuing yourself, plan, act, experience outcomes and learn) may be a subset of self-efficacy such that having self-determination paves the road to having self-efficacy. Indeed, this study found that students did not use accommodations and services because they thought they could do it and did not need accommodations and services to succeed. So, it may be self-efficacy which ultimately impacts academic success as students determine how and when they use accommodations.

Limitations

Sample Size

There are several concerns with this study which limit its generalizability. The sample size was small and the participant pool rather selective. While most students with disabilities at colleges and universities across the nation have LD, and the research addresses the college population with LD more often than students with other disabilities, focusing only on students with LD further limited the number of participants for this study and the generalizability of the study results to other students, with or without disabilities. The choice was made to limit study recruitment to students with LD primarily because accommodations are the most standard for LD, although, as accommodations are almost always tailored to the individual needs of the student, there is still much variation between accommodations for individual students with LD. This choice, while it limited generalizability to students with other disabilities, provided a

context for comparison with previous research on college students with LD, their use of accommodations, their use of services, and their academic success as measured by GPA.

Multiple Disabilities

Another limitation was that many students in this study had other disabilities in addition to LD. Secondary disabilities may have an effect on students' GPA, and may influence students' use of accommodations, use of services, and self-determination skills. Further complicating this matter is the possibility that students may not have disclosed secondary disabilities to the disability office when they registered, such that the accommodations and services they receive may be based solely on LD, when in actuality, other disabilities are present as well. While this could not be controlled entirely, information on secondary disabilities was collected in the survey and analyzed respectfully, such that those with only LD were compared to those with LD as well as other disabilities. No significant differences in self-determination, use of accommodations, use of services or GPA were found between participants with only LD as compared to those with LD as well as other disabilities.

Persisters

This study recruited juniors and seniors as participants. This selection bias is a limitation as it may have resulted in students with demonstrated success, those that have higher self-determination scores, and those who have already persisted in college. Frequently students with LD either drop out of school or are academically dismissed within their first two years, so among this pool, the range found in a typical college population was not present and therefore, the potential for students with lower GPAs serving as participants was smaller.

Unregistered Students

Further, not all students with LD choose to register with Disability Services, particularly if they believe they do not need accommodations or services to succeed academically. In this study over 95% of participants were registered with their campus Disability office. In fact, participants were identified by their DS during study recruitment because they had been associated with that office. Of those students who do register with DS, some of them may choose not to use their accommodations or services at all or only use their accommodations or services in particular courses or at particular times during the semester, for example, during final exams only. For some courses, students may not need accommodations. Therefore, there may be differences between students who choose to register with DS and those students who choose not to register with DS. For example, students who choose to register with DS may have higher self-determination scores than students who choose not to register with DS (Thoma & Getzel, 2005). The students who choose to register may be more aware of accommodations and their need for services. In fact, registering with DS as a student with a disability may be interpreted as a self-determined behavior (Getzel & Thoma, 2008). To only have included students with LD who are registered with DS in the study is a limitation in terms of generalizability; however, given the stigma associated with having a disability (Shaw, 2001; Smart, 2001), it would have been difficult to identify students with LD who were not registered with DS for participation in the study, given these students do not disclose their disability status. In addition, there was no way to verify if participants were registered with DS, as no identifying information was collected during the online survey. It may be that some study participants were not registered with DS and thus they may not

have a documented disability which has been verified by university staff.

Other Services

While this study investigated the relationship between self-determination, use of accommodations, use of services, and academic success, as measured by GPA, we do not know if services are effective for college students with LD. Study participants rated the effectiveness of services they used as a contributor to their academic success. Exactly 80% of participants said services were at least a little effective for their academic success (see Table 9). Yet, over 40% of participants said they did not use any disability services. The services targeted by this study were academic coaching (time management, organization study skills, etc.) and help talking with instructors. Participants could also select "other" and specify the service used. While 14% of participants chose other as a response, none of them specified what the "other" meant. This missing data is a limitation. Participants could have helped our understanding of which services are most needed and most effective for undergraduate juniors and seniors with LD. This is an untouched area for future research.

Uniqueness of Institutions Sampled

The results of this study reflect the unique characteristics of the eight institutions surveyed: four state universities, one of which was a HBCU, and four independent colleges, one of which was a Catholic institution. Therefore, replicating the study in different settings might result in different findings. Also, findings may differ if this study was replicated in a different geographic location of the United States from the East Coast or if the study examined different accommodations and services. The study used a convenience sample, which often is not representative of the population of college

students with LD. This is a limitation for being able to generalize the findings to the population.

Student Motivation

Only those students who were motivated to participate in this study did so. Participation was completely voluntary and not associated with any kind of course requirement or benefit. The incentive to participate was the drawing for the gift certificate. Also, given the multiple surveys used in this study, the time to complete the study was 30 minutes. Often surveys are not completed if the participants perceive the survey as taking too much time to finish (Towler, 2003). In this study, there were many participants who exited the survey before completing it. So, again the participant pool was limited to those who persisted in completing all of the survey questions which may have skewed the sample and the findings to these who were most persistent, or motivated. It may be as well, that these persons were most interested in the study topic and/or were more academically successful.

Control Group

This study did not use a control group for comparison purposes. Control groups serve to isolate the variable of interest for investigation when all other variables between the groups are similar. While this is often helpful in research, to adequately investigate the role of self-determination, use of accommodations, and use of services in regards to GPA for students with LD, this study was limited to college juniors and seniors with LD (although a significant proportion identified other disabilities in addition to having LD). Comparing students without disabilities to students with disabilities would have highlighted the difference a disability makes. However, such a study would not have

captured the unique role of use of accommodations and use of services as students without disabilities typically do not receive accommodations, and may not make use of related services. Students with LD could be compared to students with another disability. Likewise, students with LD who access services could be compared to those with LD who do not access services. In this study, students with LD alone were compared to students with LD plus another disability and no significant differences were found on all variables (GPA, SDSS, use of accommodations, use of services).

Pre-Existing Differences

Self-determination is an important skill for any person, but the literature has emphasized in particular the need for these skills for persons with disabilities to be successful in the academic environment and in life overall (Finn, Getzel, & McManus, 2008). In addition, there was no controlling for preexisting differences in intelligence (IQ) or SAT score for the students who participated. We know that IQ, as a measure of ability, has a significant relationship with GPA, as does SAT score (Coyle & Pillow, 2008). Yet, while IQ and SAT score could have been obtained, this study relied on self-report data from the students and students may not readily remember or even know their IQ or SAT score. Furthermore, to have obtained IQ and SAT score would have required students' permission to review confidential files, which may or may not contain IQ and SAT scores, and these files were not at the researcher's disposal. Lastly, to review such files would compromise the anonymity of the study participants.

Study Instruments

The study was limited by the reliability and validity of the instruments chosen. The Self-Determination Student Scale has been widely used in previous research and

found to be internally consistent, yet only one other study used this measure with a

college sample. The other measure targeting use of accommodations and services was

developed, based on previous research and literature, by the researcher for this study.

While no reliability or validity data was available on this measure, it may be that the

questions asked were not the best to measure use of accommodations and services. Pilot

testing did not reveal any significant problems with this measure; however, perhaps

students' use of accommodations and services might have been better captured using a

different method. Sarver (2000) used a simple frequency count of the number of

accommodations (testing, technology, and learning strategies) approved for and accessed

through the DS office. She also conducted a qualitative interview with a few of the study

participants. However, it might be more fruitful to ask students about the content of

accommodations and services (which accommodations and services were used, how often

were they used, how were they effective when they were used, etc.). It may be interesting

to investigate students' perception of how the accommodations they were eligible for met

their academic needs, or if students wanted accommodations that they did not receive

which they may have thought would have been helpful to their academic success.

This study used survey methodology, which is quite popular in social science

research. There is a noted gap between asking about a person's perceptions and actually

measuring behavior (Goffman, 1959) and there are also generally effects of social

desirability when persons answer surveys (Marlowe & Crowne, 1961). While these are

common limitations given the broad use of survey methodology in social science

research, this study still provided fruitful evidence of a relationship between self-

determination and academic success as measured by GPA for college students with LD,

although the impact of use of accommodations and services was more nebulous.

Finally, the perspective of the researcher, as a counselor and former DS staff member, may have limited this study. In other words, students with LD may not refer to accommodations and services by the same terminology used in this study. Research using different methods, such as a qualitative interview, may better uncover how students refer to and understand accommodations and services.

Implications

This study has far reaching implications for high school and college students, parents, disability professionals, instructors and teaching assistants, and other University Staff, such as advisors and counselors. Self-determination is such an important set of skills for students with LD, which is surprisingly, often not taught to students at either the high school or college levels. Research has shown how students who lack self-determination are often regarded as less prepared for postsecondary education than those who have this skill set (Brinckerhoff, 1994; Field et al., 2003; Layton & Lock, 2003; Mellard & Hazel, 1992). The current study provides evidence that supports the development of self-determination skills for academic success in college students with LD.

First, students and parents should discuss strategies for identifying needed resources and using such resources (like DS) to maximize academic success. This process of working through the identification of resources would be an exercise in self-determined behavior, specifically addressing the know yourself, value yourself, and plan subscales of the Self-Determination Student Scale. Students might also determine for themselves which accommodations they need or which accommodations have served

them best in the past, so that they might have an assessment of their need for accommodations. Students could also identify what services might be helpful based on their past academic experiences.

Second, high schools might include direct instruction in self-determination skills as a part of the transition planning for students with disabilities as well as education about how accommodations are obtained in the college setting. At the college level, Disability professionals and University staff can help students develop more self-determination through addressing self-determination skills within the individual and group counseling offered at Counseling Centers or through educational courses. DS could also directly address these skills with students during the students' registration appointments and during any subsequent contact with students with LD, discussing with every student exactly what services are available to support their academic success. Assigning each student with LD to a DS mentor would facilitate this process. Increased contact between DS staff and students with LD in a mentoring relationship might prevent academic problems or at least help resolve such problems before they are extreme and irreversible. In addition, during such meetings mentors can help students with LD develop more self-determination as students understand how DS can help them to succeed using accommodations and services. Increased self-determination skills should result in greater success academically.

DS might also hold exit interviews with students with disabilities who are graduating from their educational institution. An exit interview might serve multiple purposes. First, students could provide further recommendations to DS regarding what might be helpful for other students with LD. Also, graduating students could specifically

report what they found helpful to their academic success during their years at the institution. Secondly, the exit interview might serve as career preparation for students with disabilities as they move into the workplace or graduate education. Students who have received accommodations in the past might benefit from understanding how to request accommodations in the workplace or at the graduate educational level.

This study holds implications for future research as well. Simply put, while accommodations and services are widely utilized in the college and university setting, not enough is known about how and why accommodations and services are truly effective for students with LD.

Recommendations for Future Research

There are many directions for future research. First, a measure targeting the use of accommodations and use of services should be developed. With the increasing numbers of students with LD attending college, having an adequate way to measure the use and effectiveness of provided accommodations and services is necessary to determine what role, if any, accommodations and services play in regards to academic success for students with LD.

More exploration is required into the impact of use of accommodations and services on GPA. What specifically needs to be clarified is how students view accommodations and services. Are students interested in learning skills and strategies (services) or do they prefer to just receive accommodations? Do students indeed view accommodations as having a "direct payoff" while the effect of use of services may take longer to manifest? Does this vary by disability type? Does this change as students matriculate through their undergraduate years?

Secondly, this study could be replicated with several modifications. For example, a question regarding severity of disability might be included. It may be that those students with more significant learning problems use accommodations and services more often. Also, this study could be replicated with first and second year college students with LD. Do first and second year students use accommodations and services more than juniors and seniors? Is their use of accommodations and services dependent upon whether or not they used accommodations and services in high school or does it reflect more parental input?

A simple, but fruitful study might compare college students with LD given direct instruction in self-determination to college students with LD without such instruction and measure their self-determination and GPA a semester or a year later. Typically previous studies have only compared students with disabilities to students without disabilities. Taking a longitudinal look at self-determination, use of accommodations, use of services, and GPA would be interesting. Previous studies (e.g. Durlak et al., 1994) have found high school students benefited from direct instruction in self-determination, yet none of these studies considered how use of accommodations and use of services might impact GPA for college students with LD. Would use of accommodations increase over time as students experience success? Would use of accommodations decrease over time as students progress further into their major of choice? Would use of services have a greater impact for first year students as opposed to upperclassmen? How might self-determination differ over the college years as students see more or less success academically?

In addition, many questions surround the students with disabilities who choose not to register with DS. If these students could be identified, it may be interesting to know what is necessary to prompt them to register with their campus Disability Service. Or, what do they do to be successful academically?

Furthermore, the relationship between self-determination, use of accommodations, and use of services may be better measured as self-efficacy, a concept popularized by psychologist Albert Bandura. In fact, self-determination seems to be a subset of self-efficacy. Do students with LD feel that they can succeed in the college environment? Does the use of accommodations and services bolster students' self-efficacy?

Finally, future research on self-determination (or self-efficacy), use of accommodations, use of services, and GPA might also focus on students with LD from college programs designed to assist first generation college students or those from underrepresented populations in the transition to college. It may be that this type of sample can help to answer questions about what secondary schools need to do in preparing students with LD for college. Perhaps instead of emphasizing the use of accommodations and services, secondary schools need to help build students' study skills in preparation for the academic demands of college.

Exploration of these questions will hopefully lead to greater self-determination skills and academic success for college students with LD. At the University level, research like this will hopefully influence decisions regarding increased funding, staffing, and advertisement, to support students with LD for their academic success.

Appendices

Appendix A: Demographic Questions

(The actual survey appears differently on the Internet, with drop-down menus, blank spaces to type in information, or choices to select by clicking the appropriate box.)

Directions: Please fill in the blank with the appropriate answer. Please select (circle or underline) **only one** category for each question.

Age: _____

Gender: Male   Female   Prefer not to answer

Class Status: Junior   Senior

Student Status: Full-time   Part-time

With which culture do you identify most?
        Caucasian/White
        African-American/Black
        Latino/Latina
        Asian
        Pacific Islander
        Native American
        Other (please specify): _____
        Prefer not to answer

Age of Disability Diagnosis:
        Elementary School
        Middle School
        High School
        College

Do you have a Learning Disability?   Yes   No

Do you have other disabilities?   Yes   No
        If yes, please specify and add all that apply:
_____

At which college or university are you currently enrolled as a student? (please specify)
_____

In what state is your college or university located? (pull-down menu with all states listed as available answer options)

Appendix B: Use of Accommodations and Use of Disability Services

Directions: Please fill in the blank with the appropriate answer. Select <u>only one</u> answer for each question.

1. What is your current cumulative GPA (on a 4.0 scale)? _____

2. Do you have a registration letter from the Disability Service?   Yes   No

3. Do you distribute a registration letter from the Disability Service to some of your course instructors and TAs?   Yes   No

4. When did you register with the Disability Service? _____

5. How many semesters have you used accommodations or other services provided by the Disability Service? _____

6. How many semesters have you been a student at your current institution? _____

7. Please check the accommodations you are **<u>eligible for</u>** (according to your DS letter). Check all that apply.

   ____ Extended Testing Time (time and ½ or double time)
   ____ Note-taking
   ____ Reader/ Scribe
   ____ Computer
   ____ Audio Books
   ____ Interpreter/ C-Print/ CART
   ____ Other (*please specify)*:_____

8. Please check the accommodations that you **<u>have ever used</u>**. Check all that apply.

   ____ Extended Testing Time (time and ½ or double time)
   ____ Note-taking
   ____ Reader/ Scribe
   ____ Computer
   ____ Audio Books
   ____ Interpreter/ C-Print/ CART
   ____ Other (*please specify)*:_____

9. Please check the services from DS other than accommodations that you **<u>have ever used</u>**. Check all that apply.

   ____ Academic Coaching (time management, organization, study skills, etc.)
   ____ Help talking with instructors
   ____ None

_____ Other (*please specify)*:_____

10. In general, I **use** my accommodations:
   In all of my courses (91-100% of the time)
   In most of my courses (61-90% of the time)
   In some of my courses (31-60% of the time)
   In a few of my courses (1-30% of the time)
   Not at all (0% of the time)

11. In general, I **have needed** my accommodations:
   In all of my courses (91-100% of the time)
   In most of my courses (61-90% of the time)
   In some of my courses (31-60% of the time)
   In a few of my courses (1-30% of the time)
   Not at all (0% of the time)

12. What is the **primary** reason you **do not use** your accommodations (such as extended testing time, note-taking, reader/scribe, computer, etc.)? (select only one)

   I use my accommodations
   I don't want to be perceived as someone who takes unfair advantage
   I don't want to talk to instructors one-on-one
   I don't want others to know I have a disability
   I don't need accommodations to succeed
   I don't know how to use my accommodations
   It would take too much time
   I don't really have a learning disability
   I want to try succeeding without using accommodations
   Other (please specify): _____

13. What is the **primary** reason why you **do not use** other DS services (such as academic coaching or help talking with instructors, etc.)? (select only one)

   I use other services
   I don't want others to know I have a disability
   I don't need other services to succeed
   I don't know how to obtain services to help me
   I don't know what services are available
   It would take too much time
   I don't really have a learning disability
   I want to try succeeding without using services
   Other (please specify): _____

14. How effective are your accommodations as a contributor to your academic success?

Not at all   A little   Somewhat   A lot

15. How effective are the other DS services you used as a contributor to your academic success?

Not at all   A little   Somewhat   A lot

16. What would you recommend that Disability Services and/or the University do to help incoming first year students with learning disabilities to be successful academically? (open-ended question)

Appendix C: Self-Determination Student Scale[3]

Directions: Read each statement carefully. If the statement describes you or your beliefs, check the box labeled "That's me." If the statement does not describe you or your beliefs, check the box labeled "That's not me."

1. I am a dreamer.

2. I know what is important to me.

3. I have the right to decide what I want to do.

4. When I do not get something I want, I try a new approach.

5. I forget to take care of my needs when I am with my friends.

6. To help me the next time, I evaluate how things turned out.

7. There are no interesting possibilities in my future.

8. Nothing is important to me.

9. No one has the right to tell me what to do.

10. I can only think of one way to get something I want.

11. I can be successful even though I have weaknesses.

12. I can figure out how to get something if I want it.

13. Sometimes I need to take risks.

14. I do not have any goals for school this year.

15. I would not practice in my mind giving a speech to a class because it would just

    make me nervous.

16. I do not know my weaknesses.

17. My weaknesses stop me from being successful.

18. I do things without making a plan.

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[3] Hoffman, A., Field, S., & Sawilowsky, S. (2004). Self-determination assessment battery user's guide (3rd edition). Retrieved September 13, 2008, from http://education.ou.edu/zarrow/?p=38&2=41

19. I know my strengths.

20. I do <u>not</u> know where to find help when I need it.

21. It is a waste of time to reflect on why things turned out the way they did.

22. I dream about what my life will be like after I finish school.

23. I tell others what I want.

24. If I want something, I keep at it.

25. I think about how I could have done something better.

26. I make decisions without knowing if I have options.

27. I forget to think about what is good for me when I do things.

28. I am frequently surprised by what happens when I do things.

29. I am too shy to tell others what I want.

30. I am too scared to take risks.

31. Criticism makes me angry.

32. I am embarrassed when I succeed.

33. I plan to explore many options before choosing a career.

34. I prefer to negotiate rather than to demand or give in.

35. I would rather have the teacher assign me a topic for a project than to create one myself.

36. I am unhappy with who I am.

37. My life has no direction.

38. I imagine myself failing before I do things.

39. I like to know my options before making a decision.

40. I think about what is good for me when I do things.

41. Before I do something, I think about what might happen.

42. My friends are lucky to know me.

43. I know what grades I am working toward in my classes.

44. Doing well in school does <u>not</u> make me feel good.

45. When I want something different from my friend, we find a solution that makes us both happy.

46. It is important for me to know what I do well in being a good friend.

47. In an argument, I am responsible for how I act on my feelings.

48. I wish someone would tell me what to do when I finish school.

49. I like who I am.

50. Goals give my life direction.

51. I imagine myself being successful.

52. Personal hygiene is important to me.

53. My experiences in school will <u>not</u> affect my career choice.

54. When I am with friends, I tell them what I want to do.

55. If I am unable to solve a puzzle quickly, I get frustrated and stop.

56. I make changes to improve my relationship with my family.

57. I do <u>not</u> know if my parent's beliefs are important to me.

58. If I need help with a school project, I can figure out where to get it.

59. I am easily discouraged when I fail.

60. I do things the same way even if there might be a better way.

61. I know what is important when choosing my friends.

62. I could <u>not</u> describe my strengths and weaknesses in school.

63. I like to solve puzzles.

64. Nothing good could come from admitting to myself that I am having difficulty in a class.

65. At the end of the semester, I compare my grades to those I expected.

66. It is silly to dream about what I will do when I finish school.

67. I do <u>not</u> participate in school activities because I have nothing to contribute.

68. I accept some criticism and ignore some.

69. I give in when I have differences with others.

70. I do <u>not</u> look back to judge my performance.

71. I tell my friends what I want to do when we go out.

72. I know how to compensate for my weaknesses in sports.

73. I ask directions or look at a map before going to a new place.

74. I like to be called on in class.

75. When I am angry with my friends, I talk with them about it.

76. I like it when my friends see me do well.

77. When going through the dining hall line, I pick the first thing.

78. I know how to get help when I need it.

79. I prefer to flip through pages, rather than to use the index.

80. I think about how well I did something.

81. I do <u>not</u> volunteer in class because I will be embarrassed if I am wrong.

82. I do <u>not</u> know where to get help to decide what I should do after I finish school.

83. If my friends criticize something I am wearing, I would not wear it again.

84. I do <u>not</u> like to review my test results.

85. Before I give a report in class, I go over it in my mind.

86. I talk about people without considering how it might affect them.

87. I feel proud when I succeed.

88. When we are deciding what to do, I just listen to my friends.

89. When deciding what to do with my fiend, it is not possible for both of us to be satisfied.

90. When I want good grades, I work until I get them.

91. If my team wins, there is nothing to be gained by reviewing my performance.

92. Before starting a part-time job or extracurricular activity, I think about how it might affect my school work.

Appendix D: Recruitment Email

Dear Students,

You are receiving this email because you are a student registered with the Disability Service (DS).

I am inviting you to participate in a research project to explore the factors related to college success for students with learning disabilities. This study will serve as my doctoral dissertation. It is hoped that the results will inform DS offices and educators about what helps students with learning disabilities to succeed in college.

This confidential survey will be conducted online. Answering the questions in this study should take no more than 60 minutes. Once you complete the survey you will be given instructions about how to be entered into a drawing for a $50 gift certificate to Amazon.com. Two gift certificates will be given away randomly to those who have participated in the study. The chance of winning a gift certificate is estimated to be 1/140.

Please know that should you choose to participate in the study, DS staff will not receive any information regarding whether or not you chose to participate or the content of your individual responses. Your decision to participate will not affect the services that you receive through DS or anywhere at the University.

If you are interested in participating in this study, you can access the survey by clicking on the following link: http://www.surveygizmo.com/s/162483/5qnhk. I would greatly appreciate your participation!

If you have any questions, please contact me at mjbh19@umd.edu. My advisor

for this research is Dr. Kim MacDonald-Wilson and she can be contacted at

kmacdona@umd.edu.

With sincere thanks,

Marja Humphrey, MA

Doctoral Candidate, Counselor Education

Department of Counseling and Personnel Services

University of Maryland, College Park

Appendix E: Informed Consent

The Relationship of Self-Determination, Use of Accommodations, and Use of Services to

Academic Success in Undergraduate Juniors and Seniors with Learning Disabilities

This is a research project being conducted by Marja Humphrey at the University

of Maryland, College Park. You are invited to participate in this research project because

you are registered with the Disability Service (DS) as a student with a learning disability.

The purpose of this study is to investigate what factors are related to college success for

students with learning disabilities. This information is being sought to further our

understanding of what can be done to improve college success for students with your

experiences.

The survey should take you about 60 minutes to complete. The items in the

survey pertain to your use of academic accommodations and disability services, your

ability to make decisions about college, and your attitudes and personality. For example:

How effective are your accommodations as a contributor to your academic success?

Would you say that you know your strengths?

We will keep your responses confidential. This survey will not contain

information that may personally identify you. Your email address or other identifying

information will not be recorded or noted in your responses. Your responses will be

coded with a randomly computer-generated ID number that will not contain any

information that could identify you. After you complete the survey, you will be given the

option to enter a drawing for a $50 gift certificate from Amazon.com, with instructions

about how to enter. Only at that point will contact information be requested to notify you

if you win the drawing. There are no known risks associated with participating in this research project.

Please remember, your participation in this research is completely voluntary. You may choose not to take part at all. If you choose not to participate, simply check "no" below. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized.

This research is being conducted by Marja Humphrey under the supervision of Dr. Kim MacDonald-Wilson at the University of Maryland, College Park. If you have any questions about the research study itself, please contact Marja Humphrey at 301-204-4876 or mjbh19@umd.edu. If you have questions about your rights as a research subject or wish to report a research-related injury, please contact: Institutional Review Board Office, University of Maryland, College Park, Maryland, 20742; (e-mail) irb@deans.umd.edu; (telephone) 301-405-0678. This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.

If you agree to participate, please check "yes" below. Checking "yes" indicates that you are at least 18 years of age, the research has been explained to you, your questions have been fully answered, and you freely and voluntarily choose to participate in this research project. Please check "no" if you decline participation.

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EDUCATION

Ph.D.   **Counselor Education,** Rehabilitation Counseling emphasis
University of Maryland
December 2010
Dissertation: *The Relationship of Self-Determination, Use of Accommodations, and Use of Services to Academic Success in Undergraduate Students with Learning Disabilities*

M.A.   **Psychology,** Social Psychology emphasis
The University of North Carolina at Greensboro
May 2003
Thesis: *Jealousy and Deception in Romantic Relationships: What If You Can't Handle the Truth?*

B.A.   **Joint Major: Biology and Psychology,** Neuroscience emphasis
Minors: Africana Studies and Dance
Franklin and Marshall College
May 1999
Senior Project: *The Probability of Deception as a Function of Attachment in Romantic Relationships*

PROFESSIONAL EXPERIENCE

Research

Graduate Research Assistant, Department of Counseling and Personnel Services
University of Maryland
College Park, MD   May 2006-July 2007

Collected data via phone with consumers on customer satisfaction with services received from the Maryland Department of Rehabilitation Services (DORS). Presented summary data on the results and implications for improving services.

Graduate Research Assistant, Department of Counseling and Personnel Services
University of Maryland
College Park, MD   August 2004-June 2005

Conducted literature reviews on current work in transition preparation, process, and outcome for students with disabilities. Analyzed data from a large database of the Marriott Foundation's "Bridges … from school to work" program to understand how transition may differ for minority students or students with severe disabilities.

Graduate Research Assistant, Department of Psychology
The University of North Carolina at Greensboro
Greensboro, NC   August 2000-July 2003

Designed, executed, and evaluated research studies. Prepared results in American Psychological Association style for publication in academic journals. Managed data collection projects involving participant recruitment, appointment scheduling, interviewing families, and data analysis for a large bi-national (United States and Israel) longitudinal research grant focused on young women's leaving home transition and adjustment to adulthood with attention to entering college. Also assisted in evaluating a local program designed to improve African-American girls' self-esteem, body image, and communication with mother figures.

Teaching

Course Instructor, Department of Counseling and Personnel Services
University of Maryland
College Park, MD   January 2007-May 2007

Created a syllabus for a master's level assessment in counseling course. Lectured each week on various topics related to appraisal: statistical concepts, ability and intelligence testing, career inventories, and assessment issues in education. Primarily responsible for making assessment topics applicable to a school counseling context while challenging students to use assessments ethically and in a culturally appropriate manner.

Graduate Teaching Assistant, Department of Counseling and Personnel Services
University of Maryland
College Park, MD   January 2007-May 2007

Primarily evaluated student work in an undergraduate elective course titled Disability in American Society. Helped to plan class activities to further students' personal understanding of disability. Lectured on societal attitudes and responses to disability and personal experience of disability.

Graduate Teaching Assistant, Department of Counseling and Personnel Services
University of Maryland
College Park, MD   January 2006- May 2006

Lectured on Cultural Identity models and Ethics for a master's multicultural counseling course. Also evaluated student papers and presentations. Helped to direct students with group projects and encouraged personal cultural exploration.

Course Instructor, Office of Human Relations Programs

University of Maryland
College Park, MD   February 2005- May 2005

Facilitated an Intergroup Dialogue group focused on issues of race. Lead group discussion with a co-instructor. Choose readings specific to student interest and racial issues. Promoted students' understanding of differences and encouraged personal exploration of privileges accrued to one's belonging to a particular racial group.

Graduate Teaching Assistant, Department of Counseling and Personnel Services

University of Maryland
College Park, MD   August 2004-December 2004

Facilitated discussion section in Counseling Theories course for first year master's rehabilitation counseling students. Taught students how to apply counseling theories to clients with disabilities.

Graduate Teaching Assistant, Department of Psychology

The University of North Carolina at Greensboro
Greensboro, NC   January 2003-May 2003

Co-instructed undergraduate course entitled Intimate Relationships. Coordinated lab activities to help students understand the process of research. In small groups, students collected and analyzed the data. Individually, students performed a literature review and produced a research report containing their interpretation of research results.

Graduate Teaching Assistant, Department of Psychology

The University of North Carolina at Greensboro
Greensboro, NC   January 2002-May 2002

Instructor for Research Methods- Lab course. Taught research methodology, statistics, data analysis, and writing for undergraduate psychology majors.

Counseling

Customer Service Coordinator/Counselor, Disability Support Service
University of Maryland
College Park, MD   August 2005-June 2008

Assisted the Director of Disability Support Service. Hired and supervised undergraduate student workers. Worked in concert with the Coordinator of Deaf and Hard of Hearing Services, the Reading Coordinator and the Testing Coordinators. Met with students to review psychoeducational and/or neuropsychological test results to facilitate academic accommodations and provision of services. Acted as a liaison between DSS and professors to promote understanding and sensitivity to disability and related issues. Edited DSS website, written publications, policy manual, and working forms. Served as the main point of contact for grievances.

Counselor, Intern
University of Maryland
College Park, MD   September 2004-December 2004

Provided individual counseling to students presenting to Disability Support Service. Interviewed students during intake process to determine need for academic accommodations. Worked with students to determine individual academic and social goals, and formulate action plans to achieve goals.

Assessment Counselor
Moses Cone Behavioral Health Center
Greensboro, NC   September 2003-July 2004

Interviewed patients in the office and in the emergency department of area hospitals to determine the appropriate level of treatment. Provided referrals for patients not requiring urgent care. Utilized triage procedures to assist emergency department physician in resolving patients' presenting problems efficiently. Communicated with medical professionals and insurance companies regarding patient treatment plans.

SCHOLARSHIP
Presentations

Lee, C. C., Butler, A., and **Humphrey, M**. (2008, January). *Ensuring an inclusive community at woodmore.* Program presented at the Woodmore Country Club, Mitchellville, MD.

Humphrey, M. (2006, September). *Supervisee resistance*. Program presented at the Southern Association for Counselor Education and Supervision, Orlando, FL.

Lee, C. C., Butler, A., Diaz, J., Gonzales, I., and **Humphrey, M**. (2006, April). *Helping women from other cultures: Keys to communication and understanding.* Program presented at the Montgomery County Commission for Women Counseling and Career Center, Rockville, MD.

Charles-Pierre, S., Colón, B., Ethridge, G., **Humphrey, M.**, & Muñoz, O. (2006, February). *Empirically supported treatments for psychiatric, learning, and substance*

abuse disabilities. Poster session presented at the National Conference of Rehabilitation Educators, San Diego, CA.

Lee, C. C., **Humphrey, M**., and Hipolito-Delgado, C. P. (2006, January). Leadership in urban school settings. Program presented at the Urban School Counseling Conference of the Counselor Education Program, Counseling and Personnel Services Department, College of Education, University of Maryland and The College Board, College Park, MD.

Publications

Lee, C. C., Burnhill, D., Butler, A., Hipolito-Delgado, C. P., **Humphrey, M**., Munoz, O., & Shin, H. (Eds.). (2009). Elements of culture in counseling. Upper Saddle River, NJ: Pearson Education.

Humphrey, M. (2008). [Review of the book *Collaborative Treatment of Traumatized Children and Teens: The Trauma Systems Therapy Approach*]. The Family Journal, 16, 275-277.

Humphrey, M., Hipolito-Delgado, C. P., & Lee, C. C. (2005). Counselors as leaders: Why and how? *Counseling and Human Development, 38(3)*.

HONORS AND AWARDS

The Graduate School Travel Grant
        University of Maryland, September 2006

Counseling and Personnel Services Travel Grant
        University of Maryland, September 2006

The Naomi P. Hentz Memorial Fund Scholarship, College of Education
        University of Maryland, August 2006

Counseling and Personnel Services Research/Teaching Fellow
        University of Maryland, August 2004-August 2005

Summer Research Award- Psychology
        The University of North Carolina at Greensboro, May 2001-August 2001

PROFESSIONAL MEMBERSHIPS

- American Counseling Association
- Association for Counselor Education and Supervision

LEADERSHIP AND SERVICE

Panel Member   July 2006
American Counseling Association, 2007 Convention Blue Ribbon Panel

Alexandria, VA

Treasurer   August 2005-May 2006
University of Maryland, Chi Sigma Iota, Alpha Delta Chapter
College Park, MD

Committee Member   January 2005-April 2005
University of Maryland, Counselor Education Program Faculty Search Committee,
College Park, MD