UNIVERSITY STUDENTS DIAGNOSED WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER: A HERMENEUTICAL PHENOMENOLOGICAL STUDY OF CHALLENGES AND SUCCESSES

by

Vickie Johnston

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the degree of

Doctor of Education

Liberty University

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ABSTRACT

This hermeneutic phenomenological study inquired about the challenges and successes of eight university students diagnosed with Attention Deficit Hyperactivity Disorder at a university in the southeastern United States. The data collection methods involved documentation, questionnaires, focus groups, and individual interviews. The analysis of data involved open coding and in vivo coding; conversational interview methods through member checks were employed at the end of each interview. Several themes emerged from the data regarding the factors in academic success and challenges, the environments and learning styles most conducive to learning, individual factors that contributed to academic success, and the reading and study strategies that were most beneficial to participants. Participants found social supports, such as family, friends, study groups, or organizations, and university resources to be key factors in their academic success. The university schedule was seen as support, as participants shared their ability to adapt their schedule to their needs. Participants mentioned their social struggles, and struggles with focus and attention and shared strategies for controlling the distractions. Participants preferred a hands-on learning environment; and although they were confident in their reading and study strategies, almost all of the participants expressed their frustration with math. Participants cited time management and organizational strategies, reading and study strategies, as well as their individual self-determination factors that contributed to their academic success.

Keywords: Attention Deficit Hyperactivity Disorder, self-determination, university students, postpositivism, resiliency, hermeneutical phenomenology, academic success, academic challenges

DEDICATION & ACKNOWLEDGEMENTS

Oswald Chambers (1963) stated, “We give credit to human wisdom when we should give credit to the Divine guidance of God through childlike people who were foolish enough to trust God’s wisdom and the supernatural equipment of God” (p. 300). This is certainly God’s work and not mine; He guided me every step of the way, and I give Him all of the glory.

I also feel blessed to have two young adult children that encouraged me throughout this process and believed in me, especially when I questioned my sanity for starting this journey in the first place; they were always there with love and support. When the dust settled, they were the only two left on the path that not only encouraged me but also believed in the value of the research. They were truly my support system. A mother’s love is beyond measure!

I would like to thank the members of my dissertation committee, Drs. Beth Ackerman, James Zabloski, and Linda Serro, for their guidance and support during this entire process. You were all guiding voices in this research. Special gratitude is extended to my chair, Dr. Ackerman, who made herself available throughout this entire process. I would also like to thank my research consultant Dr. Swezey who was always extremely prompt with not only feedback but also an encouraging word.

Finally, I would like to thank the participants themselves for their willingness to share their stories. I thank them for trusting me with their hopes and dreams, as well as their frustrations and challenges. I hope this research validates their challenges and successes and gives a voice to their perceptions and their daily experiences in a university environment.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

Attention Deficit Hyperactivity Disorder (ADHD): According to the American Psychiatric Association (2000), ADHD is mental disorder characterized by inattention and/or hyperactivity and impulsivity and causes an inability to filter irrelevant information, maintain focus, delay gratification, act impulsively before thinking, and problem-solve.

Self-Determination Theory (SDT): According to Deci and Ryan (2008), the self-determination theory (SDT) is a theory of human motivation that is empirically based and is concerned with how motivation predicts performance and well-being.

Individuals with Disabilities Education Act (IDEA): According to the U.S. Department of Education (2012), the Individuals with Disabilities Education Act (IDEA) is a federal law that controls how public agencies and states must provide services to students with disabilities.

Individualized Educational Plan (IEP): According to the U.S. Department of Education (2012), An Individualized Educational Plan (IEP) is a document stating the objectives and mandates for students with special needs that need specialized instruction or accommodations to reach their educational goals.

Institutional Review Board (IRB): A committee designed to approve and monitor research with human subjects.

CHAPTER ONE: INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) was believed to be a disorder that students could outgrow during puberty, but researchers now believe it is not outgrown once a child reaches adulthood, and that approximately two to four percent of university students struggle with this disorder (Bierderman, Petty, Evans, Small, & Faraone, 2010; Kern, Rasmussen, Byrd, Wittschen, 1999; Weyandt & DuPaul, 2008). According to Barkley (2006), the majority of children diagnosed with ADHD experience symptoms in adulthood. Although the exact number of university students diagnosed with ADHD is unknown, due to the fact that they are not required to report their disabilities, research has shown that these students are at greater risk for academic failure and social challenges in a university environment (Prevatt, Reaser, Proctor, & Petscher, 2007; Weyandt & DuPaul, 2008). Although this disorder is clinically different from learning disabilities, students receiving accommodations at the university level receive the same accommodations that students with learning disabilities receive.

Because of their specific cognitive deficits, students in this population have greater achievement in environments that are both motivating and innovative, allowing for their deficits in attention and organization. It is believed that by understanding the experiences and perceptions of students in this population, regarding the obstacles that they face and their academic successes at the university level, it will lead to successful strategies and interventions for university students diagnosed with ADHD. These perceptions are contingent upon understanding not only the academic and social challenges and successes that these students experience, but are also contingent upon understanding the role of self-determination and resiliency in their perceptions of these learning experiences.

Background

Less is known about students diagnosed with Attention Deficit Hyperactivity Disorder at the college or university level than children, adolescents, or even adults diagnosed with the same disorder (Frazier, Youngstrom, Glutting, & Watkins, 2007; Heiligenstein, Guenther, Levy, Savino, & Fulwiler, 1999; Prevatt, et al., 2007; Weyandt & DuPaul, 2008); however, Attention Deficit Hyperactivity Disorder (ADHD) has grown to approximately two to eight percent of all university students (Weyandt & DuPaul, 2008), and these students are less likely to complete their postsecondary education than students without this disorder (Barkley, 2006).

University students diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) are believed to have neurological deficits that affect the executive functioning part of the brain. These executive functioning deficits cause them to struggle with working memory, planning, cognitive flexibility, and verbal fluency. To date, few studies have been done on the relationship of academic achievement and students diagnosed with ADHD at the college level or university level (Frazier, et al., 2007); however, it is believed that the number of students receiving disability support for ADHD is over 25% (Wolf, 2001).

According to Barkley (2006) 50-70% of children with ADHD continue to report symptoms into adulthood. Despite its prevalence, less is known about university students with a diagnosis of ADHD than children or adults that have the same disorder (Frazier et al., 2007; Heiligenstein et al., 1999; Prevatt, et al., 2007; Weyandt & DuPaul, 2008). Researchers have found that the hyperactivity and impulsivity caused by this disorder in younger students changes in young adults and manifests itself through symptoms of inattention and disorganization (Frazier, et al., 2007; Nigg, et al., 2005). Consequently, ADHD is finally being understood as a lifelong, chronic disorder (Barkley, Fischer, Smallish, & Fletcher, 2002).

Heiligenstein et al. (1999) found that adults who were diagnosed as children have a greater chance than non-ADHD control groups of developing academic problems, such as lower grade point averages, and have greater chances of being placed on academic probation. Because of their neurological deficits, students diagnosed with ADHD struggle with attention, organization, working memory, planning, phonetic fluency, and processing speed (Kofler, Rapport, Bolden, & Altro, 2008; Marzocchi et al., 2008; Nigg et al., 2005). Research has also shown that students in this population had difficulty with short term and verbal working memory, which affected their reading, writing, and test-taking strategies (Pennington, Groisser, & Welsh, 1993; Weyandt & DuPaul, 2008).

Students with the diagnosis of ADHD entering universities find it difficult to maintain the success they obtained in elementary and high school, while facing the stresses that post-secondary education creates (Frazier, et al., 2007, Heiligenstein et al., 1999, Weyandt & DuPaul, 2008; Wolf, 2001). The cognitive inflexibility associated with this disorder affected their ability to set and achieve goals, plan, and organize (Kaminski, Turnock, Lee, & Laster, 2006; Kern et al., 1999). Research has also shown that students in this population struggled socially, struggled with management of time and money, and struggled to maintain a positive self-esteem (DuPaul et al., 2001; Weyandt & DuPaul, 2008).

Although this population has become the second most prevalent developmental disorder found on college and university campuses (Kern, Rasmussen, Byrd, & Wittschen, 1999; Wolf, 2001), accommodations given to these students are the same accommodations given to students with learning disabilities, even though students with learning disabilities "can be differentiated from students with ADHD on the basis of the onset, severity, and situational pervasiveness of observed ADHD symptoms" (DuPaul & Stoner, 2003, p. 97). Consequently, more research with

university students diagnosed with ADHD is needed. Successful accommodations for students with ADHD at the university level are contingent upon first understanding the learning experiences and perceptions of university students diagnosed with this disorder.

Situation to Self

The philosophical assumptions involving methodology and ontology are what led me to choose this research; experience with students having ADHD prompted the choice of population. Prior to teaching at the university, my classes were full of elementary students diagnosed with ADHD, and these students did very well with hands-on instruction, scaffolding, and motivation. I wanted to know what happened to these students if they choose postsecondary education. Although this disorder differs from learning disabilities, accommodations at the university level for students diagnosed with ADHD are the same as those given to students with learning disabilities. It is assumed these students are struggling with the symptoms of ADHD and that the strategies and accommodations given to students with learning disabilities will help this population; this has not been established in research. In order to provide services that will help university students diagnosed with ADHD, we must first hear their voices.

I also have a constructivist view of learning that takes into account the learning environment and understands that learning involves a continuous process of integrating new knowledge into an individual's experience. I believe that each person is divinely and uniquely created and that engagement and self-directed learning create an ownership of learning; therefore, the perceptions of young adults with ADHD have voices worthy of hearing. Although I acknowledge the cognitive deficits associated with this disorder, participant responses will be understood from a human difference point of view and not a disability or defect. Consequently, the postpositivism and disability theories will shape this study, as well.

Problem Statement

According to Weyandt and DuPaul (2008), "Although it is assumed that psychotropic medication, behavioral strategies, and educational accommodations that are effective for younger and older individuals with this disorder are also effective for college students, this assumption is virtually untested" (p. 316). As Prevatt et al. (2007) note, there are also few studies that look at study strategies that help this population. What researchers do know is that students with this diagnosis face a much greater chance of academic failure at the college level, as compared to students without disabilities (Barkley, 2006; DuPaul, & Stoner, 2003; Heiligenstein et al., 1999). However, as Weyandt and DuPaul (2008) discuss, typical accommodations for university students diagnosed with ADHD are the same accommodations that are given to students with learning disabilities (i.e. books on tape, note-taking services, and extra time for examinations in distraction free rooms). Few studies have sought to determine what environments are conducive for college students diagnosed with ADHD (Sarkis, 2008; Weyandt & DuPaul, 2008), and the few studies that are available are preliminary in nature and weak in sampling sizes (Kaminski et al., 2006; Prevatt et al., 2007; Weyandt & DuPaul, 2008).

The problem of this study is that in order to provide services that will help university students diagnosed with ADHD, it must first be determined whether or not students are struggling with the symptoms of ADHD at such a level as to disrupt their ability to learn or their ability to function in their daily lives. Successful strategies for students with ADHD at the university level are contingent upon understanding not only the obstacles that students in this population face, but are also contingent upon understanding the self-determined academic and social attitudes, perceptions, and experiences that are conducive to success for this population in a university environment.

Purpose Statement

The purpose of this hermeneutic phenomenological study is to acquire an understanding of the experiences and perceptions of university students diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) at a university in the southeastern United States. It is hoped that by focusing on the experiences and perceptions of students in this population, this study would not only deepen the understanding about what students diagnosed with ADHD need at the university level, but also help identify integral strategies that students in this population feel help them to become successful both academically and socially. Success for participants was defined as academic success.

Significance of Study

This study would provide many practical outcomes for university students diagnosed with ADHD. Although research has shown that children diagnosed with ADHD were found to have academic ability scores similar to their peers (DuPaul & Stoner, 2003), accommodations for university students are the same accommodations received by students with learning disabilities. Students in this population find difficulty in planning long term, establishing organization, enduring long lectures, and advocating for their accommodations (Kaminski et al., 2006; Kern et al., 1999); consequently, there is a need to differentiate students with ADHD from students with learning disabilities. However, students must be self-aware of their difficulties in order to advocate effectively, and this becomes a challenge because many students in this population do not want to disclose their disabilities to their professors (Weyandt & DuPaul, 2008).

Although students diagnosed with ADHD were found to be similar to their peers academically (DuPaul & Stoner, 2003), university students in this population were found to have academic, reading and writing, and social deficits (Kofler et al., 2008; Nigg et al., 2005).

Because of their neurological deficits, university students diagnosed with ADHD find difficulty in planning long term, establishing organization, and listening during lectures (Kaminski et al., 2006; Kern et al., 1999). These neurological deficits are believed to affect focus in a college or university class because these deficits affect attention, visual working memory, planning, cognitive flexibility, and verbal fluency (Marzocchi et al., 2008; Nigg et al., 2005). These deficits also seem to be the most prevalent with tasks involving sustained attention (Marzocchi et al., 2008; Willcutt et al. 2005; Zentall, 1993), which is the primary area in which this disorder differs from learning disabilities (DuPaul & Stoner, 2003). DuPaul and Stoner (2003) reported that students with learning disabilities reported problems with sustained attention only when receiving academic instruction in problematic subjects; however, students with ADHD were found to exhibit attention problems across the board. DuPaul and Stoner (2003) also reported that children diagnosed with ADHD were found to have academic ability scores similar to their peers, whereas students with learning disabilities were found to have academic ability scores below their peers.

Although researchers have found that the hyperactivity and impulsivity associated with ADHD manifests itself differently in young adults in this population (Frazier et al., 2007; Nigg et al., 2005), much more research is needed. The very nature of the college or university environment demands a much greater academic challenge. College and university students face greater academic workloads that require time management and self-discipline (Kern et al., 1999). Not only are these students challenged with a rigorous academic workload that is indicative of a university or college environment, but they also find difficulty with the social aspects of college or university life. These students are challenged by social relationships, new living environments, organizational and planning skills, and time management. The support system

they previously used in high school changes at the postsecondary level; consequently, they must learn to navigate through a system that requires them to make decisions and communicate their needs.

Weyandt and DuPaul (2008) stated, "Studies of ADHD in the college age group are few, preliminary in nature, or methodolically weak" (p. 316). The literature clearly shows that students with ADHD struggle in a university or college environment, as compared to students without this disorder. Findings suggest that students in this population are at increased risk for academic, reading, writing, and social difficulties (Weyandt & DuPaul, 2008); consequently, there is the need to differentiate students with ADHD from students with learning disabilities. Therefore, accommodations at the university or college level for this population must be different, as well.

Students diagnosed with ADHD must overcome a multitude of obstacles to achieve success in college. According to Prevatt et al. (2007), "It is important for researchers to investigate the learning and study strategies used by students with ADHD so that college service providers can help these students achieve optimal academic success at the post–secondary level" (p.6). This is particularly difficult for this population because many students in this population do not want to disclose their disabilities to their professors (Weyandt & DuPaul, 2008). Further research has confirmed this, showing that students in this population chose to just cope on their own without reaching out to their instructors for support (DuPaul et al., 2001).

The transition from high school to college or universities requires students to self-advocate; consequently, students must be self-aware of their challenges in order to advocate effectively. For those that do navigate the change to postsecondary education, researchers must learn what learning experiences, internal strategies, and environmental supports help students in

this population. Successful experiences for students diagnosed with ADHD at the college or university level are contingent upon not only their awareness of the obstacles that they face but also their understanding of what will help them to become more successful in a new academic and social environment. As Wehmeyer (2004) argued, "Providing opportunities for people to set their own goals or make their own decisions can enable persons to create greater opportunities for themselves" (p. 358).

Research Questions

The overall research question:

- What are the successful experiences or challenging obstacles in obtaining academic success for university students diagnosed with Attention Deficit Hyperactivity Disorder?

Using the constructs of self-determination and resiliency, the following subquestions were explored with regards to this specific population:

- What factors influenced academic success or failure at the university level?
- How did Adaptive Services or professors influence participants' academic or social success or failure?
- What environments, both academic and social, were most conducive to academic success at the university level?
- How did students influence their own academic success or failure at the university level?
- What reading and study strategies were most conducive to the participants' academic success?

Research Plan

A qualitative research design was chosen for this study because this research requires an interpretive, naturalistic approach to students diagnosed with ADHD at the university level. Because it sought to hear the voices of university students diagnosed with ADHD, a phenomenological approach was chosen. As Van Manen (1990) stated,

> Phenomenological human science research is explicit in that it attempts to articulate, through the content and form of text, the structures of meaning embedded in lived experience (rather than leaving the meanings implicit as for example in poetry or literary texts). (p.11)

This research design was concerned with how the participants experienced the world. Although varying designs for phenomenological studies exist, a hermeneutic phenomenological design was chosen because the researcher sought to interpret this phenomenon without ever having experienced Attention Deficit Hyperactivity Disorder. As Van Manen (1990) stated,

> The fundamental model of this approach is textual reflection on the lived experiences and practical actions of everyday life with the intent to increase one's thoughtfulness and practical resourcefulness or tact. Phenomenology describes how one orients to lived experience, hermeneutics describes how one interprets the "texts" of life… (p. 4)

This method helped capture and make sense of the experiences and perceptions of students in this population, ensuring that the interpretation of their perceptions and learning experiences were accurate and unbiased.

Data consisted of individual questionnaires, focus groups, individual interviews, and documentation. Questions for the individual questionnaires, focus groups, and individual interviews were designed by the researcher, driven by the literature review, in order to

understand the experiences and perceptions regarding the challenges and obstacles faced by the participants. In order to identify participants for the study, documentation was reviewed by Adaptive Services in order to eliminate participants with comorbid disorders or disabilities and to ensure that chosen participants had attended the university for at least two semesters and were currently not on academic warning or probation. Once this was established, a recruitment email was sent to possible participants. Once the possible participants came to the Adaptive Service Office and signed the consent forms (see Appendix A), questionnaires were given to the participants. Participants responding to the questionnaires were asked to participate in a focus group interview and an individual interview. All interviews were transcribed for accuracy.

The data was analyzed and categorized to ensure the quality and depth of the data obtained in order for patterns, themes, and commonalities to emerge and triangulation was utilized to establish reliability and validity (Ary, Jacobs, Razavieh, & Sorenson, 2010; Creswell, 2007). The written notes were shared with the participants at the end of each interview in order to interpret the meaning of the phenomenon being studied and ensure accuracy of interpretation (Van Manen, 1990). The member checking process confirmed my notes and produced few edits; instead, they caused participants to reiterate those areas they felt were significant to understanding their experiences and perceptions. The notes and/or audio of the interviews were transcribed and a textural analysis was utilized in the organization and analysis. In vivo coding was utilized in the final writing in order to accurately interpret the experiences of the participants.

Delimitations

Delimitations impacting this research included the choice to use one university in southwest Florida and the criteria for participation. The criteria for participation consisted of

university students at a university in southwest Florida that had (a) a medical or psychological diagnosis of ADHD prior to entering the university with no comorbid disorders and (b) had attended that university for at least two semesters. This criterion included both students currently receiving and not receiving accommodations and students that were actively enrolled in classes and receiving passing grades. The rationale for this criterion was locating students diagnosed with ADHD that had experience with university classes and were experiencing academic success with or without the use of Adaptive Services. Students on academic warning or academic probation were not part of the sampling group.

CHAPTER TWO: LITERATURE REVIEW

Introduction

This chapter presents a review of literature regarding university and college students diagnosed with ADHD, providing not only a theoretical framework, but also highlighting the differences between ADHD and learning disabilities. Although the review of research on university students diagnosed with ADHD was found to be limited, the research that was available showed the need for further research. The literature reviewed provides an understanding of not only the neurobiology attributes of ADHD and the clinical differences between ADHD and learning disabilities but also provides current research regarding the academic and social challenges of university students diagnosed with ADHD, specifically reading, writing, and study strategies, as well as the social difficulties regarding relationships, emotions, and time management. It discusses the differences between secondary students diagnosed with ADHD, both environmental and physiological changes, and university students with the same diagnosis. It also discusses the requirements for accommodations at the university level and the need for self-advocacy. This chapter is organized into six sections, beginning with the theoretical framework and ending with a summary of the literature reviewed. The topics within these sections include differences with secondary students, differences from learning disabilities, neurological deficits, academic deficits, reading and writing deficits, and social deficits—all related to university students diagnosed with ADHD. Consequently, by understanding what has been done previously with university students diagnosed with ADHD, the research gaps will be identified.

Theoretical Framework

How the researcher viewed the participants and the phenomenon was reflected in the research process; consequently, this study's theoretical or conceptual framework must be understood. Although the literature acknowledges that university students diagnosed with ADHD possess neurological deficits, this study acknowledges that participants possess qualities of human difference and not a disability or defect. It also acknowledges the differences between Attention Deficit Hyperactivity Disorder (ADHD) and learning disabilities, both of which are accommodated the same at the university level. This study understands the impact of self-determination and the factors involved in self-directed learning, and it acknowledges research on how learning is constructed. The theoretical basis for this study is described below in order to explain the conceptual framework from which the study was designed.

Postpositivism and Disability Theories

This study acknowledges that participants possess qualities of human difference and not a disability or defect, thus being framed by both postpositivism and disability theories. According to Creswell (2007), disability theories address individuals with disabilities as simply individuals having a difference, which researchers believe respects the individual and improves society's response to these individuals. Joseph (2007) confirmed this, finding that the disability theory views people with disabilities as "complete and full human beings who can function effectively provided they are given necessary tools, alternative techniques, modern training and positive societal attitudes" (p. 247).

Postpositivism theories also affected how the data was collected. According to Creswell (2007), "Postpositivist researchers will likely view inquiry as a series of logically related steps, believe in multiple perspectives from participants rather than a single reality" (p. 20). Obtaining

multiple perspectives is vital in hermeneutic interpretation; consequently, this scientific approach helped me bracket my views in order to hear the voices of the participants. The implication of these theories explains how participants were viewed.

Motivation, Resiliency, and Self-determination Theories

Possessing motivation, self-efficacy, and self-determination have been shown to enable students to not only believe in their own abilities but also reach their academic goals and succeed in the face of difficult circumstances. According to the American Psychological Association (2006), resiliency is "the process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands" (p. 792). Gordon-Rouse (2001) found resilience to be "the ability to thrive, mature, and increase competence in the face of adverse circumstances or obstacles" (p. 461). Henry and Milstein (2004) found that having resiliency enabled students to cope with stressful events and situations by developing coping skills and promoting a healthy well-being. Resiliency theories focus on understanding how students use their positive attitudes and problem-solving strengths to cope with difficult circumstances.

According to Deci and Ryan (2008), "Self-determination theory (SDT) is an empirically based theory of human motivation, development, and wellness" (p. 182). They found that autonomous, controlled, and amotivation types of motivation could predict performance and well-being (Deci & Ryan, 2008). Bandura (1977) found personal efficacy to be a motivating factors in academic achievement, as well. He found that personal efficacy also had a positive influence in the beliefs that one could achieve his or her goals (Bandura, 1977). Wehmeyer's (1999) work revealed that students' self-determination and self-efficacy not only improved their understanding of themselves but could also improve their ability to set goals and achieve

success. He argued, "People who are self-determined act autonomously, self-regulate their behavior, and are psychologically empowered and self-realizing" (Wehmeyer, 1999, p. 57).

The implications of these theories explain the need for students diagnosed with ADHD at the university level to self-advocate for accommodations. They also explain the need to understand what factors influenced motivation for students in this population to succeed academically and what strategies these students used to cope with the difficult circumstances created by life in a university environment.

Constructivist Theory

Academic and social learning was viewed through a constructivist's lens, which understands that humans cannot simply be given information to digest, but must construct their own knowledge. According to Powell and Kalina (2009), cognitive constructivism happens when students process new information through assimilating it with their prior knowledge; the student is an active participant in his or her own learning and takes ownership of the learning. Social constructivism is seen through the support or scaffolding of others. Inquiry and social interaction create an environment for learning. Constructivist theory is based on the work of Piaget and Vygotsky (Powell & Kalina, 2009) According to Powell and Kalina (2009), in the constructivist theory, "knowledge has to be built on existing knowledge and one's background and experience contributes to this process" (p. 249). The implications for this theory are that students construct their own meaning through the experience and background that they bring to the university environment and the need to provide learning opportunities that will enhance their competencies.

Review of the Literature

Differences from Secondary Students

The university environment creates new challenges for all students with special needs. Students entering colleges or universities face a new environment and for many, the routine they previously learned to navigate drastically changes. In high school, services were provided to students with special needs. A student diagnosed with ADHD would be covered under the Individuals with Disabilities Education Act (IDEA), being covered under "other health impairment" and covered under Section 504 of the Vocational Rehabilitation Act of 1973, which prohibits schools that receive federal funding from discriminating against children with disabilities (U.S. Department of Education, 2012). Students requiring specialized instruction would receive an Individualized Educational Plan (IEP). For students that did not need specialized instruction but simply required effective accommodations, a 504 plan would have been created to ensure that they received equal access to public education and services (U.S. Department of Education, 2012).

Universities accommodate students with special needs, as well. According to the Board of Governors (2011), students are required to provide documentation for their disability and must show:

> …that he or she is disabled and that the student's inability to meet the requirement is related to the disability, and (b) the university has determined that if the requested substitution or modification is granted, a fundamental alteration in the nature of the program will not result. (p. 2)

Through state statutes, universities list conditions and describe disabilities that are eligible to receive accommodations, and therefore, are eligible for accommodations. For this particular

southeastern state, learning disabilities and Attention Deficit Hyperactivity Disorder were listed separately, along with eight other disabilities (Board of Governors, 2011). This statute was amended in 2012 to eliminate documented intellectual disabilities from "other health disabilities" and added Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder to the individual disability categories (Board of Governors, 2012). According to Statute 6.108, the following is listed for learning disabilities:

> (c) Specific Learning Disability. A disability in one or more psychological or neurological processes involved in understanding or using spoken or written language. Learning disabilities may be manifested in listening, thinking, reading, writing, spelling, or performing arithmetic calculations. Examples include dyslexia, dysgraphia, dysphasia, dyscalculia, and other specific learning disabilities in the basic psychological or neurological processes. (Board of Governors, 2011, p. 2)

Other disabilities recognized for accommodations include Deaf/Hard of Hearing, Blind/Low Vision, Orthopedic Disabilities, Speech/Language Disabilities, Emotional or Behavioral Disabilities, Autism Spectrum Disorder, Traumatic Brain Injury, and Other Health Disabilities (Board of Governors, 2011). The following was listed for ADHD:

> i) Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder. A chronic condition manifested by hyperactive and impulsive behavior, significant symptoms of inattention, or both. The behavior and symptoms have a significant impact on cognitive ability and academic functioning. (Board of Governors, 2011, p. 3)

Although learning disabilities and ADHD were listed as separate disabilities, they are accommodated the same on university campuses.

Students entering colleges or universities do not have the external accountability systems that they had in high school. When students with special needs attend a college or university, they must request accommodations on their own and be found eligible. While colleges and universities may focus on self-directed education and educational autonomy, students with special needs are leaving a family and educational support system that was, by law, required to support and accommodate them and are entering a system in which students must acquire disability support and assistance for themselves. Consequently, many students in this population do not disclose their ADHD and do not seek help or services (Weyandt & DuPaul, 2008).

Research has also indicated that the overt symptoms in this population change developmentally from adolescence to young adulthood. Barkley, Murphy, and Kwasni (1996) found that adolescents diagnosed with ADHD had, on average, more traffic accidents, teen pregnancies, and conduct problems as compared with other teens. Reif (1993) found that adolescents with ADHD were less mature socially and emotionally, showing between two and four year developmental delays in self-management skills, as compared with their peers. While impulsive behavior, lack of self-control, and high risk behaviors were found in teens diagnosed with ADHD (Barkley et al., 1996), young adults were found to manifest different symptoms; and therefore, were found to have different challenges socially (Weyandt & DuPaul, 2008). DuPaul et al. (2009) reported,

> A handful of studies have explored the driving performance of college students with ADHD and results consistently indicate that students with ADHD tend to have a higher number of driving citations, speeding violations, license suspensions and revocations, and while driving are involved in more motor vehicle accidents than their non-ADHD peers. (p. 246)

However, Weyandt and DuPaul (2008) reminded the reader a year earlier of the following:

> A substantial body of research now exists concerning ADHD in early adolescence, but information is relatively scant concerning ADHD in late adolescence or young adulthood…Relative to the information that is available concerning ADHD in children and adolescents, however, a dearth of information exists about ADHD in the college student population. (p. 311)

Although studies had concluded that ADHD was associated with a primary deficit in behavioral inhibition in young students diagnosed with this disorder (Willcutt et al., 2005), researchers found that inattention and disorganization were more prevalent than hyperactivity in young adults diagnosed with ADHD (Kass, Wallace, & Vodanovich, 2003; Nigg et al., 2005). DuPaul et al. (2001) reported high levels of inattentiveness and hyperactivity-impulsiveness among American college students diagnosed with ADHD, while Nigg et al. (2005) reported that inattentiveness replaced hyperactivity and impulsiveness in university student diagnosed with ADHD. Reaser, Prevatt, Petschre, and Proctor (2008) reported lower motivation, time management, concentration, and test taking strategies in this population, as well. Perry and Franklin (2006) confirmed this, reporting that college students with ADHD had low self-esteem, reported feelings of isolation, had difficulty sustaining attention, and difficulty with planning. According to Weyandt and DuPaul (2008), "College students with ADHD seem to find adjustment to college life difficult, especially social relationships" (p. 314).

The American Psychiatric Association (2000) reported that the hyperactivity seen in younger students with ADHD manifested itself differently in young adults with ADHD. The hyperactivity changed and was found to turn inward, developing into feelings of restlessness for

young adults with ADHD (American Psychiatric Association, 2000). This was confirmed by parents and self-reports from students (Frazier et al., 2007; Weyandt et al., 2003).

The university classroom learning environment is vastly different from high school classrooms. Students are required to spend less time in the classroom and more time independently reading and researching on their own. These large blocks of time require students to manage their academics and their personal life. University students are also required to make more autonomous decisions and self-advocate for accommodations if they have a disability. Students are required to make their own decisions about class schedules and course offerings. Students that relied on family for structure and support are suddenly required to manage their time, academics, and social life, while self-advocating for accommodations that they may not realize they need. According to Weyandt and DuPaul (2008),

> More research is needed to better understand the psychological functioning of students with ADHD as well as factors that may contribute to their academic failure or success at the college level. (p. 315)

Differences with Learning Disabilities

Researchers have determined several key differences between ADHD and learning disabilities (Barkley, 2006; DuPaul & Stoner, 2003), the most obvious being that Attention Deficit Hyperactivity Disorder is considered a mental or psychological disorder and not a learning disorder (American Psychological Association, 2000). According to the American Psychological Association (2000), the clinical criteria for ADHD includes the following: predominantly inattentive type (demonstrating symptoms of difficulty in paying attention, listening when spoken to directly, focusing on a task, missing details, not following through on instructions, forgetting, becoming easily distracted, and struggling with organizational skills);

predominantly hyperactive/impulsive type (excessive talking, restlessness, impulsivity, and fidgeting) and combined type (symptoms of both inattentive and hyperactive/impulsive). ADHD is typically diagnosed by mental health professionals or physicians and is characterized by hyperactive, impulsive behavior, and inattentive behavior that manifests itself across multiple settings (American Psychiatric Association, 2000). Children diagnosed with ADHD have difficulty filtering relevant from irrelevant information, delaying gratification, solving problems through divergent thinking, sustaining focus, and reacting before they stop to think (American Academy of Pediatrics, 2004).

Barkley (2006) reported that students with learning disabilities were rarely disruptive, impulsive, or aggressive. These characteristics, however, were reported with students diagnosed with ADHD. DuPaul and Stoner (2003) also reported that children diagnosed with ADHD were found to have academic achievement scores similar to their peers and exhibited attention problems during all activities; whereas, students having learning disabilities were found to have academic achievement scores below their peers and exhibited attention problems only in specific academic situations. Barkley, DuPaul, and McMurray (1991) found when children with learning disabilities who did not have ADHD were observed, they were found to have on-task behavior and work completion rates similar to those of their peers during seatwork. DuPaul and Stoner (2003) confirmed this, stating the following:

> Overall children with academic skills deficits can be differentiated from those with ADHD on the basis of the onset, severity, and situational pervasiveness of observed ADHD symptoms. In particular, the more specific the attention and behavior problems are to academic situations and task, the more likely it is that these difficulties are secondary to academic skills deficits rather than to ADHD. (p.97)

DuPaul and Stoner (2003) reported that students with learning disabilities had difficulty with sustained attention only when they received academic instruction in subjects they had difficulty with; however, students with ADHD were found to have attention problems during every activity they encountered.

At the university level, Prevatt et al. (2007) found differences in study strategies between students with ADHD and students with learning disabilities, as well. Prevatt et al. (2007) reported that university students diagnosed with ADHD became overwhelmed by the amount of information they were required to learn and retained little of the information they studied, as compared to students with learning disabilities and students without disabilities. DuPaul et al. (2001) argued for further study with university students diagnosed with ADHD in order to accommodate their specific needs.

Neurological Deficits

Research has clearly shown the neurological deficits associated with ADHD (Barkley, 2006; Frazier et al., 2007; Heiligenstein et al., 1999; Kern et al., 1999; Prevatt et al., 2007; Weyandt & DuPaul, 2008). This disorder was once believed to be a disorder that children outgrew during puberty, however, researchers now believe is not outgrown once a child reaches adulthood and that approximately two to four percent of university students struggle with this disorder (Bierderman, et al., 2010; Kern et al.,1999; Weyandt & DuPaul, 2008). According to Heiligenstein et al. (1999), 30 to 70% of children diagnosed with ADHD experience symptoms in adulthood, and the United States Government Accountability Office (2009) found that 19.1% of students with disabilities reported a diagnosis of ADHD. It is believed that the number of children experiencing symptoms into adulthood varies because the diagnosis of ADHD depends heavily on symptom self-report in adults with ADHD (DuPaul et al., 2001).

Researchers have concluded that ADHD reflects deficits in both executive and regulatory functions (Nigg et al., 2005). The term executive function describes a set of cognitive abilities that control and regulate behaviors, including the ability to initiate, stop, think abstractly, form concepts, and anticipate outcomes and self-adjust to changing situations (Barkley, 2006). Executive functions involve higher level thinking skills and goal-directed behavior. These affect attention, behavior, and memory skills. Many times deficits with executive functions in inhibition, visual working memory, planning, cognitive flexibility, and verbal fluency will create problems with comprehension (Marzocchi et al., 2008). These executive function deficits were found in students diagnosed with ADHD. Executive function deficits in younger students resulted in hyperactivity and impulsivity; however, these executive function deficits in young adult and college-aged students were found to contribute primarily to symptoms of inattention and disorganization (Frazier et al., 2007; Nigg et al., 2005). Kass et al. (2003) confirmed this, finding adults with ADHD reported problems with inattention more than problems with hyperactivity.

These deficits in executive functions affect a student's memory and problem solving abilities. Consequently, the university environment would pose challenges for students diagnosed with ADHD. Weiler, Bernstein, Bellinger and Waber (2002) suggested that providing additional time, simplifying multi-step tasks, teaching organizational skills, and teaching metacognitive strategies would benefit university students with ADHD.

Schirduan, Case, and Faryniarz (2002) found that more than half of their participants with ADHD exhibited spatial types of intelligence in relation to their learning styles. They argued that students with ADHD should be taught using Gardner's Theory of Multiple Intelligence, suggesting that teachers use a multi-modal approach to their teaching style. According to

Schirduan et al. (2002), "Students with ADHD do better in environments where they can pick and choose activities and then explore content using their senses" (p.327). White and Shah (2010) confirmed this, finding that college students with ADHD were more creative as compared to college students without ADHD. White and Shah (2010) found that adults diagnosed with ADHD exhibited higher levels of verbal creative thinking and real-world creative achievement than adults without ADHD. They found that "the creative advantage of ADHD is associated with higher levels of originality, but not fluency, on verbal measures of divergent thinking" (White & Shah, 2010, p. 676). Consequently, it is believed that creativity in presenting new ideas or information and presenting this information through a variety of modalities—through visual, auditory and kinesthetic means—would help students in this population maintain their attention and redirect and monitor their inhibition.

Deficits in the executive functioning part of the brain and the study of this important cognitive feature in those diagnosed with ADHD have been well-documented (Barkley, 2006; Kofler et al., 2008; Shanahan et al., 2006; Weiler et al., 2002; Zentall, 1993). However, there is evidence that indicates the actual pathways in the prefrontal cortex and subcortical areas that support executive functions, such as the attention processes, inhibition, and working memory, are actually the areas of dysfunction, effecting the executive functioning areas of the brain (Kofler et al., 2008; Martinussen & Tannock, 2006). However, as Pennington and Ozonoff (1996) argued, it did not matter if executive function deficits were the primary cause of these disorders; the issue was whether or not the reversal of the underlying imbalance could reverse the executive function deficits and thereby improve cognitive functioning and behavioral problems through medication or therapy to control inhibitions and specific cognitive processes.

More than 15 years later, executive function deficits are still being debated; however, the specific focus of executive functioning has moved towards the area of working memory and regulatory functioning (Kofler et al., 2008; Nigg et al., 2005; Rapport et al., 2008; Savage, Lavers, & Pillay, 2007; Willcutt et al., 2005). Working memory is one of two cognitive processes that control a range of executive function processes; processing speed is the other (Bental & Tirosh, 2007; Kofler et al, 2008). Working memory refers to the cognitive ability to store and manipulate limited amounts of information for use in guiding behavior (Savage et al., 2007). Regulatory functioning involves processing speed which is the cognitive ability to process information, both verbal and written. Consequently, these regulatory functioning deficits impede students diagnosed with ADHD, as they found difficulty in automatically processing what they were exposed to or what they were attempting to learn (Kofler et al., 2008; Pennington et al., 1993; Nigg et al., 2005).

Once again researchers are faced with understanding the underlying imbalance of these regulatory functions. Some researchers believe that the deficits could be reversed through medication or therapy and thereby improve cognitive and behavioral problems (Barkley, 2006; Pennington & Ozonoff, 1996). However, few studies have sought to research the neurological deficits and their effects on academic performance in university students diagnosed with ADHD. This was confirmed by Semrud-Clikeman and Harder (2011), who argued for future research on these neuropsychological deficits in this population and their effects on academic performance. Although researchers have found these deficits in attention, behavioral inhibition, and memory in adults with ADHD, few studies have looked at university students in this population (American Psychiatric Association, 2000; DuPaul et al., 2001; Frazier et al., 2007; Nigg et al., 2005).

Academic Deficits

Researchers acknowledge that students in this population were average or above average in intelligence and had likely experienced more academic success in high schools and had developed self-determined or resiliency strategies (Glutting, Monoghan, Adams, & Sheslow, 2002) Although Schirduan et al., (2002) discussed the fact that students in this population were typically average or above average in intelligence, Heiligenstein et al. (1999) found that college students with ADHD had lower grade point averages, were more likely to be placed on academic probation, and struggled with academics more than students without ADHD. University students diagnosed with ADHD were found to struggle with poor academic performance and were likely to experience problems learning (Frazier et al., 2007; Glutting, Youngstrom, & Watkins, 2005). Researchers found that students in this population were less likely to graduate from college, as well (Barkley, 2006; Murphy, Barkley, & Bush, 2002).

Barkley (2006) argued that students in this population did not really have an academic deficit but a performance deficit. According to research, students diagnosed with ADHD struggled to regulate their behavior, and therefore struggled with the working memory part of their brain, as the thought to control behavior must first be retrieved from the working memory in order to make a decision to respond (Kofler et al., 2008). Students in this population struggled to maintain their attention and sustain this attention over time. This was confirmed in research regarding online classes for college students. Researchers found that while university students diagnosed with ADHD reported feeling comfortable with technology, they took fewer online courses requiring multi-tasking activities (Weyandt & DuPaul, 2008). Sarkis (2008) argued that by providing additional time, simplifying multi-step tasks, teaching organizational skills, and teaching metacognitive strategies, this population could achieve academic success. Weiler et al.

(2002) also believed that students with ADHD would benefit from learning metacognition strategies because of their deficits in cognitive flexibility. Metacognition requires a student to understand how his or her own thought processes or cognitive processes work. Metacognition is taught to struggling readers in order to improve their comprehension (Flavell, 1979).

According to Sarkis (2008) accommodations for university students diagnosed with ADHD should include providing extra time on tests and assignments, providing written instructions for assignments and projects, creating priority for class registration, allowing for testing environments to be in a separate and quiet location, and receiving full-time student status while taking a reduced course load. Because of this cognitive inflexibility and the processing speed deficits, it is believed reading and study strategies or interventions that target comprehension, vocabulary instruction, fluency, and writing would help students in this population to achieve academically, as well.

Reading and Writing Deficits

Although research has shown that younger students diagnosed with ADHD are similar to their peers in academic ability (DuPaul & Stoner, 2003), Weyandt and DuPaul (2008) found that students diagnosed with ADHD at the university level struggled in specific areas of reading, writing, and test-taking strategies. Reaser et al. (2008) confirmed this, finding college students with ADHD had difficultly taking notes and outlining, and struggled with test-taking, learning, and study strategies.

Klein, Gangi, and Lax (2011) found that young adults with ADHD struggled to spontaneously organize information based on semantic relationships, which required them to name words that began with specific letters, as compared with their non-ADHD peers. They also found that the episodic memory, the part of the memory that records events that a person

experiences during a point of time and space, was compromised in young adults with ADHD (Klein, Gangi, & Lax, 2011). Short term and verbal working memory are needed to be successful in reading and writing. Pennington, Groisser, and Welsh (1993) confirmed this, stating that short term working memory and verbal working memory processing systems were vital for learning reading and writing skills that were needed to become successful in literacy. Because of these deficits in short term working memory and verbal memory in students with ADHD, the reading and writing process becomes much more difficult for them to obtain.

Because university students with ADHD struggle with working memory, engaging in multiple cognitive tasks simultaneously was found to be difficult (Semrud-Clikeman & Harder, 2011). Klein, Gangi, and Lax (2011) supported this finding, showing that students in this population struggled to sequence events when re-telling a story, relating this to their organizational deficits.

Comprehension and vocabulary at the postsecondary level can become difficult to grasp because students in this population struggle with impulsivity and the inability to focus on complex activities (Marzocchi et al., 2008; Shanahan et. al., 2006; Willcutt et al., 2005). Weiler et al. (2002) found when children diagnosed with ADHD had to comprehend large amounts of information or had to multi-task cognitive information in a linear fashion, their performance deteriorated. He argued that the processing disorders of children in this population could not be identified specifically, as to input or output disorders, but found when students in this population increased processing demands by having to comprehend large amounts of information, perform a task rapidly, or were required to link a series of cognitive operations in a linear fashion, their performance deteriorated (Weiler et al., 2002).

Finding the main idea is necessary for achieving comprehension in reading; however, Weyandt and DuPaul (2008) found that this was extremely difficult for university students diagnosed with ADHD. Zentall (1993) found that younger students diagnosed with ADHD were drawn off task in quiet conditions, skipped words and phrases, read with more errors, and struggled with comprehension. He also found that a majority of these younger students diagnosed with ADHD skipped a fourth of the reading material when they read silently to themselves in a quiet environment (Zentall, 1993).

Because of neurological deficits in the executive and regulatory functioning part of their brain, children with ADHD struggle to stop one thought process and move to another (Shanahan et al., 2006; Weiler et al., 2002). This cognitive inflexibility caused students to struggle with processing speed which affects fluency (Nigg et al., 2005; Shanahan et al., 2006; Weiler et al., 2002). Processing speed enables students to read fluently as they are able to process more information in a shorter amount of time. Processing speed deficits are cognitive deficits found in both students with ADHD and students with reading disorders (Dykman & Ackerman, 1991; Shanahan et al., 2006; Weiler et al., 2002; Willcutt et al., 2005). Working memory and cognitive flexibility deficits were seen to cause processing speed deficits, which affected word recognition in this population as well (Nigg et al., 2005; Shanahan et al., 2006; Weiler et al., 2002). Fluency and word recognition are important because they affect the sheer volume of reading which increases significantly at the post-secondary level. Because students with ADHD typically struggle with fluency and comprehension of long passages, researchers have argued for interventions designed around their lack of sustained attention (Nigg et al., 2005; Shanahan et al., 2006; Zentall, 1993).

Writing requirements at the university level are demanding for all students. Because university students with ADHD struggle with working memory, the writing process becomes difficult as they are required to engage in multiple cognitive tasks simultaneously (Semrud-Clikeman & Harder, 2011). Zentall, (1993) reported similar findings with younger students diagnosed with ADHD, finding that many students diagnosed with ADHD struggled with spelling and struggled with the inferential thinking required in the writing process; however, Semrud-Clikeman and Harder (2011) argued the following:

> Courses that have a major writing component are mandatory at the college level. Services for students with disabilities provide accommodations (e.g., extra time to complete exams, a reduced distraction environment) to support students with ADHD; however, research has not established how the functional impact of how ADHD specifically affects academic skills such as writing. (p. 216)

Weyandt and DuPaul (2008) confirmed this, reporting "College students with ADHD seem to be at risk for lower achievement scores, poor academic coping skills in general but especially in writing" (p. 313).

Working memory deficits restrict the writer's ability to hold and retrieve thoughts required to plan and compose a paper. Semrud-Clikeman and Harder (2011) stated, "There are far fewer research studies that evaluate the writing process in college-aged students with ADHD" (p. 217), and argued that effects of executive functioning disorders in relation to writing had not yet been researched. Consequently, much more research is needed in the area of reading and writing strategies for university students diagnosed with ADHD.

Social Deficits

Although university students diagnosed with ADHD may benefit from small class sizes and testing accommodations offered by their colleges or universities, many do not want their professors to know about their disability (Weyandt & DuPaul, 2008). Vance and Weyandt (2008) found that professors' perceptions of students with ADHD warranted much more research. Because students with ADHD struggle with their attention level and other neurological deficits, negative feedback has been shown to cause their neurological deficits to worsen and their cognitive abilities shut down (Rooney, 1995; Reif, 1993), which is another reason students in this population may not divulge their disabilities. Research has shown that this population attempted to just struggle through on their own, encountering difficulties with their social relationships, new living environments, and the challenges of organizing and managing their time and finances (DuPaul et al., 2001).

Time management affects a student's ability to set realistic schedules and optimum study times. Kern et al. (1999) found that college students diagnosed with ADHD struggled with time management, control of stress and organization, and struggled with their ability to access support from others. This was confirmed by Kaminski et al. (2006) who found that freedom from financial concerns and successful time management correlated with academic success in college students diagnosed with ADHD. Prevatt et al. (2007) reported that students in this population often become overwhelmed by the amount of information, retained little of the information they study, and although they spend a great deal of time studying, they often run out of time and feel unprepared.

Emotional symptoms and substance abuse were also found to be prevalent among students in this population. In a recent study, Blase et al. (2009) found that 153 students with

self-reported ADHD from a public and a private university reported more depressive symptoms, social concerns, substance abuse and emotional instability as compared to other students. This was confirmed by Meaux, Green, and Broussard (2009) who found students in this population reported difficulties with sleep, depression, and substance abuse. Weyandt and DuPaul (2008) reported that this population was also at risk for substance and tobacco abuse and aggressive and confrontational behavior in the presence of stress. They reiterated concern over prescription substance abuse of stimulants on college and university campuses (Weyandt & DuPaul, 2008). DuPaul, Weyandt, O'Dell and Varejao (2009) reported, "No empirical studies, to date, have investigated the effects of psychosocial interventions on the symptoms or associated functional impairments of college students with ADHD" (p. 246).

Weyandt and DuPaul (2008) also reported that this population struggled with not only social relationships, but also low self-esteem. This was confirmed by Shaw-Zirt, Popali-Lehane, Chaplin, and Bergman (2005). Consequently, it becomes vital for professors to create a "safe zone" for all students in which students can take risks without fear of what others might think. Professors must provide motivation and be able to appeal to students in this population on a personal and emotional level, as well.

Some researchers have argued that the academic and social struggles in elementary and high school students diagnosed with ADHD would not apply to university students in this population because university students would have higher ability levels, have better reading and study skills, and would have experienced success, academically, in high school (Frazier et al., 2007; Glutting et al., 2005). Although many researchers disagree with this (Barkley, 2006; Blase et al., 2009; DuPaul et al. 2001; Harrison, 2004), most researchers do agree with the fact that

more data is needed regarding the academic and social needs of college and university students diagnosed with ADHD. As Weyandt and DuPaul (2008) argued,

> …college students with ADHD are an understudied population and research is sorely needed to further investigate the academic, social, and psychological functioning of students with this disorder. Preliminary findings suggest that college students with ADHD are at increased risk for academic, social, and psychological difficulties. Information concerning treatment of ADHD in college students is virtually nonexistent. (p. 317)

Summary

To date, few studies have been done on the relationship of academic achievement and students diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) at the university level (Frazier et al., 2007, Heiligenstein et al., 1999; Weyandt & DuPaul, 2008); however, it has become prevalent on college and university campuses. According to Meaux et al. (2009), this is possibly due to improved diagnostic and treatment opportunities for high school students diagnosed with ADHD. It is also believed that more students in this population are attending colleges and universities than ever before (Meaux et al., 2009). However, students diagnosed with ADHD are less likely to complete their postsecondary education as compared with students not diagnosed with ADHD (Barkley, 2006). Despite its prevalence, less is known about students diagnosed with Attention Deficit Hyperactivity Disorder at the university level than children, adolescents, or even adults diagnosed with ADHD (Frazier et al., 2007; Heiligenstein et al., 1999; Prevatt et al., 2007; Weyandt & DuPaul, 2008).

Many researchers have argued that further research is needed with university students diagnosed with ADHD in order to determine basic epidemiological information and to accurately

accommodate university students in this population (DuPaul et al., 2001). While researchers may never know the percentage of students struggling with ADHD at the university level, research has clearly shown an academic discrepancy between the academic performance of this population and the general population of university students (Frazier et al., 2007, Heiligenstein et al., 1999, Weyandt & DuPaul, 2008), as well as university students diagnosed with learning disabilities (Prevatt et al., 2007).

Prevatt et al. (2007) noted that there were few studies that looked at study strategies helpful to this population and found differences in study strategies between students with ADHD and both students with learning disabilities and a comparison group of students without disabilities. University students with ADHD were also found to differ from young adults with the same disorder who did not enter college, as they had greater academic success in high school and were able to compensate for their disability more than their peers with the same disorder (Glutting et al., 2005).

Because of their executive and regulatory function deficits, students diagnosed with ADHD were found to struggle academically, specifically in areas of reading and writing (Kofler et al., 2008; Marzocchi et al., 2008; Nigg et al., 2005). Although hyperactivity was found to be greatly reduced in this population, the hyperactivity was replaced with inattentiveness in university students diagnosed with ADHD. Not only do these students struggle with a rigorous academic workload that is indicative of a university or college environment, but they face long lectures which require focus and attention. Although students with ADHD were found to spend a great deal of time studying, they not only ran out of time to study but also retained little of what they had studied and felt unprepared (Prevatt et al., 2007). Semrud-Clikeman and Harder (2011) also argued for further research to determine the writing needs of this population.

Students in this population were found to struggle with social relationships, new living environments, organizational and planning skills, and time management. The support system they previously used in high school has changed, and they must learn to navigate through a system that requires them to make decisions and communicate their own needs. These social deficits affected their ability to set and achieve goals, plan for their class and study schedule, and organize their academic schedule and social life.

The literature clearly shows that university students diagnosed with ADHD struggle in a university or college environment, as compared to students without this disorder and confirmed that students in this population are at increased risk for academic, reading, writing, and social difficulties. Overall, research has shown the need to differentiate students with ADHD from students with learning disabilities. Consequently, accommodations at the university or college level for this population must be different, as well. DuPaul et al. (2001) argued, "As more individuals with ADHD are able to attend university or are identified as needing accommodations or services in postsecondary institutions, the nature of this disorder in the university population requires greater scrutiny" (p. 371).

In order to accommodate university students diagnosed with ADHD, perceptions and learning experiences must first be researched; their voices must be heard. Although reviewing the current research helps one to understand the impairments and possible impediments of this disorder, understanding the academic and social challenges and successes for this population can only happen through a hermeneutic phenomenological study of their experiences. This study seeks to address the fact that although this population has become much more prevalent on college and university campuses (Kern et al., 1999; Wolf, 2001), the assumption "that psychotropic medication, behavioral strategies, and educational accommodations that are

effective for younger and older individuals with this disorder are also effective for college students… is virtually untested" (Weyandt & DuPaul, 2008, p. 316).

Typically accommodations given to these students are the same accommodations given to students with learning disabilities, even though students with learning disabilities "can be differentiated from students with ADHD on the basis of the onset, severity, and situational pervasiveness of observed ADHD symptoms" (DuPaul & Stoner, 2003, p. 97). Consequently, more research with university students diagnosed with ADHD is needed. Successful accommodations for students with ADHD at the university level are contingent upon first understanding the learning experiences and perceptions of university students diagnosed with this disorder; it is hoped that this research will show how students in this population could be better served and accommodated at the university level.

CHAPTER THREE: METHODOLOGY

Understanding the experiences of students diagnosed with ADHD at the college or university level may assist institutions of higher education in supporting, serving, or accommodating this population. Consequently, the purpose of this hermeneutic phenomenological study is to acquire an understanding of the experiences and perceptions of university students diagnosed with ADHD at a university in southwest Florida. It is hoped that by focusing on the experiences and perceptions of students in this population, this study would not only deepen the understanding about what students diagnosed with ADHD need at the university level but also help identify integral strategies that students in this population feel help them both academically and socially.

Design

Because this design involved the attempt to interpret the common experiences (having ADHD at the university level) in order to gain a deeper understanding about what students diagnosed with ADHD felt were their challenges and successes at the university level, a phenomenological design was chosen. It attempted to interpret human phenomena from the perspective of those who had experienced it (Ary et al., 2010; Creswell, 2007). Because I do not possess the phenomenon, a hermeneutic phenomenological design was chosen. This hermeneutic research approach ensures that the voices of university students diagnosed with ADHD will be heard. As Laverty (2003) stated, it is an attempt to "unfold meanings as they are lived in everyday existence" (p. 4). McManus-Holroyd (2007) confirmed this stating, "The meaning and scope of the term 'hermeneutics' is an important consideration in a research study that concerns itself with interpretation" (p. 2). Laverty (2003) concurred and stated,

> …hermeneutic phenomenology might take a somewhat different approach to data analysis. This processes involved one of co-construction of the data with the participant as they engage in a hermeneutic circle of understanding. (p. 21)

Although the data analysis took on this co-construction approach through member checking at the end of each interview, triangulation was also used to ensure quality and depth of the data obtained. Data consisted of individual questionnaires, focus groups, and individual interviews. Documentation involving medical records and grades were reviewed by Adaptive Services in order to obtain a population that met the criterion; a criterion which sought a population with a diagnosis of ADHD with no comorbid disorders and in good standing academically at the university. Participants also attended the university for at least two semesters. After the consent forms were signed, I reviewed documentation to further ensure that the participants had a diagnosis of ADHD prior to entering the university.

According to Creswell (2007), the researcher must understand the philosophy behind research designs in order to determine his or her rationale for choosing a specific research study. Van Manen (1990) concurred and stated, "…it is important for the human science researcher in education to know something of the philosophic traditions" (p. 7). Consequently, I dug deeper into the philosophies that influenced phenomenology and hermeneutics and found that although Husserl greatly influenced phenomenology, Heidegger, with the influence of Gadamer, developed hermeneutic phenomenology. As Laverty (2003) concluded, "…each philosopher sought to uncover the life world or human experience as it is lived. They sought to reclaim what they perceived had been lost through the use of empirical scientific explorations within the human realm" (p. 11).

This study sought to capture the essence of these students' experiences and perceptions and sought answers to how this population made sense of their experiences and perceptions. Consequently, as Ary et al. (2010) summarized, "Qualitative studies are a distinctive type of research in education and the social sciences that can produce vivid and richly detailed accounts of human experience" (p. 446). Hermeneutic phenomenology takes this understanding of the human experience a step further by seeking the authenticity of the interpretation. As Van Manen (1990) stated,

> To that end hermeneutic phenomenological research reintegrates part and whole, the contingent and the essential, value and desire. It encourages a certain attentive awareness to the details and seemingly trivial dimensions of our everyday educational lives. It makes us thoughtfully aware of the consequential in the inconsequential, the significant in the taken-for granted. (p.8)

Research Questions

The overall research question:

- What are the successful experiences or challenging obstacles in obtaining academic success for university students diagnosed with Attention Deficit Hyperactivity Disorder?

Using the constructs of self-determination and resiliency, the following subquestions were explored with regards to this specific population:

- What factors influenced academic success or failure at the university level?
- How did Adaptive Services or professors influence students' academic or social success or failure?
- What environments, both academic and social, were the most conducive to academic success at the university level?

- How did students influence their own academic success or failure at the university level?
- What reading and study strategies were most conducive to the participants' academic success?

Participants

The participants involved a purposeful sampling by the Office of Adaptive Services from approximately 100 students that had a clinical diagnosis of ADHD with no comorbid disorders and were not on academic probation or warning. Creswell (2007) confirmed this process of obtaining participants and stated, "The concept of purposeful sampling is used in qualitative research…because they can purposefully inform an understanding of the research problem and central phenomenon in the study" (p. 125). Information was gathered from this purposeful sampling and a criterion sample of students (students having a diagnosis of Attention Deficit Hyperactivity Disorder and having been in attendance at the university in the southeastern United States for at least two semesters from the Office of Adaptive Services) was chosen. This criterion sampling included students who had once registered for accommodations, were actively enrolled in classes, and were consider in good standing academically, and who may or may not be receiving services from Adaptive Services. In order to obtain a "good standing" status, the participant's cumulative grade point average (GPA) was a 2.0 or greater. According to the university, a student whose GPA falls below 2.0 is placed on Academic Warning; if their GPA falls below a second time, they are placed on Academic Probation. Once this sampling was chosen, Adaptive Services sent out a recruitment email to the criterion group. After participating in the questionnaire, participants were asked to participate in focus group interviews and/or individual interviews.

A total of eight students participated, four males and four females, ranging in age of 19 to 21. Eight students participated in the questionnaire. Seven of these students participated in the individual interviews, and six of the students participating in the individual interviews participated in focus group interviews. The interview process ended when saturation was achieved.

Student participants would have SAT scores at or above 1320 (Math > 440, Critical Reading > 440, and Writing> 440) or ACT scores at or above 18 in Reading, 17 in English (or 18 in combined English/Writing), and 19 in Math (if they had a GPA in high school above a 3.0 on a four point scale) to be accepted into this university, and therefore, to participate in this study. If their GPA in high school was a 2.5-2.99 on a four point scale or if they attended a non-traditional high school (or homeschooled), then they would have a score of at least a 1450 on their SAT or a 21 on their ACT composite score to be accepted into this university.

Site

The site for this study was a university in the southeastern United States with approximately 13,000 students in attendance. The demographics of this university were approximately 71.5% White, 15.8% Hispanic, 7% African American, 2.4% Asian, .8% Native American, and 1.5% non-resident alien, with 1% unreporting. Seventy-eight percent of the student body were currently under 24 years of age. According to the Office of Adaptive Services, approximately 600 students received accommodations during this time period. Approximately 52% of these 600 students were identified as ADHD; although this percentage included students with comorbid disorders. Approximately 100 students were identified as having ADHD with no comorbid disorders.

Procedures

Before collecting data, I obtained approval (see Appendix E) from Liberty University's Institutional Review Board (IRB), and then obtained approval from the IRB at the university in the southeastern United States. After IRB approval was granted from both universities in March of 2013, information was gathered by Adaptive Services from a criterion sample of students having a diagnosis of Attention Deficit Hyperactivity Disorder with no comorbid disorders, having an academic status of Good Standing, and having been in attendance at the university for at least two semesters. In order to identify participants for the study, documentation was reviewed by Adaptive Services in order to eliminate participants with comorbid disorders or disabilities and to ensure that chosen participants had attended that university for at least two semesters and were currently not on academic warning or probation. This criterion included students who were or were not currently receiving accommodations, were actively enrolled in classes for at least two semesters, and were receiving passing grades. Through each step of this process, I followed the guidelines and protocols set for research involving human subjects regulated by the IRB at both institutions.

After being emailed a recruitment letter in March of 2013 by the Office of Adaptive Services, interested participants meeting the criterion were asked to come into the Adaptive Service Office to sign a consent form and release of information form (Appendix A). They were told the purpose of the study, as well as the amount of time that would be needed to complete the questionnaire and the interviews, and what would be done with the results. Participants were given a deadline for signing the consent forms and completing the questionnaire. After signing the forms, participants were then given a questionnaire (see Appendix B). After participating in the questionnaires, participants were asked to participate in focus group interviews and/or

individual interviews (see Appendix C and D). Recruitment continued through the end of the spring semester of 2013 and the beginning of the summer semester of the same year, and protocols were updated and approved to offer both service learning hours and a chance for one participant to receive a $100 university bookstore gift card, through a drawing at the end of all of the data collection, in order to increase participant response. I attempted to schedule dates and times that were convenient to participants' schedules. The interview process continued until saturation of data was achieved, at which time I ended with eight participants at the end of May, 2013. According to Van Manen (1990), hermeneutic phenomenological researchers are most concerned with the intensity of the contact needed to gather sufficient data and accurately record the phenomenon. It was determined that a small sampling size would allow for accurate interpretation of the phenomenon. Creswell (2007) confirmed this, concluding that sample sizes for phenomenological studies should be between five and twenty-five participants. Documentation was also reviewed by the researcher, after the consent forms were signed, to ensure that participants had been diagnosed with ADHD prior to entering the university. After the interviews were completed at the end of May, the director of Adaptive Services drew a name from participants participating in the questionnaire, focus group, and individual interviews for the $100 gift card, and the gift card was sent out to the chosen participant.

Of the eight participants, one participant wished to stop after completing the questionnaire, and another participant chose only to participate in an unrecorded individual interview. This participant's interview was recorded through note-taking during the interview and transcribed into full sentences immediately afterwards. All other individual interviews and focus group interviews were recorded, and then I transcribed them word for word.

Notes were also taken during all of the interviews, in order for the participants to participate in member checking at the end of each interview, and interviews were conducted in a conference room near the Office of Adaptive Services. The member checking confirmed the notes taken and caused participants to reiterate those areas they felt were significant to understanding their experiences and perceptions. A total of seven individual interviews from the qualifying participants were conducted, and all but the first individual interviewed were recorded and transcribed afterwards. Six of those participating in the individual interviews participated in focus group interviews. I conducted focus group interviews with two students at a time from this purposeful sampling, totaling three focus group interviews. I also conducted these focus group interviews, using open-ended questions, and then transcribed these interviews. This process was continued until saturation was achieved and took approximately six weeks. According to Bogdan and Biklen (2007), saturation occurs when participants can only provide information that is redundant or does not provide any new information from what was previously collected. All of the recorded interviews were recorded digitally, using a computer and a microphone for both myself (the interviewer and researcher) and the interviewees. I also took notes. All recording and transcriptions were locked in my office, and data files were stored on a password protected laptop.

Personal Biography

Currently, I am a doctoral student at Liberty University in the School of Education. I teach full time at a university in the southeastern United States, teaching literacy classes as well as a foundational course in the College of Education. My teaching philosophy comes from teaching students (from hard of hearing high school and middle school students in Illinois and Texas to elementary students in Arkansas, Michigan and Florida) for approximately twenty years

in both public and private schools. The three years prior to teaching at the college level were spent as a Reading Specialist and teacher at a school for children with neurological disorders, most of whom had a diagnosis of ADHD.

I have a constructivist view of learning that takes into account the learning environment that not only motivates the learner but also builds the self-esteem of students. It understands that learning involves a continuous process of integrating new knowledge into an individual's experience. I believe that each person is divinely and uniquely created and that engagement and self-directed learning create an ownership of learning; therefore, the perceptions of young adults with ADHD have voices worthy of hearing.

Although I have been an advocate for students diagnosed with ADHD, I have never experienced living with ADHD. Although I would bracket my own views and perceptions, I acknowledge that I know nothing about what these participants experience and seek to interpret their attitudes and perceptions accurately. Consequently, I used open-ended questions in order to interview the participants and used systemic data analysis and in vivo coding in order to reveal themes regarding this phenomenon. This study also sought a hermeneutical focus to adequately interpret and communicate the experiences and perceptions of the participants. As a result, I used an in-depth approach in conveying this phenomenon and was committed to pursuing the ethical accountability that is required in representing this population.

Data Collection

The data collection methods (documentation, questionnaire, focus groups, and individual interviews) align with the phenomenological research design (Creswell, 2007) and the hermeneutical phenomenological requirements discussed by Van Manen (1990). Member checks were conducted at the end of each interview in order to ensure accuracy of data

collection. According to Creswell (2007), three collection methods provide triangulation which increases validity and reliability. Ary et al. (2010) confirmed this stating the following:

> Methods triangulation uses more than one method (e.g., ethnography and document analysis) in the study. The assumption is that the combination of methods results in better evidence. When these different procedures or different data sources are in agreement, there is corroboration. (p. 499)

Documentation was used to determine a purposeful sampling in order to identify participants who met the criteria. Documentation was initially reviewed by Adaptive Services in order to obtain a criterion sampling. Questionnaires were given to all those that met the criterion after they had signed the consent and release of information forms and agreed to participate in the study. I then reviewed the documentation to ensure that the participants had a diagnosis of ADHD prior to entering the university, had no comorbid disorders, were not on Academic Probation or Warning, and had been in attendance at the university for at least two semesters. I then conducted focus group interviews and individual interviews (only one participant chose to answer the questionnaire and not participate in the interviews). According to Van Manen (1990), quotes from focus groups and individual interviews provide a rich description of the phenomenon. He stated:

> In hermeneutic phenomenological human science the interview serves very specific purposes: (1) it may be used as a means for exploring and gathering experiential narrative material that may serve as a resource for developing a richer and deeper understanding of a human phenomenon, and (2) the interview may be used as a vehicle to develop a conversational relation with a partner (interviewee) about the meaning of an experience. (Van Manen, 1990, p. 66)

Documentation

The criteria for participation included university students at a university in southwest Florida who had a medical or psychological diagnosis of ADHD with no comorbid disorders and had attended the university for at least two semesters. The criteria included students who had once registered for accommodations but may or may not be currently receiving services, were actively registered for classes and had attended the university for two semesters, and were receiving passing grades in their classes. The rationale for this criterion was locating students diagnosed with ADHD that had experience with university classes, as well as students experiencing academic success with or without the use of Adaptive Services. The participants consisted of only those students diagnosed with ADHD prior to attending the university. These students would need to have experienced academic life, living with ADHD as an elementary, middle school, or high school student. The parameters for this criterion sampling were generated by the following literature:

1. Students entering colleges or universities do not have the external accountability systems that they had in high school and are leaving a family and educational support system that was, by law, required to support and accommodate them and are entering a system in which students must acquire disability support and assistance for themselves (The American Psychiatric Association, 2000).

2. Research has also indicated that the overt symptoms in this population change developmentally from adolescence to young adulthood (Barkley, Murphy, & Kwasni, 1996). The American Psychiatric Association (2000) confirmed this, reporting that the hyperactivity seen in younger students with ADHD manifested itself differently in young adults with ADHD. The hyperactivity changed and was found to turn inward, developing

into feelings of restlessness for young adults with ADHD (American Psychiatric Association, 2000).

These students would also have had to self-advocate and approach Adaptive Services, initially, for accommodations; consequently, this sampling group would possess self-awareness and self-efficacy. The parameters for this criterion sampling were generated from the literature on self-determination, personal efficacy and self-directed learning, and resiliency which stated the following:

1. Wehmeyer's (1999) work revealed strategies that promoted student self-awareness, self-knowledge, positive perceptions of control, self-efficacy, and outcome expectations. He found that self-determination enabled students with special needs to take charge of their progress and academic success (Wehmeyer, 2004).

2. According to the American Psychological Association (2006), resiliency is "the process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands" (p. 792). Gordon-Rouse (2001) found resilience to be "the ability to thrive, mature, and increase competence in the face of adverse circumstances or obstacles" (p. 461).

3. Bandura (1977) found that personal efficacy and self-directed learning were proven motivating factors in academic achievement and that personal efficacy influenced the beliefs that one could achieve his or her goals.

4. Henry and Milstein (2004) found that resiliency were positive factors that helped students focus on their strengths, problem-solving, and positive attitudes.

Questionnaire

Information was gathered by Adaptive Services from a criterion sample of students having a diagnosis of Attention Deficit Hyperactivity Disorder, having an academic status of Good Standing, and having been in attendance at the university in the southeastern United States for at least two semesters. This criterion included students who may or may not be currently receiving accommodations, were actively enrolled in classes for at least two semesters, and were receiving passing grades. After the consent forms were signed (see Appendix A), the questionnaire (see Appendix B) was given to a total of eight participants. This questionnaire was developed to investigate the research questions regarding the environments, both academic and social, that were most conducive to success at the university level. This questionnaire was generated from the literature review which stated the following:

1. Schirduan et al. (2002) found that more than half of their ADHD subjects exhibited spatial types of intelligence in relation to their learning styles.
2. White and Shah (2011) argued that college students with ADHD were more creative as compared to college students without ADHD.
3. University students with ADHD were found to differ from young adults with the same disorder who did not enter college, as they had greater academic success in high school and were able to compensate for their disability more than their peers with the same disorder (Glutting et al., 2005).

Focus Group Interviews

After the questionnaire was given, participants that chose to participate in group and/or individual interviews were interviewed. I conducted three focus group interviews containing two participants each. I transcribed all of the focus group interviews from the recordings and notes.

Creswell (2007) recommended the use of an interview protocol to guide the interview and record responses (see Appendix C). He stated, "The important point is to describe the meaning of the phenomenon for a small number of individuals who have experienced it" (Creswell, 2007, p. 131). The following list shows how the focus group interview questions (see Appendix C) were generated by the literature review:

For Focus Group Interview Question #1 (see Appendix C):

1. Research has clearly shown an academic discrepancy between the academic performance of this population and the general population of university students (Frazier et al., 2007; Heiligenstein et al., 1999; Weyandt & DuPaul, 2008).

2. Although Schirduan et al., (2002) discussed the fact that students in this population were typically average or above average in intelligence, Heiligenstein et al. (1999) found that college students with ADHD had lower grade point averages, were more likely to be placed on academic probation, and struggled with academics more than students without ADHD.

3. University students diagnosed with ADHD were found to struggle with poor academic performance and were likely to experience problems learning (Frazier et al., 2007; Glutting et al., 2005).

4. Murphy et al. (2002) found that students in this population were less likely to graduate from college.

5. Sarkis (2008) argued that by providing additional time, simplifying multi-step tasks, teaching organizational skills, and teaching metacognitive strategies, this population could achieve academic success.

For Focus Group Interview Question #2 (see Appendix C):

1. According the American Psychiatric Association (2000), the hyperactivity characteristic of younger students with ADHD changes and turns inward, developing into feelings of restlessness at the college level.
2. Kern et al. (1999) found that college students diagnosed with ADHD struggled with time management, control of stress and organization, and struggled with their ability to access support from others. Time management affects a student's ability to set realistic schedules and optimum study times.
3. Blase et al. (2009) found that 153 students with self-reported ADHD from a public and a private university reported more depressive symptoms, social concerns, substance abuse, and emotional instability as compared to other students. This was confirmed by Meaux et al. (2009) who found students in this population reported difficulties with sleep, depression, and substance abuse.
4. Weyandt and DuPaul (2008) also reported that this population struggled with not only social relationships, but also low self-esteem.

The focus group interviews lasted approximately forty to forty-five minutes. Because data was collected at the end of one term and the beginning of another, I had to allow for participants' schedules. It took approximately six weeks to complete all of the focus group interviews. I transcribed the focus group interviews, word-for-word, by listening to the audio recordings.

Individual Interviews

Participants were also asked to participate in individual interviews. This process was confirmed by Ary et al. (2010) stating, "Qualitative interviews might involve one-time interviews with a subject or subjects, multiple interviews with the same subject or subjects, or

group interviews or focus groups" (p. 439). I conducted individual interviews with seven participants, individually, for approximately an hour and transcribed the interviews, word-for-word, through audio recordings and notes. Out of the seven participants individually interviewed, one did not wish to be recorded. Notes were taken during this interview and these notes were fully transcribed immediately after the interview. This participant did not want to participate in the focus group interviews. The entire interview process also took approximately six weeks, and the individual interview questions were also open-ended (see Appendix D).

Van Manen (1990) confirmed this process, explaining that hermeneutic phenomenology requires a focused view of the participants by providing open-ended questions in order to gain understanding through individual perspectives. He felt this was the best way to capture the voice of the participants (Van Manen, 1990). The following list shows how the individual interview questions (see Appendix D) were generated by the literature review and guided by the constructs of self-determination, self-advocacy, and resiliency:

For interview question #1 (see Appendix D):

1. Wehmeyer (1999) found that self-determination enabled students with special needs to take charge of their progress and academic success.
2. According to Sarkis (2008) accommodations for university students diagnosed with ADHD should include providing extra time on tests and assignments, providing written instructions for assignments and projects, priority for class registration, allowing for testing environments to be in a separate and quiet location, and receiving full-time student status while taking a reduced course load.
3. With children diagnosed with ADHD, research has shown that because their learning styles are conducive to engagement in tactile activities and their inhibition and

impulsivity are minimized by activity, creativity in presenting new ideas or strategies in a variety of modalities improved the academic performance of younger students diagnosed with ADHD (Zentall, 1993). Zentall (1993) argued that breaking strategies down to manageable steps and constant repetition and modeling were shown to work well with younger students in this population. He argued that when tasks were presented to students with ADHD that were too easy or overly familiar, they tended to seek stimulation elsewhere; however, he felt that students in this population did not display deficits in attention during games or new activities (Zentall, 1993). Although this was found to be true for younger students in this population, there is no research showing what works well with university students diagnosed with ADHD.

4. Semrud-Clikeman and Harder (2011) found that the writing process becomes difficult as students in this population are required to engage in multiple cognitive tasks simultaneously and concluded, "Research has not established how the functional impact of how ADHD specifically affects academic skills such as writing" (p. 216).

For Interview Question #2 (see Appendix D):

1. Weyandt and DuPaul (2008) found that students diagnosed with ADHD at the university level struggled in specific areas of reading, writing, and test-taking strategies. Prevatt et al. (2007) reported that students in this population often become overwhelmed by the amount of information, retain little of the information they study, and although they spend a great deal of time studying, they often run out of time and are not prepared.

2. Although university students diagnosed with ADHD may benefit from small class sizes and testing accommodations offered by their colleges or universities, many do not want their professors to know about their disability (Weyandt & DuPaul, 2008). Vance

and Weyandt (2008) found that professors' perceptions of students with ADHD warranted much more research.

For Interview Question # 3

1. Wehmeyer's (1999) work revealed that a student's self-determination and self-advocacy not only improved their understanding of themselves but could also improve their ability to set goals and achieve success.

2. Henry and Milstein (2004) found that resiliency helped students deal with stressful situations and helped them deal with disruptive events in a healthy, positive way.

3. Weyandt and DuPaul (2008) argued, "College students with ADHD are an understudied population and research is sorely needed to further investigate the academic, social, and psychological functioning of students with this disorder" (p. 317).

For Interview Question #4 (see Appendix D):

1. Weyandt and DuPaul (2008) showed how this population was also at risk for substance and tobacco abuse and aggressive and confrontational behavior in the presence of stress.

2. Shaw-Zirt et al. (2005) confirmed the findings of Weyandt and DuPaul (2008) who reported that students in this population struggled with low self-esteem and relationships.

3. Weyandt and DuPaul (2008) stated, "Preliminary findings suggest that college students with ADHD are at increased risk for academic, social, and psychological difficulties. Information concerning treatment of ADHD in college students is virtually nonexistent" (p. 317).

Data Analysis

In accordance with a phenomenological design, the analysis of data involved open coding and in vivo coding, in order to categorize major statements to look for themes and to accurately

convey the participants intended meaning. According to Creswell (2007), in vivo coding involves using the exact wording by participants. In accordance with a hermeneutic phenomenological design, data were not only analyzed to categorize major statements in order to look for themes but also employed a conversational interview method through member checks in order to gather accurate interpretations of experiences. This was done at the end of each interview. Participants were also given my contact information again and encouraged to call if they remember new information that they wanted to share. Consequently, each statement collected was given equal value.

Analysis of participants' statements, as well as emerging themes were analyzed by highlighting significant statements from participants, and valuing each response. Member checking statements were highlighted and utilized in Chapter 4 as much as possible, to ensure that the perceptions of the participants were interpreted correctly. According to Creswell (2007), these statements would then be organized into clusters of meaning or themes. The text would be searched for thematic phrases in order to ascertain meaning of the phenomenon being studied (Van Manen, 1990). Van Manen (1990) stated that phenomenological themes should be revealed through thick, rich descriptions of the participants' experiences.

After this textural description was written, horizonalization, or a structural description was written in order to determine how the phenomenon was experienced. I then organized the writing in narrative form, exposing the experiences of the participants in the study. In vivo coding, or use of the participants' wording, was also utilized in order to achieve accuracy in the interpretation. McManus-Holroyd (2007) stated the following:

> Language, within the hermeneutic circle, is essential to lichtung or 'clearing.' More simply stated, language opens access to meaning, and is the condition on which the human world is disclosed. (p. 5)

This triangulation of data through questionnaires, focus group interviews, and individual interviews was utilized to ensure validity and reliability in data collection, but as Ary et al. (2010) instructed, data should also be analyzed to ensure that the reader understands the perspective of the participants living in their social setting, in order to understand the phenomenon from their perspective. Member checks, in vivo coding, and a textural analysis of the phenomenon were all utilized in order to obtain an accurate interpretation of the perceptions and lived experiences of university students diagnosed with ADHD.

Documentation

After the consent and release of records forms were signed, Adaptive Services had each participant complete the questionnaire. I then analyzed the data from participants regarding their diagnosis of ADHD to ensure that it contained no comorbid disorders, the number of semesters attended at the university in the southeastern United States, and their academic standing. I also viewed records to ensure a medical diagnosis of ADHD prior to entering the university. All of this was done in order to not only meet the sampling criteria previously established but also to obtain a rich purposeful sampling of participants.

Questionnaires

Open coding was used to examine the themes that emerged from the questionnaires (Appendix B). The questionnaires were read in order to discover common themes, significant statements or patterns. Data within categories were compared and analyzed further. Answers

were recorded from the open-ended question at the end of the questionnaire and clusters of meaning, statements, and common themes were noted.

Focus Groups and Individual Interviews

The interview transcriptions and notes produced over sixty pages of data, and although a list of significant statements, patterns, and themes were generated and analyzed from these (Appendix G), I attempted to stay true to the experiences and perceptions of the participants. Although clusters of meaning were sought after, Van Manen (1990) suggested keeping a hermeneutic alertness, which simply means that the researcher must step back and reflect on the deeper meanings instead of projecting one's own interpretation of the participants' perceptions, thus ensuring participants' voices would be interpreted correctly. Member checking was also utilized, in order to ensure that feelings and interpretations were accurately described. This was done at the end of both the focus group interviews and individual interviews to ensure that the participants' experiences were accurately described. Van Manen (1990) confirmed this stating, "The hermeneutic interview tends to turn the interviewees into participants or collaborators of the research project" (p. 63). I accomplished this by sharing with the individuals and focus groups what I felt they had explained to me at the end of the interviews, thus ensuring an accurate interpretation of attitudes and feelings of the participants. Van Manen (1990) stated the following:

> …the conversational interview method may serve either to mainly gather lived-experience material (stories, anecdotes, recollections of experiences, etc.) or serve as an occasion to reflect with the partner (interviewee) of the conversational relation on the topic at hand. In the latter case the conversational interview turns increasingly into a hermeneutic interview as the researcher can go back and again to the

interviewee in order to dialogue with the interviewee about the ongoing record of the interview transcripts. (pg. 63)

Once all of this was completed, I organized the writing in narrative form, utilizing in vivo coding, and presented the experiences of the participants in the study.

Trustworthiness

The data and the transcriptions were reviewed in order to ensure that themes revealed match the data. This was done to ensure the reliability and validity of the study and to ensure that I bracketed my ideas and feelings about the perceptions of the participants. Different methods for gathering data were used in order to ensure that the reliability of the phenomenon emerged, including member checks and triangulation of data. Memoing was also done at the end of each interview in order to document the themes emerged from the data. This was done to ensure reliability because it provided additional documentation for analysis.

Ethical Considerations

Ethical considerations were established for each participant by protecting the anonymity and confidentiality of the participants. Numbers were used in the place of participant names. Consent forms were written so that students understood that they did not have to participate in the study, that services would not be withheld from them, and that professors would not be notified of their disability. Data was transcribed confidentially and careful attention was paid to storing data. I also ensured that audio files were stored on the password protected laptop only, and were removed from the digital audio recording device. Creswell (2007) suggested researchers develop backups to computer files, use high-quality tapes for audio-recordings, and develop master lists of all information gathered. Three years after completing this dissertation, all data will be removed from recordings and notes, electronic or hard copy.

CHAPTER FOUR: FINDINGS

The purpose of this study was to gain an understanding of the experiences and perceptions of university students diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) at a university in the southeastern United States. It was hoped that by focusing on the experiences and perceptions of students in this population that this study would not only deepen the understanding about what students in this population felt that they needed at the university level but would also help identify integral strategies that they felt helped them to become successful both academically and socially. Success for participants was defined as academic success.

The primary research question guiding this study was as follows: What are the successful experiences or challenging obstacles in obtaining academic success for university students diagnosed with Attention Deficit Hyperactivity Disorder? Using the constructs of self-determination and resiliency, the following subquestions were explored with regards to this specific population:

- What factors influenced academic success or failure at the university level?
- How did Adaptive Services or professors influence students' academic or social success or failure?
- What environments, both academic and social, were the most conducive to academic success at the university level?
- How did students influence their own academic success or failure at the university level?
- What reading and study strategies were most conducive to the participants' academic success?

The purpose of this chapter is to present the results of the data analysis, addressing the themes or clusters of meaning. Because the subquestions that were explored significantly contributed to the themes the research question generated as a whole, these results will be presented first. This chapter will conclude with the data analysis of the overall research question. The interviews, both focus and individual, produced over sixty pages of transcription notes and interview notes. Although I developed a list of significant statements, patterns, and themes (Appendix G) when I analyzed the questionnaires and the interview transcripts and recordings, my purpose was to stay true to the experiences and perceptions of the participants; consequently, I began with in vivo coding (Appendix F), highlighting participants' words in order to reveal themes, patterns, and clusters of meaning. As Van Manen (1990) reminded us, themes might be sought after, but a hermeneutic alertness is needed in order to ensure that the deeper meanings of the participants' perceptions are adhered to, thus ensuring their voices are interpreted correctly. He stated,

> Hermeneutic phenomenology tries to be attentive to both terms of its methodology: it is a *descriptive* (phenomenological) methodology because it wants to be attentive to how things appear, it wants to let things speak for themselves; it is an *interpretive* (hermeneutic) methodology because it claims that there are no such things as uninterpreted phenomena. The implied contradiction may be resolved if one acknowledges that the (phenomenological) "facts" of lived experience are always already meaningfully (hermeneutically) experienced. (p. 180)

Consequently, participants' responses were utilized as much as possible in this chapter in order to not only support the themes and clusters of meaning, but to also stay true to the interpretation of participants' experiences.

Participants

Every attempt was utilized to maintain the confidentiality of each participant. The participants were given numbers, in order to ensure that their identities would be protected. Table 1 explains the demographics of the participants.

Table 1

Participant Demographics

Participant	Gender	Age	Year
I	F	20	ending junior year
II	F	19	ending freshman year
III	F	21	ending junior year
IV	M	19	ending freshman year
V	F	19	ending freshman year
VI	M	21	ending junior year
VII	M	20	ending freshman year
VIII	M	19	ending freshman year

Of the eight participants, all eight participated in the questionnaire, seven participated in individual interviews, and six participated in focus group interviews containing two people. All participants were Caucasian and were pursuing a variety of majors, from communications and psychology to education, environmental studies, and health science. All eight participants had been diagnosed prior to entering the university. Of the eight participants, one was an Honor's student, two were on the Dean's List, and all had ended their semester with a 3.0 or higher, completing at least two semesters at the university.

Factors in Academic Success

The first question in both the individual interviews and focus group interviews (Appendix C and D) prompted all of the participants to mention that they had received As, Bs, or passing grades in their college classes. Thematic elements or clusters of meaning were seen in what participants felt propelled them to this academic success. While the responses to the questions of academic successes or factors helping participants achieve academic successes were primarily drawn from the first interview question (Appendix C and D), thematic elements that reinforced their responses were mentioned throughout the entire interview process and were also seen in participants' responses to question three, social supports (Appendix C and D). The importance of their family, friends, study groups, organizations, university resources, and small class sizes with schedules that were conducive to focus and movement were all credited for achieving academic success.

More than half of the participants mentioned the support that they received from a family member as a contributing factor to their success in a university environment. Participant I shared that she lived at home and that she had her family for support. Participant III also mentioned family, stating, "My family…I want to say family. It is kind of hard to say…they are not here, but I call them all the time." Participant IV said, "My parents help make sure that I stay on track." Later in the interview, Participant IV reiterated the following:

> My family….They are the ones that want to see me be successful… like my mom, calls me … She's a teacher. She calls me every day to make sure get my stuff done on time and turned in. Because I give her access to see my grades, too, so she is looking at my grades just as much as I am.

Specific family members were mentioned, as well. Participant VII said, "My brother… I've seen what the value of college has done for him and what happens when you do really well in school and go after your dreams, and he's definitely pushed me…all throughout my life, academically."

Several participants mentioned friends, study groups, or organizations as contributing factors in their academic success, as well. Participant V stated, "Also classmates help me succeed more, too…. Because I have study groups or my friend will help me." This was confirmed by Participant IV who followed up with,

> I could say that too. I was leading groups. This was the year I was good at leading groups. We would meet together. When you have people that are wanting to work as hard as you, you kind of understand a lot better.

Participant VII stated, "I'm involved in a lot of clubs on campus, and I have a lot of big friend bases on and off campus, as well. I do a lot of stuff in the community…. through the Boy Scouts of America and Learning for Life", and later recalled the following:

> I was working on homework with a buddy of mine from my Stats class yesterday that I'm good friends with. He's also a psychology major, and he understood stuff better than I did and (you know) we were helping each other finish. He helped me understand it, and I understood it, and we got our work done… I did the same thing with a group project. We got together, broke it down and did certain things.

Crediting the support of organizations, Participant III shared, "Also…leadership, organizations, student organizations…I guess I lead discussions; I was doing a lot of that …as far as the mechanics and in between those things, I had a lot of support from the other members on the board." This was followed up by Participant II, who reiterated with "Yeah…I would say organizations, too. I have the Honor's Program and supports. We all live in the same hall."

All attributed Adaptive Services, university resources, or professors in helping them to achieve academically in the university environment. Participant I stated that Adaptive Services and going to tutoring helped her and that she met with someone once a week to stay on track. She shared that Adaptive Services kept her organized and that they worked out plans for her. Most participants spoke of the advantages in testing in a separate room, provided through Adaptive Services, with an unlimited amount of time and named it as a factor in their academic success. Participant II shared,

> I really like the way Adaptive Services is set up— even if my teacher misses or pushes back a test date, I can get that fixed really easily or like if I have to take the test earlier or later, I just need to get his or hers (the teacher's) consent. It's just a really nice, reliable source; and so it's less stressful for me, which is really nice and stuff. I like the rooms; it's like quiet and separate from everybody else because that really helps me. I tried taking my first math quiz of the year just with everyone, and it just didn't work for me because I felt rushed and stuff being in the same room as other students.

Participant V stated,

> Adaptive Services is really helpful for test-taking. Like my math; I was there all day taking…it took me like 5 or 6 hours to take the test (final). I didn't realize it was that long until I was done, so without that, I would not be able to finish up my exam; I would have had to guess at half of the answers.

When asked what helped you to become successful academically, Participant VII confirmed this, stating the following:

> Adaptive Services, they are wonderful. It goes back to the time thing…They help when I have to do my tests and stuff…of course…you've got to do the time management thing.

> I've got to get my paperwork in on time, but they help socially so I can do my tests in a quiet environment. I don't have to worry about if I'm going to get done in the classroom or not. …and hope that I'm going to get done or not get done and have the distraction of people around me.

While Participant IV shared his intent to use Adaptive Services for testing the following semester, he did share the following statement, "I feel like I don't need them. At least for the note-taking and the time for the test taking, I'm normally pretty good at that. I take good notes and bench my exams in a reasonable time." Participant VI was the only participant that was hesitant to utilize the separate testing rooms, stating the following:

> I could get more time on a test in my own testing room…which would help (some of the classrooms have small little desks…it's noisy …people walking in and out) but that would not really help me that much…

Some participants found other university resources helpful besides separate testing rooms offered through Adaptive Services. Participant III found that "Having a note-taker helps" and Participant IV and II felt other resources available on a university campus were contributing factors to academic success, stating the following:

> **Participant IV:** The resources available on campus… In high school they really didn't have all the resources available…. like in my high school, they didn't have all the resources available that they have here…The Writing Center…I've been there probably four or five times. It's helped a lot with my papers and also just talking to advisors to ensure I'm on track with my classes and talking to professors… Also, I have the Effective Learning Class…I took it on my own. That helped a lot, too.

Participant II: I appreciated CAPS (Counseling and Psychological Services) so much…I would talk to my friends, but they were like…You're really stressed out. You need to get help, and I was like, Okay, I need to go to CAPS… Also, I went to the Center for Academic Achievement. They helped me move up the list for CAPS so that I could get on the list for CAPS. That way I could get on their waiting list and get a counselor faster and stuff….but, yeah, I literally went to all the campus resources and stuff.

Small class sizes were also cited by two as a positive factor to academic success. Participant IV shared that it was a factor in deciding which university to attend, stating "because they had smaller class sizes and better student/teacher connection, than a big auditorium." Participant V shared the following:

> It is funny but I feel like my classes are much smaller here than in high school. The math lab has only like seven students. Not the lectures—I couldn't do the lectures….but the labs, you can ask questions. In the lecture, she can't even see your hand if you raise it. It is so big, you know? So I like the idea of the small class size.

This was followed up by Participant V stating, "Yeah, same thing…the lectures were okay, but the labs…you actually have a TA (Teaching Assistant) walking around to help you and explaining it, which I actually like a little better."

While most found Adaptive Services and the resources located on the university campus to be contributing factors to their academic success, most mentioned their professors as a factor in their academic success. Participant IV shared,

> …having the resources and the professors…like having office hours available…The professors help a lot because I've been to my professors' office hours. It's fun to sit and talk to them… you get to know them outside of the classroom. They want to help you;

> they want to get to know you… The biggest difference between high school and college is the professors here make sure that you are using the resources. They make sure that you are going to the Writing Center, to the library, to counseling, which was a lot better than high school where you kind of did it on your own. They did not really make it a priority for us.

Participant V confirmed this statement, adding:

> I feel like this school really made a difference in my life with that aspect… and professors are willing to help, too. They actually care about your grade. They care about you passing. The first day, they say, 'Everyone here is going to get an A. Everyone can do the work; everyone will do it.' They have positive energy; they get us motivated. They all want us to pass…. When I talked to the professor about the work, or when I asked them to go over the work after class, then I get a better understanding, and I succeed more. So professors help me succeed more. If that makes sense…hopefully that will happen next semester. This semester, if I have a question, they don't think it's a stupid question; they help me.

When asked what helped the participant to be successful academically, Participant VI recalled the following:

> I go to office hours all the time. Many of the environmental professors…in the science fields…that kind of stuff…I actually work with a lot of them…I guess you could say I am a friend of a few professors here….That whole scene, I guess…the professors, the students, the off campus people…the parks, the environmental groups and stuff.

Although most participants mentioned professors as a positive university support and a contributing factors to their success at the university level, all of the participants stated that they

either did not tell professors about their specific disability or simply handed them their accommodation form and did not go into detail about their disability. When asked why, Participant IV simply stated, "No, I haven't told them." Other participants expounded a bit, sharing the following:

> **Participant II:** I just bring the test forms up to them but other than that, no, I don't say anything. I think they would think of it as a handicap and sometimes they think of it as an excuse…sometimes I think they would be like …I don't know… I don't want them to think of me like, 'Oh the girl with the learning disorder' or something.
>
> **Participant III:** Well, I don't want my professors to know, but it's better now. Since I first entered the College of Education, there is a lot more understanding; but I don't want to be defined by the fact that I have ADHD. I think it's better if they don't know because I perform very well at the college level, and I think as soon as I let that leak out they are going to think…well… it is always going to be in the back of their minds that…so if I struggle on a test, they are going to think, 'Oh no, well it is because she has this'…rather than 'Oh no, maybe she needed help on something.' They think more about the disorder.
>
> **Participant V:** Yeah. The first day of class, I will show them it (the accommodations form). One professor asked me, 'What is this?' and that bothered me…I was embarrassed…to be like…I have…um…like ADD…whatever…I don't know…He was kind of like, 'Oh, okay.' It was just awkward. I don't even know. I dropped that class anyway.
>
> **Participants VII:** I have accommodations through Adaptive Services and I give them the form….and sometimes I use them and sometimes I don't….depending on the finals….or how bad the test is…whether I need the extra time or not… I don't go into

> detail. I don't feel like I need to go into my life story; I don't want to bore them. They have their own agendas and things to do; they don't need to hear about me. Besides, okay, you need accommodations, I can do that…unless they are interested…I'd freely give it; I just don't….because I'm just one person in a classroom. They have a lot more on their plate…a lot more class-wise with hundreds of students.

Most found the schedule of university classes conducive to their ability to sit for a period of time and their ability to focus, while only one struggled with it, citing difficulties in managing school, work, and studying with a schedule that changed each semester and preferring to have online classes. Participant VI summed it up the following way:

> My schedule changes…everyone that's my age…their schedule is not set in stone like the professors are…you know…They have the time they do everything. They have their office hours all that…for us, especially for people who are upperclassmen (I'm an upperclassman now) but until now, I've had a crazy schedule… I haven't been able to …you know… next semester I have 11 a.m. for all my classes the whole week and an online class. But as a freshman, it was like eight a.m. one day, noon the next day, plus working until midnight being a waiter… It's just…It's insane to have to…um…just have to get out of your own environment to learn…so much…and…a lot of that's important; it is a part of college to do that, but it just doesn't make sense a lot of the time. And for many students, even for me sometimes, it works, but…not …not most of the time.

The other participants discussed how they used the university schedule to their advantage. Participant II shared, "I have Mondays and Wednesdays off completely because I'm only taking 12 hours this semester, so I go through them all day and stuff." Participant I found lecture classes and three-hour classes to be difficult but found having the choice of two sessions that

lasted an hour and a half and met twice a week beneficial, stating that she would daydream and get jittery in her chair during 3 hour classes and that they were not the best for her. She shared that big lecture halls were not good for her and that 3 hour classes were hard to focus. She also shared that classes that met for an hour and a half twice a week were better for her. Most of the other participants found a university schedule much easier when compared to a high school schedule. Participant V recalled,

> Well, in high school it's hard for me to sit for a long period of time, right, and I can't just walk out of the classroom because I am in high school, you know. So instead, I will like get kicked out of the classroom, if I am laughing or talking, or like whatever; she just always picked on me for some reason. But in college, I can walk out of the class anytime I want. I'm paying for the class, so there is like no one saying, 'You can't leave', unless there is a Final or something. I'm allowed to leave without asking permission. So that is one really good benefit about this, but not so much for high school.

Participant III also recalled,

> When I was in high school, we had an hour and a half classes. It was on block schedule, so you had an hour and a half classes, four times a day. That is still eight hours a day, 5 days a week, and I think that part of the reason my grades were so bad, for the most part, was because of how brutal it felt. My last two years of (high school), I was in an early childhood education program. So ½ the day I was at school (I would take two classes there), then I would go to this special learning facility, and I would do…I would take classes on…um...education courses…and my grades went from Cs and Ds to As…I think it was because I had those three hours right there; and then I had a break, and I would go to education classes. It switched up the day. That happens at the college

level…Everything is switched up …I don't have class eight hours a day. I have three hours….Most teachers give breaks in between…I can sit in the lectures, take notes and then get the PowerPoints online and take notes.

In summary, other than earning successful grades in their university classes, most of the responses and experiences the participants shared regarding their academic successes centered around what they believed helped them become successful academically which involved many of their social supports. Participants mentioned the importance of their family, friends, study groups, or organizations; credited university resources, such as Adaptive Services, professors, small class sizes, and other university services provided on campus; and most gave credit to the structure of a college schedule for their ability to succeed at the university level.

Factors in Academic Challenges

The second question in both the individual interviews and focus group interviews (Appendix C and D) prompted all of the participants but two to mention a great aversion to math. Many found this was their greatest area of frustration. In regards to struggling with math, Participant VI stated, "The harder things got harder." Of the two participants that did not mention math as a frustration, Participant IV stated, "I didn't have to take a math this semester, but last semester I did get an A in College Algebra, so I'll just see how math goes for the next semester… math is another really strong subject of mine." When asked about academic successes, Participant V stated the following: "It is hard for me, but I would say, math…Even though I am not good at it, I still feel like it is easier for me than writing." The rest of the participants mentioned math as their number one academic struggle. Participant I stated that she struggled with math. Participant VII also shared, "I've not really been the best at math… also

besides math for me---science… But math is always been a struggle for me all throughout school." When asked why they felt that way, participants cited the following reasons:

Participant VI: Math**….** taking all of the classes at the same time, makes that one math class seem like it's two or three classes, by itself….and…all my other classes, since I have been in college…let's just talk about college…forget the rest of school…um…I've gotten Cs and Bs in science class, environmental studies classes, that I could have easily gotten an A in…I could have easily had the highest grade in the class…easily…not much work…half the work that most of the other students put into it…But when I comes to math, I'm the opposite. So, if I am the opposite in math than all the other students in the math classes, then it takes time away from the classes that I really should be focusing in….and it brings down all of my grades…and I probably spend more time on one math class than I do on all of my other classes combined. It shouldn't be that way.

Participant VII: I don't like it, and I don't think it likes me.

Participant II: Math… I kind of struggled first semester with my math class because I'm just terrible at math, and it has always been a weak point for me, but now that I'm not taking a math class this semester, my grades are really high…. Ever since I was in elementary school, I've just hated math. It's almost kind of why chose my major. I just have one math class… Stats… over the summer… and it is just like for me…a C in that class…. I'm just like so mad and everything! But yeah, I barely survived at all. My friend was trying to help me with the homework and stuff, and it was just like a nightmare for me…. stress like through the roof and everything.

Participant III: I've always been really bad at math, always, so I don't learn at the university level. I don't learn math; I survived math pretty much. When it comes to

homework and quizzes, I would always just either use calculators or use various ways to memorize. When we were able to use cheat sheets, I would write as much as I could really small, and then I would never really walk out of there learning anything because I was just trying to survive it…. I'm very poor at math so I think maybe just that part of my brain is not wired right and all the energy is on the other side for language. I think it started in third or fourth grade when it became a little more abstract. Then as a result (and then because it was so hard) I would get very anxious about it. I would usually give up, and I wouldn't try to spend any time trying to learn it because I was just convinced that no matter what I did, I would never get it, so all throughout high school I struggled. They put me on pass/fail for my senior year in high school. After I went to college…well…my math skills are pretty terrible, but it got easier to kind of survive it.

Participant II concurred with the last statement, and added the following:

I would agree. It would be math for me, too… I don't know why. I think that is just because God made me that way. Ever since I was little, my mom said that even with simple addition and subtraction, I would just have to have a calculator, which is not good and stuff. I took courses. I took like lower-level math courses in high school, but they did not prepare me for college. I took one class, algebra or algebra one, my senior year. It was Math for College Readiness. Some aspects of it did prepare me for college, but it was more like "vague understanding" of it all.

From the interviews and questionnaires (Appendix C and D), several common themes emerged regarding factors in their academic challenges. Experiences and perceptions shared by participants showed a pattern of struggles with focus, time management and organization, social challenges, and memory issues. These were all prevailing themes throughout both the focus

group and the individual interviews. Social challenges, such as feeling socially inappropriate or different and fear of public speaking or large groups of people were also mentioned as factors contributing to their challenges or social struggles, although most were unsure whether these challenges were from having ADHD or were simply issues they faced individually. Struggles with the side-effects of medications were also mentioned, but these were mentioned in the context of challenges that participants with ADHD had experienced and were simply required to deal with in order to be successful in a university environment.

Most participants shared their struggles with focus and attention and cited it as a major struggle to academic success. Even while discussing university schedules, Participant I shared that it was hard to focus and that she would get "jittery" in her chair during a 3 hour class. She expressed frustration will big lecture hall classes and felt that she did not do well in that environment. Most of the participants arranged their schedules and study routines around this struggle with focus and attention. Participant III shared, "…quiet and just a room that doesn't have my computer or cell phone or anything." Participants shared different coping strategies for dealing with these issues regarding focus and attention. The following statements were made by participants regarding these specific struggles with focus and attention:

> **Participant III:** I can't really take notes in class. I just really can't because if I'm listening well, I can't take notes on what I am seeing on the PowerPoint. I can't hear the lecture… I can't hear a lecture at all, so I try to take notes but most of the time I just pull up the PowerPoint later because I can't do both….so, having a note-taker helps.
>
> **Participant IV:** When I'm in class, I'm in the right environment. The environment in class is good because I can stay focused in class because everyone staying focused on a PowerPoint or lecture …where I can stay focused… like no one else is distracting me and

I can take good notes; but then outside the classrooms is where I have too many distractions. I have to send myself down to the library or study room.

Participant V: Sometimes my mind is always racing and I don't put my priorities first….If a professor calls on me in class…maybe because I am not paying attention, or whatever…but really, it's not that…I just don't understand what is going on, so I am embarrassed and I'm like "just skip me…skip me." I don't know what to say. I understand the question, but I don't understand what it's asking….like before…you told me something, and I went the other direction. I didn't understand. That's my problem. I have a following direction problem. I listen…I just …I'm just not processing the directions. I don't know why; it is just the way it is…if that is part of ADHD, I don't know.

Participant II: Um… I just always have to find a study space. I always get distracted. I'd rather (like wish) I could study in my boyfriend's room… not really… I wouldn't get everything done that I should have gotten done that day or that was on my "to do" list for that day. My "should of"…you know…I "should of" been in the library but sometimes I get distracted in that sense. I just need a quiet space. I just need a quiet space. I can't emphasize than enough.…especially when I am learning something for the first time…I can't do a bunch of work at once…I need to get up and like go to the bathroom and take a break…I take like a little mini break and listen to music before I go back in to studying. It helps me because I can't do a bunch of work at once. I just take a bunch of little breaks in between.

Participant VI: Um…well, part of being ADHD isn't just not being able to focus and stuff. I always like to study, read… anything I do, school-wise, I like to do at my desk,

at the same place, every time, at home or in the same general area of the library, but the bad part about that is I'm really distracted by noises, um…even temperature, if I feel too hot or too cold or …it bothers me and I don't do as well.

Participants shared their struggles with time management, specifically staying on task and staying organized, citing it as an academic challenge. Many felt that their time management struggles were exacerbated by a university environment. Participant IV shared,

> Procrastination is one of the worst things you can do in college. Because in college… well in high school you can kind of get away with doing the bare minimum or waiting to last minute because the work is so easy. In college the work takes at least an hour to do get done or even longer on top of that you have three or four classes.

All participants seem to feel as though their struggles with time management were issues they had to deal with because of their ADHD. The following struggles with time management and organization were shared by participants:

> **Participant III:** The organizational part is more of a challenge and more complicated at the university level…I can't stress that enough. The more scattered I become, the more my life around me becomes more scattered….I procrastinate really badly…so…for some reason, I work really well under pressure…It is not like I'm missing a whole lot of stuff…I just like….for some reason if I know that something is due, in just like five hours, I am like…I got this…I like it…waiting until (that's a really weird thing to say) but I just kind of like waiting until the last minute sometimes…It's just kind of like…challenge accepted, I guess.
>
> **Participant IV:** Struggles…staying on task, really…like putting stuff off to the last minute was a struggle. It was a big struggle, really. Kind of like getting it all together at

the last minute…that was probably my biggest struggle… and time management, that was another one. Putting the stuff that needs to be done first…get that done first…or getting the hardest stuff out of the way done first…..yeah…Because in class, I am fine.

Participant V: Also, I am always late to everything, not because I plan on it, just because it happens. I was like 5 minutes late for you, but it worked out. I don't know why. I am always running around. I always have people blowing up my phone. I have to always be here or there. I don't know why. It's just how it is. I am always somewhere. I am never like…in my dorm…like today… I have to pack. But, like this whole semester, I am like only in my room really to sleep. Maybe once or twice a week I actually have time to clean my room and have alone time, but it's so hard. I don't know how it happens; it just does. I'm always with people. I don't know how to explain it. I don't plan my days; my days just happen.

Participant VI: Basically what I have done is I put everything off to the point where the hardest classes for me…the way my scholarship is set up…I have to take so many classes at once…I'm going to have to take…Instead of taking my hardest class with three other easy classes, during one semester, I going to take four of the hardest classes for me, all at the same time…just because I have put them off. What I'm going to do is probably lose my scholarship and have to take out loans. That is the only way I can do it.

Participant VII: Studying…definitely the change from high school and college…that has definitely been a …. …. Original struggle, just seeing how you studied and how your teachers were and high school and the grades you got compared to how they are in college. You are a lot more on your own and you have to buckle down and do your work. You don't have someone always on your back saying, 'Hey this is due, then'; you

have to have a lot of time management….that is good or bad for some people, depending on how they adapt to it. But I think I have adapted well, but I think that has definitely been a change from middle school/high school to college.

The fourth question in both the individual interviews and focus group interviews (Appendix C and D) prompted all but one of the participants to share some type of social struggle in regards to feeling socially different or feeling fearful of public speaking or large groups of people. These were mentioned as factors contributing to their academic challenges or social struggles, although most were unsure whether these challenges were the result of having ADHD or were simply issues they faced on their own. All but one participant reported being extremely introverted, as well. Most felt being an introvert was an issue for them. Some wished to work on that issue to become better at talking with people; others accepted it as part of their personality or part of their ADHD. The following responses were recorded from the participants:

Participant II: I just feel like I'm out of the loop of things…like what we talked about in the focus group interview—socially awkward—I definitely get that a lot…even yesterday. Everyone was hanging out in the hall, and I just felt like I really didn't belong. Even though I had been living there all year and everything…and hanging out with everyone…that was a funny thing...I know that I felt that way before in other situations…not just that one… … Also…I guess… I have a problem with looking people in the eye.

Participant III: The thing is that I sometimes feel like I have become a little socially awkward at times. I don't know if that's even related to ADHD at all, but I do feel like some days, when I'm out there that I'm fine; but I feel like there are other days that I'm

not socializing …like I feel I cannot talk right… I'm forgetting basic English words or just having an "off socializing" day. In those days, I really just try to be quiet and not talk much, and it's really hard to explain it. I just don't know…somehow I just became socially awkward. I don't know how… I sometimes feel very anxious when I'm socializing. I don't know why. I will just have what feels like an "off day" where I feel like I'm just being really socially awkward, like something that happened yesterday that I was really… I do know why I did this… I was really…. You know those kind of desks that lift up and really have kind of a loud squeak? Well I lifted it up because I think I was trying to kind of like move my leg. I was kind of in this awkward position, but I moved it up and it made that noise-- that horrible noise-- and then somebody like looks behind me and they are like, "what you doing?" At the time, I didn't realize that that was probably louder than I anticipated. I think that for the rest of the day I felt really awkward. I was really embarrassed. I was like, I can't believe I just really made that (noise)…I know it sounds silly now, but it is just like those little things. I mean…I just don't really know when I am being a little inappropriate, or maybe I think it is more inappropriate than those around me; and everyone else writes it off, and I am sitting here thinking, "Oh no, what did I do?" But I am not sure where that comes from exactly….I am not sure if it has anything to do with the ADHD at all, but there is some sort of awkwardness there.

Participant IV: Basically...speaking in public to a large group of people. I really want to try to get better that. I want to take a public speaking course this summer because I really want to get better at speaking to large groups. With public speaking where I have to like stand up and talk with a crowd looking at me or a big classroom, I just got to have more practice, for me, to overcome that.

Participant V: Sometimes speaking to a lot of people at once makes we want to turn the other way. Or I see someone I know that I'm not really friends with, or I know her, and see her walking towards me I get like anxiety. I don't know if that is part of ADHD or what…I don't know. I don't know if I am crazy…or…but then I see her, and we will say, "Hi" and I give a hug. I just have to go through all of this mess for it to be okay. Like I go through all of this; and then in the end, it is all good. Like when I walk outside, at the side of the building and see thousands of people, I just get like all shooken up. Or like…walking down….like a wedding…you're walking down the aisle…That just gives me…I just wanna…I wanna like ru…see, I am very outgoing with people…but when it comes to all eyes on me, be quiet, I'm talking…It's like, whoa…I freeze.

Participant VI: I feel like I'm different…I am interested in different things…more unique things…on like all levels. I do other things for fun, than most people do, so to me, they are different, but I guess that would count as a struggle. It's hard to like fit in, I guess. I fit in my own unique groups….I guess…so….It's hard to relate to other people, as well….a lot of the time. My biggest issue is…when it comes to social stuff, too…one of the things holding me is I'm very bad at communicating. I think part of the reason that I am very bad at communicating is because I never try to get better at it…..I mean, I've done a whole lot of things that were extroverted. I was a camp counselor and all this stuff. It required me to be very out of the box….but I prefer not to be…It's easier to not have to challenge myself with those things I'm bad at. So with…social norms with people my age…I might be considered a loaner or …weird…or anything like that…um…but to people doing what I'm doing…similar things…we consider everyone else weird and what they're doing strange…I'm horrible at public speaking, which I

never really want to get better at because I don't ever want to be public speaking of any sort.

When asked if they wanted to add anything during the member-checking part of the interview, Participant V reiterated the following,

> Sometimes I am acting stupid or am loud. Sometimes people will think I just want attention, but it's not like that. It is just the way I am. They don't understand that. It's not that… I don't want attention. It is just the way I am. I just talk; I don't know how to explain it. It hurts that they think that I want attention. It is not like that. And I can't explain the ADHD because they don't have my brain. They don't understand how I am feeling. I say, 'If you have my brain, then you understand what I am talking about, but you don't have my brain, so you can't feel…' Maybe it is immature to say, but it is how I feel. It is frustrating at times…

Most participants shared their struggles with their memory, specifically forgetting appointments and due dates. Many felt that forgetfulness was directly related to their ADHD. While Participant VII shared, "I have a horrible memory", Participant VI felt it was a direct result of the ADHD medication he was on, stating, "One of the worst things about the ADHD diagnosis is the medications and stuff I've been on …it affected my sleep in a way. It's affected a lot of different things that affect my…that ultimately…put them all together...have made my memory worse." Participant V followed up after her interview to let me know that forgetfulness was a major issue for her. Participant II concurred, sharing the following: "Forgetting things…it is like I have to write everything down." Participant III shared her struggle with memory by recalling the following experience:

> I'm very forgetful. It's true…like I told my friend …this is a good example …Over the

weekend, I wanted to go to hang out. My friend, who had homework, and I said, "Okay; we'll go on Tuesday." We'll go because they have Dollar Burger night. I said, "Yeah, we'll go on Tuesday." So, he texts me on Tuesday and said, "Are we going out?" I said, "No, I forgot, and I'm really busy."

While specific questions about being on medication or medications in general were not asked, these issues were discussed by two of the three focus groups. Most acknowledged the negative side-effects, but there were mixed opinions as to the amount of help medications gave them in a university environment. Participant VII stated,

> For me, Strattera's been a miracle drug. I've been on it since the fourth grade. When I went on it, I swear, I was like the poster child for that drug. I think it was out like out a year when I went on it….give or take… And I automatically improved in school, scouts, sports, everything, and I've been on it since…

Participant VI responded, stating, "It (Strattera) was horrible…I threw up literally every day. I did do good on it (everyone laughed)…besides being sick (laugh). It did make me think a lot clearer and it helped socially, in school, everything it helped with." Participant VII responded with the following:

> The only side effect that I've seen or actually becoming an adult that I've seen…it just started within the past year is I have a little bit of hypertension with my blood pressure…That's why I'm trying to wean myself off… I'm almost positive it is because my blood pressure has been doing better.

Participant IV recalled,

> I got the Adderall prescription, but the doctor prescribed it too weak, and I don't really feel it. It is the lowest dose to see how it did for me, and I haven't been back yet.

It helps to where I can sit down and kind of get the mindset to where I need to get this done. It gives you the energy and focus to get it done. That is what I noticed.

Participant V responded with,

The way that I feel is like I have natural Adderall in my body. I am not exactly sure how to explain that…The doctor gave me the highest dose, too…I don't know; I just needed to stop taking it; it was too much. I couldn't focus; it was just harder for me to focus. I could focus, but I couldn't think.

Participant VI explained his experience the following way,

So, when I'm on the medication…being on medication is like eating a really good meal and relaxing for a couple of hours…um ….going for a run before that…taking a shower and like getting into that state of mind. I need to…and I've always been like that since I was a kid…I would come back from recess smarter than before because I was able to release all that energy. The medication is kind of a replacement for…healthy (laugh)….which is horrible…it really is (laugh) …it's miserable …but, it's what I got to do. …so…. ….It's made me think in a way that really I don't naturally think in. So that has actually affected my learning; it's helped in the math and that kind of stuff, but it has taken away from what I'm naturally good at, and I have a crazy imagination… I usually have to …ignore any of the medication that I have ever been on because with that, you have to time it right. If I'm coming down on the stimulants I was prescribed, you can't do anything. When you're coming down on that, it's like being regular…yourself without medication, but ten times worse….you know what I mean?...It's like it's …It makes you tired and depressed and all this stuff. It just has…the feelings just…After working all day being super focused more than you usually are, that's just the effect of

your brain working so much hard that it usually is… … I guess, adjusting it…switching to other things…has REALLY messed me up. Because it's been like…some of them make you feel bad when you're coming down off of it. …you can't ... I don't want to go out with friends; I just want to stay home and lay on the couch.

Environments and Learning Styles

From the interviews and questionnaires (Appendix B, C, and D), several common themes emerged regarding participants' preferred environments or learning styles. Environments where students could control the distractions were mentioned by all of the participants. Although they had various methods of controlling their distractions, environments in which they could control outside distractions were the number one issue that all participants talked about in the focus group and individual interviews, as well as the questionnaire. In the interviews, all but one mentioned the importance of the Library or home in helping them to study and control their distractions. Participant I shared that if she studied at home, she could focus. She shared that she worked "crazy hours," but she could go home to study. The following statements were made in regards to learning environments and the significance of controlling distractions to academic success:

Participant II: I can't study in my dorm. I have to either go to the library for like all day when I don't have classes or the study lounges, conveniently on the fifth floor, right next to my room. I can't have any distractions.

Participant III: I can't study in the dorms. I lived in the dorms the first two years of college…I was in community dorm back home where it was like two people to a bedroom, and then you had the community bathroom. So it was like with all the girls on the floor; it was awful because I could never study in my room because I always had my

roommate there or I had a lot of distractions. Now that I live in… like a subdivision (just the condominiums there); it's so quiet there that I don't need earplugs or anything. It is so quiet that it is really nice.

Participant IV: Library …just because it's around where everybody else is kind of learning and everybody is doing the same thing… there's no distractions…distractions really get me off. A study room really helps me a lot because it is like an isolated room….like a dorm room is distracting….A dorm room is the same thing but has too many distractions…you got a bed; you got a TV; you got the computer. The Library you can just stay focused on the one subject...What helps me the most is like going to the library here, you have more kids focused on getting their work done. In high school, it's kids just socializing. Here, everyone is on the same mindset…kind of helps me. It helps me succeed when everyone is on the same mindset…They have a library full of every book that you can use. I recently started using the databases which really has helped my research papers a lot.

Participant V: The Library… When you want to do a research problem…research paper…they sit down with you and help you find books for your subject, and they will tell you what books are good for this topic. They will talk to you about narrowing it down; whatever you need help with, they are there to help you. They sit down; they have patience; and they are very nice, sweet people. They tell you how to find the books if you don't know how to find the books in library, all that good stuff.

Participant VI: When I'm at home, I let myself be ADHD…study, read, do homework for twenty, thirty minutes, then I'll get up and get something out of the oven and that's like a snack…while doing homework…so I get distracted, but I time-out when I allow

myself to be distracted. It gives me little breaks…but when I'm in the library…of course I'm in my apartment; it's nice, quiet, I can listen to music if I want. If I don't want to, I don't have to…I can even have the TV on if I want to. Sometimes that helps during certain assignments or if I don't feel like doing it…it takes me longer…but the assignment ends up being better because I just was able to just relax while doing it which helps me think better.…but when I'm in the library, I have to be listening to music. I have to have headphones on. People walking by distract me. People are always so noisy in the library. Everything in there distracts me…but, the reason that I go to the library so much and do most of my work there is because of the way I have had to structure my classes—doing everything in one day.

From the questionnaire (Appendix B), preferences were noted for learning styles and preferred environments, as well. Although "Hands-on" and "Individual Work" were checked as most preferred, there were different definitions of what participants considered as a "hands-on" environment (Table 2). Two of the participants that marked "Individual Work" as their most preferred, wrote in "hands-on" for question #2 and three participants wrote in that they preferred smaller class sizes (Appendix B). During the interviews, Participant V stated, "I learn best in small environments" Between the questionnaire and the interviews, each participant mentioned preferring some type of "hands-on" environment. Table 2 shows the most preferred and least preferred environment participants checked on the questionnaire.

Table 2

Results of the Questionnaire

Method of Instruction	# choosing most favorite	# choosing least favorite
Individual Work	3	
Hands-on Instruction	3	
Online Classes		4
Hybrid		1
Small Group Work		1
Lecture	1	1
Whole Class Discussion	1	1

While it would appear that half the students felt that online classes were their least preferred environment, in the interviews, two participants mentioned that they preferred online classes because they could control their environment and the outside distractions. Participant VI stated,

> I like to be in my own environment….which means that for me it doesn't make sense to have to…you know…with the issues I have, I guess…also with being in this economy and supporting myself and doing all of these other things I do besides school, to have to drive here and find a parking place in that madness… go to class…just go through all these hoops so that a professor can lecture you…and you sit there and take notes. I have taken online classes. That's easier; I can do it at my own discretion…. For me, it is like, if I stay at home, the thirty minutes it takes me to get to class, I could spend going for a run, working out, cooking a good breakfast (a better breakfast than I would if I would wake up to go to class)….it's like an extra hour you got to wake up, you know. I would be able

> to, instead of doing it in the morning, doing the class or doing the test or the quiz, I could do it like in the middle of the night, if I wanted to. You just have so much freedom with it. The only thing that comes along with that are due dates, which I'm…the only reason that I have ever procrastinated on anything, is because I am busy with so many other things at the same time, all these other classes. But with online classes, it's easy for me because you don't have to go through all these hoops just to find out what you need to learn, what's on the test, and all that stuff. You can just access it yourself anytime.

This was confirmed by Participant I, who stated that if she had online classes, she could do fine because she was at home and could focus. However, Participant VI also seemed to enjoy an outdoor, hands-on environment, stating the following during the individual interview:

> I guess getting into my actual major, which coincides with my hobbies, and things that I enjoy so a lot of the environmental stuff, the science…even the hard, difficult biology and stuff like that that usually people find very difficult is easy for me because I enjoy it. I do that stuff for fun, anyways. All of the…a lot of the classes here, especially…they do outdoor field trips. In the field, a lot of the Service Learning for my major is out in the field and not in a room…you know… doing a lot of what a finance major or business major would be doing. You are out hands-on…you know…with plants, animals and that kind of stuff, and I enjoy that a lot and succeed in it.

Individual Factors

The first or third question in both the individual interviews and focus group interviews (Appendix C and D) prompted all of the participants to mention coping strategies that helped them to be successful in a university environment. All participants credited individual factors, such as their ability to compensate for their time management or memory struggles by creating

calendars or planners containing their upcoming schedules, due dates, and events. They also attributed self-determination factors such as effort and caring about their grades and future.

While Participant I shared that she would meet with someone in Adaptive Services once a week to keep her on track with what she needed to do, Participant III stated,

> I use notes on Windows 7. That really helps me because I'm extremely forgetful. I forget everything… everything… like I have to write everything down, so I have all these random notes…like what's due or some random thing that I need to remember or an appointment… It's all there because otherwise I forget…I use technology a lot. When I do want to remember something really well, like concepts and stuff (not like to do lists) I like to write it down because it helps me to memorize it and stuff ….Most of the time because I have my laptop and my phone on me, I use those because (you know) I have it right there. … the little tidbits like this appointment time and meeting …. I mean I wrote that down on my phone, so I also use my phone.

This was confirmed by most of the participants. The following statements were made in regards to creating calendars or "to do" lists:

> **Participant II:** I do the big calendar and the daily "to do list" … I like daily to do lists...I just like the feeling of crossing things off when I complete a task and everything…I have it like on one of my desks so I can see it…well…actually I have two calendars; one is like a dry erase board and the other one is like more permanent; so I know when the test days are… like this many weeks away (or days). With the Expo one, I just go by weekly things I have to do… The one on my paper and pad, I just do like an advanced everything. I go by my syllabus and just write where all my tests are (like beginning of the year and stuff), which is one of the tips that I read in one of the books,

and it helps me a lot…. One week (like last week) I tried using my iPhone memo pad, but it's just easier for me to physically see it. I am more of an agenda person. It's just easier for me to see it.

Participant VI: I have to write everything down. I have this crazy huge calendar on my wall. Everything is written down on it…everything I have to do…Even that is difficult…I have to take an hour out of my day, once, twice a month, to completely list out the entire month.

Participant IV: Writing everything down and making sure you know when everything is due… I began the semester with the Effective Learning class last semester because she basically helps you like succeed in college…. so what she told me was to write down everything you have due that week and basically make like a checklist… which helped me a lot to make a checklist that then after spring break I kind of fell off from doing the checklist and I have noticed a drop in my grades from not following along or not keeping up with my assignments. But the checklist helped a lot …making a checklist of all your assignments, within that week, that are due that week that we need to get done and then also…we also in that class made study schedules of how many hours of studying you got to put in for each class, which helped a lot, and she taught time management. It was a very great class….basically know how to get through college correctly, or get through upper level classes, better.

Participant VII: I use my planner, a lot….which is one of the coping mechanisms for people with ADHD…I've used it a lot more in college. I've been taught to use it since elementary school but ….that was on or off during my schooling career whether or not I used it or didn't use it. I really didn't start using it a lot—very, very, heavily— until I

> think high school or halfway through high school…Ironically enough, I'm a tech geek, but I don't like it electronic. I physically write it and carry it with me.

Throughout the interview process, participants shared self-determination factors that they felt contributed to their academic success. They all spoke of themselves as the deciding factor on whether or not they would continue to achieve. While Participant I and V spoke of the environment as a contributing factor to their success, they mentioned several steps or action plans that they knew they had to take in order to succeed. The rest of the participants spoke about themselves specifically, as being a major factor in their academic success. Participant VI stated, "For the things difficult that are difficult to succeed in…just trying very hard." Participant II recalled,

> I went to CAPS (Center for Psychological Services) on my own. I went to Center for Academic Achievement on my own…I went to all of the tutoring on my own…because I said, "This is just not working." I had a friend that I did math homework with, but before that, I went to a bunch of my friends on my own and said, "This is just not working; they are not really helping me understand this."

Participant IV stated it the following way,

> Challenges at college are basically brought on myself…basically not getting the work done…not staying on top of it…but college is a lot more helpful than high school because of the resources. That is what I like about college is the resources I am able to go to, to basically get the academic success that I want. People here are out to help you, that is what I like about it.

Participant III stated,

> My parents like push me harder than any parent would. If it was up to me, I probably

wouldn't have even gotten the grades I got in high school. Finally at some point, I started caring myself, as a result of them pushing me so hard.

Participant VII stated,

> My personal drive…for what I want out of life….and career-wise…realizing I'm on my own and doing the time management and what it takes to do well in each of my classes and the significance of whether I do or do not do well in each of those classes and what I take from each individual class that will be able to help me in my future.

Reading and Study Strategies

From the interviews (Appendix C, and D), several common themes emerged regarding participants' reading and study strategies. All had specific strategies, such as making index cards or study guides, previewing the text, rehearsing, writing notes, or visualizing. Although most did not remember where they learned the specific reading or study strategies, Participant II shared,

> Yeah I read some books over break and what actually helped me was some books that (the university) provided during orientation (which were really like pamphlets). They were tips from students (which were kind and contradictory), but what helped me the most was like underlining in the book (which I probably shouldn't be doing) but that helps me the most. Then I make index cards while I'm reading so that I don't I have to go back and do that later when I have to study and stuff. Again, I have to always do it in a quiet space or outside because I just get distracted.

The other participants simply knew which strategies specifically helped them with reading and studying from past experience. Several reading strategies were described by participants. Participant I shared that when she got to class, she would read or skim what they were to read. Then she would highlight the information; and when she went home, she would make her own

study guides, and then review them. The following statements or experiences were shared in regards to the reading and study strategies that they used in order to achieve academic success:

Participant V: I use index cards. I highlight the key words…repetition…you know…you also have to go out of order. You can't do…can't practice…Once you know the material, you have to study out of order… Because on the test everything's mixed up…on the quiz for example. If I don't understand what I'm reading, I'll ask a friend or professor to go into more depth with it because it is not about memorizing it. It is about processing and understanding what you are reading, or the problem you are doing for math, for example. Once you process it, you'll ace it every time, but if you memorize it, it's going to go in one ear and out the other. You are not going to remember it ten minutes later from now. So I don't believe in memorizing it; I believe in processing and understanding it…to do something.

Participant IV: I take notes in class. I learn better from writing them back out. So like I take notes in class and then when I want to study again, I'll rewrite the notes basically again…just to do that writing part again; but really, summarizing the notes from class, too…Well reading…I kind of just read over it really …skim it until I find something important and then go back and read it again until I understand it….I'll read with like a purpose to kind of understand it. Then when I find something that I really need to kind of remember…then I read it again and write it down and maybe read it again and keep going.

Participant III: I guess I just sort of highlight things…You know… to keep my eye, well you know…A lot of times my eye will like lose where I am at, so if I don't have like my finger on something, I'll forget exactly where I am. I'll completely forget. This isn't

so much a study strategy, but I can't really take notes in class. I just really can't because if I'm listening well, I can't take notes on what I am seeing on the PowerPoint. I can't hear the lecture… I can't hear a lecture at all, so I try to take notes but most of the time I just pull up the PowerPoint later because I can't do both.

Participant VI: There's a lot of differences…when it comes to reading the math textbooks, you have to be doing the problems. I have to do it over and over again until I …I have a really bad memory…I remember things in pictures….really…that's hard for math…The biology stuff—with that kind of stuff, I think in a certain way, that, when I'm looking through the biology book, they have big pictures…um…figures in the book…that shows how an amphibians heart works or something…how it's three and a half chambers or something…and shows the ways it goes around. Most people look at that and go, whoa…it's a complicated picture. But I think of myself as a lizard or something and think of how my body is working. So when it comes to those classes, I just kind of visualize everything in a way where I can understand it…make it understandable for me.

Participant VII: I'm an avid reader but… I have a thing for marking up books…I'm kind of a yes for sometimes and no for other times. So I don't really mark up my books all that much, even though you're told to do… that's a study strategy, or it works for some people, doesn't work for others…um…I pretty much just study the main points of what we learned or what we need to know….and especially the vocab…The vocab is a big thing in my classes.

Participant II: For me, like I have to study a lot. I'm not one of those people that have a photographic memory or anything. I have to study a lot because I have problems with

memorization and stuff. Since I'm a visual learner, I just have to write terms or questions on index cards and have stacks and go through them.

Successful and Challenging Experiences in Reaching Academic Success

The data analyzed above were generated from the subquestions explored. The themes and clusters of meaning contributed significantly to the research question regarding the successful experiences or challenging obstacles in obtaining academic success for university students diagnosed with Attention Deficit Hyperactivity Disorder. A number of themes emerged that characterized the participants' overall responses and experiences. While all participants mentioned their grades at the university level, in regards to academic success, and most mentioned math as their academic struggle, participants had several common factors that contributed to their academic success or made achieving academic success at the university level more difficult. Consequently, *Figure 1* was developed to categorize these themes or clusters of meaning.

Participants found social supports, such as family, friends, study groups, or organizations and university resources to be key factors contributing to their academic success. Participants mentioned struggles with focus and attention and shared not only strategies for controlling the distractions, such as studying in the library or at home, but also shared how they would adjust their schedules to allow for their focus struggles, signing up for small class sizes, taking classes with shorter class periods, or taking online classes.

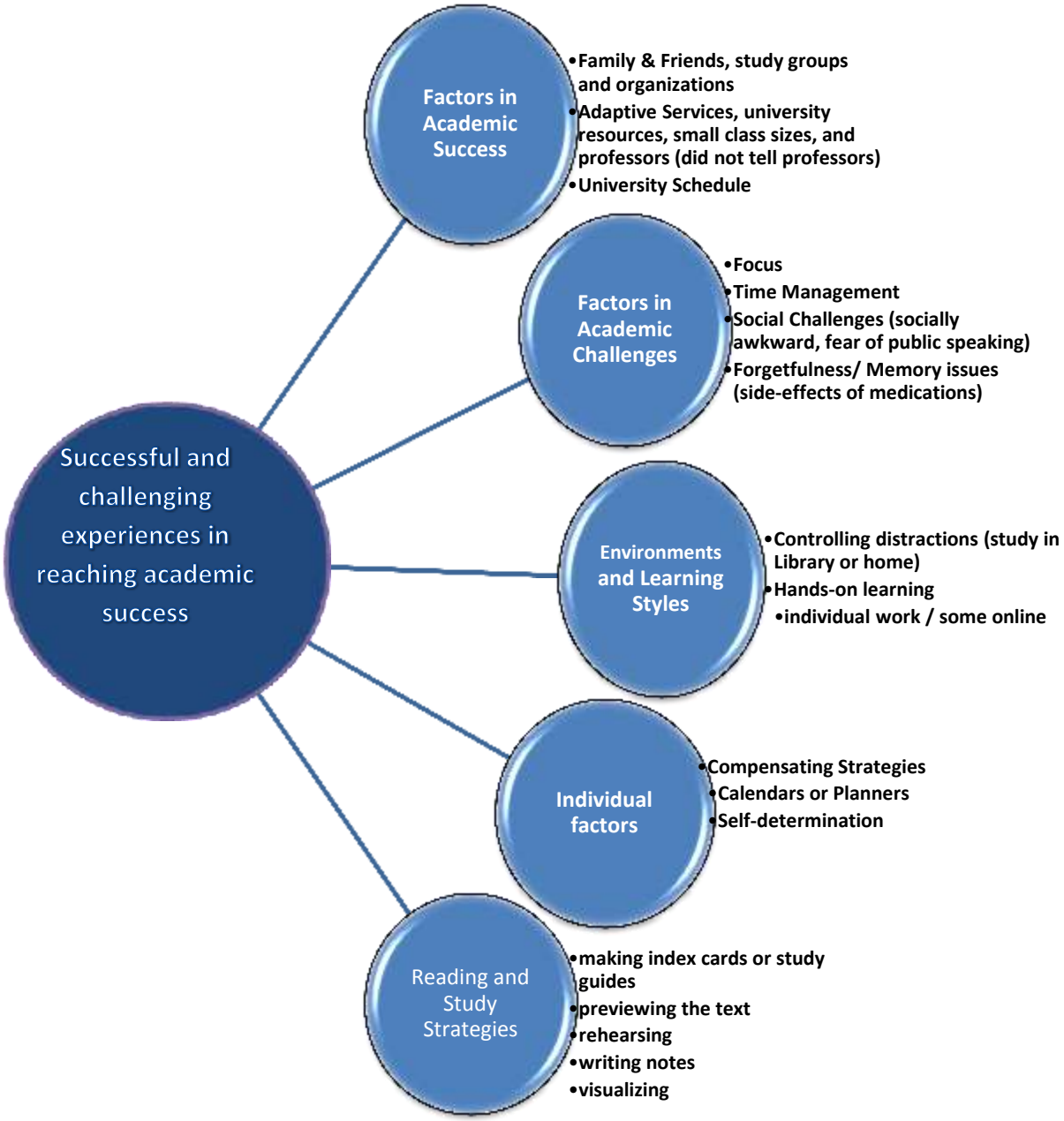

Figure 1. Factors in Successful Experiences or Challenging Obstacles

Most felt that the learning environment at the university level was more conducive to academic success than their previous high school environment. Participant V summed it up the following way:

> Adaptive Services, the classmates, the energy…you know…everyone wants to learn…everyone wants to study. In high school you have the followers and the different cliques whatever. Here, everyone just wants to like... independent…do their own thing, and they are here to learn. So, it is a learning environment, and everyone is here to learn together….study groups or…to work together and help each other out. You don't find that in a lot of places. I feel like this school really made a difference in my life with that aspect.

Almost all of the participants expressed their frustration with math. While most mentioned strategies for dealing with this (i.e. Adaptive Services, tutoring, choice of major, etc.), this was a common thread in almost all of the interviews. Participant VI stated his frustration in the following way,

> It's just a little bit harder for us…If they (professors) could fully understand these things….I don't expect a math teacher to be a psychologist, also…but they just need to understand that when they are up there lecturing, there's a kid sitting in the class that gets 100% on everything…that completely understands it…doesn't even need to study…But then, there's another kid that sitting right next to him that has no clue what is going on. But…if you put him in a different environment, with his own computer, like the online class that I do better with, maybe I could even get a 100 on everything. So…it's…I don't think they even understand.

Although participants shared their academic struggles that they attributed to their ADHD, they were also quick to take ownership of their learning, citing time management and organizational strategies, reading and study strategies, as well as their individual self-determination factors that they felt contributed to their academic success.

While families were mentioned as being supportive, you could sense the tension that having ADHD brought to their families. Participant III stated, "My family is ridiculously supportive. Almost like …well in grade school, it was pretty stressful because they were, well you know…Every time I got a bad grade, it was like a nightmare at my house, pretty much." Participant V recalled,

> Growing up my mom didn't understand. She didn't understand disabilities. She didn't understand ADHD…so frustrating…she thinks that…she just…She sometimes frustrates me….and my dad and my mom got divorced, and maybe my mom just didn't understand my dad either because he has the same thing I have, so maybe I was the issue. I don't know that; I'm just throwing that out there.

Participant II shared,

> My mom was taking me to my doctor's appointment. I used to have a doctor in high school, and then we got this other doctor. Now, it is pretty good now that we got him, so my stress has been so much better and mental focus more and everything. At the same time, I know my mom can like "freak out" about it sometimes and that just makes it so much worse on me and stuff. She's really supportive; but at the same time, it can really be kind of annoying sometimes, but I know she just does it because she loves me…

The focus group interviews seemed to help participants feel as though they were not alone in their academic or social struggles. By sharing their struggles with each other, participants not only received validation for their feelings, but also shared coping strategies with each other. Individual and focus group interviews revealed that participants had a strong understanding of their personal strengths and weaknesses. Participant V shared,

> It is just time-consuming and it takes a lot …it takes me…to study for a test a lot longer and to do homework a lot longer than most other students. I'm studying way more…. You know I'm studying a lot more…a student maybe doesn't have to study for this quiz because it's so easy; but for me, I'm studying maybe four days for it.

Participant VI stated it in the following way:

> …historically…people that have ADHD…stuff like that…problems…I feel like it's been around for a long time. So if I grew up on a farm or something, I probably be the most…the best worker out of all the kids in the family…(laugh) …the nine kids in the family working on the farm. Because I would always be out there with a lot of energy doing what we are doing…so…it's just another thing to put in there…It's the way I'm wired, I suppose. It makes me excel at these sorts of things. You put me in a computer desk in the classroom, and I'm the dumbest kid in the class…

Summary

Allowing individuals to make their own decisions and create future goals provides greater opportunity (Wehmeyer, 2004). The transition from high school to a university environment requires students with ADHD to be self-aware of their challenges and successes in order to utilize strategies that are beneficial to their specific needs. This chapter analyzed the common themes in participants' successful and challenging learning experiences. This study revealed several themes regarding factors in academic successes, academic challenges, preferred learning environments, individual factors, and reading and study strategies with this population. The actual words of the participants were utilized as much as possible in order to stay true to the understanding and interpretation of the participants' responses. Although *Figure 1* was created

to show the commonalities of the participants' experiences, I attempted to analyze the data by allowing the voices of the participants to be heard. As Van Manen (1990) stated,

> In one sense the notion of textuality becomes a fruitful metaphoric device for analyzing meaning. If all experience is like text then we need to examine how these texts are socially constructed. Interpretation that aims at explicating the various meanings embedded in a text may then take the form of socially analyzing or deconstructing the text and thus exploding its meanings. We must not forget, however, that human actions and experiences are precisely that: actions and experiences. To reduce the whole world to text and to treat all experience textually is to be forgetful of the metaphoric origin of one's methodology. (p. 39)

By understanding what learning experiences, environmental supports, and internal struggles and strategies these participants felt helped them in a university environment, it is hoped that this will add to the body of research regarding successful strategies and interventions for university students diagnosed with ADHD.

CHAPTER FIVE: DISCUSSION

The purpose of this hermeneutical phenomenological study was to gain an understanding of the experiences and perceptions of a purposeful sample of university students diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) at a university in the southeastern United States. The preferred learning environments were explored through a questionnaire with eight participants and the experiences and perceptions of the challenges and successes at the university level of seven participants were explored through interviews. Documentation was used to ensure the participants met the sampling criteria. The study explored what students in this population perceived were their struggles and successes at the university level, and in doing so, identified integral strategies that participants believed helped them to become successful, both academically and socially. Success for participants was defined as academic success.

In keeping with hermeneutical alertness, the data in Chapter 4 were analyzed for themes and clusters of meaning (*Figure 1* and Appendix G), but in vivo coding was also utilized to capture the essence of the participants' experiences (Appendix F). Chapter 5 provides a summary; a discussion of the findings through the lens of postpositivism, disability, and the motivational theories of self-determination and resiliency, as well as constructivism theories. This chapter also provides a discussion of the findings in light of the relevant literature regarding ADHD; an outline of the study limitations; implications, both methodological and practical; and a recommendation for future research. Following Van Manen's (1990) guidelines for hermeneutical phenomenological studies, a thematic reflection was utilized in this chapter in order to present the findings of this study in an attempt to "somehow capture a certain phenomenon of life in a linguistic description that is both holistic and analytical, evocative and precise, unique and universal, powerful and sensitive" (p. 39).

Summary

The study sought to explore the successful experiences or challenging obstacles in obtaining academic success for university students diagnosed with Attention Deficit Hyperactivity Disorder at a university in the southeastern United States. From the interview data and responses to the questionnaire, the study revealed several themes regarding the factors in academic success, the factors in academic challenges, the environments and learning styles most conducive to learning, the individual factors that contributed to academic success, and the reading and study strategies that were most beneficial to participants' academic success in a university environment.

Key factors or themes found to contribute to academic success were shared as social supports by all participants. While academic success was described as As, Bs, or passing grades in their university classes, themes or cluster of meaning were found in what participants attributed to their academic success. These were found in their social supports, such as family, friends, study groups, or organizations. Participants also cited university resources as a contributing factor to their academic success; citing Adaptive Services, Counseling and Psychological Services, The Writing Center, Library, and professors. Although professors were cited as a positive factor in academic success, participants shared that they chose not tell their professors about their ADHD. The university schedule was also seen as support, as participants shared their ability to adapt their schedule to their needs of small class sizes, shorter class times, or fewer hours per day in the classroom.

While academic struggles were shared as "math" by most participants, commonalities were also seen in what participants' attributed to their academic struggles. Key factors or themes found to contribute to academic struggles were distractions, focus and attention, time

management and organization, and difficulties remembering things. Social struggles, such as feelings of social awkwardness or fear of public speaking, and side-effects to medications were also mentioned as negative factors to university life for participants' with ADHD. Most of the participants mentioned their struggles with introversion and shared their struggles with socializing. While not a direct correlation to academic struggles, these were found to negatively affect academic success in the long run. As Participant III stated, "The more scattered I become, the more my life around me becomes more scattered." The medication side-effects were mentioned as issues that many participants felt they experienced in order to gain academic success.

Environments and perceived learning styles were explored through the questionnaire and interviews. Participants preferred hands-on environments and environments where they could control the distractions. Although participants mentioned various strategies for controlling their distractions, most found the university library to be the optimal study environment. Most participants preferred face-to-face classes; and two participants preferred online environments, stating that online classes helped them to control distractions because of the flexibility of the schedule. It is important to note that these two participants also noted that they also preferred hands-on and natural environments, as well.

Participants credited individual factors in their ability to compensate for their academic or social struggles. University resources, such as seeking out tutoring services, counseling services, or testing or note-taking accommodations through Adaptive Services were not only mentioned, but participants also mentioned individual compensating strategies for their time management, organization, and memory struggles. They all shared the importance of creating calendars containing upcoming events, assignments, and due dates. Most participants found the process of

writing out the latter to be beneficial. Participants also shared how their attitudes toward success attributed to their eventual success in a university environment. Participant VI summed it up by the following statement: "To everyone else, they're challenges; but if everyone else were to do the things I do, they would be pretty damn challenged (laugh)…it's just what society says is a challenge. …That's all it is."

Reading and study strategies were explored through the individual interviews. All participants shared reading and study strategies that they utilized. These included previewing the text, re-reading, highlighting, underlining, pulling out the main points of the text, rehearsing, writing notes, visualizing, or note-taking strategies. Participants shared various strategies for breaking down text they were required to study, such as rewriting notes, creating study guides, or making index cards for flash card study.

This study revealed the experiences and perceptions of participants diagnosed with ADHD in the area of academic successes, academic challenges, preferred learning environments, individual factors, and reading and study strategies utilized. The themes and clusters of meaning revealed similar findings by the purposeful sampling of participants to the overall research question regarding the successful experiences or challenging obstacles in obtaining academic success for university students diagnosed with Attention Deficit Hyperactivity Disorder.

Findings

The findings in this section are discussed through the lens of postpositivism and disability theories, and the motivational theories of self-determination and resiliency. Constructivism also played a role in understanding the strategies for success shared by participants in the areas of reading and studying. The findings are discussed in light of these theoretical theories, as well as relevant research regarding ADHD and university students. This section looks at the responses of

participants and their shared experiences in light of the current research regarding neurobiology attributes of ADHD, differences between high school students with ADHD and university students with ADHD, and the differences between university students with ADHD and university students with learning disabilities; and it provides implications regarding the academic and social challenges of university students diagnosed with ADHD, specifically reading, writing, and study strategies, as well as the social difficulties regarding relationships, emotions, and time management. It discusses the importance of self-advocacy and the availability of campus resources, class scheduling, social support systems, and a hands-on environment to academic success with this population. Although this study does not seek to prove any previous research, the participant responses and experiences shared in Chapter 4 are analyzed, placed into this contextual framework, and expounded upon in light of this current research and theoretical lens.

All of the participants in this study self-advocated, as they all had approached Adaptive Services at one time or another for accommodations. While not all participants accessed these accommodations at the time of the interviews, this sampling group had to possess self-awareness and self-efficacy in order to approach Adaptive Services for help. Throughout the interview process, participants shared self-determination factors contributing to their academic success and spoke of themselves as the determining factor to their future success. Many shared their appreciation for the self-determination attitudes of other students in a university environment, as well. Participant V shared this in the following way:

> Everyone wants to learn…everyone wants to study. In high school you have the followers and the different cliques whatever. Here, everyone just wants to …do their own thing, and they are here to learn. So, it is a learning environment, and everyone is here to learn together….study groups or…to work together and help each other out.

As participants shared their experiences with successes and struggles at the university level, their responses also correlated with research on motivational theories of self-efficacy and self-determination. Research has shown that possessing motivation and self-efficacy enable students to not only believe in their own abilities but also enable students to reach their academic goals (Bandura, 1977; Deci & Ryan, 2008; Wehmeyer, 1999). Bandura (1977) found personal efficacy to be a motivating factor in academic achievement, finding that personal efficacy had a positive influence in the belief that a person could achieve his or her goals. Participants' responses correlated with theories on self-efficacy and self-determination in that although participants were self-aware of their struggles brought on by their ADHD, they cited examples of resources or strategies that they utilized to overcome their struggles.

As participants shared their experiences and responses to their struggles and successes, they were quick to take responsibility for their learning, citing strategies for utilizing university resources, strategies to maintain focus and attention, strategies for time management and organization, strategies utilized in reading and studying, as well as strategies to help their unique situation and circumstances in life. Participants shared the fact that they sought out tutoring services, testing accommodations, or counseling services through Adaptive Services or other university resources as well as individual coping strategies or interventions they used to compensate for their time management, organization, and memory struggles. They all shared the importance of creating calendars containing upcoming events, assignments, and due dates, and shared how their attitudes toward success attributed to their belief in their eventual success in a university environment. They also attributed self-determination factors, such as hard work and effort and caring about their grades and future careers or opportunities, to their ability to succeed academically. This correlates with the findings of Wehmeyer (1999), whose work revealed that

a student's self-determination and self-efficacy not only improved one's understanding of oneself but could also improve his or her ability to set goals and achieve success. Deci and Ryan (2008) confirmed this, finding that self-determination factors could predict performance and well-being.

In light of the relevant research regarding ADHD, participant responses confirmed what research has found on executive functioning deficits in university students with ADHD. Inattention and disorganization were found to be more prevalent among university students with ADHD than hyperactivity and were shown to also affect students' memory; all of these deficits were found to be controlled by the executive functioning part of the brain (Frazier et al., 2007; Kass et al., 2003; Nigg et al., 2005). As participants shared their struggles, they also confirmed the findings of Kern et al. (1999). Kern et al. (1999) found that college students diagnosed with ADHD struggled with time management, control of stress, and organization. This was confirmed by the responses of all participants, as time management, organization, focus, attention, and memory struggles were reported as academic or social struggles by all participants.

According to previous research, students diagnosed with ADHD struggled to maintain their attention and sustain this attention over time (Kofler et al., 2008). This was confirmed by participants throughout their interview responses. Maintaining their focus in both the classroom and study environments were mentioned as key strategies to participants' academic success. Math was the only subject that most participants felt they struggled to learn. For all other subjects, participants cited the importance of controlling distractions in both their study and classroom environments. While participants shared struggles in this area, they also shared coping strategies for each of these difficulties. They believed that although time management, organization, focus, attention, and memory issues were all major struggles that they faced each

day, they all were self-determined and shared successful coping strategies for gaining academic success, despite their challenges. This supports Barkley et al.'s (2006) finding that students in this population have a performance deficit instead of an academic deficit.

Although prior research has shown that emotional symptoms, sleeping difficulties, and substance abuse were found to be prevalent among students in this population (Blase et al., 2009, Meaux et al., 2009), and research by Weyandt and DuPaul (2008) reported that this population was also at risk for substance abuse, tobacco abuse, and aggressive and confrontational behavior in the presence of stress, participants in this study did not mention or confirm these issues. Some participants mentioned the side-effects to medications as challenging, but medication abuse or substance abuse was not found in the participants' responses or experiences shared.

Weyandt and DuPaul (2008) also reported that university students with ADHD typically struggle with not only social relationships, but also low self-esteem. Shaw-Zirt et al. (2005) indicated the students with ADHD lacked the social skills required for meaningful social interactions. Participants mentioned struggling with social relationships, such as feelings of awkwardness or fear of public speaking, but low self-esteem was not shared as a struggle among the participants in this study. Anxiety, instead of self-esteem, seemed to be a bigger struggle, being mentioned by half of the participants. As Participant III shared the following:

> When I was a kid, my maturity level was slightly below my peers. I think over time that did change quite a bit, but I think that the anxiety that I had about it (that realizing I was behind) has really stuck with me, and I've always been anxious about how I am acting and constantly checking myself…constantly.

Participant VI shared, "I get a lot of anxiety and a lot of social anxiety, too, because I…and a lot of it has to do with the medications." Participant II shared, "I used to have a doctor in high

school, and then we got this other doctor. Now, it is pretty good now that we got him, so my stress has been so much better and mental focus more and everything." All but one participant shared their struggles with being introverted, some seeing it as a social struggle that they needed to improve on and others seeing it as a personality trait or result of their ADHD. All seemed to have strategies to deal with it, however. When asked what made them successful, Participant VI reiterated the following:

> Things that stem off my interest …that's a good way to say it. A lot of it is introverted work, really. Me, I might be out there with other people or other professors, but we are doing what we want to do…what we learn about.

Although Glutting et al. (2005) and Frazier et al. (2007) argued that university students with ADHD had greater academic success in high school and were therefore able to compensate for their disability more than their peers with the same disorder, this was not confirmed by the participants in this study. Many participants in this study shared their frustration with high school schedules and teachers, sharing how they felt more successful at the university level because of the schedule of university classes, the ability to choose their own schedule, as well as their ability to choose small classes over large lecture classes.

Participant responses also correlated with what research has shown about resiliency factors. Resiliency theories focus on understanding how students use their positive attitudes and problem-solving strengths to thrive and increase competence in difficult circumstances (Gordon-Rouse, 2001; Henry & Milstein, 2004). This was seen in not only the participants' shared experiences, but also the social supports that participants felt helped them in coping with the challenges brought on by their ADHD in a university environment.

Social supports and university resources were mentioned as a contributing factor to participants' academic success and were seen in their support from their family, friends, and organizations. Although Kern et al. (1999) found that college students diagnosed with ADHD struggled with their ability to access support from others, participants in this study did not confirm this, citing several positive supports ranging from family and friends to study groups and organizations.

The university schedule was also seen as support, as participants shared their ability to adapt their schedule to their needs of small class sizes, shorter class times, or fewer hours per day in classes. Participants also credited university resources for their ability to succeed, citing Adaptive Services, Counseling and Psychological Services, The Writing Center, the Library, and professors. Although professors were mentioned as a positive factor in their academic success, participants shared that they chose not tell their professors about their ADHD. This confirmed the research of Weyandt & DuPaul (2008), who found that university students diagnosed with ADHD typically do not want to share their diagnosis with their professors.

This study was framed by postpositivism and disability theories. It understands that participants in this study possess a learning difference and not a disorder or a disability. According to Creswell (2007), participants are seen as having a learning difference and this difference respects the participants and improves society's response to these participants. This was seen in the response to preferred learning environments. While all participants' responses were shared, allowing for multiple perspectives rather than a single reality, which is supported by both Creswell (2007) and Van Manen (1990), responses to preferred learning environments were found to vary from participant to participant. While preferred environments (Table 2) were not unanimous among the participants, all participants shared that they preferred some type of hands-

on environment. Through both the questionnaire and the interview process, participants shared their preferences for smaller class sizes, hands-on learning, distraction free environments that maximized their attention and focus, and environments that did not require them to sit for long periods of time. The ability to move around the classroom and not need to focus on long lectures or take notes while listening to instructions or lectures were statements shared by all participants. Having access to natural environments was mentioned as a key intervention to their difficulties with distraction and attention, as well.

Participants' perceptions and responses support the work by Schirduan et al. (2002) who found that more than half of their participants with ADHD exhibited spatial types of intelligence in relation to their learning styles and argued for a multi-modal approach to learning. White and Shah (2010) argued that adults diagnosed with ADHD had higher levels of verbal creative thinking than adults without ADHD. This was confirmed by several participants. Participant II stated, "I can't stress enough that I am a visual learner…" When asked what makes them successful, Participant IV shared, "…creative mind. I can also be good at problem solving, too…" Participant VI argued, "but it (medicine) has taken away from what I'm naturally good at, and I have a crazy imagination… it would be really hard for most people; for me, I just visualize it, and it just comes naturally." Participants also confirmed what Schirduan et al. (2002) found in regards to choosing activities and exploring content through the senses. These researchers found that "students with ADHD do better in environments where they can pick and choose activities and then explore content, using their senses" (Schirduan et al., 2002, p.327). This was also confirmed through the responses of most participants. Many shared that they preferred "natural environments." Participant VI stated it the following way,

> A lot of it is comfort level. You should write that down, too, I suppose. It's…a…when I'm at home…when I say I am sitting at my desk, I have a very nice, like, leather computer chair. I like sitting in that….um….I like to have a drink…you know… in the Library, you can bring a drink with you, but if I'm at home…depending on what subject I am doing homework in….you know…I'm either drinking a caffeinated beverage or just plain water…

Participants in this study were found to have unique needs and learning styles as compared to what research has shown with students with learning disabilities. Although research has shown the differences between the needs of students with ADHD and students with disabilities, both groups of students are offered the same accommodations at the university level. Most of the participants in this study shared that it benefitted them to take their exams in separate environments. Participants in this study shared their need for tutors and the benefits of being able to choose class schedules that helped them to compensate for their inability to sit through long classes. They shared their difficulties with paying attention, focusing on a task, forgetting, becoming easily distracted, and struggling with organizational skills, which are all found to be challenging effects of ADHD (American Psychiatric Association, 2000). While most participants mentioned struggling with math, the sustained focus and divergent thinking required to understand this subject were mentioned as key struggles to their academic success, as well.

All participants mentioned strategies for constructing their own knowledge and shared research-based reading and study strategies that they used at the university level. While only two participants were able to mention where they obtained these skills (Participant IV through and Effective Learning Class, and Participant II through pamphlets handed out by the university), all participants were self-determined and possessed strategies to take ownership of their reading and

writing requirements at the university level. Participants in this study shared how they constructed their own knowledge and understood their own metacognitive practice in regards to reading and studying at the university level. Although Reaser, et al. (2008) found that college students with ADHD had trouble taking notes, outlining, test-taking, and study strategies, participants in this study shared successful strategies for reading and studying and did not confirm Reaser et al.'s (2008) findings. Participants confirmed our understanding of both cognitive and social constructivism (Powell & Kalina, 2009), explaining how they processed new information, assimilating it with their prior knowledge and accessing the support of others for their reading and learning success. As Participant V stated,

> It is about processing and understanding what you are reading, or the problem you are doing for math, for example. Once you process it, you'll ace it every time, but if you memorize it, it's going to go in one ear and out the other. You are not going to remember it ten minutes later from now. So I don't believe in memorizing it; I believe in processing and understanding it.

Many participants shared reading strategies that they used for reading or studying new information. These included making index cards or study guides, previewing the text, re-reading, highlighting, underlining, pulling out the main points of the text, rehearsing, writing notes, or visualizing. Participants did not confirm the reading and learning deficits found by Pennington et al. (1993) or Weyandt and DuPaul (2008), who found that the reading and writing process was difficult for university students with ADHD. Most participants shared their comfort with reading and writing; their biggest academic frustration came in the area of math.

While participants' responses correlated with the research findings on self-determination by Wehmeyer (1999) and Deci and Ryan (2008) which found that understanding oneself could

improve one's performance through a person's ability to set goals, it is also important to note the underlying frustrations shared by participants in the area of academics and social situations. According to the Psychological Association (2006), resiliency is only needed when a person is required to adapt to difficult mental, emotional, or behavioral life experiences by adjusting his or her external and internal demands. While all participants set goals for themselves, all shared coping strategies for dealing with the daily challenges they felt they had to overcome because of their ADHD. Distractions, attention, time management, memory, the amount of time required to acquire knowledge, utilizing university resources, and the ability to navigate through social situations all required a great deal of time and effort. As Participant VI stated,

> It's just a little bit harder for us…If they (professors) could fully understand these things …but they just need to understand that when they are up there lecturing, there's a kid sitting in the class that gets 100% on everything…that completely understands it…doesn't even need to study…But then, there's another kid that sitting right next to him that has no clue what is going on.

Although participants were determined to succeed, they were very aware of their challenges. As Participant III stated, "The organizational part is more of a challenge and more complicated at the university level…I can't stress that enough." University life for these participants required much more time and energy in order to become successful. Participant V confirmed this, sharing the following:

> It is just time-consuming and it takes a lot …it takes me…to study for a test a lot longer and to do homework a lot longer than most other students. I'm studying way more…. You know I'm studying a lot more…a student maybe doesn't have to study for this quiz because it's so easy; but for me, I'm studying maybe four days for it.

Study Limitations

This study attempted to interpret the phenomenon of having ADHD at the university level for eight students and the implications of this phenomenon on academic and social success and struggles. Key limitations to the study would be in the area of size, scope, geographical location, ethnicity, gender, and age. Although a small sample size was key to understanding the perceptions and experiences of students in this hermeneutical phenomenological study (Van Manen, 1990), participants' perceptions as they related to ethnicity, socioeconomic background, or gender could not be explored because of the sampling group. While a small sampling from one university enhanced participants' perceptions and overall experiences, a larger sampling from several universities may have produced greater depth and variety of experiences of the phenomenon being explored.

This study also viewed participants through a self-determination and self-advocacy lens and was limited to students with ADHD that had already self-advocated for services and were self-determined to succeed. Interviewing a population of students with ADHD that had not self-advocated may present alternate themes in future studies.

Recommendations for Education

Although this study did not seek to prove any previous research or offer any new theories, participants' common themes in their responses and shared experiences suggested practical educational implications from the participants themselves for enabling other university students with ADHD to become successful both academically and socially. From this study, there are several implications for educators. Understanding the academic successes and struggles of students with ADHD that are self-determined and self-advocate for their needs may

give educators an understanding of what would help other students with ADHD become successful in a university environment.

Need for Self-Advocacy

The educational implication of this study through the lens of motivation theories explains the need for students diagnosed with ADHD at the university level to self-advocate and for stakeholders to understand what factors influenced motivation for students in this population to succeed academically. Although research shows that students with ADHD are leaving high school support systems that were required to support and advocate for them (American Psychological Association, 2000), participant responses in this study suggested that their motivating and resiliency factors helped them to continue to reach out to social supports, such as family, friends, and organizations. The findings also suggest that because these students were self-determined and advocated for their needs, they were also able to maintain social supports in order to overcome their social and emotional struggles.

Providing University Resources

Another educational implication would be for universities to reach out to university students, as well as their parents, in order to provide them with an explanation of the university resources that are available, as well as the requirements for accessing accommodations. University life presents unique challenges for students with ADHD; however, there are resources that can make the transition from high school to university life easier. Participants in this study credited university resources as a factor in their academic success; consequently, accommodations must be easy to obtain and self-advocacy must be encouraged.

An assumption was made in the development of this study that reading and study strategies were needed or lacking in this population; however, participants in this study had

strategies for reading and studying and self-advocated for testing accommodations and tutoring needs. Typically accommodations given to these students are the same accommodations given to students with learning disabilities; however, from the responses shared by participants, students diagnosed with ADHD might benefit from time management, distraction control, and attention strategies, in addition to testing accommodations, note-takers, and tutors.

Priority Registration and Reduced Class Loads

Although hyperactivity was found to be greatly reduced in this population, inattentiveness was found to be a daily struggle for all participants. Not only did these participants struggle with a rigorous academic workload but they also struggled to maintain their attention in the classroom. It suggests that interactive classes may benefit students in this population. It may also benefit this population to be given priority for class registration in order for them to be able to create a schedule that is conducive to their needs in the area of attention and focus. Priority in class registration should include the option to take a reduced class load, yet still retain full-time status for their financial aid. This would be a beneficial accommodation because of the amount of time and energy these students utilize for each class they take. Participant responses support prior recommendations from Sarkis (2008), who suggested that small class sizes, early or priority registration, testing in separate rooms with an unlimited amount of time, and reduced class loads might benefit university students diagnosed with ADHD.

Providing Mentor Groups, Study Partners, or Study Groups

Students in this population were found to struggle with social relationships, new living environments, organizational and planning skills, and time management. The challenges shared by participants supported recommendations by Weiler et al. (2002) who suggested that providing

additional time, simplifying multi-step tasks, teaching organizational skills, and teaching metacognitive strategies would benefit university students with ADHD.

During this study, the process of interviewing students in a focus group itself seemed to help the participants feel as though they were not alone in their struggles. Consequently, in order to accommodate university students diagnosed with ADHD, it may benefit students in this population to utilize individual mentors, study partners or tutors, and study groups with individuals who have experienced success with their ADHD at the university level. These groups could be formed to discuss common struggles and resources and strategies for success.

Providing Distraction-free, Hands-on Environments

It is also important to note that all participants felt that a study environment, free from distractions, was key to their academic success. Most chose the Library as a distraction-free study environment. With budget cuts forcing universities to limit Library hours, this might severely affect students in this population. Consequently, an educational implication would be to provide distraction free study environments that are available day or night in order for students to have a place to go where they may access study and academic resources without the dorm or home distractions.

All participants in this study shared that they preferred some type of "hands-on" learning environment. The implication for university educators would be to provide interactive teaching styles in their course instruction. Schirduan et al. (2002) argued for a multi-modal teaching style that utilized Gardner's Theory of Multiple Intelligence with this population. University students diagnosed with ADHD might benefit from classrooms that utilized this teaching style. Consequently, instead of delivering lectures during each class period, it is believed that creativity

in presenting new information and presenting this information through a variety of modalities might help students in this population maintain their attention and motivate them to learn.

Faculty Training

Because participants shared their fear in regards to sharing their diagnosis with their professors, it might also benefit professors to have an understanding of the symptomology of young adults with ADHD and the different learning styles possessed by students in this population. Universities may need to consider providing in-service training for faculty in order to provide information on how to meet the needs of students in this population. This will enable professors to embrace the learning differences in their classes and instill a willingness to be open to hands-on teaching methods.

Recommendations for Future Research

While the challenges of children diagnosed with ADHD have been well-documented, university students diagnosed with ADHD are an understudied population (Frazier et al., 2007; Heiligenstein et al., 1999; Prevatt et al., 2007; Weyandt & DuPaul, 2008); yet this population has become the second most prevalent developmental disorder seen on college and university campuses (Kern et al., 1999; Wolf, 2001). Consequently, there is a great need for further research with university students that are diagnosed with ADHD. As mentioned earlier, this study was limited to students with ADHD that had already self-advocated for services and were self-determined to succeed. Interviewing a population of students with ADHD that had not self-advocated may provide a richer understanding of the learning experiences of university students with ADHD and provide alternate themes in future studies.

This study was also limited to students diagnosed with ADHD with no comorbid disorders. Further research could compare a large sampling of students with ADHD, with and without comorbid disorders, in order to compare the experiences and perceptions of both groups.

Future research should focus on providing a greater depth and variety of experiences and perceptions by comparing experiences of participants from several universities. This would allow for experiences to be categorized by gender, race, age, or year in college.

Academic success for university students with ADHD in direct relation to teaching styles or accommodations should also be explored. According to Weyandt and DuPaul (2008), there have not been any empirical data to measure the effectiveness of accommodations for university students diagnosed with ADHD. Participants in this study believed that they learned differently from their peers that did not have ADHD. Consequently, more research needs to be explored to ascertain whether or not university students with ADHD have a learning style that is compatible with traditional university teaching methods which rely on lecture.

Conclusion

The purpose of this hermeneutic phenomenological study was to acquire an understanding of the experiences and perceptions of university students diagnosed with ADHD at a university in the southeastern United States. Reviewing current research helps one to understand the impairments and possible impediments of this disorder; however, understanding the academic and social challenges and successes for this population can only happen through an understanding of their experiences. The study attempted to provide a viewpoint from students diagnosed with ADHD in order to gain new insight into their successes and struggles on a university campus. In hearing participants' perceptions and learning experiences, we can develop a deeper appreciation for the effort they invest in obtaining a university degree. By

advocating for their needs and using self-determined beliefs, participants shared strategies for academic success, and allowed us into their world of daily challenges and struggles.

In order to succeed, participants shared how they scheduled class and study times around their inability to focus and routinely isolated themselves from distractions in order to succeed. They not only shared their social supports, such as family, friends and organizations that supported them and helped them to believe in their own success, but also shared their humiliating moments of social awkwardness and frustration with feeling different from their peers. They shared their ongoing struggles with medications and the complications and side-effects that they had previously experienced.

Although these participants shared their daily challenges and struggles, they had strategies and interventions for each obstacle they faced. They all shared reading and study strategies that indicated an understanding of the reading process and the importance of breaking the text down to manageable steps for comprehension. While most shared an aversion to math, participants shared the steps they took to obtain tutors or seek extra help from professors.

Their ADHD was not seen as a disability; participants saw it as learning difference. Participants knew they could learn through hands-on activities and were fully invested in their own education outcomes. Although they understood their ADHD as a learning difference, they did not want to be defined by their ADHD, choosing not to share their diagnosis with professors. They fully engaged with professors, but did so as one of their student peers, wishing to be seen for who they were and not the disorder they possessed. Professors, parents, campus professionals, and other stakeholders need to become actively involved in efforts to help other students with ADHD to self-advocate and develop self-determination strategies in order to help

this population to learn to succeed in a university environment and hopefully continue this success in their future workplace environments.

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APPENDICES

Appendix A

Consent Form

Study Title: UNIVERSITY STUDENTS DIAGNOSED WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER: A HERMENEUTICAL PHENOMENOLOGICAL STUDY OF CHALLENGES AND SUCCESSES

Principal Researcher: Vickie Johnston
Faculty Sponsor: Liberty University, Dr. Beth Ackerman

You are invited to be in a research study conducted through XXXXXXXXXXXXXXXXX regarding experiences from university students diagnosed with ADHD. You were selected as a possible participant because you have a diagnosis of ADHD. I ask that you read this form and ask any questions you may have before agreeing to be in the study. The researcher will explain the purpose of the project in detail, the procedures that will be used, the expected time the study will take, and any benefits or risks to you.

A short description of the study follows. Please read it and ask the researcher any questions you have to help you understand the study. If you choose to join the study, please sign the last page of this form in front of the person who told you about the study. You will get a copy of this form to keep.

If you choose to join the study, you can leave it at any time with no penalty. If you choose to participate or not participate, this in no way will affect your grades or the services provided by the university and will not affect any future services you may be eligible to receive from the University, including Adaptive Services. Anyone who chooses to participate in this study is free to withdraw at any time with no penalty or loss of benefits to which they are entitled.

The purpose of this study is to gain an understanding of the experiences and perceptions of university students diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) in order to determine what helped them academically and socially and what they found challenging academically and socially. I am asking you to take part in the study because you have been diagnosed with ADHD.

If you join the study, you will be asked to answer a questionnaire. This questionnaire will take approximately 5 to 10 minutes to complete. After you fill out the questionnaire, you may choose to participate in a group or individual interview; however, you may simply choose to fill out the questionnaire and not participate in the interviews. If you choose to participate in the group and/or individual interviews, you would be interviewed with four other participants, and/or individually, for approximately thirty to forty minutes. These interviews will be conducted in the office next to Adaptive Services and would be scheduled at your convenience. Qualitative data will be collected through the questionnaire and interviews.

There are no known or anticipated risks to you if you join the study. I hope the information I get from this study will help others attending a college or university who have ADHD. If you join the study, I will take the following steps to keep your information confidential and secure. The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify you. Research records will be stored securely and only the researcher and Adaptive Services will have access to your file.

Although I will maintain your confidentiality, if you choose to participate in focus groups, I cannot guarantee confidentiality for that portion of the data; however, your written data will be given a pseudonym. If the results of this study are published or presented, no information will be included that would make it possible to identify you as a study participant.

You will not be paid to take part in this study. There is no cost to you or your insurance company if you join the study. If you have any questions about this study, you may contact me, Vickie Johnston at XXXXXXXXX or my faculty advisor, Dr. Beth Ackerman at XXXXXXXX

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board through XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24502 or email at irb@liberty.edu.

I have read this form and I understand it. The researcher answered my questions about the project. My signature indicates that I volunteer to participate in the project. I understand that if I become uncomfortable with the project I am free to stop my participation. I also understand that it is not possible to identify all potential risks in an experimental procedure and I believe that reasonable steps have been taken to minimize both the known and potential but unknown risks.

_____ I volunteer to participate in focus group interviews

_____I volunteer to participate in individual interviews.

_____I agree to be audio-recorded during the focus group/individual interview portion of the research study.

_____ _____
Signature of Study Participant Date

_____ _____
Signature of Witness Date

The dated approval stamp on this consent form indicates that this project has been reviewed and approved by the XXXXXXXXXXXXX Institutional Review Board for the Protection of Human Subjects in Research.

CONSENT FORM

Consent to Disclose Information

To comply with the provisions of the Family Educational Rights and Privacy Act of 1974, an institution must obtain signed consent before it can release student information to a third party.

I, _____, hereby request and authorize the Office of Adaptive Services at XXXXXXXXXXX to release specific information pertaining to academic progress, academic records, psycho educational information, medical and/or health conditions to the following physicians/specialists/agencies/educational institutions:

__Vickie Johnston _____
Name of physician/specialist/agency/educational institution

_____
Address

_____
City State Zip Code

_____
Telephone number Fax number

The purpose or need to disclose this information is
For qualitative research to establish a criterion sampling of participants

The specific information to be released includes
Medical Records –doctor's note stating a diagnosis of ADHD_
Academic Records—ensuring the participant is not on Academic Probation

I understand that as an adult student, I may revoke this consent, in writing, at any time to the parties listed above, except to the extent that any previous action has been undertaken, or information released. I understand that all information released is specifically indicated and will be released only to individuals named on this form. All other information remains confidential.

_____ _____ _____
Student Signature *UIN* *Date*

FOR OFFICE USE ONLY:

_____ _____ _____
OAS Signature *Action Taken* *Date*

Appendix B

Name_____

1. Choose the method of instruction that you prefer in a college or university classroom.

Rank the following by placing a **number one** by the one you prefer **the most** all the way up to number **seven,** which would be the one that you **prefer the least**.

Lecture_____

Whole Class Discussion_____

Small Group Work_____

Individual Work_____

Hands-on Instruction_____

Online Classes _____

Hybrid Classes _____

2. In what environments do you feel like you learn the best?

Appendix C

Focus Groups: Interview Protocol

Date_____ Time_____Place_____

Name of Interviewer_____

Name of Interviewees _____

_____

Diagnosis_____

Position of Interviewee_____

Questions:

1) What do you feel are some of your academic successes?

    a) Why?

2) What do you feel are some of your academic challenges at the university?

    a) Why?

3) What are some of your social supports in a university environment?

    a) Why?

4) What are some of your social struggles in a university environment?

    a) Why?

Appendix D

Individual Interviews: Interview Protocol

Date_____Time_____Place_____

Name of Interviewer_____

Name of Interviewees _____

_____

Diagnosis_____

Position of Interviewee_____

Questions:

1) What do you feel are some of your academic successes in the university environment?

    a.) What do you feel has helped you become successful academically?

    b.) What kind of environment do you feel as though you learn best in?

    c.) What reading and study strategies do you use that help you the most at the university level?

2) What are some of your academic struggles at the university?

    a) Do you tell your professors that you are eligible for accommodations?

3) What do you feel are your best social supports in the university environment?

4.) What are your social challenges?

Appendix E

LIBERTY UNIVERSITY

The Graduate School at Liberty University

February 28, 2013

Vickie Johnston

IRB Approval 1540.022813: University Students Diagnosed with Attention Deficit Hyperactivity Disorder: A Hermeneutical Phenomenological Study of Challenges and Successes

Dear Vickie,

We are pleased to inform you that your above study has been approved by the Liberty IRB. This approval is extended to you for one year. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Thank you for your cooperation with the IRB and we wish you well with your research project.

Sincerely,

Fernando Garzon, Psy.D. *Professor, IRB Chair*

LIBERTY UNIVERSITY.

Liberty University | Training Champions for Christ since 1971

Appendix F

Sample In Vivo Coding

Family, Friends, Study Groups, and Organizations

Participant I – she lived at home and that she had her family for support.
Participant II—"Yeah…I would say organizations, too. I have the Honor's Program and supports. We all live in the same hall."
Participant III—"My family…I want to say family. It is kind of hard to say…they are not here, but I call them all the time."
Participant III –"Also…leadership, organizations, student organizations…I guess I lead discussions; I was doing a lot of that …as far as the mechanics and in between those things, I had a lot of support from the other members on the board."
Participant IV—"My parents help make sure that I stay on track."
Participant IV—"My family….They are the ones that want to see me be successful… like my mom, calls me … She's a teacher. She calls me every day to make sure get my stuff done on time and turned in. Because I give her access to see my grades, too, so she is looking at my grades just as much as I am".
Participant IV-- I could say that too. I was leading groups. This was the year I was good at leading groups. We would meet together. When you have people that are wanting to work as hard as you, you kind of understand a lot better.
Participant V – "Also classmates help me succeed more, too…. Because I have study groups or my friend will help me."
Participant V—"Everyone wants to learn…everyone wants to study. In high school you have the followers and the different clicks, whatever. Here, everyone just wants to …do their own thing, and they are here to learn. So, it is a learning environment, and everyone is here to learn together….study groups or…to work together and help each other out".
Participant VII – "My brother… I've seen what the value of college has done for him and what happens when you do really well in school and go after your dreams, and he's definitely pushed me…all throughout my life, academically."
Participant VII – "I'm involved in a lot of clubs on campus, and I have a lot of big friend bases on and off campus, as well. I do a lot of stuff in the community…. through the Boy Scouts of America and Learning for Life".
Participant VII—"I was working on homework with a buddy of mine from my Stats class yesterday that I'm good friends with. He's also a psychology major, and he understood stuff better than I did and (you know) we were helping each other finish. He helped me understand it, and I understood it, and we got our work done… I did the same thing with a group project. We got together, broke it down and did certain things".

Appendix G

Patterns or Themes

Factors in Academic Success

Successful grades in class=academic success
Family, Friends, Study Groups, and Organizations (all but one said)
Adaptive Services—(all but one said)—the ability to take tests in a separate environment with no time limit (all but two said)
Services provided by the university (all—combination of small classes, writing center, counseling center)
Small class sizes (two said)
Professors (several said) Professors told?--All said no (only one said they would if the professor asked; otherwise they would not volunteer to discuss)
The scheduling differences in college (only one found troubling because of work schedule—others found it easier because they did not need to sit for long periods of time like in high school)

Factors in Academic struggles

Math (all but one mentioned/only one mentioned success)
Distractions (all mentioned going to the Library to avoid distractions)
Focus (processing or attention problems—all mentioned)
Time management –organization (several mentioned procrastinating and struggles with organization)
Social Challenges—feeling of social awkwardness (mentioned by several)
feeling introverted or fear of public speaking (all but one mentioned)
Memory issues (all mentioned)
Medicines side-effects (a few mentioned)

Environments (Table 2 also utilized)

No distractions (all said) Library—distraction control (all said)
hands-on (several said)
online / natural environments (three mentioned liking online classes—of these, two said they liked and did well in them because they could do them when they wanted at home; the third liked because of the schedule, but did not do well in because of poor time management skills)
small study groups or study partner (several said)
one-on-one / my own/ individual assistance (three said)
visualizing or visual examples (three said)
notes/Powerpoints provided by the instructor during class

Individual factors

Successful time management (using a written planner, scheduler, or planner (all said)
Self-determination factors (all participants mentioned—Knowing their own needs, strengths, and weaknesses)

Reading and study strategies

notecards
Outlining

pulling out the main points
highlighting
underlining
re-reading
rewriting notes after class
visualizing
getting notes from Adaptive Services so they could listen in class (not able to take notes and listen)