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Effects of Academic Coaching on College Students with Learning Disabilities or Attention-Deficit Hyperactivity Disorder

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Effects of Academic Coaching on College Students with Learning Disabilities or Attention-Deficit Hyperactivity Disorder

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Table of Contents

Title Page……. 1

Copyright Page..…… 2

Approval Page……..……..……..…..3

Acknowledgements..... 4

Table of Contents..... 5

List of Tables 6

List of Figures..... 7

Abstract..... 8

Chapter 1..... 10

Chapter 2..... 21

Chapter 3..... 38

Chapter 4..... 59

Chapter 5..... 78

References..... 92

Appendices..... 102

Curriculum Vita 124

List of Tables

Table 1 Participants' Demographics

Table 2 Types of Accommodations Approved

Table 3 Demographic Information of the Participating Institution

Table 4 Academic Coaching Procedures by Session

Table 5 ANCOVA Descriptive Statistics; Means and Adjusted Means

Table 6 ANCOVA Analyses for Post-test Scores while Controlling for Pre-test Scores

Table 7 Cohen's d Effect Size Values

Table 8 Social Validity Results

Table 9 Services Utilized

List of Figures

Figure 1 Adjusted means for each group on the outcome scores across the 10 subscales on the LASSI after controlling for pre-test scores.

Figure 2 Adjusted means for each group on the outcome scores across the six subscales on the NSSE after controlling for pre-test scores.

Figure 3 Adjusted means for each group on outcomes from the Academic Self-Efficacy Scale after controlling for pre-test scores.

Figure 4 Adjusted means for each group on end of semester GPA after controlling for pre-test scores.

Abstract

Learning disabilities (LD) and/or attention-deficit hyperactivity disorder (ADHD) are the largest and fastest growing categories of disabilities at 4-year colleges and universities (National Health Interview Survey, 2008). Young adults with LD and/or ADHD attend four-year colleges at half the rate of the general populations and have poor outcomes related to retention and success in college (NLTS2, 2011). Although students with LD and/or ADHD are approved for accommodations under the Americans with Disabilities Act (ADA), they continue to struggle with poor organizational, time management, poor study, and poor social skills (Mull, et al., 2001; Weyandt & DuPaul, 2006). To improve the success of college students with LD and/or ADHD, a growing number of researchers are evaluating the use of Academic Coaching as an intervention to increase the success of these students. Although there is some evidence that Academic Coaching could be effective, more rigorous research is needed to document its efficacy with college students with ADHD and/or LD. The present study aimed to examine the effect of an Academic Coaching intervention plus typical services on college students with disabilities'' (LD or ADHD) use and knowledge of learning and study strategies, academic engagement, self-efficacy, and academic achievement by using a quasi-experimental, pre-posttest, control group design. Controlling for pre-test differences, an analysis of covariance (ANCOVA) was used to assess differences between groups on all outcome measures. In addition, this study aimed to provide descriptive information on other services, in addition to Academic Coaching, utilized across groups, whether or not co-occurring diagnoses were present across groups, and the social validity and treatment integrity of the Academic Coaching Intervention. There were significant mean differences across all dependent measures with the exception of two of the scales, one from the LASSI, and one from the NSSE. Findings suggest that Academic Coaching may be an

effective intervention to increase the use and knowledge of learning and study strategies, academic engagement, self-efficacy, and academic achievement of students with LD or ADHD. Future research is needed to continue to evaluate the effectiveness of Academic Coaching with college students with disabilities.

Key Words: Academic Coaching, Learning Disabilities, Attention-Deficit Hyperactivity Disorder, Self-Efficacy, Student Engagement, Academic Achievement, Accommodations

Chapter 1

Statement of the Problem

Introduction

Postsecondary education is increasingly regarded as a critical component for gaining suitable and meaningful employment (Carnevale & Desrochers, 2003; National Organization on Disability, 2001). Attending a postsecondary education institution and earning a bachelor's degree are linked to long-term cognitive, social, and economic benefits, enhancing individuals' quality of life and benefitting society as a whole (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). More and more students are choosing postsecondary education after high school. The characteristics of students participating in postsecondary education are diverse, with students presenting a wide array of learning styles and needs. Particularly, the number of students diagnosed with disabilities participating in postsecondary education has increased over the past decade. Part of this increase is a result of the implementation of the Individuals with Disabilities Education Act (IDEA, 1997), which ensures that school-aged children with disabilities have the opportunity to receive free and appropriate public education. The implementation of IDEA is monumental in encouraging more students to participate in general education classes at the middle and high school level, thus providing opportunities for inclusion of students with disabilities at the postsecondary levels of education (Jones, Apling, & Smole, 2004; Joshi & Bouck, 2015).

The percentage of college freshmen diagnosed with disabilities has more than tripled over the last 30 years (1978= 3%, 1998= 9%, and 2008= 11%) (Cortiella & Horowitz, 2014; U.S. Department of Education, 2013). Types of disabilities vary and include learning disabilities (LD), attention-deficit hyperactivity disorder (ADHD), as well as visual, auditory, speech,

orthopedic, and/or other health impairments. Of those disabilities, LD and/or ADHD were the largest and fastest growing categories of disabilities at 4-year colleges and universities between 1988 and 2006 (National Health Interview Survey, 2008). Young adults with LD and/or ADHD attend four-year colleges at half the rate of the general population, with 21% of students being identified as having LD and/or ADHD versus 40% of the general population enrolling in four year colleges (National Longitudinal Transition Study (NLTS2), 2011). Rates of ADHD diagnosis have increased at a greater rate among older teens as compared to younger children (Cortiella & Horowitz, 2014). Additionally, there is a higher prevalence of LD reported by adults age 18-24 (2.7%) versus school-age population (2.2%) (Cortiella & Horowitz, 2014). Furthermore, it is estimated that between 2% and 8% of university students exhibit clinically significant symptoms consistent with ADHD (DuPaul, Weyandt, O'Dell & Varejao, 2009).

The growing number of students with disabilities enrolled in postsecondary education, along with the implementation of key legislation such as the Higher Education Act 504 and the Americans with Disabilities Act (ADA), generated increased focus on the accessibility of higher education for students with disabilities (Newman, Wagner, Cameto, Knokey, & Shaver, 2010; Snyder & Dillow, 2010). ADA and the Higher Education Act 504 require institutions to provide accommodations that promote equal access to higher education and success in college courses.

Decisions about what accommodations will be offered are made by the institution and are based on documentation and reports from the students about their disability and how their disability affects them academically. In order to receive accommodations, the Higher Education Act 504 and ADA require students to self-advocate, understand their disability and be able to articulate reasons for specific academic accommodations (Taylor, Richards, & Brady, 2005). In other words, it is the students' responsibility to initiate requests for services, self-identify as a

student with a disability, provide documentation of their disability and the accommodations needed, self-advocate to their professors, and participate in services that will support their academic progress (Hadley, 2011).

Examples of accommodations that assist students with LD and/or ADHD include, but are not limited to, the use of readers, note-takers, extended test time, early course registration, alternate and distraction reduced testing environments, and the use of assistive technology to assist with writing and reading. The question remains about whether or not these kinds of accommodations are enough to ensure academic success for students with LD and ADHD. Students with LD and/or ADHD have more academic, social, and emotional difficulties as compared to their college peers without disabilities (Richman, Rademacher, & Maitland, 2014). Additionally, students with LD and/or ADHD face challenges throughout their academic careers, including experiencing problems in academic, behavioral, social, and emotional functioning, generally resulting in substantial difficulties in school settings (DuPaul, Reid, Anastopoulos, & Power, 2014; Richman, et al., 2014; Weis, Dean, & Osborne, 2014). Furthermore, difficulties with time management, procrastination, social interactions, and academic performance persist into adulthood in more than 50% of cases (Barkley, Murphy, & Fischer, 2007). The implementation of accommodations may help these students through some of the challenges; however, much of the research on graduation and retention rates of students with LD and/or ADHD is alarming.

Students with LD and/or ADHD face challenges such as lower attendance and graduation rates (Kober, 2002). Students diagnosed with LD and/or ADHD are less likely to attend college and when they do attend college, are less likely to graduate relative to their peers without disabilities (Barkley, 2002). Specifically, only 41% of these students manage to graduate, which

is half of the graduation rate for students without disabilities (Cortiella & Horowitz, 2014). There may be many reasons, in addition to the challenges mentioned above, for unsuccessful college completion, including the lack of understanding of disabilities by institutions of higher education (Greenbaum, Graham, & Scales 1995), academic dismissal based on poor academic progress, and dropping out for personal reasons, family responsibilities, and/or lack of assistance on campus (Cortiella & Horowitz, 2014; Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010).

In recent years, there is a renewed focus on an effort to improve retention and graduation rates (Bettinger & Baker, 2011). It is imperative for post-secondary institutions to go beyond offering the more common academic accommodations such as extended test time and distraction free testing. A number of researchers have raised concerns about the effectiveness and use of accommodations (Gregg & Nelson, 2010; Lovett, Nelson, Lindstrom, 2014; Mull, Sitlington, & Alper, 2001; Wadley & Liljequist, 2013). Accommodations may not be effective for students with disabilities because they often do not address students' functional needs (Kurth & Mellard, 2006). As reported by the NLTS2 (2011), 44% of students with LD who never received help with school work though that some assistance would have been helpful. It is important to consider ways to increase students' study skills, competency, self-efficacy, and engagement at the postsecondary level in order to address many of the challenges that students with LD and ADHD encounter. Many institutions offer services in addition to those accommodations approved by law, at no extra cost to their students to enhance success. The most common services offered include peer tutoring (Stodden, Whelley, Change, & Harding, 2001; Vogel, Fresko, & Wertheim, 2007), writing center services, student workshops on skill building, counseling services, and advising services.

An alternative approach beyond the typical services is Academic Coaching. Academic Coaching is an intervention based on reflection, planning, goal setting, and individual support. It involves weekly, individual meetings between the student and the coach to discuss goals, progress on goals, barriers to completing goals, and strategies for completing goals. Academic Coaching derives from the coaching model used in Executive Coaching and athletics (Quinn, Ratey, & Maitland, 2000). Executive Coaching is defined as an approach using feedback, relationship building, insight, and competency development by using a variety of behavioral techniques and strategies to complete goals in a systematic way (Brotman, Liberi, & Wasylyshyn, 1998; Kilburg, 1996)

Similar to executive coaching, Academic Coaching provides students with an intentional way to reflect on their interests, academics, and goals, and implement plans while engaging in a process of integrative learning (Robinson & Gahagan, 2010). Academic Coaching is an

> "interactive process that focuses on the personal relationship created between the student and the coach. The coach challenges the student to think about their personal and/or professional goals in order to relate them to his or her academic/educational goals. In this learning process, it is important for the coach to encourage the student to become more self-aware by understanding their strengths, values, interests, purpose, and passion. This process should also focus on the student developing necessary skills to be responsible for their actions and decisions. Through this learning and growing process, the coach should provide the student with resources to enhance academic success and personal development, as well as developing action plans that holds him or her accountable for the results. Academic coaching is designed to help students produce fulfilling results, improve their performance, and enhance the quality of their lives." (Romano, 2011)

Academic Coaching involves helping students with disabilities to explore aspects of their disability, skills, and study habits that interfere with academic performance in order to address difficulties such as procrastination, time management, self-regulation, and social deficits (Prevatt, Lampropoulos, Bowles, & Garret, 2011).

A vital component of Academic Coaching is planning. According to Kuh (2003), students who participate in a planning process to strategically map out engagement and academic endeavors are more satisfied and more likely to persist to degree completion than students who do not. Part of the planning process that students engage in during Academic Coaching includes evaluation of goals, progress on goals, and use of strategies to overcome barriers that may have impeded completion of goals. Swartz, Prevatt, and Proctor (2005) describe the use of a four-step approach used during the Academic Coaching process. The four steps are reviewing, evaluating, anticipating, and planning. Specifically, the coach and student spend each session together reviewing goals set at their previous session, assessing whether or not the student accomplished the goal or objective, evaluating the barriers that prevented goal completion, and finally, engaging in a discussion about strategies and ways to avoid those barriers in order to make progress towards the goal for the next session.

Although Academic Coaching has been evaluated to some extent, it is still an intervention that requires further empirical support. Currently, most research evaluating the effects of Academic Coaching on student outcomes have been non-experimental. They have involved case reports (e.g. Robinson & Gahagan, 2010; Swartz, et al., 2005), qualitative studies (e.g. Parker, Hoffman, Sawilowsky, & Rolands, 2011a; Parker, Hoffman, Sawilowsky, & Rolands, 2011b), and a pre-posttest design with no comparison group (e.g. Prevatt & Yelland, 2013) to describe outcomes such as the impact Academic Coaching has on students' study skills

and learning strategies (measured by the Learning and Study Strategies Inventory [LASSI]), students' self –regulation skills (measured by qualitative interview analyses), students' achievement of personal course-related goals (measured by qualitative interview analyses), and students' perceptions on the use of Academic Coaching (measured by qualitative interview analyses). A few studies have used more rigorous experimental designs with comparison groups (e.g. Richman, et al., 2014; Zwart & Kallemeyn, 2001) and found that Academic Coaching improved student outcomes such as improved problem-solving and time management skills (measured by the LASSI), improved management of emotions and daily stress (measured by the Self-Determination Student Scale), and achievement of academic goals (measured by the Behavior Rating Inventory of Executive Function-Adult Version). Only one study employed a randomized group design (e.g. Field, Parker, Sawilowksy, & Rolands, 2013) involving 113 college students with ADHD across 10 colleges and found that Academic Coaching had positive effects on student outcomes including improved study skills and improved use of learning strategies (measured by the LASSI).

Although these studies provide preliminary evidence on the effectiveness of Academic Coaching, more rigorous designs utilizing pre-posttest measures with a comparison group is needed. In addition, research is needed to evaluate additional outcomes that are highly correlated with student success such as self-efficacy and academic engagement. Furthermore, more research is needed that includes more rigorous reports of treatment fidelity, and more information is needed regarding additional services that students' used in addition to Academic Coaching. Even though a few studies employed more rigorous group designs, (e.g. Field et al., 2013; Richman et al., 2014; Zwart & Kallemeyn, 2001) they presented numerous limitations including unequal number of participants in treatment groups versus the control groups, lack of

established group equivalency when randomization was not used, lack of information on what other services participants used in addition to the Academic Coaching, lack of information on key participant characteristics such as the diagnoses of co-occurring mental health difficulties (depression and anxiety), and use of medication to manage symptoms, especially those diagnosed with ADHD. Only two studies (Richman, et al., 2014; Zwart & Kallemeyn, 2001) documented use of Academic Coaching with students with LD. The majority of studies focused exclusively students with ADHD. Additionally, in a majority of the studies, the institutions that have implemented Academic Coaching have traditionally used outside coaching agencies, thus increasing the cost associated with the implementation of Academic Coaching. Finally, increased empirical support on the efficacy and acceptability of Academic Coaching is needed and will provide institutions with insight on the use of Academic Coaching as an intervention tool for students with LD and ADHD.

Purpose of Study

The purpose of this study was to examine the effect of an Academic Coaching intervention plus typical services on college students' LD or ADHD use and knowledge of learning and study strategies, academic engagement, academic self-efficacy, and academic achievement. Primarily, this study aimed to examine the difference between two group conditions: students receiving Academic Coaching plus typical services versus students receiving only typical services. Typical services include academic accommodations plus access to academic support services offered by the student's institution including (a) writing center services, (b) tutoring services, (c) meetings and/or drop-ins with disability support specialist and/or advisor, (d) attending student workshops, and (e) participating in study tables.

This study aimed to address several gaps and limitations of the current literature evaluating the effects of Academic Coaching in several ways. First, this study included multiple measures (Academic-Self Efficacy Scale, National Survey of Student Engagement [NSSE], Learning and Study Strategies Inventory [LASSI]) to evaluate student outcomes that are highly correlated with student achievement and success (self-efficacy, academic engagement, and study and learning strategies). Second, this study evaluated the impact of Academic Coaching on semester grade point average (GPA), a measure of academic achievement for college students. Third, this study included students with LD or ADHD. Fourth, this study included a current disability support specialist as the trained academic coach employed by the students' institution and at no cost to the students. Fifth, this study included information on key variables that may impact the effectiveness of Academic Coaching such as the use of typical services in addition to Academic Coaching, and whether or not students' have co-occurring diagnoses (depression/anxiety). Sixth, this study evaluated the social validity of Academic Coaching. Finally, this study evaluated treatment integrity and implementation of Academic Coaching by the disability support specialist.

This study used a quasi-experimental nonequivalent, pre-posttest, control-group design to evaluate to effects of Academic Coaching plus typical services. Although participants were not randomly assigned to groups, this study incorporated analyses to control for any pre-test differences that may have existed between the groups by using pre-test scores as a covariate.

Research Questions and Hypotheses

The primary research questions and hypotheses are:

1. After controlling for pretest scores on each of the 10 scales from the LASSI, is there a significant mean difference on posttest scores on each of the LASSI's 10 scales

between the Academic Coaching plus typical services and typical services only group? The LASSI is a measure of the use and knowledge of study skills. It was hypothesized that there would be a significant mean difference on each of the ten scales on the LASSI for those students in the Academic Coaching group compared to those students in the typical services only group.

2. After controlling for pretest scores on each of the six scales from the NSSE, is there a significant mean difference on posttest scores on each of the NSSE's six scales between the Academic Coaching plus typical services and typical services only group? The NSSE is a measure of academic engagement. It was hypothesized that there would be a significant mean difference on each of the six scales from the NSSE for those students in the Academic Coaching group compared to those students in the typical services only group.
3. After controlling for pretest scores on the SES, is there a significant mean difference on posttest scores from the SES between the Academic Coaching plus typical services and typical services only group? The SES is a measure of self-efficacy. It was hypothesized that there would be a significant mean difference on the posttest scores from the SES for those students in the Academic Coaching group compared to those students in the typical services only group.
4. After controlling for beginning of semester cumulative GPA, is there a significant mean difference on end of semester cumulative GPA between the Academic Coaching plus typical services and typical services only group? GPA is a measure of academic achievement. It was hypothesized that there would be a significant mean difference on end of semester cumulative GPA for those students in the

Academic Coaching group compared to those students in the typical services only group.

5. How well was the Academic Coaching implemented by the disability support specialist? It was hypothesized that the disability support specialist would implement Academic Coaching with high integrity.
6. How do students in the Academic Coaching group judge the acceptability and effectiveness of the intervention? It was hypothesized that students would perceive the intervention as being acceptable and effective in enhancing self-efficacy, academic engagement, learning and study strategies, and semester GPA and would have positive perceptions on the use of Academic Coaching.

Significance of Study

This study aimed to provide further empirical support for the use of Academic Coaching with students with LD or ADHD to increase their success in the postsecondary education setting. Currently, research on the efficacy of Academic Coaching is limited. This study could provide information on how Academic Coaching can enhance students' academic success despite challenges posed by their disabilities. Institutions would benefit from this information so that administrators and support personnel are able to implement effective interventions that impact students' self-efficacy, academic engagement and academic achievement.

Chapter 2

Review of the Literature

The primary purpose of this literature review is to evaluate and review several key areas. The first area includes the challenges that students with LD and/or ADHD face at the postsecondary level. The second area includes typical services being offered to students with LD and/or ADHD at the postsecondary level in an attempt to address the challenges they face. The third area includes the use of self-efficacy and academic engagement as measures for student success. The final area includes the effectiveness of Academic Coaching on outcomes of college students with LD and/or ADHD.

As discussed in Chapter 1, the number of students with LD and/or ADHD attending postsecondary institutions is steadily increasing (US Department of Education, 2013). Students with LD and/or ADHD have been described as underserved and unprepared for postsecondary education (Gregg, 2009). Many students with LD and/or ADHD begin college unprepared to manage what might be the most significant demands placed on them (Connor, 2012). Typically, college students are required to (a) respond to complex and high amounts of academic work (Lindstrom, 2007); (b) learn information through a lecture format and from instructors whose support of students can be unpredictable (Ginsberg & Schulte, 2008); (c) be responsible for creating their own study guides and study materials; (d) be responsible for creating self-management systems to manage time; and (e) maintain an acceptable grade point average (Ginsberg & Schulte, 2008). Unfortunately, students with LD and/or ADHD report significantly more problems than their peers with regard to understanding lectures, managing time to complete assignments, and managing study skills to perform well on exams (Heiman & Precel, 2003). Students with LD and/or ADHD also experience more anxiety associated with school and in

turn, spend more hours studying to keep up with coursework (Trainin & Swanson, 2005). Underlying factors that affect students with LD and/or ADHD include poor organizational and time management skills, poor study skills, and poor social skills (Mull, et al., 2001; Weyandt & DuPaul, 2006). In addition to functional deficits, students with LD and/or ADHD often have core deficits in reading and math. Such skill deficits make it increasingly difficult for students with LD and/or ADHD to perform well in their college classes, thus causing them to be at-risk for dropping out before finishing their degree.

Many postsecondary institutions have responded to the increased rate of students with disabilities in postsecondary education and the challenges they face in their college classes by expanding support service programs for students with disabilities (Mull, et al., 2001). Many postsecondary institutions have created offices and staff to respond to the federal laws (ADA, Higher Education Act 504) designed to protect students with disabilities as they transition from high school to college. These staff members, often referred to as disability specialists, are responsible for ensuring that students with disabilities have access to higher education by adhering to the ADA and the Higher Education Act 504. ADA and the Higher Education Act 504 require colleges to provide reasonable accommodations to students with disabilities (Weis, et al., 2014). Reasonable accommodations adjust the manner in which students with disabilities learn or are evaluated so that they can access and demonstrate knowledge equal to their peers without disabilities (Ofiesh, 2007). Reasonable accommodations are not meant to lower expectations, but are meant to remove restrictions to participation (Lovett, 2014).

It is the disability specialist's responsibility to review documentation received from outside clinicians (physicians and psychologists) to decide what accommodations will be approved under ADA for each student requesting accommodations in college. In most cases,

reasonable accommodations are straightforward (Weis, et al., 2014). For example, students with vision difficulties might be afforded the use of Braille text as an approved accommodation. Students with hearing difficulties might be afforded a sign language interpreter or captioning services as an approved accommodation. Students with orthopedic impairments might be afforded wheelchair access as an approved accommodation. However, selecting accommodations for students with LD and/or ADHD can be less straightforward and problematic (Newman et al., 2011).

There are several reasons why selecting accommodations for students with LD and/or ADHD is problematic. First, disability specialists often rely on the evaluation and recommendations of outside clinicians when making accommodation decisions (Weis, et al., 2014). This is problematic because in most cases, clinicians make recommendations based on the student's diagnosis and not necessarily the student's functional limitations as a result of their diagnosis, causing a mis-match between the approved accommodation and the student's functional need. Second, the recommendations made by clinicians are typically based on student self-report on what the student perceives is the problem and student perceptions on what may help (e.g. difficulties on tests equals need for extended test time) (Gordon, Lewandowski, Murphy, and Dempsey, 2002; Wadley & Liljequist, 2013). This is problematic because students who are struggling with academic requirements at the postsecondary level may be under the impression that if they are approved for accommodations (e.g. having a note-taker in class because they have difficulties focusing on the lecture), they will do better on tests. However, this is not always the case. For example, if a student was approved for note-taking services, but does not understand the material or have the strategies needed to create effective study guides from the notes, then the student is still likely to do poorly on tests. Finally, disability specialists

may lack the training, background, and experience in understanding assessment reports and recommendations made by clinicians (Ofiesh & McAfee, 2000). This is problematic because even when clinicians do use formal assessments and/or describe symptoms the student is faced with, disability specialists often do not have the training or experience in deciphering on how the assessment reports and symptoms impact academic functioning at the post-secondary level.

While disability specialists do adhere to approving accommodations based on required documentation from clinicians, it is important to consider that the documentation from clinicians stem from a focus on the student's diagnosis rather than the student's contextual and functional needs, and thus, accommodations are often ineffective and inappropriate (Kurth & Mellard, 2006). Accommodations may not necessarily match underlying challenges such as poor organizational skills, poor time management skills, and poor study skills that students may be experiencing.

In the small number of studies that evaluate the effects of accommodations on college students' performance, the appropriateness of accommodations is questioned. For example, Gregg and Nelson (2010) reported in their meta-analysis on the use of extended test time with all students (with and without disabilities) that extended test time improved the performance of all students. In fact, Gregg and Nelson reported that students without disabilities outperformed students with disabilities even when extended test time was provided. In a more recent study, Wadley and Liljequist (2013) reported that students with ADHD actually did not do better on tests when given extended test time. Specifically, when students with ADHD were told they had extended test time on a math placement test, there was no effect on their test scores (Wadley & Liljequist, 2013). This is discerning because one of the most approved accommodations for

students with LD and/or ADHD is extended test time, with the thought that this accommodation will equal success on tests, when it may not.

There may be times when accommodations are well-matched in addressing some of the difficulties that students with LD and/or ADHD experience. For example, students who have difficulty with focus and concentration may benefit from a less distracting testing environment as an approved accommodation. However, even when accommodations are well-matched, they do not guarantee successful outcomes. To reiterate, the original intent of accommodations for students with disabilities was to provide equal access to higher education, not necessarily to ensure success in higher education (Lovett, et al., 2014). Students with LD and/or ADHD may need additional support services to ensure success. Over the past 15 years, the number of support service programs for students with disabilities has expanded at a phenomenal rate (Mull, et al., 2001). In addition to approved accommodations by law, postsecondary institutions also provide support services such as peer tutoring, writing center drop-in services, student workshops on skill building, counseling services, and advising services. However, the services and supports provided vary considerably from institution to institution, and the documented efficacy of these services for improving learning outcomes for students with disabilities is limited (Mull, et al., 2001).

Academic Success

An additional challenge for evaluating effective supports and services for students with disabilities is identifying effective measures of student success. Success can be defined by a number of activities and behaviors including academic achievement, satisfaction, engagement in educationally purposeful activities, acquisition of desired knowledge, skills and competencies, persistence, attainment of educational objectives, and post college performance (Kuh, et al.,

2008). Two constructs in particular have been found to be effective measures of student success. Both student engagement (Braxton, Hirschy, & McClendon, 2004; Kuh, 2003; Kuh, 2009; Pascarella & Terezini, 2005) and self-efficacy are highly correlated to academic success in the postsecondary education setting. In addition to self-efficacy and student engagement, grade point average (GPA) is used extensively to measure academic achievement and is typically used to evaluate whether or not students should continue forward in their academics at the college level.

Student engagement is defined as the initiation of action, effort, and persistence with schoolwork (Skinner, Wellborn, Connell, 1990). Engagement represents the time and effort students devote to academic activities (participation in class) that are linked to desired outcomes of college (increased knowledge) (Kuh, 2009). In addition, engagement has an interpersonal component, for example, interactions between students and instructors, interactions between students with peers, and interactions between students and their environment (Connell & Wellborn, 1991; Skinner & Belmont, 1993). Engagement is an important link to general college success and achievement (Kuh, 2001). Students who leave college prematurely are less engaged in academic activities than their counterparts who persist (Hughes & Pace, 2003).

Kuh and colleagues (2008) analyzed the relationships between key student behaviors and the institutional practices and conditions that foster student success. They evaluated two key outcomes of college, student engagement and academic achievement. Kuh and colleagues included two measures, scores from the NSSE to measure student engagement, and grade point average along with financial aid information to measure academic achievement from the first to second year of college. The authors used logistic regression to evaluate the relationships between the variables. They found that student engagement in educationally purposeful

activities had a small but statistically significant effect on first-year grades. That is, students who studied more hours per week earned higher first-year GPAs, and student engagement in educationally purposeful activities had a statistically significant effect on persistence, even after controlling for background characteristics (other college experiences during first college year, academic achievement, and financial aid).

The connection between students' academic success and self-efficacy is also well supported through research (Bong, 2001; Hackett, Betz, Casas, & Rocha-Singh, 1992; Multon, Brown, & Lent, 1991; Zajacova, Lynch, & Espenshade, 2005). Self-efficacy is defined as one's belief of one's own competence to successfully execute a course of action necessary to reach desired outcomes (Bandura, 1986). Academic self-efficacy refers to students' confidence in their ability to carry out academic tasks such as preparing for exams and writing term papers (Zajacova, et al., 2005). Self-efficacy beliefs can impact college outcomes by increasing students' motivation and persistence to master challenging academic tasks and by fostering the efficient use of acquired knowledge and skills (Bandura, 1993). Self-efficacy may be a more influential determinate of success than one's abilities, because belief in one's capacity impacts effort (Pajares, 2002).

An extensive body of research has demonstrated that academic self-efficacy is positively associated with grades in college (Bong, 2001; Hackett, et al., 1992; Multon, et al., 1991; Zajacova, et al., 2005). Chemers, Hu, and Garcia (2001) evaluated academic self-efficacy of college students using the Academic Self-Efficacy Scale (Chemers, et al., 2001) and found that students with high academic self-efficacy also had higher GPAs and, in turn, students with higher high school GPAs demonstrated higher academic self-efficacy, academic expectations, and academic performance in college as compared to students with lower high school GPAs.

In addition, Zajacova and colleagues (2005) found that self-efficacy in college was correlated with better grades, more accumulated credits, and greater persistence. Participants in this study included 107 first-semester freshmen. Measures included a questionnaire asking students to report their demographics, and the Academic Self-efficacy and Stress Scale (Zajacova, et al., 2005). The analyses included an exploratory and confirmatory factor analysis to determine whether stress and self-efficacy were related to one another. Results indicated that academic self-efficacy has a strong positive impact on freshman grades. However, self-efficacy did not have an impact on student persistence from freshman to 2nd year. Zajacova and colleagues hypothesized that students may drop out for reasons unrelated to beliefs about being able to handle academic demands.

Furthermore, Khan (2013) also found that academic self-efficacy and GPA were positively correlated. Participants included sixty-six undergraduate students that included freshmen, sophomores, juniors, and seniors. Measures included the Academic Self-Efficacy Scale (Chemers, et al., 2001), and the Coping with Problems Experienced (COPE) inventory (Carver, 2007). Results indicated that academic self-efficacy was positively correlated with GPA, consistent with previous research (Chemers, et al., 2001; Zajocova, et al., 2005), and academic self-efficacy was negatively correlated with a number of subscales on the COPE Inventory. However, the relationship between stress coping skills and GPA was not strong.

Success in postsecondary education can be difficult to measure; however, as demonstrated in the literature, engagement and self-efficacy are two constructs that serve as effective measures of success for students in postsecondary educations and are highly correlated with academic achievement and success. Students with LD and/or ADHD, due to the challenges they face, may present with lower self-efficacy and lower levels of engagement than their peers

without disabilities. If students with LD and/or ADHD engage in supports that aim to increase their self-efficacy and engagement with academic activities (e.g. participation in class, interacting with professors), they may experience increased success in the postsecondary environment including the ability to maintain a GPA that helps them to progress forward towards graduation.

Academic Coaching

Academic Coaching is an intervention meant to help students reflect on their interests and goals by focusing on barriers that may impede academic success such as poor organizational skills, poor time management skills, poor study skills, and poor study habits (Field et al., 2013; Prevatt & Yelland, 2013, Robinson & Gahagan, 2010; Romano, 2011; Swart, et al., 2005; Zwart & Kalleymeyn, 2001). With the use of Academic Coaching, students may improve their organizational skills, their time management skills, and their use and knowledge of study skills and habits. As a result, Academic Coaching could also have the potential to improve academic self-efficacy by increasing the student's knowledge and confidence with using learning and study strategies. In addition, Academic Coaching has the potential to increase the student's confidence by helping students to think about strategies that will encourage them to participate more in class, engage with their professors, and engage in other academic activities such as study groups.

Although limited, there are some studies evaluating the effectiveness of Academic Coaching on student outcomes. Research included in this review is categorized in one of two categories, non-experimental or experimental. The studies included in the non-experimental category include case studies, qualitative studies, and pre-posttest design studies with no comparison group. The studies included under experimental include those studies that have pre-post design with a comparison group.

The non-experimental studies provide preliminary support for the use of Academic Coaching. In the first case study example, Swartz, et al., (2005) used one participant, a college student with ADHD, over 8-weeks to evaluate the impact of Academic Coaching. The Academic Coaching program included development of goals, discussion on progress of goals, and discussion of rewards and consequences (e.g. praises and reminders). The coaching method involved cognitive-behavioral therapy with psychoeducational techniques. The coach was hired through the university-based training clinic. The student paid for the coaching sessions and was seen for 1:1 sessions, once per week for 8 weeks. Measures included the Learning and Study Strategies Inventory (LASSI) and the Coaching Topics Survey as pre-and posttest assessments. The LASSI is a survey that measures a student's self-assessment of their practices and attitudes related to learning and studying. The Coaching Topics Survey was a researcher-generated survey designed to rate components of academic and personal life on a scale of how badly the student felt he/she needed to work on each item. The student showed improvements in study skills and learning strategies as measured by the LASSI. Additionally, the student achieved personal course-related goals as measured by the Coaching Topics Survey. Although this study illustrates the general procedures used in a coaching intervention in a university setting, the findings should be viewed with caution due to the lack of a rigorous research design and the use of a single participant.

The second non-experimental study was a mixed methods design, using primarily qualitative analyses and secondary quantitative analyses with a pre-post measure (LASSI). Parker, Hoffman, Sawilowsky, and Rolands (2011a) used qualitative interviewing on seven students with ADHD from one university, across one semester to evaluate student perceptions on the effect and benefits of Academic Coaching, and additionally, the effect that Academic

Coaching had on the students' well-being. Coaches were trained as academic coaches through the Edge Foundation, a corporation that provides structured coaching to individuals, at no cost to the student participating in the coaching intervention. Coaching took place for six months, with one 30 minute telephone meeting per week. Parker and colleagues conducted recorded, face-to-face, one-on-one interviews lasting about one hour with each participant. Qualitative analyses were used to decipher emergent themes from students' descriptions of personal artifacts that symbolized coaching's influence on their lives. In addition to qualitative interviewing, a secondary measure, the LASSI, was used to measure skill, will, and self-regulation of students. Students reported that their skills improved with the use of Academic Coaching, and that coaching helped them to achieve a greater sense of well-being. The scores on the LASSI showed substantial gains from pre-to-posttest in self-regulation skills.

Similarly to Parker, et al. (2011a), Parker, et al. (2011b) used qualitative interviewing with 19 students with ADHD across 10 colleges, over the course of a semester to evaluate the effects of Academic Coaching following the same procedures as outlined in Parker et al. (2011a). However, the sample was bigger and was derived from a larger study conducted by Field and colleagues (2013) described later in this review. Parker and colleagues intentionally picked the sample based on certain variables (gender, grade point average, scores on LASSI). Similar to the results from Parker et al. (2011a), students reported that their skills improved with the use of Academic Coaching, and that coaching helped them to achieve a greater sense of well-being. The scores on the LASSI showed substantial gains from pre-to-posttest in self-regulation skills.

In another case example, Robinson & Gahagan (2010) presented outcome data on 182 students on academic probation from the University of South Carolina to describe the impact of Academic Coaching on improving student progress. Over the course of a year, coaches trained

through the University of South Carolina's Academic Center for Excellence (ACE) met and coached students in an attempt to improve their GPA. The coaching model included self-assessment, reflection, and goal setting. Of those 182 students, 92% (n=168) improved their cumulative GPA. In addition, the researchers reported 40% fewer suspended students than predicted prior to the use of Academic Coaching. Although their results are positive and their case example involved a large sample, a comparison group was not used, thus limiting internal validity. In addition, it is unknown if any of the students had LD or ADHD.

In the final non-experimental design, Prevatt & Yelland (2013) used a coaching program described by Swartz, et al. (2005) with 148 college students with ADHD from one university over a 5-year period using a pre-posttest design with no comparison group. The coaching method used involved cognitive-behavioral therapy with psychoeducational techniques. The coaches were hired through the university-based training clinic and were supervised by doctoral level and/or master's-level licensed school psychologists. The students paid for the coaching sessions and were seen for 1:1 sessions, once per week for eight weeks. Measures included the Between-Session Assignments Survey, the Client Symptom Checklist, the Coach's Rating of Motivation and Progress, Coaching Topics Survey, the LASSI, Outcome Questionnaire, and the Rosenberg Self-Esteem Inventory. Students showed significant improvement on all 10 areas of the LASSI, which measures study and learning strategies, improvement on their self-esteem, as measured by the Rosenberg Self-Esteem Inventory, improvements in symptom distress and improved satisfaction with school and work, as measured by the Client Symptom Checklist and the Coach's Rating of Motivation and Progress. Although more rigorous than case studies, the lack of a control group limits the results of this study. Another limitation is the absence of

information on whether or not the students engaged in other services in addition to Academic Coaching.

Overall, although the non-experimental studies described above show some promise with the use of Academic Coaching on outcomes of students with ADHD, the studies are limited for several reasons. The most critical limitation is the absence of a comparison group, thus lacking internal validity. Second, it is unclear about the other services (besides Academic Coaching) that students were engaging in that may have affected the outcomes reported. Third, outcomes are not able to be generalized to other settings/populations due to the use of only college students with ADHD.

Several studies used experimental designs to evaluate Academic Coaching. In the first experimental design, Zwart and Kallemeyn (2001) used a quasi-experimental (no randomization) control group design to evaluate the effectiveness of a peer-based coaching program for college students with ADHD and LD. Peer coaches (other college students) used individually tailored sessions to help students with ADHD adhere to schedules, use study techniques, and role-play situations to improve self-advocacy. The control group was composed of significantly more students with LD than in the coaching groups. The participants demonstrated significant improvement over the control group on measures of motivation, time management, anxiety, and test preparation after 2-10 sessions of peer coaching.

Similar to Zwart and Kallemeyn (2001), Richman, et al. (2014) used a nonequivalent, quasi-experimental research design, along with qualitative interviews, on 24 students with LD and/or ADHD from one university, to evaluate the influence of coaching on executive functioning and self-determination skills of college students with LD and/or ADHD. Students volunteered to be in either the treatment group or control group. The final sample size

comprised of 16 students in the treatment group and eight students in the comparison group. The students participating in the treatment group received 12-24 coaching sessions over two successive semesters and participated in weekly 30 minute sessions in person or via the telephone. Pre-post measures used included the Self-Determination Student Scale, the Behavior Rating Inventory of Executive Function-Adult Version, and the Learning and Study Strategies Inventory (LASSI). Due to the small sample size, this study did not yield any statistically significant quantitative outcomes, but the qualitative interviews yielded a detailed understanding of student experiences with coaching. Specifically, students reported that working with coaches helped them to think more critically, problem solve more efficiently, move closer to achieving their goals, and better manage their emotions, daily stress and distractions. Although more rigorous than non-experimental studies, findings should be interpreted with caution due to a number of critical limitations including a small sample size, variability in the number of sessions received by each participant, variability in types of sessions used (telephone vs. in person), and the use of instruments (Self-Determination Student Scale, Behavior Rating Inventory of Executive Function-Adult Version) with little to no reliability to measure self-determination and executive functioning.

Perhaps the most rigorous research study to evaluate the use of Academic Coaching was conducted by Field, et al. in 2013. Field and colleagues used a pre-posttest randomized control group design on 113 undergraduate students with ADHD across 10 colleges (2 community colleges, and 8 four-year colleges), over the course of six months to explore the impact of Academic Coaching. Participants were randomly assigned to each group as they were recruited, using IMSL's (2011) RNUN algorithm, assigning two-thirds of the recruited students from each college to the treatment group and one-third to the comparison group. The final sample included

78 participants in the coaching group and 35 in the comparison group. Coaches were trained as academic coaches through the Edge Foundation, a corporation that provides structured coaching to individuals, at no cost to the student participating in the coaching intervention. Coaching took place for six months, with one 30 minute telephone meeting per week. Measures included the LASSI as a pre-posttest, and the College Well-Being Scale (CWB) as a posttest. A MANCOVA was used to evaluate the mean differences between scores on the LASSI between groups and an ANCOVA was used to evaluate the results of the CWB. Results indicated significantly higher LASSI scores for students who received the coaching intervention compared to those students in the control group. A large effect size within groups for the LASSI scores was noted, with the students in the coaching intervention receiving the most significant gain. Although this study is the most rigorous, there are still limitations. First, there is a discrepancy in the number of participants in the treatment versus control group raising questions on whether or not the groups are truly equivalent despite randomization. Rather than describing participant characteristics in each group, the authors reported combined group information on class level and gender. Second, although treatment fidelity was assessed, it was assessed through student report. Third, coaching occurred outside the services of the university. Last, only students with ADHD were used in the study, limiting generalization to other students with disabilities.

Summary

Although more students with LD and/or ADHD are being admitted into college, they struggle with meeting the academic demands of college life. Typical services may not be sufficient in ensuring success for these students, causing them to be at-risk for dropping out of college. Academic Coaching is an intervention that might increase the success of students with LD and/or ADHD. Although there is some evidence that Academic Coaching could be effective,

more rigorous research is needed to document its efficacy with college students with LD and/or ADHD.

The lack of comparison groups in many of the studies supporting the use of Academic Coaching make it difficult to rigorously evaluate the effectiveness of Academic Coaching. Specifically, in the eight studies reviewed, only three of them used comparison groups (Field, et al., 2013; Richman, et al., 2014; Zwart & Kallemeyn, 2001). Of those three studies that used comparison groups, two did not randomly assign, nor did they match participants between groups or use analyses to establish pre-treatment equivalency. In addition, there were significantly more students in the treatment groups versus the control groups for two of the studies (Field, et al., 2013; Richman, et al. 2014). In one of the studies, there were significantly more participants with LD in the control group than the treatment group (Zwart & Kallemeyn, 2001). In addition to the lack of comparison groups, all of the studies but two (Richman, et al., 2014; Zwart and Kallemeyn, 2001) focus exclusively on students with ADHD, despite the documented difficulties of students with both LD and/or ADHD in the postsecondary setting. Finally, although many studies provide descriptive information on the acceptability of Academic Coaching with students, the acceptability from college personnel carrying out the intervention is unknown. This is largely due to the fact that many of the studies used outside coaching sources to provide coaches to implement the intervention.

Additional research is needed to evaluate the effectiveness of Academic Coaching with college students with LD and/or ADHD to help them to be more successful in college. Additional research should include several components in order to address the gaps and limitations in the current research. First, empirical, quantitative, and evidence-based support of Academic Coaching (Richman, et al., 2014) is needed. Second, an evaluation of Academic

Coaching on student outcomes that are more highly correlated with academic success in the postsecondary education setting is needed. Third, larger sample sizes with control groups (Parker, et al., 2011) are needed. Fourth, an evaluation of treatment integrity and implementation of academic coaching is warranted. Fifth, documentation on the use of additional services used by students in addition to Academic Coaching (Field, et al., 2013), documentation on the use of psychostimulants by students participating in Academic Coaching (Field, et al., 2013; Prevatt & Yelland, 2013), and documentation of whether or not students receiving Academic Coaching have co-occurring mental health diagnoses (Prevatt & Yelland, 2013) is needed to evaluate how these variables may impact the use of Academic Coaching. Finally, documentation on the acceptability and use of academic intervention with college students with LD and/or ADHD and with college administration and staff is needed to evaluate the perceptions on the effectiveness and acceptability and ease of use of Academic Coaching as an intervention for college students with LD and/or ADHD to increase their success in college.

Chapter 3

Method

Participants

Student Participants. Thirty-five college students from a traditionally female undergraduate private college in Northeast Pennsylvania participated in the study. Of those 35 students, 19 agreed to participate in Academic Coaching, and 16 students agreed to participate in the typical services only group. Participants in both groups (a) had a confirmed diagnosis of LD or ADHD as indicated through approved documentation at the college, (b) had documented approval for accommodations under the Americans with Disabilities Act (ADA) through the disability services departments at the college, (c) were enrolled full-time (i.e., taking at least 12 credits which could include independent study credits) at the start of the study and maintained full-time status at the completion of the study, and (d) were enrolled as at least second semester Freshmen. All participants were involved in the study for the duration of one semester, fall or spring. All participants completed a demographic questionnaire that included information on age, gender, ethnicity and race, professional or employment status, class level status, number of courses or independent study credits currently enrolled in, and whether or the student was a commuter or resident. See Table 1 for a complete description of participant demographics by group. Both groups had similar characteristics with the majority of the participants aged 18-25 (29), identifying as female (33), white (24), and residing on campus (25). With regard to age, it is important to note that even those students who were over the traditional college age (18-25), were still considered undergraduate students and enrolled in undergraduate programs. School year varied among the participants with 10 Freshmen in the coaching group, five Freshman in the typical services only group, seven Sophomores in the coaching group and 8 Sophomores in the

typical services only group, and finally, three Juniors in the coaching group and two Juniors in the typical services only group. Of the 19 participants in the coaching group, five students were diagnosed with ADHD, four with LD, six with ADHD and Anxiety, one with LD and Anxiety, one with LD, Anxiety, and Depression, and two with ADHD, Anxiety, and Depression. Of the 16 participants in the typical services only group, two students were diagnosed with ADHD, six with LD, three with ADHD and Anxiety, four with LD and Anxiety, and one with ADHD, Anxiety, and Depression.

Table 1

Participants' Demographics

Variables		Coaching *N=19*	Control *N=16*	Total *N=35*
Disability Type				
	ADHD	5	2	7
	LD	4	6	10
	ADHD, Anxiety	6	3	9
	ADHD, Depression, Anxiety	2	1	3
	LD, Anxiety	1	4	5
	LD, Anxiety, Depression	1	0	1
	Total LD	6	10	
	Total ADHD	13	6	
Age				
	18-25	17	12	29
	26-33	2	4	6
Gender				
	Female	18	15	33

Variables		Coaching *N=19*	Control *N=16*	Total *N=35*
	Other	1	0	1
	Prefer not to respond	0	1	1
Race/Ethnicity				
	American Indian or Alaska Native	0	1	1
	Black or African American	1	3	4
	Hispanic or Latino	4	2	6
	White	14	10	24
Employment				
	Full-time	1	0	1
	Part-time	9	10	19
	Unemployed	9	6	15
Class level				
	Freshman	10	5	15
	Sophomore	7	8	15
	Junior	2	3	5
No. of courses enrolled				
	Two	1	0	1
	Three	1	3	4
	Four	9	8	17
	Five	6	5	11
	Six	2	0	2
Resident Status				
	On-campus	13	12	25
	Off-campus	6	4	10

Types of Approved Accommodations. The types of approved accommodations were also similar across groups (see Table 2). The most frequently approved accommodation for both

groups were extended test time and alternate testing environment. Other less frequently approved accommodations included use of a calculator, e-textbooks, electronic screen readers for exams, recording lectures, use of laptop to write notes and assignments, flexibility in deadlines, preferential seating, flexibility in absences, and use of magnifying device.

Table 2

Types of Approved Accommodations

Accommodation Type	Coaching *N*	Control *N*	Total *n*
Extended Test Time	18	16	34
Alternate Testing	14	15	29
Use of a Calculator	1	1	2
E-Text	2	1	3
Screen Readers for Tests	0	1	1
Recording Device	1	6	7
Use of laptop in class	0	1	1
Flexibility in Deadlines	4	0	4
Preferential Seating	2	0	2
Flexibility in Absences	2	1	3
Use of Magnifier	1	0	1

Note. Students can be assigned more than one accommodation.

Participating Institution and Disability Support Specialist

Participating Institution. The participating college was a private not-for-profit 4-year and above institution (has a graduate program offering Master level degrees). See Table 3 for demographic information.

Table 3

Demographic Information of the Participating Institution

Total Enrolled Students	*Student to Faculty Ratio*	*Total applicants*	*Total % admitted*	*% Males*	*% Females*	*Retention Rate*	*Graduation Rate*
1,531 1,342 Undergrad 189 Graduate	10:1	1,246	52	7.4 (99)	92.6 (1,243)	72.3	58.8

Note. Information publicly available (http://colleges.usnews.rankingsandreviews.com) from the 2015-16 school year.

Academic Coach. The disability specialist from the participating college (also the researcher) served as the Academic Coach and the disability specialist for participants in the typical services only group. The disability support specialist was a white, 34-year old female, with 2 years in the position at the start of the study. The disability specialist held a Master's in Education degree in Counseling and Human Services, and was a Ph.D. candidate in Special Education. The disability specialist was trained as an Advanced Level Academic Coach through the National Tutoring Association. As part of the training through the National Tutoring Association, the disability support specialist completed three, 4-hour on-line training modules, completing an essay and short-answer test at the end of each module, and received a 100% grade on each test. Training modules provided information, case examples, and research on the background, implementation, and key components of Academic Coaching.

Design

A nonequivalent, pre-posttest, control-group design was used to examine the effects of Academic Coaching plus typical services versus typical services only on students' use and knowledge of learning and study strategies, engagement, self-efficacy, and academic achievement. The quasi-experimental design was used because random assignment to groups

was not practical or feasible. The nonequivalent control group design with pre-and posttest measures is one of the most commonly used quasi-experimental designs in educational research (Cohen, Manion, & Morrison, 2007). The design has advantages because it deals with intact groups and does not disrupt existing research settings, which reduces the reactive effects of the experimental procedures and improves external validity (Dimitrov & Rumrill, 2003). However, the use of non-equivalent groups is a limitation of this design. In order to control for this limitation, group equivalency was established by using selection criteria that allowed the groups to be as alike as possible. For example, only students with LD or ADHD from the college participated. Secondly, all of the students were from one institution that allowed for a more homogeneous group. Additionally, all of the student participants were full-time at the start of the study. In addition, the use of analysis of covariance (ANCOVA) as the primary analysis allowed for statistical control of pretest measures as a covariate, thus controlling for any pretest differences that may have initially existed between the experimental and control groups.

Dependent Measures

The dependent outcomes of interest were use and knowledge of learning and study strategies, academic engagement, self-efficacy, and academic achievement. To measure these outcomes, the following measures were employed; 10 subscales from the Learning and Study Strategies Inventory (LASSI), 6 subscales from the National Student Engagement Survey (NSSE), the Academic Self-Efficacy Scale (SES), and cumulative semester grade point average (GPA).

The LASSI, NSSE, and SES were used as pre-and post-measures and given to each participant in both groups at the beginning of the semester and then again at the end of the

semester. Cumulative GPA was also used as a pre- and post- treatment measure, collected at the beginning of the semester and at the end of the semester in which students participated.

Learning and Study Strategies Inventory (LASSI): All 10 subscales of the LASSI (Weinstein, Palmer, & Schulte, 1987)) were used to evaluate student self-assessment of their practices and attitudes related to learning and studying. The LASSI is an 80-item standardized assessment. Students respond to items using a five-point Likert-scale (1 = not at all typical of me to 5 = very much typical of me). Scores are grouped across 10 subscales including Anxiety, Attitude, Concentration, Information Processing, Motivation, Selecting Main Ideas, Self-Testing, Study Aids, Test Strategies, and Time Management. Each scale is scored separately and there is no overall score. Specifically, the anxiety subscale measures how tense or concerned students are when approaching academic tasks. The attitude subscale measures students' general attitudes and motivation for succeeding in school and performing tasks related to school success. The concentration subscale measures the students' abilities to concentrate and direct their attention to school tasks. The information processing subscale measures how well students can create imaginal and verbal elaborations and organizational schemes to foster understanding and recall. The motivation subscale measures the degree to which students accept responsibility for performing specifics task related to school success. The selecting main ideas subscale measures how skilled the student is at selecting important information for further studying. The self-testing subscale measures students' awareness of the importance of self-testing and reviewing information. The study aids subscale measures students' ability to use or create study aids that support and increase meaningful learning and retention. The test strategies subscale measures students' use of test-taking and test preparation strategies. The time management subscale measures the degree to which students create and use schedules.

The validity and reliability of the LASSI are reported to be strong (Weinstein & Palmer, 2002). With regard to validity, a number of different approaches have been used including comparing scale scores to other tests or subscales measuring similar factors, validating against performance measures, and repeating tests of user validity (Weinstein & Palmer, 2002). With regard to internal consistency, the coefficient alphas for the scales range from a low of .68 to a high of .89, with all but two scales above .80. Test-retest correlations range from .72 to .85 (Weinstein & Palmer, 2002).

Scoring. Students' responses to each item yielded a possible range of 1-5 given the 5-point Likert-scale. Then, in order to conduct analyses for each scale, scores were totaled across the items within each scale. For example, the Attitude scale had 8 items, therefore the total possible points across the items was 40.

Academic Engagement: The National Student Engagement Survey (NSSE). Six of the ten subscales from the NSSE were used to evaluate student engagement within college classes and on the college campus. The NSSE is an 80-item survey designed for undergraduate students at four-year institutions. The NSSE measures students' participation in educationally purposeful activities that prior research links to desired outcomes of college (Pascarella & Terenzini, 2005). The NSSE represents student behaviors that are highly correlated with many desirable learning and personal development outcomes of college (Kuh, 2011). The NSSE asks students to report the frequency with which they engage in an array of activities that represent good educational practice, such as using resources, following curricular programs, engaging during class participation, and communicating with faculty and other students. Students respond to items on nine of the ten subscales using a four-point Likert-scale (1 = never to 4 = very often) in terms of how often the student engaged in the behavior described in each item. The quality of

interactions subscale uses an eight-point Likert-scale (1 = poor to 7 = excellent; 8 = not applicable) in terms of types of interactions the student had with each identified group in the item question. Engagement indicators are then derived to give the student information on each indicator. Engagement indicators are sets of items that are grouped into 10 key dimensions or subscales of student engagement (NSSE, 2014).

For the purposes of this study, four of the subscales, Higher-Order Learning, Quantitative Reasoning, Effective Teaching Practices, and Supportive Environment, were not used because the questions from those subscales measure student perceptions of instructional practices used by professors and quantitative reasoning which were not relevant to the purposes of this study. Of interest to this study, the following subscales were used; Collaborative Learning (7 items), Reflective and Integrative Learning (17 items), Student-faculty Interaction (4 items), Discussions with Diverse Others (5 items), Learning Strategies (10 items), and Quality of Interactions (5 items) for a total of 48 items. The collaborative learning scale requires students to reflect on how often they are engaged in solving problems or mastering difficult material. The reflective and integrative learning scale requires students to reflect on their understanding and experiences to content and focuses on how students make connections between their learning and the world around them. The student-faculty interaction scale requires students to reflect on how often they engaged with faculty to make connections between their current studies and future plans. The discussions with diverse others scale requires students to reflect on how often they interact with and learn from other with different backgrounds and life experiences. The learning strategies scale requires students to reflect on how often they use learning strategies such as identifying key information in readings, reviewing notes after class, and summarizing course material. The

quality of interactions scale requires students to reflect on the quality of their interactions with peers, advisors, faculty, staff, and other individuals at the college.

Validity and reliability in the form of internal consistency for the NSSE is reported to be strong (Kuh, 2009). With regard to validity, the majority of the items on the survey were derived from good educational practices, and positively correlated with desired outcomes of college (Kuh, 2009). With regard to internal consistency, the co-efficient alphas for the indicators (subscales) range from .70 to .90.

Scoring. Students' responses to each item yielded a possible range of 1-4 given the 4-point Likert-scale with the exception of questions pertaining to the quality of interactions scale, which yielded a possible range of 1-8 given the 8-point Likert-scale. The scoring yielded a possible range of 1-7 for the quality of interactions scale because none of the participants checked 'not applicable' (8). Then, in order to conduct analyses for each scale, scores were totaled across the items within each scale. For example, the Collaborative Learning scale had 7 items, therefore the total possible points across the items was 28.

Self-Efficacy: Academic Self-Efficacy Scale (SES). To evaluate academic self-efficacy and student perceptions about their capacity to improve in-class performance, manage responsibilities, and manage social interactions, the SES (Zajacova, et al., 2005) was used as a pre-and post-measure. The SES was originally created from both the Academic Milestones Scale (Lent, Brown, & Larken, 1986) and the College Self-Efficacy Inventory (Solgbery, O'Brien, Villareal, Kennel, & David, 1993) by Zajacova and colleagues (2005). The SES is a 27-item assessment where students rate perceptions of self-efficacy using an 11-point Likert-scale (1=not at all confident to 11= extremely confident). The scale asks respondents to rate

perceptions of self-efficacy according to how confident they are that they could successfully complete each item listed

Reliability in the form of internal consistency for the SES is reportedly strong (Zajacova, et al., 2005) and ranges from $\alpha = .77$ to .90. Information on validity of the SES is not available.

Scoring. Students' responses to each item yielded a possible range of 1-11 given the 11-point Likert-scale. Then, in order to conduct analyses for each scale, scores were totaled across the 27 items for a total possible score of 297.

Academic Achievement: Grade Point Average (GPA). Cumulative GPA was used as a pre-and post-measure to evaluate academic achievement. GPA is a number representing the average value of the accumulated final grades earned in courses. GPA was obtained from the college's registrar's electronic system where student grades are reported and then calculated, listing the cumulative semester GPA. For pre-test scores, cumulative GPA included the GPA of each student up until the semester prior to participation in the study for the pre-test scores. For post-test scores, cumulative GPA included the GPA of each student up to and including the semester after they finished participation in the study.

Scoring. GPA was calculated by adding up accumulated final grades obtained up until the semester prior to participation in the study for the pre-test scores and up to and including the semester after they finished participation in the study dividing that figure by the number of grades awarded. Cumulative GPA is measured on a 4-point scale with a maximum of 4.0 and minimum of 0.0.

Social Validity

To assess the perceived effectiveness and acceptability of the Academic Coaching intervention, each student completed a seven-item researcher-developed social validity rating

scale. The social validity form was administered to the student at the completion of the Academic Coaching intervention (i.e., immediately after the final session). Students rated each item on a three-point Likert-scale (3 = agree to 1= disagree), to indicate whether they whether they agreed with the statement, was unsure about the statement, or disagreed with the statement (See Appendix A).

Scoring. Mean responses from the 19 students who engaged in Academic coaching were calculated for each question.

Treatment Implementation Fidelity

To assess the academic coach's implementation of the academic coaching procedures used during sessions with students, two methods of treatment implementation fidelity were used. First, a direct observation method using a 26-item treatment implementation fidelity checklist, delineating core coaching components across each session was used. A trained observer from the disability office at the college observed at least 33% of the intervention sessions for each student using the treatment fidelity checklist (Appendix B). Since the trained observer observed 33% of the intervention sessions, the range of items completed varied from 9-15 items out of the 26 items across at least seven sessions. The observer was an administrative staff person who coordinated letters for approved accommodations testing accommodations for students with disabilities at the college. The observer was trained in the components of Academic Coaching (Appendix C). The training was developed and implemented by the disability specialist who was trained as an Advanced Academic Coach. Training included a PowerPoint on the structure and components of Academic Coaching. Specifically, training included six sections. The first section described the rationale for use of Academic Coaching. The second section described how to develop goals using the SMART (Specific, Measurable, Attainable, Results-Oriented,

Timely) goal method. The third section described and gave examples of the questioning sequence used during Academic Coaching sessions. The fourth section provided an overview of each Academic Coaching session. The fifth section provided an opportunity to practice using the treatment fidelity form. The final section provided a summary of the training and an opportunity for the observer to ask questions.

The second method of treatment fidelity was a self-report coaching interactions checklist completed by students who engaged in the Academic Coaching intervention (Appendix D). After each session, students circled whether each component of the intervention was followed, as indicated in the checklist.

Scoring. With regard to the direct observation treatment fidelity checklist, fidelity responses were calculated by dividing the number of observed components by the number of intended components and multiplying by 100% to obtain a percentage of implemented components. Similarly, the responses from the coaching interactions checklists completed by each student were calculated by determining the total number of agreements divided by the total number of intended components multiplied by 100% to obtain a percentage for treatment fidelity.

Services Utilized

In order to evaluate the types of support services used by students in both groups, students completed a researcher-designed form (Appendix E). Students were asked to complete the form at the end of the semester in which the student participated in the study. The service utilization form asked students to indicate how often per week or per semester they used (a) accommodations and (b) typical college services available to all students (e.g. tutoring services, writing center services, study tables, and student success workshops). In addition, the form also asked students to report the frequency of meetings with the disability specialist.

Procedures

Recruitment and screening procedures. Participant recruitment began with approval obtained from Lehigh University's Institutional Review Board (IRB) and the administrative and IRB approval from the participating college. Student participants were selected based on nominations and discussions between the disability specialist and director of student success and retention form the college. Nominations were made according to the participant selection criteria previously described: (a) a confirmed diagnosis of a LD or ADHD as indicated through approved documentation by the college, (b) documented approval for accommodations under the Americans with Disabilities Act (ADA) through the disability services department at the college, (c) full-time enrollment (i.e. at least 12 credits), and (d) undergraduate status and enrolled in undergraduate classes. Once students were identified using the above criteria, the disability specialist met with each student, briefly describing the Academic Coaching intervention. After the conclusion of the initial meeting, students indicated their choice of whether or not they wanted to engage in Academic Coaching. Students who did not want to participate in Academic Coaching were then placed in the typical services only group, contingent upon their willingness to complete the pre-and post-inventories and consent to allow the disability specialist to access their GPA for purposes of the study. After verbally agreeing to participate in either the coaching or typical services only group, each student participant signed a consent letter that described the purpose of the study, the intervention (for those in the coaching group only), the scales used for testing, and the risks and benefits of the study. Recruitment ended on the last day of the fourth week of the semester in order to allow for at least seven Academic Coaching sessions.

Both Conditions

Students in both conditions were assessed on their knowledge and use of learning and study strategies, engagement, and self-efficacy, by completing the LASSI, the NSSE, and the SES within the first week of consenting to participate. Using the same instruments for all students in both groups, the end of semester measurements took place at the end of the semester within two weeks after the last Academic Coaching session. The participants completed all scales using a paper format. The participants completed the inventories in private rooms near the disability specialist's office and were given as much time as they needed to complete the inventories. Participants completed the inventories within 1-1.5 hours. The disability specialist obtained the cumulative GPA of each student prior to the start of the semester and at the end of the semester using the college's data-base. Further, to determine the types and frequency of typical services accessed by the students in both conditions, the service utilization form (Appendix E) was completed by each student at the end of the semester within two weeks after the last Academic Coaching session.

Typical services (control) condition. Students in this condition were provided with typical services provided by the college which included receiving approved accommodations under ADA and access to other support services on campus such as writing center services, tutoring services, student workshops, meetings and/or drop-ins with disability support specialist and/or advisor. During meetings with the disability support specialist, the student and specialist discussed difficulties with use of accommodations, difficulties with professors and course content, or to answer questions on receiving tutoring or writing services. To address difficulties, the disability specialist provided the student with strategies that could help remedy the problem. Meetings lasted anywhere between 5-15 minutes depending on issue discussed. The disability specialist did not provide academic coaching as described in this study.

Academic Coaching (treatment) condition. The participants in this condition also received typical academic services and approved accommodations under ADA. In addition, they received at least seven sessions of Academic Coaching. Implementation of the intervention began once the first round of measurement was completed. Students participated in Academic Coaching for a minimum of 7 sessions and up to 15 sessions for the duration of the semester. Some students received only 7 sessions versus 15 because students had up until the fourth week of the semester to be recruited as described in the recruitment procedures. All sessions were scheduled sessions and did not include any drop-in meetings. Students in the Academic Coaching condition also completed the coaching interactions checklist (Appendix D) as described in the treatment fidelity section under the procedures section. Finally, at their final coaching session, students also completed the Social Validity form (Appendix A) described under Social Validity under the procedures section.

Academic Coaching Intervention and Materials

The Academic Coaching process and materials used in this study were derived from the coaching process described by Swartz, et al. (2005) and Romano (2011) (See Chapter 1). Each Academic Coaching session, approximately 30 to 50 minutes, followed a consistent structure (see Table 4). For example, the academic coach and participant began each session with a review of the student's goals and the student's use of previous week's strategies and skills. See Appendix F for a sample student goal form that was used in this study.

During the initial meeting, the coach explained the process of coaching to the student. Additionally, during the initial meeting, the student and coach discussed the student's interests, current academic performance, and goals for the upcoming semester. The student and coach set between 3-5 achievable learning goals for the semester, with the student deciding on their goals

and the coach serving as the facilitator in designing the format of each student-identified goal. The goals served as overall indicators of student progress or achievement during the Academic Coaching process. All goals were based on the SMART model; that is, goals were specific, measurable, attainable, realistic, and timely. For example, goals included increasing grade point average, increasing use of time management strategies, increasing the use of effective study skills, increasing engagement with diverse others, decreasing test anxiety and/or social anxiety by using effective strategies, and using and increasing the effectiveness or prioritizing and/or organizing materials.

In session 2, once goals were established, the student, with coach facilitation, developed weekly objectives. Weekly objectives were small action steps that the student agreed to implement in the upcoming week to achieve their overall semester goals. Weekly objectives were intended to be easily attainable to facilitate the student's self-confidence. An example of a weekly objective was "Student will use and evaluate the 'Memory Dump' at least three times over the test week, as a test-taking strategy."

For the remaining 3-15 sessions, the student and coach discussed progress toward goals and objectives, and then finished the session with a discussion of specific strategies and skills that the student agreed to use in the upcoming week. Each session used a four-step approach to evaluate progress on goals (Swartz, et al., 2005). The four steps included reviewing, evaluating, anticipating, and planning. The coach and the student spent each session reviewing goals set at their previous session, assessing whether or not the student accomplished the goals or objectives, evaluated the barriers the prevented goals completion, and finally, engaged in a discussion about strategies and ways to avoid those barriers in order to make progress towards the goal for the next session. In order to facilitate the students' thinking about their own behavior and generating

solutions to problems, the coach prompted students with questions rather than explicitly stating recommendations (Quinn et al., 2000). Finally, at the end of each session, the student completed a coaching interactions checklist that identified the steps of the session that were completed. The student checked whether or not they completed each step with the academic coach (See Appendix B).

During the final session, the student and coach discussed overall progress for each goal and whether or not the student achieved the goals specified. The student and coach discussed how the Academic Coaching sessions went for the student over the course of the semester and discussed whether or not there would be a need for additional coaching for upcoming semesters.

Table 4

Academic Coaching Procedures by Sessions

Session #	*Description of Session*	*Materials Needed*
1 Initial Meeting with Student Establishment of coaching guidelines	• Establish guidelines for the coach-student relationship • Establish frequency and duration of meetings • Discuss student interests, current academic achievement, and brainstorm possible goals	• Goals Brainstorming Form • Creating S.M.A.R.T. Goals • Student Goal Form (See Appendix A) • Coaching Interactions Checklist
2 Goals discussion and attainment progress	• Complete discussion of student's goals and finalize goals • Discuss specific strategies and skills pertaining to goals that student will utilize over the next week • Discuss weekly objectives aligning with goals	• Goals Brainstorming Form • Creating S.M.A.R.T. Goals • Student Goal Form • Coaching Interactions Checklist
3-7 Goals discussion and attainment progress	• Discuss goals/objectives using the 4-step approach (Swartz, Prevatt, and Proctor, 2005), Review, Evaluate, Anticipate, Plan o Review: Discuss goals/objectives set at the	• Student Goal Form • Coaching Interactions Checklist

Session #	*Description of Session*	*Materials Needed*
	previous sessions ○ Evaluate: Discuss whether or not the student accomplished the goal or objective ○ Anticipate: Discuss barriers that may have or will prevent completion of goal/objective ○ Plan: Discuss strategies and ways to avoid those barriers	
8 Goals discussion and attainment progress Discussion of overall progress and student's success with use of Academic Coaching	• Discuss overall progress of goals • Discuss plans on moving forward for the next semester	• Student Goal Form • Coaching Interactions Checklist

Power Analysis

To determine sample size that is expected to achieve power of .80, a power analysis using the free computer program G*Power 3.1.5 statistical software (Faul, Erdfelder, Buchner, & Lang, 2009) was run for the ANCOVA: fixed effects and main effects, by specifying an alpha level of .05. Assuming a medium effect size, the analysis indicated that a minimum of 64 participants in each group (N = 128 in total) is sufficient to obtain a power of .80. Given the total sample size of 35 and medium effect size for this study, an achieved power of .30 was determined after running post hoc analysis. In the same model, with a large effect size, the analysis indicated that a minimum of 26 participants in each group is sufficient to obtain a power of .80 (N = 52 in total). Given the total sample size of 35 and large effect size for this study, an achieved power of .63 was determined after running post hoc analysis.

Data Analysis

After running an initial examination of the pre-post data that included descriptive statistics for all variables of interest and an inspection for missing data for the variables, additional preliminary statistics were run using a chi-square test of independence to evaluate any differences in characteristics between groups. The chi-square test for independence is typically used to determine whether there is a significant association between two categorical variables. In this study, five chi-square tests for independence were conducted using IBM SPSS Statistics software (2015), where the variables of interest were group and employment, group and class level, group and living, group and number of courses, group and age, group and accommodation type (extended test time), and finally, group and accommodation type (alternate testing environment). Following the initial examination of the data and preliminary analyses, research questions 1, 2, 3, and 4 were then evaluated using IBM SPSS Statistics software (2015) to conduct a one way ANCOVA to evaluate each of the outcomes. Specifically, an analysis of covariance (ANCOVA) was conducted for each of subscales from the NSSE (6 total) and LASSI (10 total), the SES, and the beginning and end of semester cumulative GPAs; thus a total of 18 analyses were conducted. An ANCOVA is typically used to evaluate whether means on the dependent variables are the same across levels of the independent variable, adjusting for differences on one or more covariates or whether the adjusted group means differ significantly from each other. For this study, an ANCOVA was used to control for pretest differences by using pretest scores as the covariate for the analyses, group membership as the independent variable and scores on the posttest scores from each outcome as the dependent variables. As part of the ANCOVA, partial η^2 was reported for each variable. Partial η^2 is a measure of effect size that represents how much variance in the outcome is accounted for by the intervention.

In addition to running the statistical tests described above, effect size using Cohen's d was calculated as part of the data analysis for each outcome using original means. Different from partial η^2, Cohen's d (Cohen, 1988) is an effect size used to indicate the difference between the means of two groups divided by their standard deviations, in other words, to indicate how large groups differ in mean outcome as a function of treatment. Cohen (1988) suggests that d = or < 0.2 represents a small effect size, 0.5 represents a medium effect size, and 0.8 or more represents a large effect size. Furthermore, a small effect size means that something is happening (possibly by chance) to the intervention group as compared to the control group. A large effect size means there is a big enough effect that it is considered substantial. If two groups' means do not differ by at least .2 standard deviations or more, then the differences is trivial, even if statistically significant results were found.

In order to evaluate research question 5; the treatment fidelity of the Academic Coaching Intervention, two methods of treatment fidelity of Academic Coaching were used, direct observation and coaching interactions checklist. Descriptive data were analyzed to evaluate both methods of treatment fidelity.

In order to evaluate research question 6; the social validity of the Academic Coaching intervention, students who participated in the Academic Coaching intervention completed a researcher-developed Social Validity Form (Appendix A) as described previously after the completion of their last coaching session. Descriptive data are presented in a table representing mean scores across participants for each question.

Chapter 4

Results

The primary purpose of this study was to examine the effect of an Academic Coaching intervention plus typical services on college students with disabilities' (LD or ADHD) learning and study strategies using 10 scales from the LASSI, engagement using 6 scales from the NSSE, self-efficacy using the Academic Self-Efficacy Scale, and academic achievement using GPA. Specifically, this study aimed to examine the differences on outcomes between two group conditions: students receiving Academic Coaching plus typical services versus students receiving only typical services after controlling for pretest measures. In addition, this study examined the treatment fidelity and social validity of the Academic Coaching intervention.

As described previously under data analysis, a chi-square test of independence was performed to evaluate whether there was a significant association between group membership and five population characteristics; employment, class level, living status, number of courses, and age. There was no statistically significant association between group and employment type (χ^2 (2) = 1.41, p = .495), between group and class level (χ^2 (2) = 1.69, p = .430), between group and living status (χ^2 (2) = 1.84, p = .668), between group and number of courses (χ^2 (4) = 3.92, p = .417), between group and age (χ^2 (9) = 8.48, p = .487), between group and accommodation type- extended test time (χ^2 (1) = .867, p = .352), and finally, no statistically significant association between group and accommodation type- alternate testing environment (χ^2 (1) = 2.46, p = .117).

Research question 1. After controlling for pretest scores on each of the ten scales from the LASSI, is there a significant mean difference on posttest scores on each of the LASSI's 10 scales between the Academic Coaching plus typical services and typical services only group?

Research question 2. After controlling for pretest scores on each of the six scales from the NSSE, is there a significant mean difference on posttest scores on each of the NSSE's six scales between the Academic Coaching plus typical services and typical services only group?

Research question 3. After controlling for pretest scores on the SES, is there a significant mean difference on posttest scores from the SES between the Academic Coaching plus typical services and typical services only group?

Research question 4. After controlling for beginning of semester GPA, is there a significant mean difference on end of semester GPA between the Academic Coaching plus typical services and typical services only group?

To evaluate research questions 1, 2, 3, and 4, a one-way ANCOVA was used to examine group differences across each of the dependent outcomes (learning and study strategies, engagement, self-efficacy, and academic achievement). The pre-and posttest responses to each of the 10 scales on the LASSI was used to evaluate learning and study strategies, the pre-and-posttest responses to 6 of the subscales on the NSSE was used to evaluate student engagement, the pre- and posttest responses to the Academic Self-Efficacy Scale was used to evaluate self-efficacy, and beginning and end of semester GPA was used to evaluate academic achievement. The following section is organized by the dependent outcomes and the measures used to evaluate each outcome. As described in data analysis, because the LASSI and NSSE are reported using subscales, analyses were run for each subscale and are reported as such. In total, 18 ANCOVAS were run to evaluate the research questions. The independent variable was group membership (receiving Academic Coaching and typical services versus typical services only). Pretest scores were included as a covariate for all ANCOVA analyses. At the end of this section, several tables are included to represent the data analyses described. Table 5 presents the descriptive statistics

including means and adjusted means (after controlling for pre-test scores). Table 6 presents the results from the ANCOVA analyses. Table 7 presents Cohen's d effect size values across dependent measures. For descriptive purposes only, Appendix G presents graphical representation of the mean differences between groups before controlling for pre-test scores.

Learning and Study Strategies Inventory (LASSI)

Statistically significant mean differences on post-test outcomes were found for all 10 scales of the LASSI.

Anxiety. After controlling for pre-test scores on the anxiety scale, there was a statistically significant difference in the post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 4.99$, $p = .033$, partial $\eta^2 = .135$). Specifically, at post-test, students in the Academic Coaching group reported significantly less anxiety (adj $M = 15.63$, SE = 1.00) than students in the typical services only group (adj $M = 12.32$, SE = 1.09) (Fig. 1). Note that the higher the score, the less anxiety. Partial η^2 (.135) suggested a medium effect size. Further, Cohen's *d* (0.48) suggested a small effect size.

Attitude. After controlling for pre-test scores on the attitude scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 26.51$, $p < .001$, partial $\eta^2 = .453$). Specifically, students in the Academic Coaching group had a better attitude and higher interest in academics (adj $M = 26.29$, SE = .678) than students in the typical services only (adj $M = 21.04$, SE = .741) (Fig. 1). Partial η^2 (.453) suggested a large effect size. Further, Cohen's *d* (1.71) suggested a large effect size.

Concentration. After controlling for pre-test scores on the concentration scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 25.63$, $p < .001$, partial $\eta^2 = .445$). Specifically, students

in the Academic Coaching group had higher concentration and attention to academic tasks (adj *M* = 18.23, SE = .913) as compared to students in the control group (adj *M* = 11.36, SE = .996) (Fig. 1). Partial η^2 (.445) suggested a large effect size. Further, Cohen's *d* (1.67) suggested a large effect size.

Motivation. After controlling for pre-test scores on the motivation scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 39.29$, $p < .001$, partial $\eta^2 = .551$). Specifically, students in the Academic Coaching group reported higher motivation, diligence, self-discipline, and willingness to work hard (adj *M* = 25.14, SE = 1.13) as compared to students in the typical services only group (adj *M* = 14.47, SE = 1.24) (Fig. 1). Partial η^2 (.551) suggested a large effect size. Further, Cohen's *d* (2.24) suggested a large effect size.

Test Strategies. After controlling for pre-test scores on the test strategies scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 17.55$, $p < .001$, partial $\eta^2 = .354$). Specifically, students in the Academic Coaching group reported using more strategies related to test taking and preparation (adj *M* = 19.06, SE = .748) than students in the typical services only group (adj *M* = 14.12, SE = .823) (Fig. 1). Partial η^2 (.354) suggested a large effect size. Further, Cohen's *d* (1.89) suggested a large effect size.

Study Aids. After controlling for pre-test scores on the study aids scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 64.09$, $p < .001$, partial $\eta^2 = .667$). Specifically, students in the Academic Coaching group reported higher use of support techniques and materials (adj *M* = 22.64, SE = .801) as compared to students in the typical services only group (adj *M* = 12.75, SE

= .879) (Fig. 1). Partial η^2 (.667) suggested a large effect size. Further, Cohen's *d* (3.18) suggested a large effect size.

Self-Testing. After controlling for pre-test scores on the self-testing scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 75.44$, $p < .001$, partial $\eta^2 = .702$). Specifically, students in the Academic Coaching group reported a higher use of strategies related to self-testing, reviewing, and preparing for classes (adj $M = 25.65$, SE = 1.20) as compared to students in the typical services only group (adj $M = 10.04$, SE = 1.31) (Fig. 1). Partial η^2 (.702) suggested a large effect size. Further, Cohen's *d* (3.06) suggested a large effect size.

Selecting Main Ideas. After controlling for pre-test scores on the selecting main ideas scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 20.77$, $p < .001$, partial $\eta^2 = .394$). Specifically, students in the Academic Coaching group reported greater use of strategies related to selecting main ideas and recognizing important information (adj $M = 19.70$, SE = .933) as compared to students in the typical services only (adj $M = 13.30$, SE = 1.02) (Fig. 1). Partial η^2 (.392) suggested a large effect size. Further, Cohen's *d* (1.75) suggested a large effect size.

Time Management. After controlling for pre-test scores on the time management scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 40.01$, $p < .001$, partial $\eta^2 = .556$). Specifically, students in the Academic Coaching group reported a greater use of time management strategies (adj $M = 20.80$, SE = 1.31) as compared to students in the typical services only group (adj $M = 8.23$, SE = 1.44) (Fig. 1). Partial η^2 (.556) suggested a large effect size. Further, Cohen's *d* (2.40) suggested large effect size.

Information Processing. After controlling for pre-test scores on the information processing scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 14.42$, $p = .001$, partial $\eta^2 = .311$). Specifically, students in the Academic Coaching group reported greater use of strategies related to information processing (adj $M = 22.91$, SE = 1.06) as compared to students in the typical services only group (adj $M = 16.80$, SE = 1.16) (Fig. 1). Partial η^2 (.311) suggested a large effect size. Further, Cohen's *d* (1.55) suggested a large effect size.

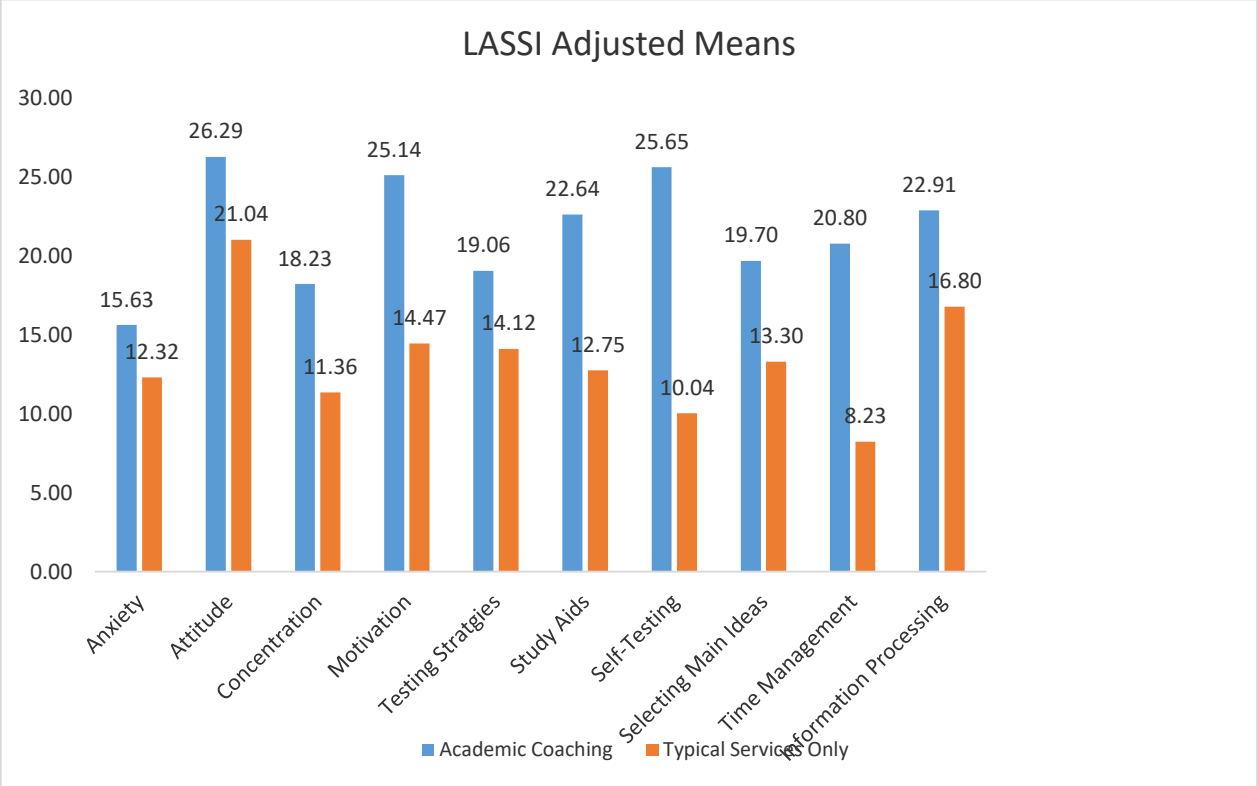


Figure 1. Adjusted means for each group on the outcome scores across the 10 subscales on the LASSI after controlling for pre-test scores.

National Student Engagement Survey (NSSE)

Significant mean differences on post-test outcomes were found for five out of the six scales of the NSSE.

Collaborative Learning. After controlling for pre-test scores on the collaborative learning scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 43.36$, $p < .001$, partial $\eta^2 = .575$). Specifically, students in the Academic Coaching group reported greater use of collaboration skills (adj $M = 11.74$, SE = .518) as compared to those students in the typical services only group (adj $M = 6.62$, SE = .566) (Fig. 2). Partial η^2 (.575) suggested a large effect size. Further, Cohen's effect *d* (2.09) suggested a large effect size.

Discussions with Diverse Others. After controlling for pre-test scores on the discussions with diverse others scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 5.96$, $p = .020$, partial $\eta^2 = .157$). Specifically, students in the Academic Coaching group reported engaging in more interactions with diverse others (adj $M = 9.10$, SE = .764) than students in the typical services only group (adj $M = 6.26$, SE = .836) (Fig. 2). Partial η^2 (.157) suggested a medium effect size. Further, Cohen's *d* (1.12) suggested a large effect size.

Quality of Interactions. After controlling for pre-test scores on the quality of interactions scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 21.39$, $p < .001$, partial $\eta^2 = .401$). Specifically, students in the Academic Coaching group reported engaging in more positive interpersonal interactions (adj $M = 29.86$, SE = 1.04) than students in the typical services only group (adj $M = 22.73$, SE = 1.13) (Fig. 2). Partial η^2 (.401) suggested a large effect size. Further, Cohen's *d* (1.50) suggested a large effect size.

Learning Strategies. After controlling for pre-test scores on the learning strategies scale, there was a statistically significant difference in post-test scores between the Academic

Coaching and typical services only groups ($F(1,32) = 41.87$, $p < .001$, partial $\eta^2 = .567$). Specifically, students in the Academic Coaching group reported greater use of effective learning strategies (adj $M = 20.37$, SE = .970) as compared to students in typical services only group (adj $M = 10.69$, SE = 1.06) (Fig. 2). Partial η^2 (.567) suggested a large effect size. Further, Cohen's d (2.62) suggested a large effect size.

Reflective and Integrative Learning. After controlling for pre-test scores on the reflective and integrative learning scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 20.61$, $p < .001$, partial $\eta^2 = .392$). Specifically, students in the Academic Coaching groups reported higher use of strategies related reflective and integrative learning (adj $M = 29.44$, SE = 1.51) as compared to students in the typical services only group (adj $M = 19.16$, SE = 1.65) (Fig. 2). Partial η^2 (.392) suggested a large effect size. Further, Cohen's d (1.70) suggested a large effect size.

Student-faculty Interaction. After controlling for pre-test scores on the student-faculty interaction scale, there was not a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,31) = .26$, $p = .617$, partial $\eta^2 = .008$.

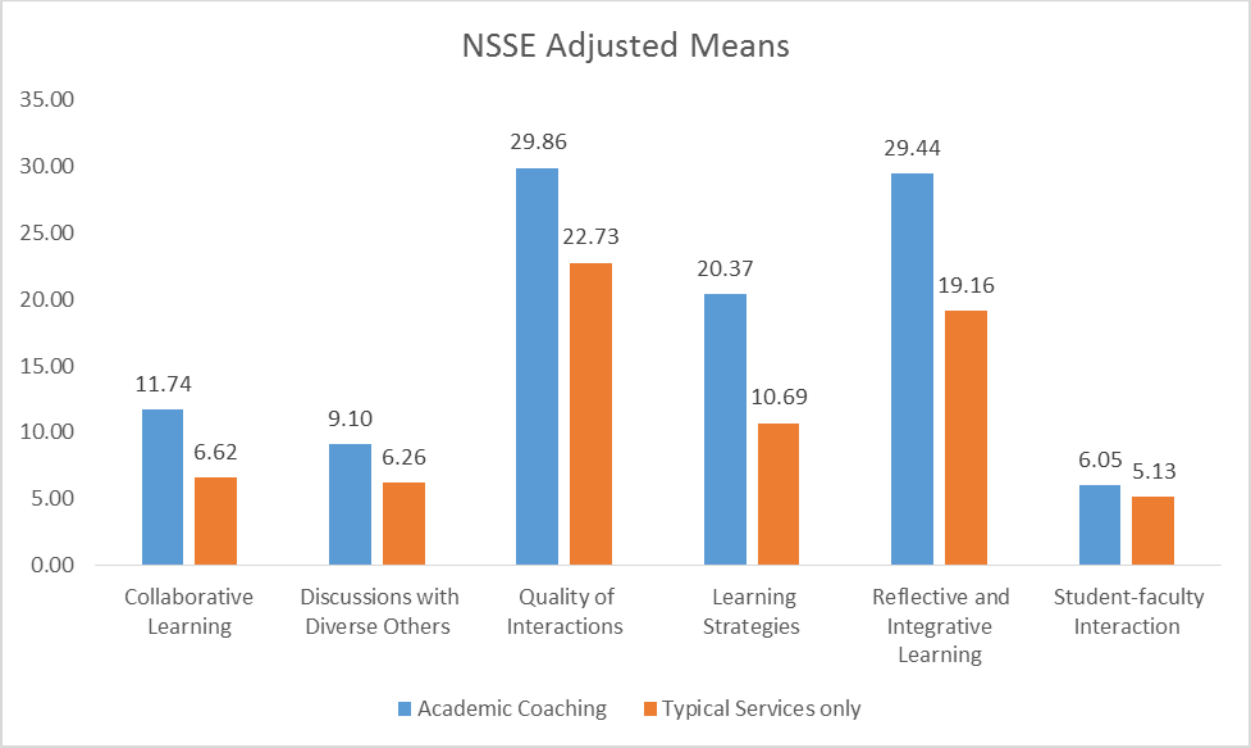


Figure 2. Adjusted means for each group on the outcome scores across the six subscales on the NSSE after controlling for pre-test scores.

Academic Self-Efficacy (SES)

After controlling for pre-test scores on the Academic Self-Efficacy scale, there was a statistically significant difference in post-test scores between the Academic Coaching and typical services only groups ($F(1,32) = 29.92$, $p < .001$, partial $\eta^2 = .483$). Specifically, students in the Academic Coaching group reported higher academic self-efficacy (adj $M = 99.98$, SE = 7.67) as compared to students in the typical services only group (adj $M = 164.40$, SE = 8.41) (Fig. 3). For this measure, the lower the score, the higher the self-efficacy. Partial η^2 (.483) suggested a large effect size. Further, Cohen's *d* (2.21) suggested a large effect size.

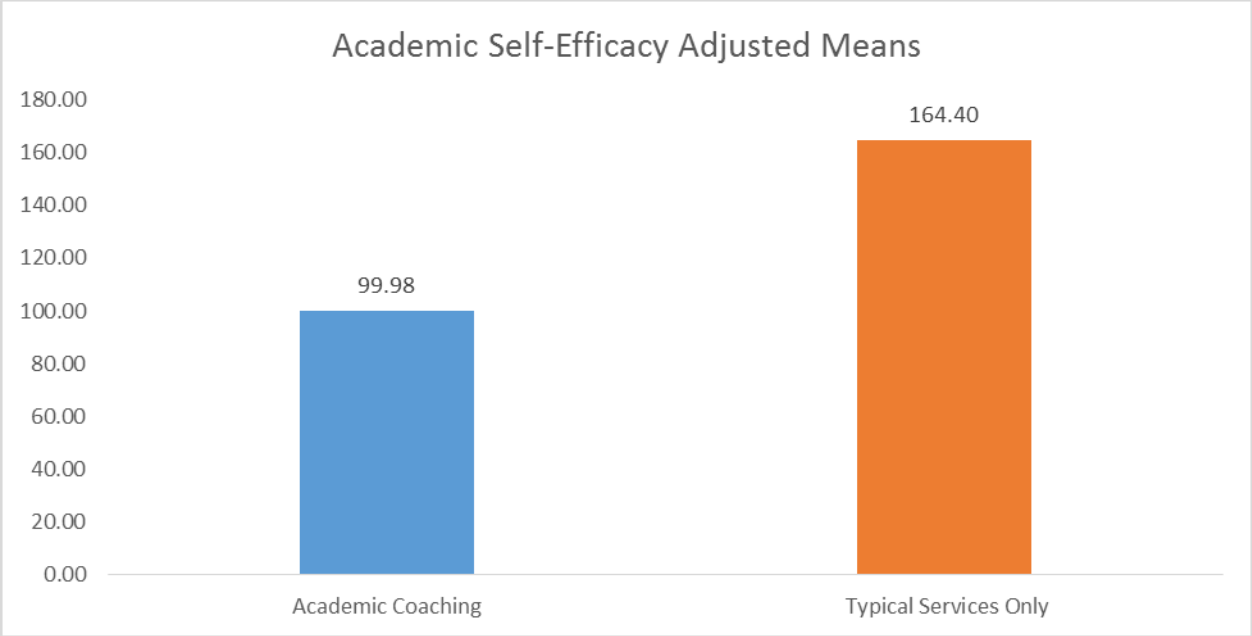


Figure 3. Adjusted means for each group on outcomes from the Academic Self-Efficacy Scale after controlling for pre-test scores.

Academic Achievement

GPA. After controlling for beginning of semester cumulative GPA, there was a statistically significant difference in post-intervention measures between the Academic Coaching and typical services only groups ($F(1,32) = 6.66$, $p = .015$, partial $\eta^2 = .172$). Specifically, students in the Academic Coaching group had a higher GPA (adj $M = 2.97$, SE = .05) as compared to those students in the typical services only group (adj $M = 2.78$, SE = .06) (Fig. 4). Partial η^2 value (.172) suggested a medium effect size. Further, Cohen's d (0.63) suggested medium effect size.

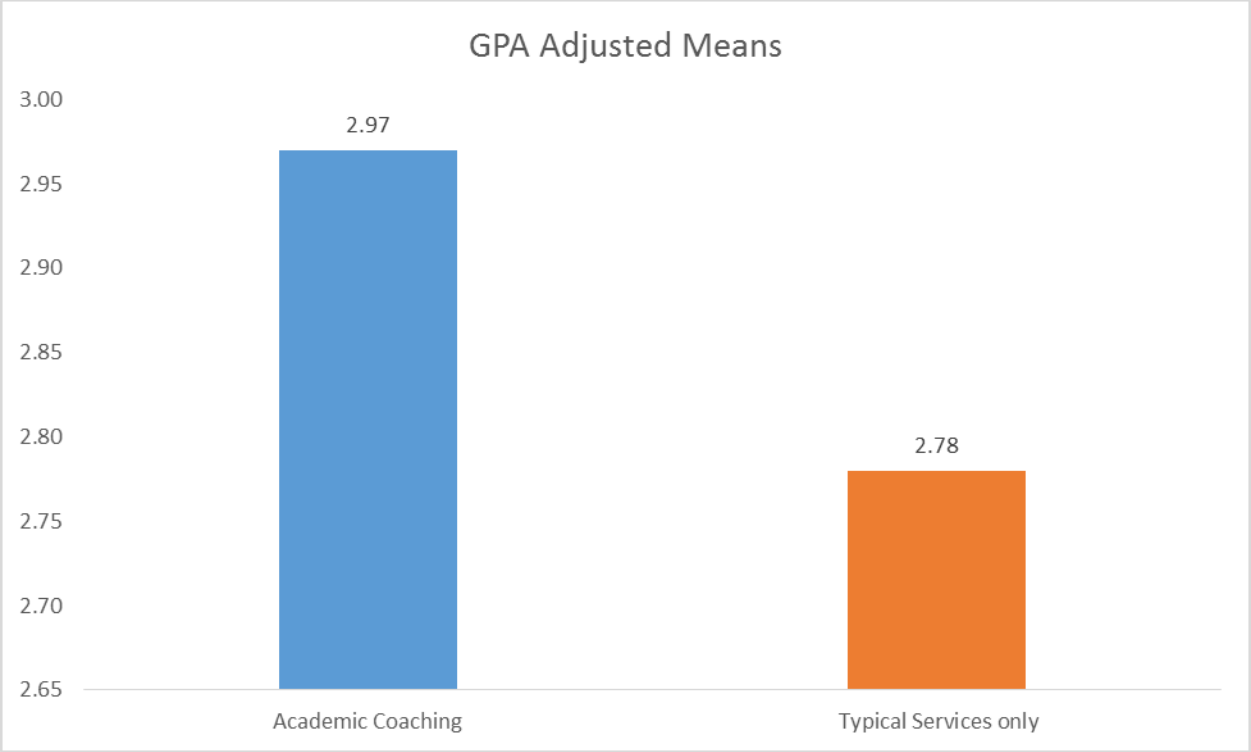


Figure 4. Adjusted means for each group on end of semester GPA after controlling for pre-test scores.

Table 5

ANCOVA Descriptive Statistics; Means and Adjusted Means

Measure		*Mean*	SD	Adjusted *Mean*	SE	95% Confidence Level	
						Lower	Upper
LASSI							
Anxiety							
	AC	15.32	5.53	15.63	1.00	13.59	17.67
	TS	12.69	5.76	12.32	1.09	10.09	14.54
Attitude							
	AC	26.89	3.09	26.29	.678	24.90	27.67
	TS	20.31	4.80	21.04	.741	19.53	22.55

Measure		*Mean*	SD	Adjusted *Mean*	SE	95% Confidence Level	
Concentration							
	AC	18.53	4.71	18.23	.913	16.37	20.09
	TS	11.00	4.56	11.36	.996	9.33	13.38
Motivation							
	AC	25.68	4.81	25.14	1.13	22.83	27.44
	TS	13.81	6.15	14.47	1.24	11.94	16.99
Test Strategies							
	AC	19.42	3.61	19.06	.748	17.53	20.58
	TS	13.69	2.41	14.12	.823	12.45	15.80
Study Aids							
	AC	23.11	3.33	22.64	.801	21.01	24.27
	TS	12.19	3.76	12.75	.879	10.96	14.53
Self-Testing							
	AC	26.05	5.95	25.65	1.20	23.21	28.10
	TS	9.56	5.02	10.04	1.31	7.37	12.71
Selecting Main Ideas							
	AC	19.95	4.16	19.70	.933	17.80	21.60
	TS	13.00	4.00	13.30	1.02	11.22	15.37
Time Management							
	AC	21.42	5.35	20.80	1.31	18.13	23.48
	TS	7.50	6.64	8.23	1.44	5.31	11.16
Information Processing							
	AC	23.37	4.55	22.91	1.06	20.75	25.06

Measure		*Mean*	SD	Adjusted *Mean*	SE	95% Confidence Level	
	TS	16.25	4.91	16.80	1.16	14.44	19.16
NSSE							
Collaborative Learning							
	AC	12.21	2.76	11.74	.518	10.69	12.80
	TS	6.06	3.32	6.62	.566	5.46	7.77
Discussions with Diverse others							
	AC	9.63	3.45	9.10	.764	7.54,	10.65
	TS	5.63	3.98	6.26	.836	4.56	7.97
Quality of Interactions							
	AC	30.37	3.70	29.86	1.04	27.75	31.97
	TS	22.13	7.33	22.73	1.13	20.43	25.03
Learning Strategies							
	AC	20.89	3.57	20.37	.970	18.39	22.34
	TS	10.06	4.95	10.69	1.06	8.52	12.86
Reflective and Integrative Learning							
	AC	30.26	5.96	29.44	1.51	26.38	32.51
	TS	18.19	8.71	19.16	1.65	15.81	22.51
Student-faculty Interaction							
	AC	6.22	2.29	6.05	1.24	3.52	8.58
	TS	4.94	7.64	5.13	1.31	2.45	7.81
Academic Self- Efficacy (SES)							
	AC	94.05	42.27	99.98	7.67	84.35	115.61

Measure		*Mean*	SD	Adjusted *Mean*	SE	95% Confidence Level	
	TS	171.44	26.91	164.40	8.41	147.27	181.54
Grade Point Average (GPA)							
	AC	3.04	.43	2.97	.05	2.87	3.07
	TS	2.69	.71	2.78	.06	2.66	2.89

Note. AC = Academic Coaching, TS = Typical Services, SD = Standard Deviation, SE = Standard Error.

Table 6

ANCOVA Analyses for Post-test Scores while Controlling for Pre-test Scores (N=36)

Dependent Measure	F	df	*p* value	partial η^2
LASSI				
Anxiety	4.99	1, 32	.033*	.135
Attitude	26.51	1, 32	.001***	.453
Concentration	25.63	1, 32	.001***	.445
Motivation	39.29	1, 32	.001***	.551
Test Strategies	17.55	1, 32	.001***	.354
Study Aids	64.09	1, 32	.001***	.667
Self-Testing	75.44	1, 32	.001***	.702
Selecting Main Ideas	20.77	1, 32	.001***	.394
Time Management	40.01	1, 32	.001***	.556
Information Processing	14.42	1, 32	.001***	.311
NSSE				
Collaborative Learning	43.36	1, 32	.001***	.575
Discussions with Diverse Others	5.96	1, 32	.020*	.157

Dependent Measure	F	df	*p* value	partial η^2
Quality of Interactions	21.39	1, 32	.001***	.401
Learning Strategies	41.87	1, 32	.001***	.567
Reflective and Integrative Learning	20.61	1, 32	.001***	.392
Student-faculty Interaction	.26	1, 31	.617	.008
Academic Self- Efficacy (SES)	29.92	1, 32	.001***	.483
Grade Point Average (GPA)	6.66	1, 32	.015*	.172

Note. *p < .05, **p < .01, ***p < .001, AC = Academic Coaching, TS = Typical Services, *p* = probability.

Table 7

Cohen's d Effect Size Values across Dependent Measures

Dependent Measure	*Cohen's d value*	Interpretation
LASSI		
Anxiety	0.48	Small Effect Size
Attitude	1.71	Large Effect Size
Concentration	1.67	Large Effect Size
Motivation	2.24	Large Effect Size
Test Strategies	1.89	Large Effect Size
Study Aids	3.18	Large Effect Size
Self-Testing	3.06	Large Effect Size
Selecting Main Ideas	1.75	Large Effect Size
Time Management	2.40	Large Effect Size

Dependent Measure	*Cohen's d value*	Interpretation
Information Processing	1.55	Large Effect Size
NSSE		
Collaborative Learning	2.09	Large Effect Size
Discussions with Diverse Others	1.12	Large Effect Size
Quality of Interactions	1.50	Large Effect Size
Learning Strategies	2.62	Large Effect Size
Reflective and Integrative Learning	1.70	Large Effect Size
Student-faculty Interaction	.24	Small Effect Size
Academic Self- Efficacy (SES)	2.21	Large Effect Size
Grade Point Average (GPA)	.63	Medium Effect Size

Note. NS= not significant

Treatment Fidelity

Research Question 5. How well was the Academic Coaching implemented by the disability support specialist?

Treatment fidelity by the trained observer was calculated for 33% of the sessions for each student. Since the trained observer observed 33% of the intervention sessions, the range of items completed varied from 9-15 items out of the 26 items across at least seven sessions.The mean percentage of observer agreement was calculated at 100%, determining that the Academic Coach applied each component of the intervention as indicated by the observer.

Treatment fidelity using the second method, the coaching interactions checklist, was calculated for the first seven sessions of Academic Coaching, and then the final session for a

total of eight sessions per student (e.g. the student completed the coaching interactions checklist after each session). The mean percentage of treatment fidelity across students was calculated at 97%, indicating that students rated the intervention as being implemented with a high degree of integrity.

Social Validity

Research Question 6. How do students in the Academic Coaching group judge the acceptability and effectiveness of the intervention?

Table 8 presents the social validity mean scores of each question averaged across each student. Overall, students had positive perceptions of the Academic Coaching intervention. As shown in table 8, all 19 students liked engaging in the Academic Coaching sessions, felt that having good study skills and confidence were important to their success after engaging in sessions, reported that they would recommend Academic Coaching to other college students, and felt that the time that Academic Coaching took was worth it (mean response = 3). A majority of students felt more confident after engaging in sessions (mean response = 2.79) and felt they were doing better in classes after engaging in sessions (mean response = 2.74). Less than half the students felt that they participated more in activities on campus after engaging in sessions (mean response = 2).

Table 8

Social Validity Results

Social Validity Item	Mean	Range
I liked engaging in the Academic Coaching Sessions.	3	3-3
I feel more confident in my classes after engaging in the Academic Coaching Sessions.	2.79	2-3

Social Validity Item	Mean	Range
I feel that I am doing better in my courses after engaging in the Academic Coaching sessions.	2.74	2-3
I feel that I am participating more in college activities outside of class after engaging in the Academic Coaching sessions.	2	1-2
I feel that having good study skills and confidence are important to my success as a college student.	3	3-3
I feel that the time that Academic Coaching took was worth it.	3	3-3
I would recommend Academic Coaching to other college students who need help with study strategies and skills.	3	3-3

Note. 3= Agree 2=Unsure 1=Disagree

Service Utilization Data Collected

Table 9 presents the frequency of service utilization by students in the Academic Coaching group and typical services only group. As shown in Table 9, out of the 35 students, nine students (two from the coaching group and seven from the control group) utilized tutoring services between 1-5 times throughout the semester, four students (two from the coaching group and two from the control group) utilized tutoring services 6-10 times throughout the semester, and four students (three from the coaching group and one from the control group) utilized tutoring services between 11-15 times throughout the semester. Out of the 35 students, 14 (eight from the coaching group and six from the control group) utilized writing center services 1-5 times throughout the semester. Out of the 35 students, one student (from the coaching group) utilized study tables between 1-5 times throughout the semester, and six students (2 from the coaching group and 4 from the control group) utilized study tables 6-10 times throughout the semester. Out of the 35 students, 11 students (one from the coaching group and 10 from the control group) attended student success workshops 1-5 times throughout the semester. Out of the 16 students in the typical services only group, all 16 met with the disability specialist at least

once during the semester but not more than five times. Students in the Academic Coaching group met with the disability specialist to receive Academic Coaching at least seven times throughout the semester and at most 15 times throughout the semester.

Table 9

Services Utilized by Group

Services Utilized	Coaching *n*	Control *N*	Total *n*
Tutoring			
1-5 times per semester	2	7	9
6-10	2	2	4
11-15	3	1	4
Writing Center			
1-5	8	6	14
Study Tables			
1-5	1	0	1
6-10	2	4	6
Student Success Workshops			
1-5	1	10	11
Meetings with Disability Specialist			
1-5	0	16	16
7-15	19	0	19

Chapter 5

Discussion

Significance of the Study

The purpose of this study was to examine the effects of an Academic Coaching intervention plus typical services on college students' with LD or ADHD use and knowledge of learning and study strategies, academic engagement, self-efficacy, and their academic achievement. College students with LD and/or ADHD are the two largest groups of students served by disability services in postsecondary education (Harbour, 2004). Students with LD and/or ADHD struggle with skills such as time management, planning, organizing, and using effective study and testing strategies. Academic Coaching appears to address these difficulties (Field, et al., 2013; Parker, et al., 2011; Prevatt & Yelland, 2013). This study provides further empirical support for the use of Academic Coaching to increase postsecondary success among students with LD or ADHD. Currently, research on the efficacy of Academic Coaching is limited. Institutions will benefit from this information so that administrators and support personnel are able to implement effective interventions that impact students' self-efficacy, academic engagement, and academic achievement.

Summary of Findings

Significant mean differences were found between the Academic Coaching group plus typical services and typical services only group across all the post-test measures. With regard to the use and knowledge of learning and study strategies, the Academic Coaching group scored better on all 10 subscales of the LASSI than the typical services only group. Specifically, students' anxiety and worry about school performance was lower for those students in the Academic Coaching group after engaging in coaching versus those students in the typical

services only group (Anxiety Scale). Students' attitude and interest towards school (Attitude Scale) was also better in the Academic Coaching group as was their concentration and attention to academic tasks (Concentration Scale), and their motivation, diligence, self-discipline, and willingness to work (Motivation Scale). The use of testing strategies and use of skills for preparing for tests was higher for students in the Academic Coaching groups (Test Strategies Scale) than in the typical services only group. Students in the Academic Coaching group also reported a higher use of support techniques and materials (Study Aids Scale) and a higher use of self-testing, reviewing strategies, selecting main ideas and recognizing important information (Self-Testing Scale and Selecting Main Ideas Scale) as compared to students in typical services only group. In addition, the students in the Academic Coaching group developed better information processing skills as compared to students in the typical services only group (Information Processing). Students in the Academic Coaching group also reported a greater use of time management principles for academic tasks as compared to the students in the Typical Services only group (Time Management Scale). Effect sizes indicated large treatment outcomes across all scales but the Anxiety Scale. These results show that Academic Coaching could be an effective intervention to increase the use and knowledge of learning strategies for students with LD or ADHD, specifically addressing the challenges in executive functioning skills often faced by students with LD and/or ADHD.

Regarding academic engagement, students in the Academic Coaching group scored better on five out of the six subscales of the NSSE than the typical services only group. Specifically, students in the Academic Coaching group reported higher levels of engagement in collaborative learning as compared to those students in the typical services only group (Collaborative Learning Scale). Students in the Academic Coaching group also reported higher use of effective learning

strategies (Learning Strategies Scale) and a higher use of reflective and integrative learning strategies (Reflective and Integrative Learning Scale) than those students in the typical services only group. Furthermore, students in the Academic Coaching group reported engaging in significantly more discussions with diverse others (Discussions with Diverse Others Scale) and a higher quality of interactions with others (Quality of Interactions Scale) as compared to students in the typical services only group. However, there were not significant mean differences between groups on the Student-Faculty Interaction Scale. Effect sizes indicated large treatment outcomes on all scales of the NSSE except for the Student-faculty Interaction Scale. These preliminary results suggest that Academic Coaching could be an effective intervention to increase collaborative learning skills, reflective and integrative learning skills, discussions with diverse others, and engagement in higher quality of interactions for students with LD or ADHD by specifically addressing the difficulties in engagement and social skills often faced by these students.

With regard to self-efficacy, students in Academic Coaching group scored better on post-test measures of the Academic Self-Efficacy Scale. Specifically, students in the Academic Coaching group reported better self-efficacy than students in the typical services only group. Effect size indicated a large treatment outcome in the Academic Self-Efficacy Subscale, demonstrating that Academic Coaching could be an effective intervention to improve the academic self-efficacy of students with LD or ADHD.

With regard to academic achievement, significant differences were found between the Academic Coaching group and the typical services only group on end of semester GPA. Specifically, students in the Academic Coaching group had higher cumulative GPAs at the end

of the semester than students in the typical services only group. Further, effect sizes indicated a medium magnitude impact on this variable.

With regard to treatment fidelity, the Academic Coaching intervention was implemented as intended as evidenced by observer fidelity and the coaching interactions checklist. Specifically, the coach implemented each step of the coaching intervention.

With regard to the social validity of Academic Coaching, students who engaged in Academic Coaching reported that this intervention was beneficial. Specifically, students reported that the Academic Coaching intervention helped them to be more successful in classes, increased their confidence, increased their engagement in classes, and improved their study skills and learning strategies. In addition, students reported that they would recommend Academic Coaching to friends.

Discussion of the Findings and Contribution to the Literature

This study makes several important contributions to the literature on the use of Academic Coaching for improving the success of college students with LD or ADHD. This study was one of the few that used a rigorous group design (Field et al., 2013; Richman et al., 2014; Zwart & Kallemeyn, 2001). Most studies (Parker, et al., 2011a & b; Prevatt & Yelland, 2013; Robinson & Gahagan, 2010; Swartz, et al., 2005) used non-experimental designs such as case studies, qualitative studies, or a pre-posttest design with no comparison group. Although participants were not randomly assigned to groups, this study used a pre-posttest design with a comparison group that had similar characteristics. Further, this study used analyses (ANCOVA) that controlled for possible pre-test differences by using pre-test scores as a covariate. Previous quasi-experimental studies investigating Academic Coaching (Richman et al., 2014; Zwart &

Kallemeyn, 2001) did not establish group equivalency or use analyses that controlled for pre-test scores.

This was the first study to use a college's disability specialist as the Academic Coach rather than outsourcing the coaching intervention. Most studies evaluating Academic Coaching have used outside coaching agencies (Parker, et al., 2011a; Prevatt & Yelland, 2013), thus increasing the cost associated with the implementation of Academic Coaching, and raising concerns about the feasibility of implementation by typical college staff. Furthermore, in previous studies, students who engaged in the coaching were responsible for a fee for the coaching services (Prevatt & Yelland, 2013; Swartz, et al., 2005). In this study, because the college's disability specialist was the Academic Coach, coaching services were free to all students, and the only cost to the college was minimal and one-time cost to certify the disability specialist. The feasibility and low cost of the Academic Coaching intervention provides practical benefits to colleges.

In addition, the use of outside coaching agencies in most other studies (Parker, et al., 2011a & b; Zwart & Kallemeyn, 2001; Richman, et al., 2014; Field, et al., 2013) means that it was difficult for those studies to include information on treatment integrity to ensure that the components of the coaching intervention were being implemented as intended. Although the most rigorous study (Field, et al., 2013) assessed treatment fidelity, they did so through student report only. In this study, two forms of treatment integrity were measured using a trained observer and the coaching interactions checklist, both of which demonstrated high treatment fidelity.

Unlike previous studies, this study included multiple measures to evaluate student outcomes that are highly correlated with student achievement and success. Although other

studies sometimes used more than one measure to evaluate Academic Coaching (Kuh, et al., 2008; Braxton, Hirschy, & McClendon, 2004; Khan, 2013), no study used multiple measures that examined success across use and knowledge of study strategies, academic engagement, self-efficacy, and academic achievement.

Furthermore, although previous studies using a pre-posttest design evaluated the use and knowledge of effective learning strategies using the LASSI as a primary measure found significant improvements in the learning and study strategies of students who engaged in Academic Coaching (Prevatt & Yelland, 2013; Parker, et al., 2011a and b; Richman et al., 2014; Field, et al., 2013), these studies did not report the effects of Academic Coaching across all 10 scales of the LASSI inventory. Instead, they either focused on overall scores, or chose just a few LASSI sub-scales to report. As described in the methods section, the use of all 10 scales in this study provides critical information in the evaluation of Academic Coaching. Further, the LASSI is not an inventory that is meant to provide an overall score, but rather its purpose is to provide separate scores for each of the scales because each scale measures a different construct. In this study, significant mean differences were found for all subscales on the LASSI suggesting that students in the coaching group improved skills related to academic success including time management, study skills, and test-taking skills. It is important to note that although there were significant mean differences on post-test measures of the Anxiety Scale, there was a small effect size, indicating that the mean differences could have been by chance. Inspection of the data suggests that both groups decreased their anxiety over time. This may be due to students becoming more comfortable over time in their college experience.

This was also the first study to use the NSSE to measure academic engagement to evaluate Academic Coaching, demonstrating better outcomes for students in the Academic

Coaching group in all areas except the student-faculty interaction scale. There may be two explanations for the lack of significant results between groups on students' interactions with their faculty. First, the Academic Coaching intervention focused primarily on enhancing study skills, time management skills, and engagement with course materials but did not typically focus on improving faculty student interactions. To the extent to which this is an important outcome, future studies may want to incorporate a focus on improving faculty-student interactions. Second, Academic Coaching may not have had a significant impact on interactions with faculty as compared to the typical services only group because the college from which the students participated is a small institution. With a 10:1 student to faculty ratio, students may have had ample opportunities to interact with their faculty members.

Furthermore, this was also the first study to evaluate the effect of Academic Coaching on self-efficacy, a construct that is highly correlated with academic success and achievement (Chemers, Hu, & Garcia, 2001; Zajacova, Lynch, & Espenshade, 2005; Khan, 2013). Because self-efficacy refers to students' confidence in their ability to carry out academic tasks such as preparing for exams and writing term papers (Zajacova, et al., 2005), developing stronger self-efficacy in students with LD and/or ADHD has potential to impact their academic achievement and persistence in college.

This was also the first study to use GPA as an assessment for academic achievement. Previous studies (Parker, et al., 2011a; Parker, et al., 2011 b) used student self-report inventories or assessments, excluding more objective measures. GPA is a primary indicator of measuring students' success and a determinant in whether students are progressing academically.

Another contribution of this study is that it is among the first to include students with LD and not just those with ADHD. Zwart and Kallemeyn (2001) and Richman and colleagues

(2014) are two other studies that used students with both LD and/or ADHD, also finding positive results for the use of Academic Coaching to increase student success. In addition to including students with LD and ADHD, this study is among the first to include information on co-occurring mental health diagnoses (depression and anxiety). Having co-occurring mental health diagnoses could affect how students respond to Academic Coaching. Out of the 35 participants in this study, 18 (10 from the Academic Coaching Group and 8 from the Typical Services only group) students identified as having co-occurring mental health diagnoses. Because groups in this study had similar rates of co-occurring diagnoses, Academic Coaching was shown to be an effective intervention for students who were also experiencing anxiety and/or depression.

This study is also the first to include descriptive information on the use of typical services by students in both the treatment and control groups, a key variable that may impact the effectiveness of Academic Coaching. In taking into consideration the quantitative data provided for use of learning and study strategies, academic engagement, self-efficacy, and achievement, this additional descriptive data offers additional support for the use of Academic Coaching. Both groups engaged in the same services throughout the semester. There were no notable differences regarding the types of approved accommodations across participants; students in both groups were approved for similar accommodations. Similarly, descriptive data regarding the use of typical services suggests that the groups did not differ in their use of tutoring services or writing services. The only notable difference across participants in the services used was the use of success workshops. Ten students in the typical services only group participated in success workshops whereas only one student from the Academic Coaching group used this service. Students in the typical services only group may have sought additional help by attending the success workshops. Despite the students in the typical services only group seeking out this

additional help, students in the Academic Coaching group performed better on all measures, suggesting that individualized coaching may be a more effective service than workshops.

The frequency of services that each student engaged in as well as the number of hours is important to consider when evaluating whether or not students in the Academic Coaching group had better outcome scores than those in the typical services. It is possible that outcome differences were due to dosage or time engaged with the disability specialist and not Academic Coaching. Upon further inspection of the services utilized per student in the control group, four students used at least one service, six students used at least two different services, four students used at least three different services, and two students used at least four different services. With regard to the students in the Academic Coaching group, in addition to meeting with the disability specialist for coaching sessions, six students utilized at least one service in addition to coaching, and seven students utilized at least two different services in addition to coaching, while six students only utilized coaching and no additional typical services. Furthermore, it is estimated that students in the coaching group spent a total of 93 hours per semester engaging in typical services in addition to the coaching sessions while students in the typical services only group spent about 107.15 hours engaging in typical services. Considering that students in the typical services only group engaged in more different types of typical services and for more hours than the students in the coaching group, changes in outcomes are more likely to be attributed to the coaching intervention itself. However, research employing quantifiable methods and with a larger sample size needs to be completed to evaluate whether just time spent in coaching sessions with the disability specialist is just as effective as the intervention components itself.

Finally, this was one of the few studies to include information on social validity of Academic Coaching. Student perceptions about the benefits of Academic Coaching may affect

their motivation and growth over time. Overall, students reported that they felt more confident and were doing better in classes after engaging in Academic Coaching suggesting that Coaching may be effective in improving student growth and persistence in post-secondary education.

Limitations of the Study

In evaluating the findings of this study, it is important to recognize the limitations. First, the generalizability of the sample is limited. Despite recruitment efforts to involve surrounding colleges and participants, participation rates were low, leaving a small sample size from just one participating college. In addition to the small sample size, the participating college is a traditionally female institution, thus limiting the generalizability of the results to other populations.

A second limitation is the lack of random assignment. The researcher's inability to ethically deny coaching to students who requested it prevented students from being randomly assigned to groups. Because random assignment was not used, students who volunteered for the Academic Coaching intervention may have been more motivated than those in the typical services only group, thus providing more favorable responses towards improvement on skills.

A third limitation is the use of self-report measures. Self-report measures can be affected by many variables that could have played a role in how students responded such as their awareness of the purpose of the study. In addition, dependent on the relationship with the academic coach/disability specialist, students may have responded more favorably if they were aware that the academic coach/disability specialist would be reviewing their answers. However, students in the Academic Coaching group still demonstrated higher GPAs over the students in the typical services only group; thus providing a more objective measure than the self-report inventories. In an inspection of the descriptive means (Appendix H), students in the coaching

group maintained or improved their GPA from beginning to end of semester versus those students in the typical services only group whose GPA slightly decreased.

A fourth limitation has to do with the use of a cumulative GPA. Although significant mean differences were found between groups, further investigation is needed into the use of cumulative GPA as a pre-post measure especially when varying class levels (e.g. freshmen, sophomores, juniors) are included in the sample. In this study, there were twice as many first-year students in the Academic Coaching group than the typical services only group, possibly affecting outcomes. For instance, growth in cumulative GPA for first-year students who attended just one semester may be more sensitive to change than the cumulative GPA of sophomores or juniors whose grades are averaged across three or four semesters. In addition, greater change may be expected for first-year students after their first semester once they have acquainted themselves to the postsecondary environment.

A fifth limitation includes the possibility of bias. The researcher acted as the academic coach potentially affecting internal validity of this study. Despite efforts to attempt to train an additional academic coach, resources were not available during the time of the study to do so. The academic coach was also the disability specialist at the participating institution and data were not collected on whether the disability specialist had prior academic discussions with the participants in the study, or how previous relationships may have influenced the success of students receiving academic coaching from the disability specialist.

A sixth limitation includes the potential increase in Type I error because multiple statistical tests were conducted for each of the subscales of both the LASSI and NSSE. The LASSI and NSSE are inventories that are not meant to provide total scores, but rather are meant to describe specific student skills through the use of subscales, thus requiring multiple statistical

analyses. To minimize inflation of experiment-wise Type I error in future studies, more stringent alpha levels using the Bonferroni adjustment should be used. However, considering that this study was under-powered (as described in the Methods section under Power Analysis), more stringent alpha levels were not used. Nevertheless, considering that this study was a small-scale exploration study, the results are still beneficial in determining the focus of future research.

Implications for Future Research

Future studies should include several components. First, randomized control groups and larger sample sizes should be used to evaluate Academic Coaching with college students with LD and/or ADHD. Second, longitudinal data would be useful to evaluate the long-term effects on self-efficacy, engagement, GPA, and retention and graduation rates for college students who engage in Academic Coaching. Specifically, with regard to GPA, mean differences suggest that students in the coaching group slightly increased or at least maintained their GPA whereas students in the typical services only group demonstrated a slight decrease in their cumulative GPA at the end of the semester. A longitudinal study could determine long-term effects of the coaching intervention and assess whether changes observed in one semester change over time or are maintained. Third, as this study attempted to demonstrate, an important variable to examine is the presence of secondary diagnoses such as mental health diagnoses with the primary ADHD and/or LD diagnoses. As previous researchers (Field et al., 2013) have suggested, with larger sample sizes, a breakdown analysis by co-morbidity could be helpful in evaluating potential differential effects of Academic Coaching on those college students with additional diagnoses. Fourth, other important variables such as medication status could be evaluated to determine differences in response to coaching among those individuals with ADHD on a medication regime. Fifth, future studies should further validate the initial descriptive findings that this study

reported regarding other service utilization. Larger samples may allow for quantitative analyses of differences between groups in terms of typical services utilized between the two groups. Sixth, because the needs of students with LD versus students with ADHD may vary, it is important to evaluate the impact of Academic Coaching by examining whether or not there are differences in the ways that students with LD are impacted by Academic Coaching versus students with ADHD. Specifically, students who are diagnosed with a specific learning disability may have needs focused around learning to comprehend material or recalling material versus students who have a primary diagnosis of ADHD and have needs focused around time management and prioritizing. Finally, to address issues of feasibility and to avoid possible researcher bias, it would be beneficial to train academic coaches who are not involved with the researcher to implement the intervention.

Summary

In this study, the effects of Academic Coaching on the use and knowledge of learning strategies, academic engagement, self-efficacy, and academic achievement of college students with LD or ADHD were evaluated. Academic Coaching is an intervention that has gained significant popularity in recent years (Prevatt & Yelland, 2013; DuPaul, Weyandt, O'Dell, & Jarejao, 2009; Murphy, et al., 2010). Despite its limitations, this study addressed several gaps in the existing literature by examining the effectiveness of Academic Coaching by including participants with learning disabilities, using multiple outcome measures that are highly correlated with successful college students, gathering information on other services utilized by the participants other than Academic Coaching, and using objective treatment fidelity and social validity measures. Based on the preliminary findings from this study, Academic Coaching may be an effective intervention with college students with LD or ADHD to improve their use of

learning and study strategies, academic engagement, self-efficacy, and implications for the improvement of academic achievement using GPA. Future research is needed to continue to confirm and validate the effectiveness of Academic Coaching with college students with disabilities.

References

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist 28*, 117–149.

Barkley, R. A. (2002). Major life activity and health outcomes associated with attention-deficit/hyperactivity disorder. *Journal of Clinical Psychiatry, 111*, 279-289.

Barkley, R. A., Murphy, K. R., & Fischer, M. (2007). Adults with ADHD: Clinic-referred cases vs. children grown up. *The ADHD Report, 15*, 1-13.

Bettinger, E., & Baker, R. (2011). *The effects of student coaching in college: An evaluation of a randomized experiment in student mentoring* (No. w16881). National Bureau of Economic Research.

Bong, M. (2001). Role of self-efficacy and task-value in predicting college students' course performance and future enrollment intentions. *Contemporary Educational Psychology 26*, 553–570.

Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2004). *Understanding and reducing college student departure*. ASHE-ERIC Higher Education Report, Vol. 30, No. 3. Washington, DC: School of Education and Human Development, George Washington University.

Brotman, L. E., Liberi, W. P., & Wasylyshyn, K. M. (1998). Executive coaching: The need for standards of competence. *Consulting Psychology Journal of Practice and Research, 50*, 40-46.

Carnevale, A. P., & Desrochers, D. M. (2003). Preparing students for the knowledge economy: What school counselors need to know. *Professional School Counseling, 6*, 228-236.

Carver, C.S. (2007). Stress, coping, and health. In H.S. Friedman & R.C. Silver (Eds.), *Foundations of Health Psychology* (pp. 117–44). New York, NY: Oxford University Press.

Chemers, M. M., Hu, L. T., & Garcia, B. F. (2001). Academic self-efficacy and first year college student performance and adjustment. *Journal of Educational Psychology*, *93*, 55-64.

Cohen, L., Manion, L., & Morrison, K. (2007). Observation. *Research Methods in Education*, *6*, 396-412.

Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M.R. Gunner & A.L. Sroufe (Eds.), *The Minnesota Symposia on Child Psychology* (pp. 268). Hillsdale, NJ: Lawrence Erlbaum Associates.

Connor, D. J. (2012). Helping students with disabilities transition to college: 21 tips for students with LD and/or ADD/ADHD. *Teaching Exceptional Children*, *44*, 16-25.

Dimitrov, D. M., & Rumrill, Jr, P. D. (2003). Pretest-posttest designs and measurement of change. *Work: A Journal of Prevention, Assessment and Rehabilitation*, *20*, 159-165.

DuPaul, G. J., Reid, R., Anastopoulos, A. D., & Power, T. J. (2014). Assessing ADHD symptomatic behaviors and functional impairment in school settings: Impact of student and teacher characteristics. *School Psychology Quarterly*, *29*, 409-421.

DuPaul, G. J., Weyandt, L. L., O'Dell, S. M., & Varejao, M. (2009). College students with ADHD current status and future directions. *Journal of Attention Disorders*, *13*, 234-250.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149-1160.

Field, S., Parker, D. R., Sawilowsky, S., & Rolands, L. (2013). Assessing the impact of ADHD coaching services on university students' learning skills, self-regulation, and well-being. *Journal of Postsecondary Education and Disability*, *26*, 67-81.

Ginsberg, S. M., & Schulte, K. (2008). Instructional accommodations: Impact of conventional vs. social constructivist view of disability. *Journal of the Scholarship of Teaching and Learning*, *8*, 84-91.

Green, J. L., Camilli, G., & Elmore, P. B. (Eds.). (2012). *Handbook of complementary methods in education research.* New York, NY: Routledge.

Gregg, N. (2009). *Adolescents and adults with learning disabilities and ADHD: Assessment and accommodation*. New York, NY: Guilford Press.

Gregg, N., & Nelson, J. (2010). A meta-analysis of the test accommodation research specific to adolescents and adults with LD. *Journal of Learning Disabilities*, *43*, 483-499.

Greenbaum, B., Graham, S., & Scales, W. (1995). Adults with learning disabilities: Educational and social experiences during college. *Exceptional Children, 61*, 460-471

Gordon, M., Lewandowski, L., Murphy, K., & Dempsey, K. (2002). ADA-based accommodations in higher education: A survey of clinicians about documentation requirements and diagnostic standards. *Journal of Learning Disabilities*, *35*, 357-363.

Hackett, G., Betz, N. E., Casas, J. M., and Rocha-Singh, I. A. (1992). Gender, ethnicity, and social cognitive factors predicting the academic achievement of students in engineering. *Journal of Counseling Psychology 39*, 527–538.

Hadley, W. M. (2011). College students with disabilities: A student development perspective. *New Directions for Higher Education*, *2011*, 77-81.

Heiman, T., & Precel, K. (2003). Students with learning disabilities in higher education

academic strategies profile. *Journal of learning disabilities*, *36*, 248-258.

Houtenville, A. J. (2007). 2007 Disability Status Report-Flyer. *Employment and Disability Institute Collection, 1240.*

Hughes, R., & Pace, C. R. (2003). Using NSSE to study student retention and withdrawal. *Assessment Update*, *15*, 1-2.

Individuals with Disabilities Education Act Amendments of 1997. Public Law 105-17.20 U.S.C. Chapter 33, Section 1415 et seq. (EDLAW. 1997).

Jones, N. L., Apling, R. N., & Smole, D. P. (2004). *Individuals with Disabilities Education Act (IDEA): Background and Issues*. Hauppauge, New York: Nova Publishers.

Joshi, G. S., & Bouck, E. C. (2015). Examining postsecondary education predictors and participation for students with learning disabilities. *Journal of Learning Disabilities, XX (X),* 1-11.

Khan, M. (2013). Academic self-efficacy, coping , and academic performance in college. *International Journal of Undergraduate Research and Creative Activities, 5*, 1-11.

Kilburg, R. R. (1996). Toward a conceptual understanding and definition of executive coaching. *Consulting Psychology Journal-Practice and Research*, *48*, 134-144.

Kober, N. (2002). Twenty-five years of educating children with disabilities: The good news and the work ahead. Retrieved March 11, 2015 from http://www.ctredpol.org/specialeducation/

Kuh, G. D. (2001). The national survey of student engagement: Conceptual framework and overview of psychometric properties. *Bloomington, IN: Indiana University Center for Postsecondary Research*, 1-26.

Kuh, G. D. (2003). What we're learning about student engagement from NSSE. *Change*, *35*, 24–

31.

Kuh, G. D. (2009). What student affairs professionals need to know about student engagement. *Journal of College Student Development, 50,* 683-706.

Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *Journal of Higher Education, 79,* 540-563.

Kurth, N., & Mellard, D. (2006). Student Perceptions of the Accommodation Process in Postsecondary Education. *Journal of Postsecondary Education and Disability*, *19,* 71-84.

Lent, R. W., Brown, S. D., & Larkin, K. C. (1987). Comparison of three theoretically derived variables in predicting career and academic behavior: Self-efficacy, interest congruence, and consequence thinking. *Journal of Counseling Psychology*, *34,* 293.

Lindstrom, J. H. (2007). Determining appropriate accommodations for postsecondary students with reading and written expression disorders. *Learning Disabilities Research & Practice*, *22,* 229-236.

Lovett, B. J. (2014). Testing accommodations under the Amended Americans with Disabilities Act: The voice of empirical research. *Journal of Disability Policy Studies, 25*, 81–90.

Lovett, B. J., Nelson, J. M., & Lindstrom, W. (2014). Documenting hidden disabilities in higher education: Analysis of recent guidance from the association on higher education and disability (AHEAD). *Journal of Disability Policy Studies*, *XX (X),* 1-10.

Marshak, L., Van Wieren, T., Ferrell, D. R., Swiss, L., & Dugan, C. (2010). Exploring barriers to college student use of disability services and accommodations. *Journal of Postsecondary Education and Disability*, *22,* 151-165.

Mull, C., Sitlington, P. L., & Alper, S. (2001). Postsecondary education for students with

learning disabilities: A synthesis of the literature. *Exceptional Children, 68*, 97-118.

Multon, K. D., Brown, S. D., and Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology, 38*, 30–38.

National Center for Health Statistics (US). National Health Interview Survey. 2008. http://www.cdc.gov/nchs/nhis.htm

National Organization on Disability. (2001). People with disabilities unprepared for terrorist, other crises at home or at work, new poll finds. Retrieved March 11, 2015, from http://www.nod.org/index.cfm?fuseaction=page.viewPage&pageID=1430&nodeID=1&FeatureID=507&redirected=1&CFID=1994474&CFTOKEN=7199853

Newman, L., Wagner, M., Cameto, R., Knokey, A. M., & Shaver, D. (2010). Comparisons across Time of the Outcomes of Youth with Disabilities up to 4 Years after High School. A Report of Findings from the National Longitudinal Transition Study (NLTS) and the National Longitudinal Transition Study-2 (NLTS2). NCSER 2010-3008. National Center for Special Education Research.

Newman, L., Wagner, M., Knokey, A., Marder, C., Nagle, K., Shaver, D., & … Schwarting, M. (2011). *The post-high school outcomes of young adults with disabilities up to eight years after high school: A report from the NLTS-2*. Menlo Park, CA: SRI International.

Ofiesh, N. S. (2007). Math, Science, and Foreign Language: Evidence-Based Accommodation Decision Making at the Postsecondary Level. *Learning Disabilities Research & Practice, 22*, 237-245.

Ofiesh, N. S., & McAfee, J. K. (2000). Evaluation practices for college students with LD. *Journal of Learning Disabilities*, *33*, 14-25.

Pajares, F. (2002). Gender and perceived self-efficacy in self-regulated learning. *Theory into Practice, 41*, 116-125.

Parker, D. R., Hoffman, S. F., Sawilowsky, S., & Rolands, L. (2011a). An examination of the effects of ADHD coaching on university students' executive functioning. *Journal of Postsecondary Education and Disability*, *24*, 115-132.

Parker, D. R., Hoffman, S. F., Sawilowsky, S., & Rolands, L. (2011b). Self-control in postsecondary settings students' perceptions of ADHD college coaching. *Journal of Attention Disorders*, *17*, 215-232.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade Of research*. San Francisco, CA: Jossey-Bass.

Prevatt, F., Lampropoulos, G. K., Bowles, V., & Garrett, L. (2011). The use of between session assignments in ADHD coaching with college students. *Journal of Attention Disorders*, *15*, 18-27.

Prevatt, F., & Yelland, S. (2013). An empirical evaluation of ADHD coaching in college students. *Journal of Attention Disorders, XX (X),* 1-12.

Parker, D. R., Hoffman, S. F., Sawilowsky, S., & Rolands, L. (2013). Self-control in postsecondary settings students' perceptions of ADHD college coaching. *Journal of Attention Disorders*, *17*, 215-232.

Quinn, P. O., Ratey, N. A., & Maitland, T. L. (2000). *Coaching college students with AD/HD: Issues and answers.* Silver Spring, MD: Advantage Books.

Raue, K., and Lewis, L. (2011). Students with Disabilities at Degree-Granting Postsecondary Institutions (NCES 2011–018). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Reimers, T. M., & Wacker, D. P. (1988). Parents' ratings of the acceptability of behavioral treatment recommendations made in an outpatient clinic: A preliminary analysis of the influence of treatment effectiveness. *Behavioral Disorders, 14,* 7-15.

Richman, E. L., Rademacher, K. N., & Maitland, T. L. (2014). Coaching and College Success. *Journal of Postsecondary Education and Disability*, *27*, 33-50.

Robinson, C., & Gahagan, J. (2010). In practice: Coaching students to academic success and engagement on campus. *About Campus*, *15*, 26-29.

Romano, C. (2011, January). *Academic Coaching Techniques for College Professionals.* Presented at the NASPA/CCPA Drive-In Conference, San Francisco, CA.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85,* 571-581.

Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I've got it: A process model of perceived control and children's engagement and achievement in school. *Journal of Educational Psychology, 82*, 22-32.

Snyder, T. D., & Dillow, S. A. (2011). Digest of education statistics 2010 (NCES 2011-015). Washington, DC: US Department of Education, Institute of Education Sciences. *National Center for Education Statistics. Retrieved from http://nces.ed.gov/*

Solberg, V.S., O'Brien, K., Villareal, P., Kennel, R., and Davis, B. (1993). Self-efficacy and Hispanic college students: Validation of the college self-efficacy instrument. *Hispanic Journal of Behavioral Sciences 15,* 80-95.

Stodden, R. A., Whelley, T., Chang, C., & Harding, T. (2001). Current status of educational

support provision to students with disabilities in postsecondary education. *Journal of Vocational Rehabilitation, 16,* 189-198.

Swartz, S. L., Prevatt, F., & Proctor, B. E. (2005). A coaching intervention for college students with attention deficit/hyperactivity disorder. *Psychology in the Schools*, *42*, 647-656.

Taylor, R. L., Richards, S. B., & Brady, M P. (2005). *Mental Retardation: Historical perspectives, current practices and future directions.* Boston: Allyn and Bacon.

Trainin, G., & Swanson, H. L. (2005). Cognition, metacognition, and achievement of college students with learning disabilities. *Learning Disability Quarterly*, *28*, 261-272.

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. Retrieved on March 15, 2015 from http://nces.ed.gov/fastfacts/index.asp?faq=FFOption5#faqFFOption5

Vogel, G., Fresko, B., & Wertheim, C. (2007). Peer tutoring for college students with learning disabilities perceptions of tutors and tutees. *Journal of learning disabilities*, *40*, 485-493.

Wadley, M. N., & Liljequist, L.C. (2013). The effect of extended test time for students with attention-deficit hyperactivity disorder. *Journal of Postsecondary Education and Disability*, *26*, 263-271

Weinstein, C. E., & Palmer, D. R. (2002). *LASSI User's Manual: For Those Administering the Learning and Study Strategies Inventory*. Clearwater, FL: H & H Publishing.

Weinstein. C.E., Palmer. D.R., & Schulte. A.C. (1987) *Learning and Study Strategies Inventory.* Clearwater, FL: H&H Publishing.

Weis, R., Dean, E. L., & Osborne, K. J. (2014). Accommodation decision making for postsecondary students with learning disabilities: individually tailored or one size fits all? *Journal of learning disabilities, XX (X),* 1-15

Weyandt, L. L., & DuPaul, G. (2006). ADHD in college students. *Journal of Attention Disorders, 10,* 9-19.

Zajacova, A., Lynch, S. M., & Espenshade, T. J. (2005). Self-efficacy, stress, and academic success in college. *Research in Higher Education, 46,* 677-706.

Zwart, L. M., & Kallemeyn, L. M. (2001). Peer-based coaching for college students with ADHD and learning disabilities. *Journal of Postsecondary Education and Disabilities, 15,* 1-15.

Appendix A
Social Validity Form-Academic Coaching: Student

Please complete the items listed below. Place check mark following the question that best indicates how you feel about the Academic Coaching sessions

	Item	Agree	Unsure	Disagree
1	I liked engaging in the Academic Coaching sessions.			
2	I feel more confident in my classes after engaging in the Academic Coaching sessions.			
3	I feel that I am doing better in my courses after engaging in the Academic Coaching sessions.			
4	I feel that I am participating more in college activities outside of class after engaging in the Academic Coaching sessions.			
5	I feel that having good study skills and confidence are important to my success as a college student.			
6	I feel that the time that Academic Coaching took was worth it.			
7	I would recommend Academic Coaching to other college students who need help with study strategies and skills.			

Appendix B
Treatment Implementation Fidelity Checklist by Session/Academic Coaching

Session #	**Description of Session**	**Circle answer**
1 Initial Meeting with Student Establishment of coaching guidelines	Did the coach and student establish guidelines for the coach-student relationship?	YES NO
	Did the coach and student establish frequency and duration of sessions?	YES NO
	Did the coach and student have a discussion of the student's interests and brainstorm possible goals?	YES NO
2 Goals discussion and attainment progress	Did the coach and student finalize the student's goals?	YES NO
	Do the goals meet the SMART goal guidelines? Goal 1: Specific Measurable Attainable Realistic Timely Goal 2: Specific Measurable Attainable Realistic Timely Goal 3: Specific Measurable Attainable Realistic Timely	 Goal 1: YES NO YES NO YES NO YES NO YES NO Goal 2: YES NO YES NO YES NO YES NO YES NO Goal 3: YES NO YES NO YES NO YES NO YES NO
	Did the coach and student discuss specific strategies and	YES

	skills pertaining to goals that student will utilize over the next week?	NO
3 Goals discussion and attainment progress	Did the coach and student begin the session with a review of the student's goals?	YES NO
	Did the coach and student follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY
	Did the coach and student discuss specific strategies and skills pertaining to the goals that the student will use over the next week?	YES NO
4 Goals discussion and attainment progress	Did the coach and student begin the session with a review of the student's goals?	YES NO
	Did the coach and student follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY
	Did the coach and student discuss specific strategies and skills pertaining to the goals that the student will use over the next week?	YES NO
5 Goals discussion and attainment progress	Did the coach and student begin the session with a review of the student's goals?	YES NO
	Did the coach and student follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY
	Did the coach and student discuss specific strategies and skills pertaining to the goals that the student will use over the next week?	YES NO
6 Goals discussion and attainment progress	Did the coach and student begin the session with a review of the student's goals?	YES NO

	Did the coach and student follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY
	Did the coach and student discuss specific strategies and skills pertaining to the goals that the student will use over the next week?	YES NO
7 Goals discussion and attainment progress	Did the coach and student begin the session with a review of the student's goals?	YES NO
	Did the coach and student follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY
	Did the coach and student discuss specific strategies and skills pertaining to the goals that the student will use over the next week?	YES NO
8 Goals discussion and attainment progress Discussion of overall progress and student's success with use of Academic Coaching	Did the coach and student begin the session with a review of the student's goals?	YES NO
	Did the coach and student follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY
	Did the coach and student discuss specific strategies and skills pertaining to the goals that the student will use over the next week?	YES NO

Appendix C
Training for Treatment Fidelity: Observer Training Checklist

	Description of Training	**Materials/Forms Needed**
Training Section 1: Describe Rationale for use of Academic Coaching	The trainer discussed the use of Academic Coaching and implications for practice	N/A
Training Section 2: Developing Goals Using SMART Goal Method	• The trainer described the use of the SMART method to develop goals, describing each of the following components: a. Specific b. Measurable c. Attainable d. Realistic e. Timely	• Goals Brainstorming Form • SMART Goal Component Checklist
	• The trainer gave examples of SMART method developed goals	SMART Goal Component Checklist
	• The coaches developed their own goals and evaluated each example with the trainer using the SMART guidelines	SMART Goal Component Checklist
Training Section 3: Questioning Sequence Overview	The trainer discussed the use of questioning format during sessions and role-played the questioning sequence. Break out/Practice	N/A
Training Section 3a: Questioning Sequence Practice	The trainer provided opportunities for the coaches to practice the questioning format	N/A

Training Section 4: Overview of each session	The trainer described an overview of each session using the 4-step approach (Swartz, Prevatt, & Proctor, 2005), including a description and example of forms needed for each sessions	• Student Goal Form • Coaching Interactions Checklist (Student)
Training Section 5: Practice	The observer practiced using the treatment fidelity checklist to ensure understanding of the use of Academic Coaching. Assessment broken into 3 separate testing components: 1) Establishing guidelines of sessions 2) Development of goals 3) Using the 4-step approach	• Role Modeling a session • Treatment Fidelity Checklist
Training Section 6: Review and Questions	The trainer reviewed the objectives of the training and gave time for questions and comments.	N/A

Appendix D
Coaching Interactions Checklist

Session #	**Description of Session**	**Circle answer**
1 Initial Meeting with Student establishment of coaching guidelines	Did we establish guidelines for my relationship with my coach?	YES NO
	Did we establish frequency and duration of meetings?	YES NO
	Did we have a discussion of my interests and brainstorm possible goals?	YES NO
2 Goals discussion and attainment progress	Did we complete a discussion of my goals?	YES NO
	Did we discuss specific strategies and skills pertaining to my goals that I will use over the next week?	YES NO
3 Goals discussion and attainment progress	Did we begin session with a review of my goals?	YES NO
	Did we follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY
	Did we discuss specific strategies and skills pertaining to my goals that I will use over the next week?	YES NO
4 Goals discussion and attainment progress	Did we begin the session with a review of my goals?	YES NO
	Did we follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY

	Did we discuss specific strategies and skills pertaining to my goals that I will use over the next week?	YES NO
5 Goals discussion and attainment progress	Did we begin the session with a review of my goals?	YES NO
	Did we follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY
	Did we discuss specific strategies and skills pertaining to my goals that I will use over the next week?	YES NO
6 Goals discussion and attainment progress	Did we begin the session with a review of my goals?	YES NO
	Did we follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY
	Did we discuss specific strategies and skills pertaining to my goals that I will use over the next week?	YES NO
7 Goals discussion and attainment progress	Did we begin the session with a review of my goals?	YES NO
	Did we follow the 4-step approach by Reviewing, evaluating, anticipating, and planning?	YES NO PARTIALLY
	Did we discuss specific strategies and skills pertaining to my goals that I will use over the next week?	YES NO
8 Goals discussion and attainment progress	Did we begin the session with a review of my goals?	YES NO
Discussion of overall progress and student's success with use of Academic Coaching	Did we follow the 4-step approach by Reviewing, evaluating, anticipating, and	YES NO

	planning?	PARTIALLY
	Did we discuss my overall progress and success with Academic Coaching?	YES NO

Appendix E
Services Utilization Form

Student Name/ID number: _____

Types of Services (Circle those that you have utilized this past semester)	**How many times per week? If less than once per week, write how many times over the course of the semester.**
Indicate accommodations that you have been approved for: _____ _____ _____ _____ _____ _____ _____	Specify how often you have used each approved accommodation: ___ times per week ___ times per semester ___ times per week ___ times per semester ___ times per week ___ times per semester ___ times per week ___ times per semester ___ times per week ___ times per semester ___ times per week ___ times per semester ___ times per week ___ times per semester
Tutoring Services: Within school or outside services or Both	_____times per week _____times per semester
Writing Center Services	_____times per week _____times per semester
Meeting 1:1 with learning specialist and/or disability support specialist	_____times per week _____times per semester

Attended student success workshops If so, what areas?	_____times per week _____times per semester
Study groups or tables	_____times per week _____times per semester
Other: (Please write in)	_____times per week _____times per semester

Appendix F
Academic Coaching: Student Goal Form

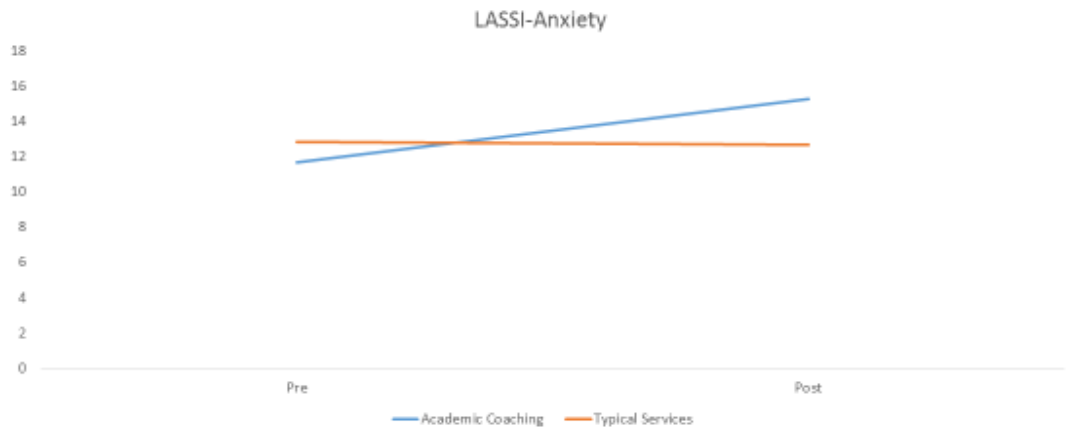
Goal 1:		
Action Steps	Deadline	Circle Yes for action taken Circle No for no action taken
1)		YES ☺ NO ☹
2)		YES ☺ NO ☹
3)		YES ☺ NO ☹
Possible Obstacles I may face in attempting to reach my goal:		
Strategies and Resources I will use to overcome obstacles:		
Other Strategies and Resources available to assist in completing goal:		

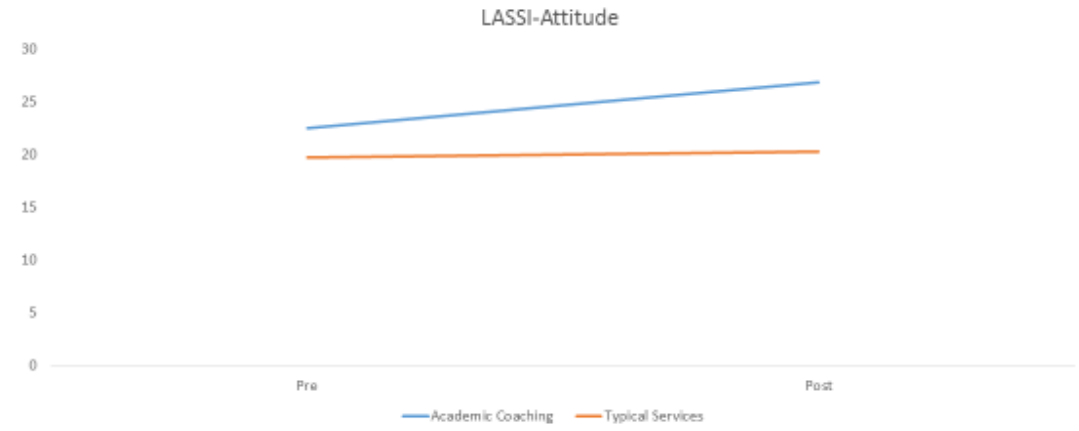
Goal 2:		
Action Steps	Deadline	Circle Yes for action taken Circle No for no action taken
1)		YES ☺ NO ☹
2)		YES ☺ NO ☹
3)		YES ☺ NO ☹
Possible Obstacles I may face in attempting to reach my goal:		

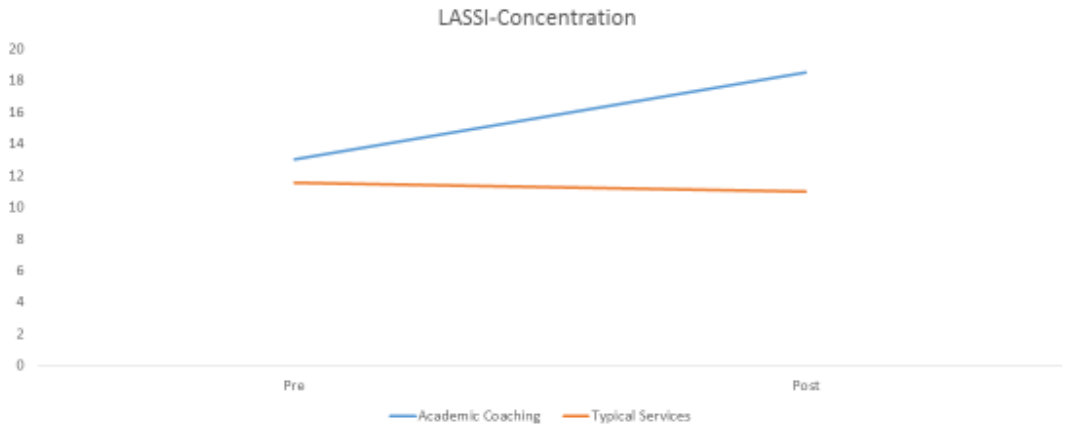
Strategies and Resources I will use to overcome obstacles:
Other Strategies and Resources available to assist in completing goal:

Goal 3:		
Action Steps	Deadline	Circle Yes for action taken Circle No for no action taken
1)		YES ☺ NO ☹
2)		YES ☺ NO ☹
3)		YES ☺ NO ☹
Possible Obstacles I may face in attempting to reach my goal:		
Strategies and Resources I will use to overcome obstacles:		
Other Strategies and Resources available to assist in completing goal:		

Appendix G
Graphical Representations of Mean Differences Between Groups



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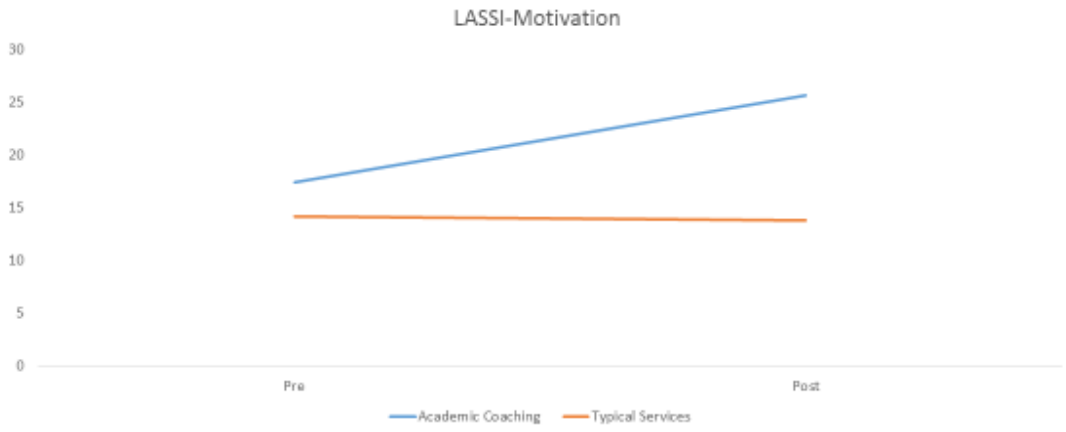
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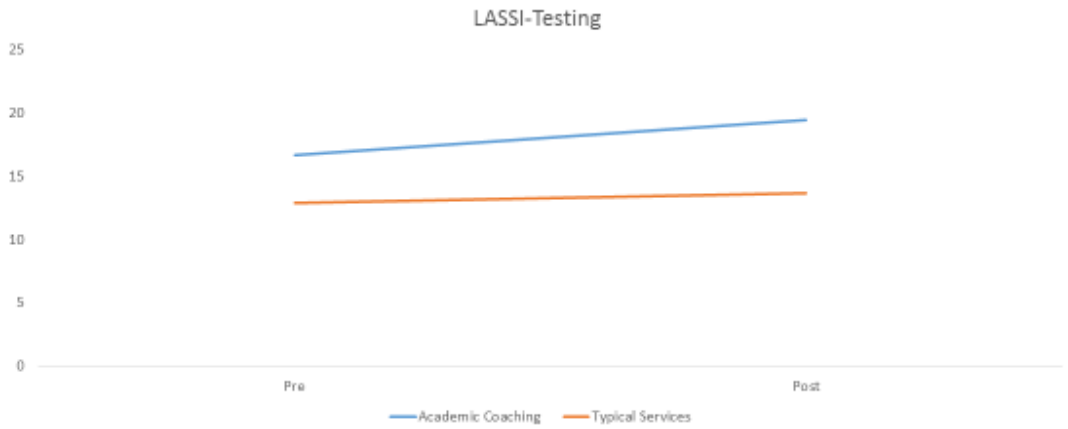
Pre
Post
Academic Coaching
Typical Services


LASSI-Testing
25
20
15
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5
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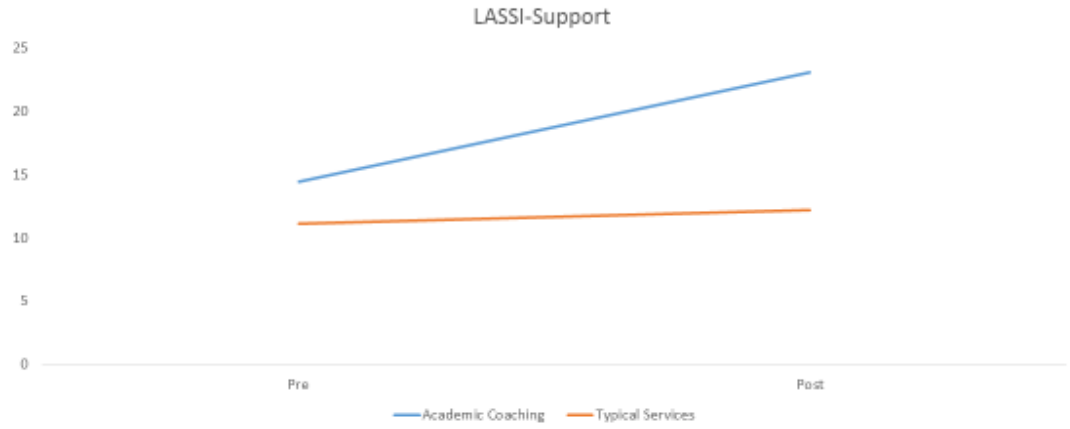
Pre
Post
Academic Coaching
Typical Services


LASSI-Support
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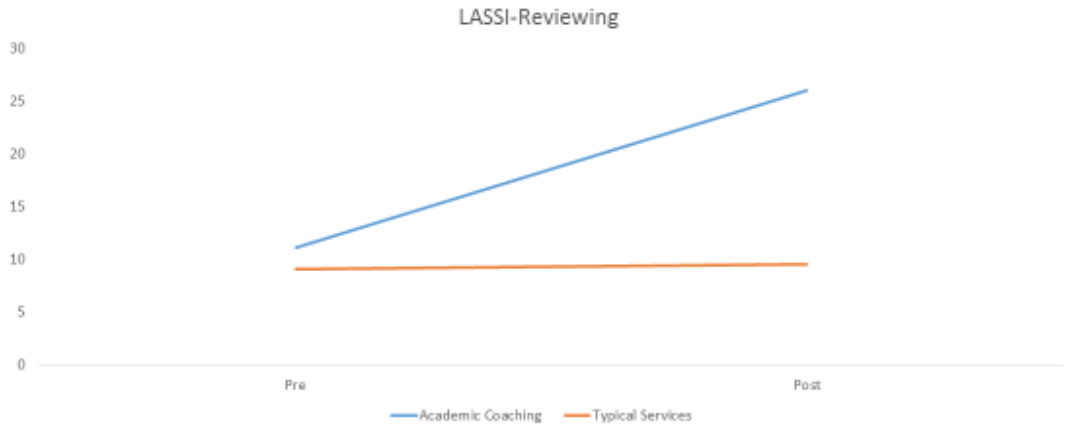
Pre
Post
Academic Coaching
Typical Services


LASSI-Reviewing
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20
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10
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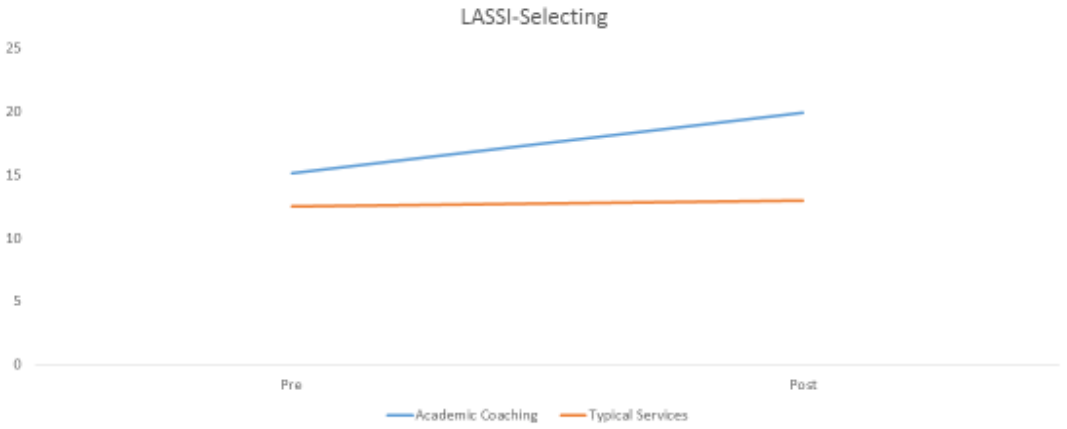
Pre
Post
Academic Coaching
Typical Services


LASSI-Selecting
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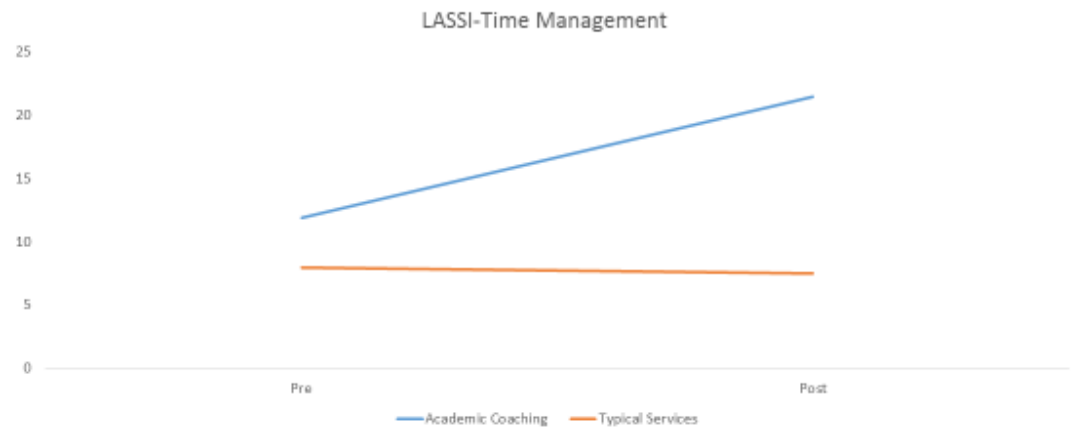
Pre
Post
Academic Coaching
Typical Services


LASSI-Time Management
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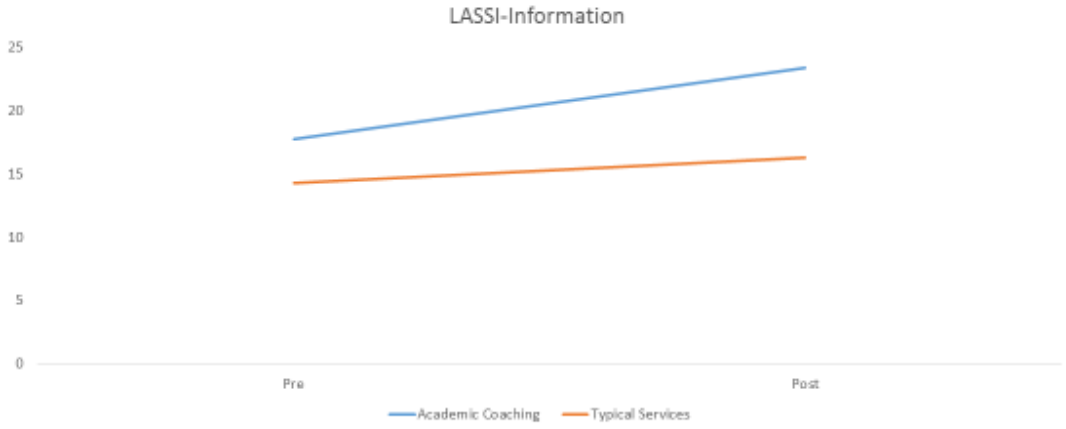
Pre
Post
Academic Coaching
Typical Services


LASSI-Information
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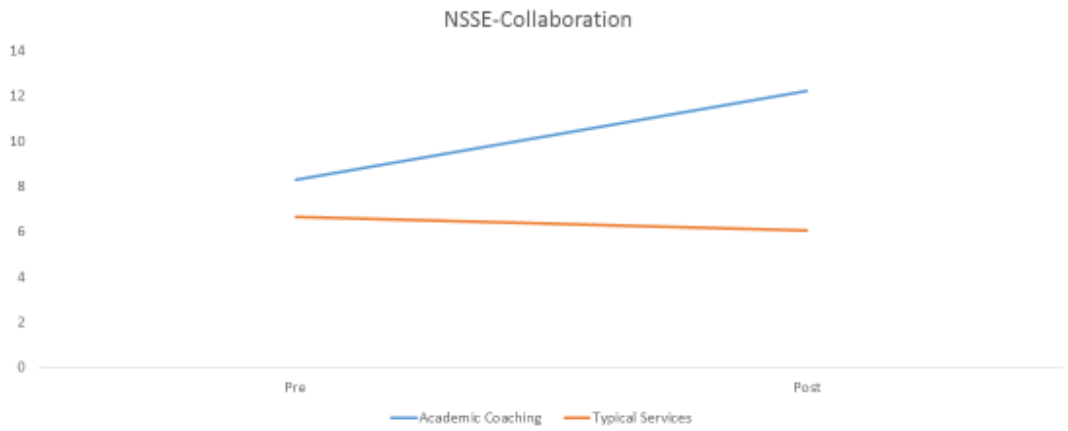
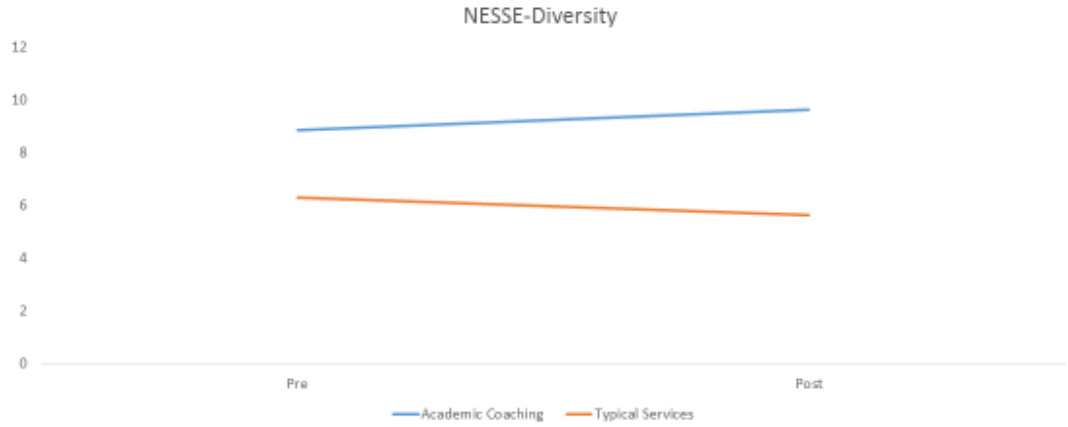
Pre
Post
Academic Coaching
Typical Services


NSSE-Collaboration
14
12
10
8
6
4
2
0
Pre
Post
Academic Coaching
Typical Services


NESSE-Diversity
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8
6
4
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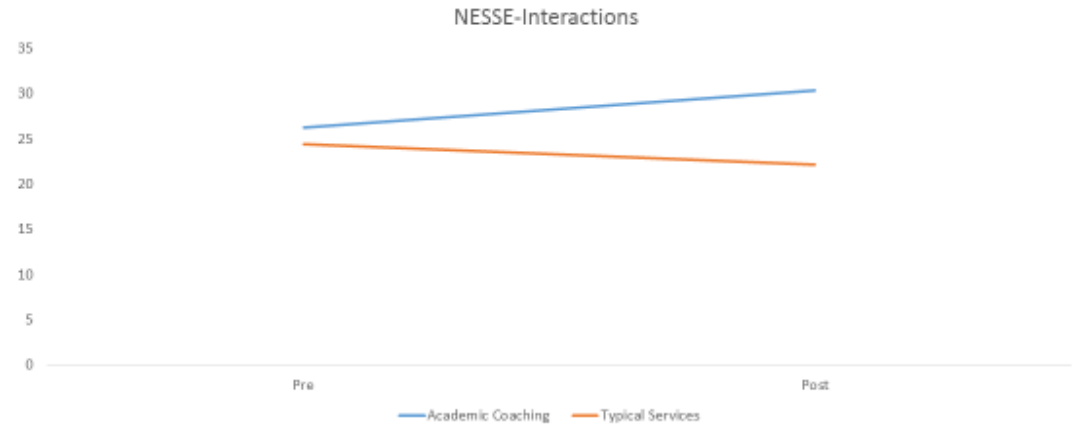
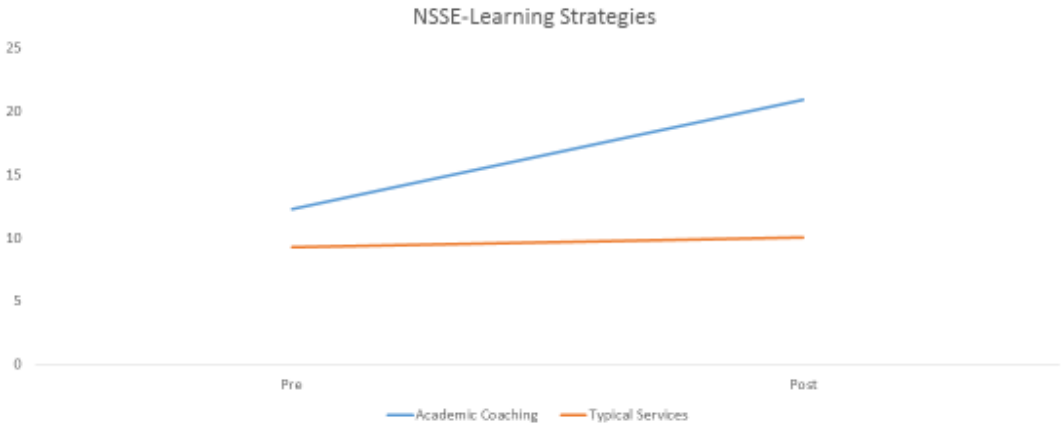
Pre
Post
Academic Coaching
Typical Services


NESSE-Interactions
35
30
25
20
15
10
5
0
Pre
Post
Academic Coaching
Typical Services


NSSE-Learning Strategies
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10
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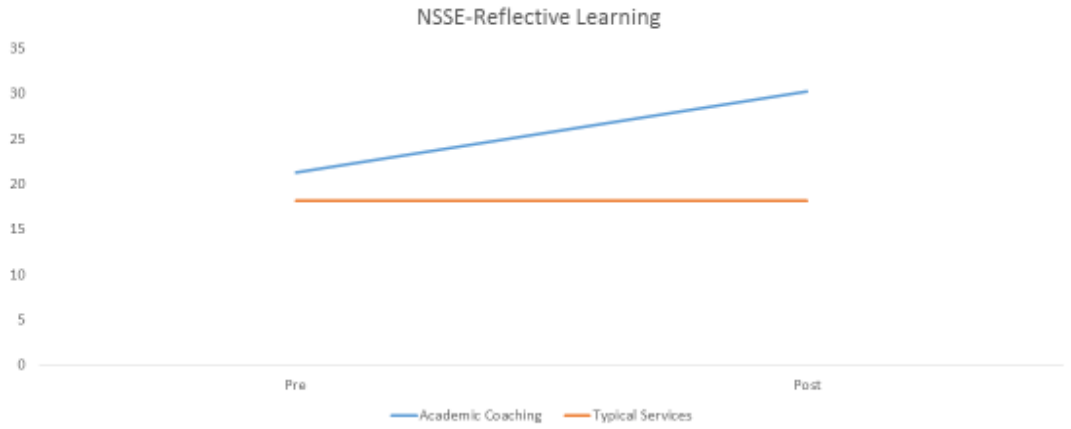
Pre
Post
Academic Coaching
Typical Services


NSSE-Reflective Learning
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20
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10
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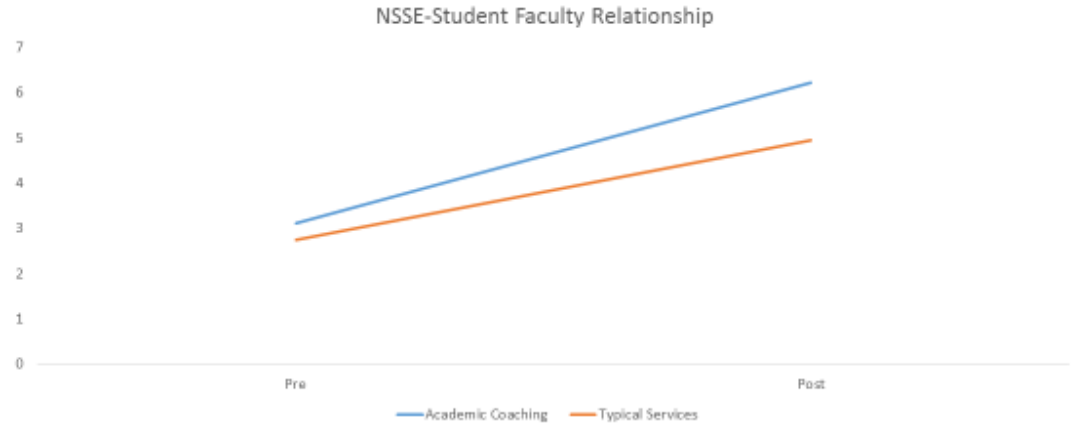
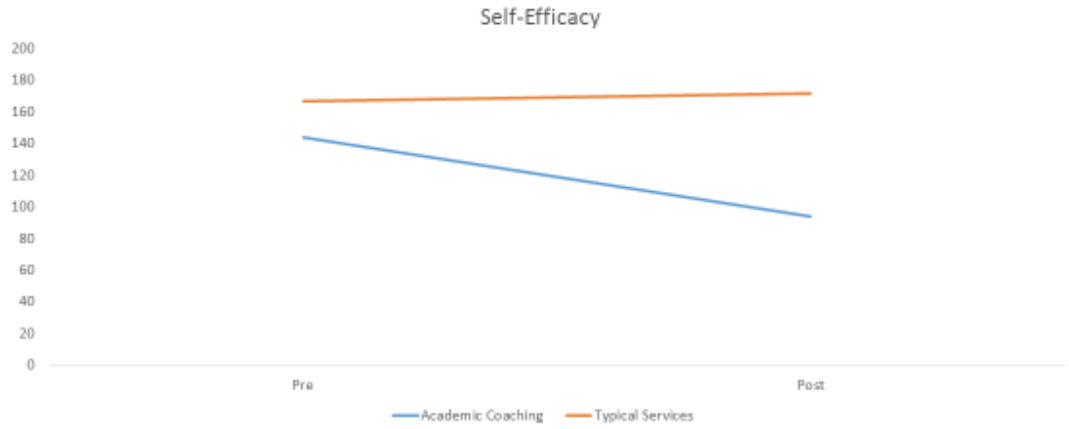
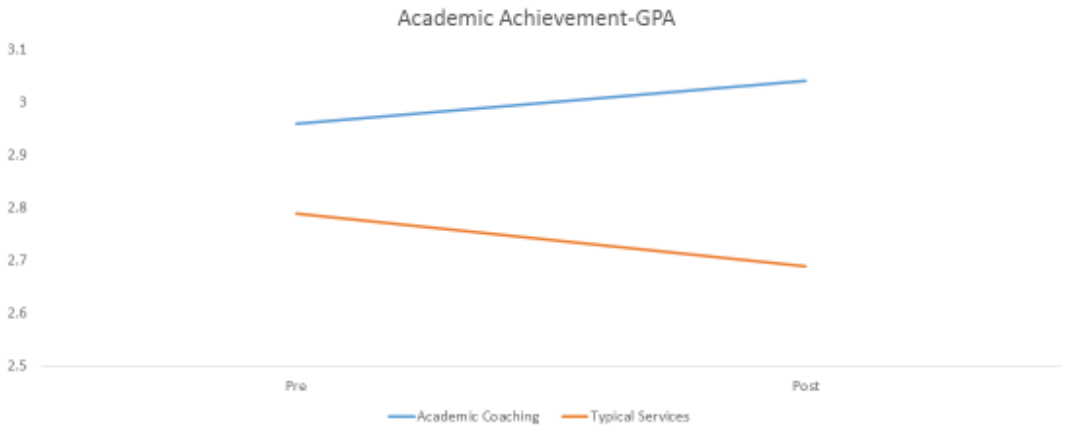
Pre
Post
Academic Coaching
Typical Services


NSSE-Student Faculty Relationship
7
6
5
4
3
2
1
0
Pre
Post
Academic Coaching
Typical Services


Self-Efficacy
200
180
160
140
120
100
80
60
40
20
0
Pre
Post
Academic Coaching
Typical Services


Academic Achievement-GPA
3.1
3
2.9
2.8
2.7
2.6
2.5
Pre
Post
Academic Coaching
Typical Services

Curriculum Vitae

Dolly M. Singley, M.Ed, ABD

446 Race Street
Macungie, PA 18062
dmh205@lehigh.edu
Cell: 610.739.8337
Email Address:

EDUCATION

Doctoral Candidate	Special Education- ABD-May 2017 Lehigh University, Bethlehem, PA
M.Ed.	Counseling and Human Services-2006 Lehigh University, Bethlehem, PA
B.S.	Psychology Minor in English Creative Writing-2004 East Stroudsburg University, East Stroudsburg, PA

CURRENT PRINCIPLE POSITION

September 2014-Current

Disability Services Support Specialist at Cedar Crest College.
Responsibilities include:
coordinating the delivery of accommodations and support services to students with a wide range of disabilities, including (but not limited to) ADD/ADHD, autism spectrum disorders, anxiety/depression, physical and sensory disabilities, chronic illnesses, learning disorders, and medical conditions, in compliance with the American with Disabilities Act (ADA), Sections 504 of the Rehabilitation Act of 1973, campus policy, and all other federal and state laws pertaining to persons with disabilities, reviewing documentation to assess eligibility for accommodations and determining appropriate accommodations, collaborating with students, families, instructors, staff, and off-campus providers to provide both initial assessment and ongoing monitoring of individual students' support requirements, collaborating with faculty and staff to facilitate student success, providing training and professional development programs for the campus community, and overseeing the use and implementation of assistive technologies and equal access strategies (Universal Design) to maintain an accessible learning environment, and assisting students in developing self-advocacy skills and adapting to the demands of college life. Leader of the Accessibility Working Group, Member of the Academic Excellence Strategic Plan Committee, Compliance Committee, and Diversity and Inclusion Committee

PROFESSIONAL EXPERIENCES

2013-2014	*Assisting Director of SPIN*. a nonprofit human service organization providing quality services and supports to children and adults with intellectual disabilities, developmental disabilities, and Autism and their families in the community. Responsibilities included coordination of a multidisciplinary team including 3 supervisors, 2 employment specialists, 47 direct care professionals, and 61 individuals with disabilities including training of staff centered on best practices utilizing positive behavior supports and person centered approaches, supporting the team in growing services by completing referrals and assisting in coordinating programming and services for new individuals, monitoring and auditing of required fiscal documentation such as units and services provided across day services including employment, home and community, and educational services, responsible for collaboration between stakeholders and other community representatives and SPIN, and provide support in crisis management.
2009-2013	*Lead Coordinator* of Lehigh University Transition and Assessment Services, Department of Education and Human Services, Lehigh University, Bethlehem, PA. A federally funded grant designed to support young adults with developmental disabilities in their transition years and adults to have gainful employment in their local communities as well as provide a field based opportunity for graduate students. Responsibilities include coordination of 3 supervisors, 23 direct care staff, and 19 individuals with disabilities including training of staff centered on best practices in the field (positive behavior supports, person-centered approaches, systematic instruction techniques, building natural supports, behavioral intervention strategies, crisis management, assessment, team building, research implementation and dissemination.
2006-2009	*Support Supervisor*, Lehigh Support for Community Living, Lehigh University, Bethlehem, PA. Responsibilities included: supervision of direct care support staff in the home, scheduling, medication monitoring, implementation of effective behavioral techniques, state required paperwork monitoring (monthlies, quarterlies, and financials).
2007-2008	*Practicum/Volunteer*, (DBT and CBT Therapy), Allentown State Hospital, Allentown, PA. Responsibilities included: individual therapist for individuals residing at Allentown state hospital, group therapist for dialectic behavioral therapy group, focus on individuals with major depressive disorder and borderline personality disorder employing both dialectic behavior therapy and cognitive behavior therapy principles.
2005-2006	*Social Skills and Employment Instructor*: Life Skills Classroom, Pocono Mountain, Transition and Assessment, Lehigh University, Bethlehem, PA. Responsibilities included teaching social skills and employment skills to individuals with intellectual and severe disabilities, instruction was both

classroom based and community based, developed lesson plans based on instruction, provided modifications based on individualized education plans for each student, responsibility for goal monitoring and charting.

2004-2005 *Team Case Manager,* Lehigh Valley Assertive Treatment Team, Bethlehem, PA. Responsibilities included case management for 15-20 individuals with mental health and intellectual disabilities diagnosis', responsible for coordinating medical appointments, providing community based support, and documentation of services rendered. In addition, acted as a co-therapist for the dialectic behavioral therapy group, and provided social skills instruction at a group level.

TEACHING EXPERIENCES

Fall 2016-Current Adjunct Faculty: Special Education Graduate level courses, Lehigh University, Bethlehem, PA, *Current: Introduction to Special Education, Transition to Post-School Life, Lifeskills (Alternative Learning) Curriculum*
Adjunct Faculty: Undergraduate level courses, Cedar Crest College, Allentown, PA, *Current: First Year Seminar: Breaking the Stigma Mental Health in America, College Life, and Exploring Your Future*

Fall 2013-Current Co-Instructor (with Dr. Linda Bambara): *Transition from school to Post-School Life*, Lehigh University, Bethlehem, PA

Fall 2012 Co-Developer & Instructor (with Dr. Linda Bambara): *Transition from school to Post-School Life*, Lehigh University, Bethlehem, PA (**Facilitated in the development of this course)

Spring 2012 Guest Instructor: *Diversity Awareness*, Focus on Self-determination for individuals with disability, Arcadia University, Philadelphia, PA

Summer 2012 Guest Instructor: *Diversity Awareness*, Focus on Self-determination for individuals with disability, Arcadia University, Philadelphia, PA

Fall 2011 Guest Instructor: *Transition Course*, Focus on opportunities for individuals transitioning from school to adult life, Arcadia University, Philadelphia, PA Fall 2011

Fall 2010 Co-Instructor (with Dr. Lee Kern): *Positive Behavior Support*, Lehigh University, Bethlehem, PA

Spring 2010 Guest Instructor: *Education and Inclusion for Individual with Special Needs*, Learning Disabilities, Lehigh University, Bethlehem, PA

Spring 2009	Co-Instructor (with Dr. Brenna Wood): *Education and Inclusion for Individuals with Special Needs*, Lehigh University, Bethlehem, PA
Spring 2009	Guest Instructor: *Diversity and Multicultural Perspectives*, Culture and Disability, Lehigh University, Bethlehem, PA
Fall 2009	Co-Instructor (with Dr. Freya Koger): *Life Skills and Transition Strategies*, Lehigh University, Bethlehem, PA

TRAINING DEVELOPMENTS AND IMPLEMENTATION

- Using Campus-wide Universal Design and Equal Access Strategies
- Developing and Implementing of an Academic Coaching Program for College students with Learning Disabilities and ADHD
- Using systematic and embedded instruction for young adults in transition and older adults in work environments
- Using data and graphing to make instructional decisions for progress monitoring
- Resiliency for team members in human service positions
- Building natural supports in the community and work environments for individuals with intellectual and developmental disabilities
- Team collaboration and professionalism
- Crisis Management and use of effective positive strategies for resolution and proactive responses

LEADERSHIP

2014-Current	Disability and Accessibility Specialist, Cedar Crest College, Allentown, PA
2013-2014	Assisting Director, SPIN, Bethlehem, PA
2009-2013	Coordinator, Transition and Assessment, Lehigh University, Bethlehem, PA
2006-2009	Supervisor, Transition and Assessment, Lehigh University, Bethlehem, PA

2002-2004	Psychology Association Secretary, Chairperson for Professional Development and Fundraising, East Stroudsburg University, East Stroudsburg, PA
2003	Co-Founder and Leader of 'MindFest', a now annual event at East Stroudsburg University, East Stroudsburg, PA
2003-2004	Vice President: National Honor Society of Psychology, Psi Chi, East Stroudsburg University, East Stroudsburg, PA

GRANTS & FUNDING AWARDED

2010-2012	College of Education Equity & Community Initiative Grant, *"I'm different and the same: Challenging Educators' Perspectives towards People with Disabilities*, Lehigh University, Bethlehem, PA ($1,000)

RESEARCH INTERESTS

Use of academic interventions to increase the successfulness of college students with disabilities

Use of technology (video modeling) to teach social skills and work skills to individuals with intellectual and developmental disabilities in their natural environments

Facilitation of self-determination skills in adults with intellectual and developmental disabilities (assessment, intervention and evaluation)

Transition services for young adults with intellectual and developmental disabilities

PUBLICATIONS

Bambara, L.m., Koger, F., Burns, R., Singley, D. (2016). Building Skills for Home and Community. In F. Brown, J. McDonnell, & M.E. Snell (Eds.), *Instruction of Students with Severe Disabilities*, pp. 474-507. Boston, MA: Pearson.

Bambara, L.M., Janney, R., & Snell, M.E. (2015). *Behavior Support, 3rd Edition*. Baltimore, MD: Paul H. Brookes. (Contributor)

Singley, D., & Bambara, L. *(Current). Effects of Academic Coaching on College Students with Learning Disabilities and ADHD*

Singley, D., & Bambara, L. (*Current). Effects of Video Self-Modeling: Improving Conversational Skills of Adults with Intellectual and Developmental Disabilities*

NATIONAL, REGIONAL, AND LOCAL PRESENTATIONS

2015	Pennsylvania Community on Transition Conference

Singley, D., & Taylor, C. *Effects of Academic Coaching on College Students with LD and ADHD*

2015 Pennsylvania Community on Transition Conference
Singley, D., & Taylor, C. *Increased Need for Self-Advocacy in College Students*

2011 National CEC
Drogan, R., Singley, D., & Cole, C. *Teaching Independent Living Skills Using a Self-Monitoring Tool With a Young Adult With Autism*

2011 PA Community on Transition
Helman, A., Singley, D., Koger, F., Bambara, L. *Strategies for Including Students with Intellectual Disabilities in College Classes*

Singley, D., Helman, A., Koger, F., & Bambara, L. *Self-Advocacy and Self-Determination in Transition Programs*

2011 PATTEN: Transition Conference
Singley, D, Helman, A., Koger, F., Beaulieu, J, Tomko, S., Lentz, N., Gome, W., Tomko, C., Altemose, K. *I Led My Own Meeting*

2010 PA CEC
Helman, A., Singley, D., Koger, F., Bambara, L. *Strategies for Including Students with Intellectual Disabilities in College Classes*

2010 TASH
Helman, A., Singley, D., Koger, F., Bambara, L. *Strategies for Including Students with Intellectual Disabilities in College Classes*

HONORS, CERTIFICATES, & AWARDS

2004 Recognition of Honors Certificate, East Stroudsburg University, East Stroudsburg, PA

2004 Cum Laude honors, East Stroudsburg University, East Stroudsburg, PA

2003 National Service Award: Psi Chi, East Stroudsburg University, East Stroudsburg, PA

2001-2004 Dean's List, East Stroudsburg University, East Stroudsburg, PA