The Readiness of Adults with Attention Deficit Hyperactivity Disorder for Self-Directed Learning

Melissa Sue Wright
University of Southern Mississippi

Follow this and additional works at: https://aquila.usm.edu/dissertations

Recommended Citation
Wright, Melissa Sue, "The Readiness of Adults with Attention Deficit Hyperactivity Disorder for Self-Directed Learning" (2011). Dissertations. 646.
https://aquila.usm.edu/dissertations/646
THE UNIVERSITY OF SOUTHERN MISSISSIPPI

THE READINESS OF ADULTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER FOR SELF-DIRECTED LEARNING

by

Melissa Sue Wright

Abstract of a Dissertation Submitted to the Graduate School of The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

May 2011
ABSTRACT

THE READINESS OF ADULTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER FOR SELF-DIRECTED LEARNING

by Melissa Sue Wright

May 2011

This study investigated the readiness for self-directed learning of adults with Attention Deficit Hyperactivity Disorder (ADHD), as well as their overall educational experiences. Using Guglielmino’s Self-Directed Learning Readiness Scale for Adults (SDLRS-A), the researcher investigated whether the following factors were significantly related to adults with ADHD and their readiness for self-directed learning: gender, age of diagnosis, treatment for a period of at least six months, level of education, and the existence of co-morbid conditions. Fifty-four adults who were at least 18 years old and self-reported a formal diagnosis of ADHD participated in this study. There were 22 (41.5%) males and 31 (58.5%) females, with one person not reporting his or her gender. The results indicated that level of education was significantly related to self-directed learning in adults with ADHD. Those who had completed college with at least a bachelor’s degree scored significantly higher than those who had not earned at least a bachelor’s degree. The participants’ readiness for self-directed learning was not significantly related to gender, age of diagnosis, treatment, or the existence of co-morbid conditions. However, because over 75% of the participants were college graduates, the sample was atypical of the adult ADHD population, and thus more research needs to be conducted in order to support the findings.
Interviews were conducted with 10 of the participants (six females and four males) in order to determine how they described their educational experiences and what facets of these experiences were common to participants. The participants described the educational experiences in primarily negative terms such as constant feelings of stress and failure and depression. The results also revealed the following six themes: creativity, a lack of organizational skills, a need for feedback when completing learning projects, the tendency to procrastinate, and the preference for hands-on activities and/or concrete examples in the learning environment. Implications for adult educators included re-examining the roles of the instructor in creating self-directed learners and using various theories of self-directed learning to assess and plan learning activities for adult learners with ADHD.
The University of Southern Mississippi

THE READINESS OF ADULTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER FOR SELF-DIRECTED LEARNING

by

Melissa Sue Wright

A Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirement
for the Degree Doctor of Philosophy

Approved:

Lilian H. Hill
Director

John R. Rachal

Thomas Lipscomb

Kyna Shelley

Susan A. Siltanen
Dean of the Graduate School

May 2011
DEDICATION

Dedicated to my mother, Martha M. Wright, and to the memory of my father,

Orvey T. Wright.
ACKNOWLEDGMENTS

Special thanks go to my committee members, Dr. Lilian H. Hill, Dr. John R. Rachal, Dr. Kyna Shelley, and Dr. Thomas J. Lipscomb. Thanks for being great educators and for all of your help with this project. Thanks especially to my chair, Dr. Hill, for all of your time and dedication to this study and for being an educator, mentor, and friend to me throughout my doctoral studies. Thanks to Dr. Rachal for being one of the most gifted educators I have ever known. Your passion for the field of adult education has been an inspiration to many of us. Thanks to Dr. Shelley for making me like statistics. All students should be lucky enough to have you teach them statistics. Thanks to Dr. Lipscomb for the great research skills you imparted and for always making me strive to do my best.

Special thanks also go to my friends, Teresa Welsh and Amanda Russell, for the laughter, fun, shopping trips, and great discussions. To my classmates in the doctoral program, Wendy Jean Sonstrom, Deborah Stover, Jerry Ross, Beth Cole, and Juan Loiaza, thanks for the great discussions and conversations and for showing me what excellence in academia is. To Wendy Jean especially, thanks for keeping me sane during this journey and for your friendship.

Thanks to my family, especially my mother and best friend, Martha Wright. I could not have done this without you. You are my rock. To my brother, Jon, and sister-in-law, Charlee, my nieces, and my wonderful “greats,” thanks for helping me see what is really important in life. Without all of you, I would not be the person I am today. I love you beyond measure.
# TABLE OF CONTENTS

ABSTRACT

DEDICATION

ACKNOWLEDGMENTS

LIST OF TABLES

CHAPTER

I. INTRODUCTION

  Background
  Statement of the Problem
  Definitions
  Limitations
  Delimitation
  Assumptions
  Justification and Importance of the Study

II. REVIEW OF RELATED LITERATURE

  Self-Directed Learning
  Narrative Theory
  Attention Deficit Hyperactivity Disorder (ADHD)
  Learning Disabilities
  Federal Laws Pertaining to ADHD and Learning Disabilities
  Summary

III. METHODOLOGY

  Overview
  Research Design
  Participants
  Procedure
  Data Analysis

IV. RESULTS

  Description of Questionnaire Participants
  Analysis of Results
  Interviews
V. DISCUSSION AND CONCLUSION.............................................132
   Major Implications
   Limitations of the Study
   Implications for Further Research
   Conclusion

APPENDIXES.........................................................................151

REFERENCES........................................................................169
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Highest Level of Education Completed by the Participants</td>
<td>92</td>
</tr>
<tr>
<td>2.</td>
<td>Type of Treatment Received</td>
<td>93</td>
</tr>
<tr>
<td>3.</td>
<td>Co-Morbid Conditions</td>
<td>94</td>
</tr>
<tr>
<td>4.</td>
<td>Range of Scores on the SDLRS-A</td>
<td>95</td>
</tr>
<tr>
<td>5.</td>
<td>Learner Self-Confidence Ratings</td>
<td>97</td>
</tr>
<tr>
<td>6.</td>
<td>Learner Creativity Ratings</td>
<td>99</td>
</tr>
<tr>
<td>7.</td>
<td>Coefficients Table</td>
<td>101</td>
</tr>
<tr>
<td>8.</td>
<td>Means for Each Group within Each Hypothesis</td>
<td>103</td>
</tr>
</tbody>
</table>
CHAPTER I  
INTRODUCTION  

Background  

Self-directed learning is one of the major theories of adult education. Its basic premise is that adult learners will assume primary control over “planning, implementing, and evaluating their own learning” and learning projects (Brockett & Hiemstra, 1991, p. 3). While much research has been conducted on self-directed learning in various adult populations such as nursing students, engineers, teachers, or doctors, very little work has been done regarding how well those individuals with either learning disabilities and/or attention deficit hyperactivity disorder (ADHD) are able to plan and complete their learning projects. Because there has been little research conducted on adults with ADHD and their ability to plan and implement learning assignments, this study investigated adults with ADHD and their readiness for self-directed learning. 

Self-Directed Learning  

Since the work of Houle (1961), Knowles (1970, 1975), and Tough (1971, 1979), self-directed learning has been at the forefront of adult education. Much research has been conducted on self-directed learning and many models have been developed (Brockett & Hiemstra, 1991; Brookfield, 1984; Garrison, 1997). It may be defined as the process by which individuals assume the primary responsibility in “diagnosing their learning needs, formulating their learning goals, identifying human and material resources for learning, choosing, and implementing appropriate learning strategies, and evaluating learning outcomes” (Knowles, 1975, p. 18). Brockett and Hiemstra (1991) further state that self-direction is composed of two facets: (a) self-directed learning, the
instructional process of teaching and learning in which the individual assumes primary responsibility for his or her learning; and (b) learner self-direction, the individual characteristics the learner possesses which allow him or her to engage in self-directed learning. Thus, they maintain that self-directed learning encompasses both the actual learning process and the characteristics that each individual learner possesses that would allow him or her to be successful in implementing and completing his or her own learning projects. Knowles (1970) identified this ability to be self-directed as a primary characteristic of the adult learner and maintained that as learners mature, they become more self-directed.

Researchers have identified certain characteristics of learners who tend to be the most successful at self-directed learning. Oddi (1986) and Oddi, Ellis, and Roberson (1990) developed The Oddi Continuing Learning Inventory (OCLI) to measure self-directedness. Some of the traits that correlate most positively with self-directedness on the OCLI are self-efficacy, positive self-concept, a strong sense of personal responsibility, and grade point average (as cited in Merriam, Caffarella, & Baumgartner, 2007). Another scale which measures self-directedness is Guglielmino’s (1977) Self-Directed Learning Readiness Scale (SDLRS), which has shown that initiative, independence, curiosity, a love of learning, and a great desire for achievement positively correlate with a high degree of self-directedness.

Attention Deficit Hyperactivity Disorder

ADHD may be defined as a neuropsychiatric disorder whose symptoms are divided into three primary categories: inattention, hyperactivity, and impulsivity (Nadeau, 1995). It affects 3-5% of the adult population. Studies have shown that 49% to 66% of
those diagnosed with the disorder will continue to exhibit its symptoms as adults (Barkley, Fischer, Smallish, & Fletcher, 2002; Mannuzza, Klein, Bessler, Mallory, & LaPadula, 1998; Weiss & Hechtman, 1993). Hopkins, Perlman, Hechtman, and Weiss (1979) found that those with ADHD who had impaired executive functioning as children still had “significant deficits” (as cited in Barkley, 2006, p. 271) in attention, impulsivity, and distractibility as adults. While people with ADHD may not be officially diagnosed until they are adults, the symptoms must have been present during childhood for a formal diagnosis of ADHD to be made. It should, however, be noted here that most people exhibit at least some of these traits or behaviors at some point in their lives. A formal diagnosis of ADHD should be made only when there is a consistent pattern of these behaviors and when they interfere with one or more areas of a person’s life (i.e., education, occupation, or personal life; Barkley, 2006).

While many of the symptoms of ADHD may be similar in children and adults, the way that they manifest may be vastly different. Traits of ADHD that tend to be unique to adults are frequent moves or job changes, difficulty maintaining relationships (both romantic and platonic), mood lability, a history of underachievement in educational and occupational settings, a tendency toward substance abuse, and difficulty managing one’s finances (Nadeau, 1995). In addition, Barkley (2006) has identified the following traits of adults with ADHD who self-refer themselves for testing for the condition: difficulty making and maintaining friendships, quickness to anger, low frustration tolerance, low self-esteem, immaturity, poor self-discipline, poor organizational and time management skills, and a low level of follow-through on commitments. Since self-esteem and good organizational and time management skills are often needed to be successful at self-
directed learning (Oddi, 1986; Oddi, Ellis, & Roberson, 1990), a low level or lack of these traits could inhibit adults with ADHD in undertaking and/or completing learning projects on their own, making it difficult for them to succeed in educational and/or occupational endeavors.

Statement of the Problem

While the traits which are associated with successful self-directed learners, including positive self-concept, self-efficacy, strong grade point average, and independence, may be present in many adults, those with learning disabilities and/or ADHD may struggle with them. For example, low self-esteem, low self-efficacy, and lower grade point averages are often associated with adults with ADHD (Barkley, 2006). As aforementioned, Knowles (1970) stated that learners become more self-directed as they mature. However, since most adults with ADHD lag behind their non-ADHD peers in maturity (Barkley, 2006; Hallowell & Ratey, 1994), they may have difficulty with planning, implementing, and assessing their own learning projects. If they do not possess the skills and tools to work independently and complete learning projects, they may continue to lag behind in the educational and occupational arenas. This study investigated the readiness of adults with attention deficit hyperactivity disorder (ADHD) for self-directed learning and whether factors such as age of diagnosis, treatment, and gender were related to their level of readiness. In addition, this study investigated the overall educational experiences of adults with ADHD.
Hypotheses

$H_1$ There is a significant difference in the scores for the general population and the scores for adults with ADHD on Guglielmino’s Self-Directed Learning Readiness Scale for Adults (SDLRS-A).

$H_2$ There is a significant difference in scores on the SDLRS-A between those adults diagnosed with ADHD as a child or adolescent and those diagnosed as adults.

$H_3$ There is a significant difference in scores on the SDLRS-A between those adults who have received treatment for their ADHD at some point for a period of at least six months and those who have not.

$H_4$ There is a significant difference in scores on the SDLRS-A of adults with ADHD based on their level of education.

$H_5$ There is a significant difference in scores on the SDLRS-A between male and female adults who have ADHD.

$H_6$ There is a significant difference in scores on the SDLRS-A between those adults who report a diagnosis of ADHD and a co-morbid condition such as bipolar disorder, depression, and/or a learning disability and those who do not report a co-morbid condition.

Research Questions

$R_1$ How do adults with ADHD describe their educational experiences?

$R_2$ What are the participants’ greatest struggles in their educational endeavors?

$R_3$ How does having ADHD affect the participants’ educational experiences?

$R_4$ What aspects of their educational experiences are common among the participants?
Definitions

*Definition of an Adult and Adult Education*

One of the first tasks in determining what adult education is was to define what constitutes an adult. Many definitions exist which are based on biological/chronological age, psychological and emotional maturity, or social maturity. Rogers (1986) defined an adult as someone who has “[come] to terms with life, [copes] successfully with crisis, and [is] in charge of one’s world” (p. 3). Knowles (1980) defined an adult as one who performs the roles typical of an adult (maintaining employment, raising a family, and/or paying the majority of his or her bills), regardless of his or her chronological age. The legal definition of adult is one who has reached the age of majority, which may vary from state to state in the U.S., but is generally considered to be 18. The age of majority may be defined as “the legally defined age at which a person is considered an adult, with all the attendant rights and responsibilities of adulthood” (U.S. Legal Forms, Inc., 2008, para. 1). To increase the potential sample as much as possible, for this study, the definition of an adult was based on the legal definition and defined as one who was chronologically at least 18 years of age.

There are also many definitions of adult education. Merriam and Brockett (1997) maintained that any definition of adult education should have two components: the adult status of the participants and the idea that the learning activity is a planned one. Bryson (1936) defined adult education as “all the activities with an educational purpose that are carried on by people, engaged in the ordinary business of life” (as cited in Merriam & Brockett, 1997, p. 3). Darkenwald and Merriam (1982) defined it as a learning or educational process where the goal is to create changes in knowledge, skills, or attitudes.
and is engaged in by those persons whose daily activities are those of an adult (Merriam & Brockett, 1997). For the purposes of this study, adult education was defined as those planned learning or educational opportunities engaged in by those who were at least 18 years of age. These activities included, but were not limited to, college or university education at either the undergraduate or graduate level, training as part of an individual’s job, technical training, or GED or adult basic education (ABE) classes.

**Definitions of Other Terms**

1. **Attention Deficit Hyperactivity Disorder (ADHD)—**a neurobiological condition which affects 3-5% of the population; typically manifests itself as difficulties with sustained attention or focus, impulsivity, and/or hyperactivity (Nadeau, 1995).

2. **Episode—**“a period of time devoted to a cluster or sequence of similar or related activities, which are not interrupted much by other activities” (Tough, 1979, p. 7); includes all of a person’s activities, thoughts, and experiences during that time.

3. **Formal diagnosis—**a diagnosis made by a psychologist, psychiatrist, physician, and/or other medical or mental health professional; may also be referred to as an official diagnosis.

4. **Learning—**the result of an individual’s attempt to gain, retain, and utilize new knowledge or skills through various methods such as reading, attending a class or lecture, or watching a video or other multimedia (Tough, 1971); “all changes in behavior that result from experience but that are not due to fatigue, maturation, drugs, injury, or disease” (Lefrancois, 1980, p. 172).

5. **Learning Episode—**a period of time in which a person’s goal is to gain new knowledge and/or skills in a particular area (Tough, 1979).
6. Learning Project—a series of related learning episodes where one increases his or her knowledge and/or skills in a certain subject area such as auto mechanics, British literature, or inferential statistics (Tough, 1979).

7. Psychotropic Medications—medications such as antidepressants (e.g., Wellbutrin), stimulants (e.g., Ritalin), or nonstimulants (e.g., Strattera) that are often prescribed for those who have been diagnosed with psychological or neuropsychological conditions such as depression, bipolar disorder, or ADHD.

8. Self-directed learning—the ability to assume the majority of the control over one’s own learning.

9. Self-Directed Learning Readiness Scale for Adults (SDLRS-A)—a 58-item instrument designed to measure the attitudes of adults toward self-directed learning; developed by Guglielmino in 1977 and also called the Learning Preference Assessment (SDLRS/LPA, n.d.).

Limitations

1. There was a relatively small sample of 54 adults with ADHD participating in the study compared to the general population of adults with ADHD. Therefore, the results may not be generalizable beyond the sample.

2. The results were compared to the general population mean on the SDLRS-A of 214. The general population may include those with ADHD, as well as those who do not have ADHD.

3. Due to the difficulty in finding adults with ADHD for the sample, the researcher initially used purposive sampling, rather than random sampling. Thus, it cannot
be assumed that the sample was fully representative of the total population of ADHD adults.

4. Due to difficulties with sustained attention that are often a symptom of ADHD, some participants may have been unable to complete the SDLRS-A, or may have completed it inaccurately by marking random answers without completely reading the questions.

Delimitation

1. This sample was delimited to those who were members of ADHD online support groups, library and information science message boards, or those who attended a certain university in the southern part of the United States. Therefore, the sample may not be representative of the total population of ADHD adults.

Assumptions

1. Participants completed the questionnaire honestly and to the best of their ability.
2. Participants offered accurate and honest information in the interviews.
3. Participants accurately self-reported a formal diagnosis (not self-diagnosed) of ADHD.

Justification and Importance of the Study

According to the U.S. Census Bureau, the adult population (18 years and over) is estimated to be 227,431,128 (United States Census Bureau, n.d.). If at least 3% of U.S. adults have ADHD, at least 6,822,934 American adults could potentially have the condition. Over six million people, then, could potentially be entering adult education programs in the United States at some point in their lives and may struggle to succeed in these programs. Additionally, the National Center for Education Statistics (2006) found
that 93,107 (44%) out of 211,607 adults surveyed participated in formal adult education programs, which included GED programs, English as a second language programs, work-related courses, personal interest courses, and part-time college, university, or vocational studies. This figure did not include those adults enrolled full-time in college, university, or vocational studies. The results also indicated that the percentage of those participating in adult education increases as their level of education increases. Twenty-two percent of those with less than a high school diploma participated in adult education opportunities, while 33% of those with a high school diploma and 60% of those with a bachelor’s degree did (National Center for Education Statistics, 2006). This agrees with Johnstone and Rivera’s (1965) initial research into who participates in adult education. Since research has shown that adults with ADHD tend to lag behind those without the condition in educational attainment and that adults with a lower level of educational attainment are less likely to participate in educational opportunities, adults with ADHD may be more at risk for not achieving all that they can than those without the condition (Barkley, Fischer, Smallish, & Fletcher, 2006; Mannuzza, Klein, Bessler, Mallory, & LaPadula, 1993; Weiss & Hechtman, 1993). However, if they are participating in some type of educational or learning endeavor and they indeed lag behind their non-ADHD peers in self-directed learning skills, they may struggle in adult education environments, causing them to be unsuccessful in the classroom and/or at their jobs, to have low self-esteem, to earn lower salaries, and to have a less comfortable life than those adults without ADHD.

Dao (1975) identified nine clusters of reasons for adults not participating in educational opportunities. These include perceived difficulties in succeeding in the learning environment, negative feelings toward institutions which offer educational
programs, and previous negative experiences in the educational environment. Since research has revealed that many adults with ADHD have struggled academically, as evidenced by low GPAs, more discipline referrals than their non-ADHD peers, and higher drop-out rates, their previous negative experiences may make them reluctant to participate in further education. Research on adults with ADHD has also revealed that those with the condition lag behind their non-ADHD peers in educational achievement, job retention, income, and self-esteem (Barkley et al., 2002). However, little research exists regarding adults with ADHD and their ability and/or readiness to engage in self-directed learning and if a lack of readiness would make them reluctant to participate in educational opportunities.

The researcher conducted a search of the online databases Academic Search Premier, ERIC, PsycARTICLES, PsycINFO, and Psychology and Behavioral Sciences Collection using the following terms: (a) (ADHD or Attention Deficit Hyperactivity Disorder) and self-directed learning; (b) Attention Deficit Disorder and self-directed learning; (c) learning disabilit* and self-directed learning; and (d) (ADHD or Attention Deficit Hyperactivity Disorder) and adult education. The first search, (ADHD or Attention Deficit Hyperactivity Disorder) and self-directed learning, revealed one book, *Executive Function in Education: From Theory to Practice*, by Lynn Meltzer (2007), which provides suggestions for helping those with a variety of disabilities to develop self-directed learning skills. However, the book’s focus is children with disabilities. The second search, Attention Deficit Disorder and self-directed learning, revealed the same book as the first. The third search, learning disabilit* and self-directed learning, revealed nine results. However, only one source, conference proceedings from an adult literacy
educator’s conference, related to adults. The fourth search, (ADHD or Attention Deficit Hyperactivity Disorder) and adult education), revealed 18 results. However, while one book chapter focused on non-medication treatments and accommodations for ADHD and one was a phenomenological study of graduate students with ADHD, none focused specifically on self-directed learning.

In addition, a search of the database Dissertations and Theses using the above search terms revealed that there has been one study conducted on learning disabilities and self-directed learning in adults. This study focused on individuals who were diagnosed with learning disabilities as adults and the process of educating themselves about their condition. Thus, little or no research exists on adults with ADHD and/or learning disabilities and how their condition may impact their ability to engage in self-directed learning. However, a search of Dissertations and Theses using the search term “self-directed learning and adults” revealed 470 dissertations on the topic. Populations such as university faculty, nurses, school staff, immigrants, international students, and Native Americans and their attitudes and/or readiness for self-directed have been studied, but there is very little research dedicated to self-directed learning skills in those with learning disabilities and/or ADHD. There is, then, a huge gap in the literature on adults with ADHD and/or learning disabilities and their readiness or ability to engage in self-directed learning.

This study, then, could provide new information on adults with ADHD and their ability to engage in self-directed learning. If the results revealed that adults with ADHD and/or learning disabilities had a significantly lower level of readiness for self-directed learning, as evidenced by their scores on the SDLRS-A, plans or accommodations could
be made to help provide them with these skills. These opportunities could possibly be incorporated into the typical accommodations offered by university offices of disability accommodations or places of employment.

In conclusion, since there has been so little research conducted on adults with ADHD and self-directed learning, the results, if significant, could be used to inform practice, redevelop current models of self-directed learning so that they are more conducive for producing successful results for those adult learners with ADHD and/or learning disabilities, and/or create new theories which could attempt to explain what makes a learning environment, instructor, or self-directed learning project successful for adults with ADHD.
CHAPTER II
REVIEW OF RELATED LITERATURE

Attention deficit hyperactivity disorder (ADHD) is a neuropsychological disorder which may impact an individual in the following ways: a decreased ability for sustained attention, heightened levels of impulsivity, and hyperactivity. As a result, adults with this condition often perform less well in the educational and occupational environments and may be less ready or able to engage in self-directed learning than their non-ADHD peers (Barkley, 2006). Thus, they may require certain accommodations in order to succeed in these arenas. The following areas were relevant to this study: humanistic psychology, self-directed learning, narrative theory, ADHD and adults, learning disabilities, and disability law.

Humanistic Psychology

This study is grounded in humanistic psychology, the self-directed theory of learning, and the narrative theory. Self-directed learning has its underpinnings in humanistic philosophy, which states that the primary goal for learning in adults is their own personal growth (Brockett & Hiemstra, 1991). There are three major ideas from the humanistic philosophy which relate to self-directed learning: (a) human beings are basically good; (b) human beings have unlimited capacity for growth; and (c) self-directed learning is the primary way to be proactive in what, when, and how knowledge or a particular skill is to be acquired (Merriam et al., 2007).

While behaviorist theories focus on the effects of the environment on behavior and cognitive theories focus on how information is processed, humanistic theories focus on human beings’ potential for growth. Humanists do not believe that behavior is
determined by either one’s environment or a subconscious. Rather, they believe that
people are able to create their own destiny, they are inherently good and will always work
to create a better world, they are free to choose how they act and react and that their
behavior is the result of choices that they make. Human beings have unlimited potential
for growth (Maslow, 1970; Rogers, 1983).

One of the most prominent humanists, Maslow (1970), developed a motivational
theory based on a hierarchy of needs. Basic physiological needs such as hunger and thirst
are at the lowest level and must be satisfied before one can begin to meet other needs
such as personal safety and security, the next level. The top levels of needs include
“belonging and love, self-esteem, and . . . the need for self-actualization” (Merriam &
Caffarella, 1991, p. 132), which may be defined as human beings’ need and desire to
learn so that they may be all that they can be. Learning is, then, the primary goal of self-
actualization and one of the primary roles of educators is to help learners achieve this.
Sahakian (1984) maintains that learning can promote good psychological health. While,
like Maslow, he identifies self-actualization as the primary goal of learning, he also
recognizes the following additional goals:

1. The discovery of a vocation or destiny
2. The knowledge or acquisition of a set of values
3. The realization of life as precious
4. The acquisition of peak experiences
5. A sense of accomplishment
6. The satisfaction of psychological needs
7. The refreshing of consciousness to an awareness of the beauty and wonder of life
8. The control of impulses
9. The grappling with the critical existential problems of life
10. Learning to choose judiciously. (p. 439)

Rogers (1983) focuses on learning which leads to personal growth and development. He states that learning which leads to personal growth must have the following characteristics:

1. People should be involved both cognitively and affectively in the learning process.
2. Learning should be self-initiated and self-directed.
3. Learning should affect one’s behavior and attitude.
4. The learner should evaluate his or her own learning process and experiences.
5. The meaning of the learning experience becomes a part of a person’s “total experience.” (p. 20)

Learning, then, is an essential part of becoming a whole person. People who have not had sufficient learning opportunities or whose learning has been negatively impacted by a learning disability or ADHD may not only have difficulty in developing their full potential, but they may also be less psychologically healthy than those who have had many learning opportunities. Humanistic psychology underpins many of the basic principles of self-directed learning and, thus, plays an important role in forming the theoretical framework for this study.
Self-Directed Learning

The concept of self-directed learning and the readiness of adults to engage in it form the basis of this study. Self-directed learning may be defined as a person’s being able to assume the primary responsibility for his or her own learning. Initially, the primary research was conducted by Houle (1988), Knowles (1970), and Tough (1971, 1979). Their major findings, from their respective samples, indicate that over two-thirds of adults planned, implemented, and assessed their own learning at least some of the time, that learning takes place in many contexts, and that adults become more self-directed as they mature. Most adults will complete self-directed learning projects in a variety of areas which interest them.

Tough (1967) began his research on self-directed learning in order to challenge Verner’s (1964) claim that self-directed learning should not be considered adult education. Verner maintained that in order to be self-directed, learners had to possess enough insight and character to plan, implement, and manage their own learning. Most individuals, though, he stated, did not possess this insight and thus for sufficient learning to take place, an external facilitator would be required to play a major role in the learning process. He further stated that since self-directed learning, or self-education, was an individual activity, it fell beyond the scope of adult education because there was no facilitator to “exert influence on the learning process” (p. 31). Therefore, his view was that few individuals are able to use self-directed learning projects as their only method of learning.

To refute Verner’s claims, Tough (1967) used a study of “self-teaching” learning projects conducted by 66 adults from Ontario, Canada, where he discovered that the
participants planned at least 70% of all of their learning projects. To be considered a learning project, there must have been a series of learning episodes which added up to at least seven hours (Tough, 1967). Based on his research and on interviews with adult learners, Tough (1979) identified 13 major steps in which adults engage when conducting self-directed learning projects: (a) Adults first decide what knowledge or skill they wish to acquire; (b) They then decide which activities and materials they need in order to gain the desired skills; (c) They choose where the learning will take place; (d) Learners then determine their timelines and deadlines for acquiring desired skills; (e) After the deadlines for completion of a project have been set, adult learners determine when to begin the learning episode; (f) They then decide the pace at which they will learn; (g) They determine their current knowledge base and their progress in acquiring new knowledge; (h) They identify barriers to learning or acquiring new skills; (i) The learners obtain needed resources and materials; (j) They prepare the physical learning environment; (k) They acquire the funds needed to pursue their learning project; (l) They find time to engage in their learning project; and (m) They work to maintain or increase their motivation for engaging in and completing their learning project.

There are three major goals of self-directed learning. First, learning or the educational process should be designed to increase or enhance adult learners’ ability to be self-directed. Caffarella (2000) and Brockett and Hiemstra (1991) identify two elements which must be present in order for this goal to be met. First, learners must have the specific tools or skills to engage in self-directed learning, and second, they must have the personal characteristics which motivate them to be self-directed. One of the primary
roles of educators, then, is to provide learners with the skills necessary to plan, implement, and assess their own learning (Merriam et al., 2007).

The second major goal of self-directed learning is that learning should be transformational, or bring about a change in learners’ underlying values or belief systems (Merriam et al., 2007). Through learning projects, adults test their current beliefs and values against the historical, cultural, personal, and societal bases and contexts for their wants and needs (Brookfield, 1984). By critically reflecting on these societal, cultural, and historical bases for their behaviors, a change in underlying values often begins to take place. These changes in learners’ value systems, in turn, create a change in their outward behavior toward others and attitudes towards themselves, others, and society (Mezirow, 1985).

The third goal is that self-directed learning should bring about social action and/or change. Identifying their own learning needs and taking control of these needs can aid adults in becoming more invested in their learning, and they will choose to gain knowledge in areas which will help them confront societal issues such as poverty, crime, and/or healthcare. Thus, by identifying their learning needs and planning and implementing learning projects in these areas, adults will feel more empowered to work towards improving the larger society or community in which they live. Self-directed learning, then, should be emancipatory, in that it helps learners identify the elements in their lives which keep them from succeeding and gives them the tools to challenge the status quo in both their own lives and in society (Merriam et al., 2007).
Models of Self-Directed Learning

There are three basic types of self-directed learning models: linear, interactive, and instructional. Most of these models, regardless of their structure, however, have aided adults in becoming more self-directed as their major goal.

Linear Model

One of the earliest linear models relevant to this study was developed by Knowles (1975), who designed a six-step linear process. First, the atmosphere for learning must exist. The circumstances must be right, the relevant materials must be available, and the learner must have the time and the energy to expend on a learning project. Second, there needs be a assessment of the learner’s needs. This includes pin-pointing in what areas (e.g., cooking, creative writing, auto-mechanics) the learner needs to acquire or improve his or her skills. Third, after determining what needs to be learned, the adult and the facilitator identify specific goals to work toward in his or her learning projects. Fourth, after creating specific goals to work toward, the learner and the facilitator identify materials and other resources to aid him or her in meeting these goals. Fifth, once the materials and resources have been identified, learners identify and select appropriate strategies and activities for engaging in and completing their learning projects. Sixth, during and after the completion of the learning project, the learner and the facilitator evaluate and assess learning outcomes. The role of the facilitator or instructor in this process is to guide the learner and provide help when needed, but to let the learner assume most of the responsibility for completing the learning project (Merriam et al, 2007).
Interactive Models

While the models for self-directed learning proposed by Knowles (1975) and Tough (1971) are very linear in nature, others (Brockett & Hiemstra, 1991; Garrison, 1997; Spear, 1988) have created more interactive models. The interactive models are based on the premise that learning is not always well-planned and does not always follow a set pattern. Spear (1988) based his model on the following three factors: (a) learning opportunities people discover in their own environments; (b) current or former knowledge that learners possess; and (c) chance events in learners’ lives. These factors can be expanded to include seven principal elements:

Knowledge:
1. Residual Knowledge ($K_r$) -- Past knowledge from previous learning projects or experiences that the learner possesses.
2. Acquired Knowledge ($K_a$) -- Knowledge that the learner has acquired from the current learning project.

Action:
1. Directed Action ($A_d$) — Actions where the goal is to meet a certain goal or “specific end.” (Merriam & Caffarella, 1991, p. 47)
2. Exploratory ($A_e$) — Actions in which the learner engages where he or she is not sure of the outcome.
3. Fortuitous Action ($A_f$) — Actions in which the learner engages that are not a part of his or her current learning project.
Environment:

1. Consistent Environment (E_c)—Both human and other resources which are available to the learner on a regular basis.

2. Fortuitous Environment (E_f)—“Chance encounters” which, while not related to the learning project at hand, may affect either the learner and/or the project. (p. 48)

Learning projects comprise clusters of these factors. Spear maintains that the “clusters” of learning experiences do not always occur in a linear fashion. Thus, one is not necessarily connected or related to those which follow it. Instead, learners retain information learned from past clusters and use it again when it is related to ideas or concepts being studied or learned in current clusters. A self-directed learning project is successful when learners can take related clusters and combine the knowledge gleaned from them to form a complete idea concept or project (as cited in Merriam & Caffarella, 1991).

In Brockett and Hiemstra’s (1991) Personal Responsibility Orientation (PRO) model, the foci are the process of instruction and the characteristics or personality of the learner. In the instructional process dimension, “the primary responsibility for learning and engaging in and completing a learning project falls to the person him or herself, with an educational agent or resource often play[ing] a facilitating role in the process” (p. 24). The person serving as the “educational agent” may provide guidance with locating resources (human, paper, and/or electronic), organizing materials, assessing learning, and choosing methods of learning. The learner, however, assumes the primary responsibility for planning, implementing, completing, and evaluating the learning project. The learner
is also primarily responsible for making decisions about alterations to the learning project and how to best implement these alterations.

The second aspect of the model, the personality of the learner, “centers on the learner’s desire or preference for assuming responsibility for learning” (p. 24). Learners must choose to engage in learning. If the choice is made for them, the learning project may be less likely to be a success or be completed. While the personality of the learners is central to successful implementation and completion of self-directed learning projects, his or her social environment and other factors may also affect his or her learning process. Thus, the context or environment in which the learner exists is very important to the learning process.

In the fall of 2010, Brockett suggested that changes needed to be made to the PRO model because knowledge of the context domain had increased. He proposed the Person Process Context (PPC) Model of Self-Directed Learning. Elements of the person dimension include “creativity, critical reflection, enthusiasm, life experience, motivation, previous education, resilience, and self-concept” (p. 9). The process dimension includes “facilitation, learning skills, learning styles, planning, organizing, and evaluating abilities,” (p. 9) and the context dimension includes “culture, environment, finances, gender, learning climate, political climate, and sexual orientation” (p. 9). The main tenets of the PPC model are that all three dimensions are important and essential parts of self-directed learning.

Garrison’s (1997) model consists of three dimensions: self-management, the learner’s ability to self-monitor, and a motivational component. The self-management dimension examines the environment or setting in which a person is engaging in a
learning project. Whether or not the learner is in a formal or informal environment is considered so that how much control learners have over their learning and the extent to which they can reach their goals may be assessed. By control, Garrison is not referring to a lack of influence or aid from others, but rather the “use of learning materials within a context where there is opportunity for sustained communication” (Merriam et al., 2007, p. 114). Self-management must also include opportunities to work collaboratively with others.

Self-monitoring refers to learners’ opportunities or abilities to monitor the cognitive and metacognitive processes in which they engage while undertaking a learning project. These processes involve learners being able to use a wide variety of learning methods and to think about, analyze, and make needed changes to the learning process. Self-monitoring is about making meaning of one’s learning and the ability to be reflective and critical about the learning process (Merriam et al., 2007).

The motivational dimension encompasses the factors which propel people to engage in, maintain, and complete learning projects. Like the self-monitoring dimension, it also focuses on cognition and metacognition. Learners must be able not only to apply a variety of learning techniques and resources to the learning process, but they also must be able to critically reflect on their reasons for undertaking a learning project and for keeping the project going until it is completed. They must be able to evaluate critically these reasons throughout the learning process and to create new goals if necessary. Unlike the linear models, all three dimensions operate throughout the learning process. One dimension is not necessarily completed before another is begun (Merriam et al., 2007).
Peters (1989) developed his model based on the premise that adults engage in self-directed learning in order to seek solutions to problems that they encounter. His method, the Action-Reason-Thematic (ART), is composed of “cycles of analyses followed by interviews in which the interviewer seeks to discover how people approach solving their problems” (Merriam & Caffarella, 1991, p. 212). Through these interviews, people seek not only solutions to their problems, but also the reasons that others chose the solutions that they did. Specific questions used in this model include: (a) What areas of the problems does the learner pay the most attention to and what areas does he or she choose to ignore? (b) What types of information does the learner specifically seek out in order to solve a particular problem? (c) If a learner is required to solve a problem, how does he or she “transform the problem” in order to connect it to his or her own experiences (pp. 212-213)? (d) What general and specific methods does the learner use in order to solve his or her problem or make decisions among multiple solutions? and (e) What are the general known rules or guidelines which learners may use in order to solve a particular problem?

**Instructional Models**

Instructional models, which may aid instructors or facilitators in guiding learners toward self-direction, include those by Grow (1991) and Hammond and Collins (1991). They are comprised of specific instructional methods and assignments which can be incorporated into the learning environment. Grow (1991) identifies the following four stages of learners: (a) Dependent Learners—learners are not very self-directed and require a lot of structure and a facilitator to lead them; (b) Learners of Moderate Self-
Direction—learners are motivated to learn and have a mid-level ability to self-direct; however, they do not possess much knowledge of the topic being studied; (c) Learners of Intermediate Self-Direction—learners possess basic knowledge and skills in the topic being studied; they are confident that they can embrace learning in the target area with an effective leader; and (d) Learners of High Self-Direction—learners possess a high degree of self-directedness and are able to plan, implement, complete, and evaluate their own learning project with little or no help from a facilitator. It should be noted that a learner’s stage may vary according to the content area in which the learning takes place.

For learners at stage 1, dependent learners, the learning process is very teacher-centered, with them playing a very passive role and the facilitator playing a very active one. Some learners are more dependent upon the facilitator in some subjects and less so in others, whereas other learners are fully dependent on others in all subjects. The role of the facilitator is that of an authority figure or coach. Examples of classroom or learning activities may include drill and practice with immediate feedback, lectures, and/or other tasks which increase learners’ skill levels. Grow (1991) points out that while being a dependent learner can seriously impede learning, it should not be seen as a deficit.

Learners of moderate self-direction, those at stage 2, are interested in the learning process and are willing to be engaged. They are especially responsive to topics and assignments or projects in which they are interested and for which they see a purpose. They are confident in their abilities, but do not have a basic knowledge in the subject being taught. They also tend to be very responsive to personal interactions with their instructor or facilitator. Effective methods of instruction for these learners include providing “clear explanations of why skills are important and how assignments help
attain them” (Grow, 1991, p. 131), guided discussions, goal setting, assignment planning, “highly interactive drills” (p. 132), and structured assignments with “predictable outcomes” (p. 132). Goal setting is very important at this stage as it can help prepare learners in becoming more self-directed.

Learners of intermediate self-direction, those at stage 3, have basic knowledge and skills in the topic being studied and are able to perceive themselves as active participants in the learning process. They are very open to learning, but may need to develop greater self-esteem, self-confidence, and the ability to engage in collaborative learning. At this stage, they are able to examine the culture in which they live and how it impacts learning and they are able to see the value of both their own personal experiences and those of others. They are able to work with their facilitators in designing and implementing learning projects. Effective teaching methods include facilitator-initiated discussions where the instructor and the learners participate equally, collaborative learning projects, and seminars. Learners are given increased responsibility in setting goals and implementing their projects (Grow, 1991).

Learners of high self-direction, those at stage 4, are able to plan and implement their own projects with or without the aid of the facilitator. They are able to use multiple resources (both human and other) to pursue and achieve their learning goals. Effective teaching methods for learners at this level include “self-directed study groups,” (Grow, 1991, p. 129), individual projects, internships or practica, or writing a dissertation or thesis.

Unlike other models, the one proposed by Hammond and Collins (1991) addresses the issue of learning and its relationship to social action. They suggest that one
of the primary goals of learning should be to aid learners in becoming social activists and working to combat injustices in society. Their model includes seven steps which “assist learners in formal settings to engage in the critical practice of adult education” (Merriam et al., 2007, p. 119). First, instructors should create a collaborative learning environment. Second, instructors should help learners to reflect critically on their lives and the political, social, and economic contexts in which they live. Third, instructors should help learners to evaluate their own competency in different areas. Fourth, learners should develop competencies in evaluating their own personal learning needs as well as those which would benefit society. Fifth, learners should not only become able to set their own learning goals, but also to articulate these goals into a learning contract. Sixth, instructors should help learners to manage their own learning projects. Finally, learners should be able to effectively reflect on and evaluate the learning process and their learning projects. Like other models of self-directed learning, the immediate goal is to equip learners to manage their own learning needs and projects. However, unlike other models, Hammond and Collins (1991) propose that the ultimate goal of self-directed learning should be to improve the lives of the learners and others in society by combating economic, political, and/or social injustices (Merriam et al., 2007). While this is an important area of adult education, learning for the purpose of becoming a socialist activist is only one of the many goals of adult education and certainly not always its primary purpose.

The major tenets of self-directed learning are that adults should be self-directed, that they become more self-directed as they mature, and that self-directed learning is a skill which may be constantly improved upon. However, because research (Barkley,
2006; Hallowell & Ratey, 1994) has shown that adults with ADHD tend to lag behind in maturation, they may continue to struggle more with learning to become more self-directed. Thus, it is important to determine if adults with ADHD are significantly less ready for self-directed learning than those adults without ADHD because if they are less ready, it is important for adult educators to work with these learners on developing the skills necessary for becoming more self-directed. If deficits in self-directed learning are not addressed, it is possible that adults with ADHD may continue to struggle in the learning environments, possibly effecting their educational and economic success. It is important, then, not only to determine their level of readiness for self-directed learning by using an instrument such as the SDLRS-A, but also what their previous educational experiences have been. By using the narrative theory as a basis for interviewing adults with ADHD about their educational experiences, information can be gleaned about their views of the learning environment and how these environments might have contributed to their readiness or ability to self-direct.

Narrative Theory

Narrative theory was relevant to this study because it was the framework through which the interviews in the study were conducted and analyzed. A narrative may be defined as a first-hand account of a person’s life, and may either be oral or written in diaries or journals. It is generally told in story format with a beginning, middle, and end. It is “symbolic actions, words, and/or deeds that have sequence and meaning for those who live, create, or interpret [it]” (Brief history and theory of speaking: Walter Fisher’s narrative paradigm, n.d, para. 1). Through narratives, human beings are able to make
meanings of their lives. Types of narratives include autobiographies, oral histories, life histories, journals, and autoethnographies (Fisher, 1987).

In narratives, the participants are the primary source of data. Data may be collected in the following ways: oral interview, letters, diaries or journals, written interviews conducted via online chats, or literature. Narratives are generally analyzed in one of three ways: (a) biographical, which examines participants’ stories in conjunction with various aspects of their lives such as race, gender, socio-economic status, educational attainment, culture, and nationality; (b) psychological, which examines participants’ motivations and goals; and (c) linguistic, which examines participants’ discourse, their manner of speaking, use of grammar, and/or their language or lect of choice (Merriam & Associates, 2002).

In narrative research, both the researcher and the participant are storytellers. The participants tell their stories, while the researcher attempts to create meaning by retelling these stories through analysis. Researchers, then, “construct” participants’ stories by making meaning of them through data analysis. Thus, creating the stories is a dual effort between the researcher and the participant. It is “the interplay between the narrative that is told and the structure of the telling that is critical” (Merriam & Associates, 2002, p. 311).

Narrative theory was developed by Walter Fisher as an alternative to rational theory. His belief is that all communication is a form of storytelling and that humans are *homo narrans* (storytellers). Humans make sense of their lives through their own stories and those of others. In order to make sense of or relate to a story, people test two assumptions: (a) Narrative probability or coherence—how the story “hangs together”; are
the parts consistent with the whole? When the parts are combined to form the whole, does the story make sense? and (b) Narrative Fidelity or truthfulness—does the story make sense when filtered through one’s own life experiences and does it adhere to one’s own values and ideas? (Brief history and theory of speaking: Walter Fisher’s narrative paradigm, n.d, para. 1).

Narrative theory allows researchers to capture and interpret the stories and experiences of others. It is important to capture the stories of the educational experiences of adults with ADHD in order to understand them and to develop needed changes or methods of teaching to instructors or facilitators.

Attention Deficit Hyperactivity Disorder (ADHD)

ADHD is a neuropsychological disorder which may affect people’s ability to concentrate for sustained periods of times and control their impulses and levels of activity. Additionally, many adults with ADHD suffer from mood lability, have problems with self-esteem, and may exhibit compulsive behaviors such as excessive spending or substance abuse. The condition affects 3-5% of the adult population (Barkley, 2006).

**ADHD and Its Effects on Educational and Occupational Achievement**

Studies have shown that adults with ADHD have a lower level of educational attainment, lower grades, and more course failures than their non-ADHD peers (Barkley et al., 2006; Mannuzza et al., 1993; Weiss & Hechtman, 1993). In their longitudinal study of 149 adults with ADHD and a control group of 72 who did not have ADHD, Barkley, Fisher, Smallish, and Fletcher (2006) found significant differences in the educational attainment and job performances of a group of adults with ADHD and a
control group who did not have ADHD. The group with ADHD, who were all diagnosed during childhood, first participated in the initial study from 1978-1980 and were then followed for approximately 13 years. Ninety-one percent of the original sample of 158 children with ADHD and 81 in the control group were male, whereas 9% were female; 94% of the participants were Caucasian, 5% were African-American, and 1% were Hispanic. In the third follow-up study, which took place between 1992 and 1996, 149 of the subjects with ADHD and 72 of the control group participated. The mean ages of the participants in this follow-up study were 21.1 years for the group with ADHD and 20.5 years for the control group.

The results revealed that 68% of the participants with ADHD completed high school, whereas 100% of those in the control group did (p < .001). In addition, 21% of those with ADHD enrolled in college, as compared to 78% of those in the control group (p < .001). Of those enrolled in college, only 15% of those with ADHD were full-time students, as compared to 66% of those in the control group (p < .001). Another significant difference was in the mean GPAs of the final year of completed education, with the mean GPA of 1.8 for those with ADHD and 2.4 for those in the control group (p < .001) (Barkley et al., 2006). In addition, Mannuzza et al. (1993), in their longitudinal study of 91 white males with ADHD and 95 white males in the control group, also found that those with ADHD had achieved a lower level of educational attainment that those in the control group. Thirty-two (34%) of those in the control group had earned a bachelor’s degree, whereas eight (9%) of those with ADHD had. Seven (7%) of those in the control group had pursued graduate studies or medical or law school, whereas two (2%) of those with ADHD had. In addition, 21 (23%) of those with ADHD failed to complete high
school, as compared to 2% of the control group. Thus, the research shows that those with ADHD tend to have a significantly lower level of high school completion, college enrollment, and a significantly lower GPA.

In their meta-analysis of persons with ADHD and academic achievement, Frazier, Youngstrom, Glutting, and Watkins (2007) found only four studies which focused on ADHD students and their academic performance in higher education. The results revealed that college students with ADHD had significantly lower GPAs, reported a greater number of problems in their classes than their non-ADHD peers, and were more likely to be placed on academic probation than their non-ADHD peers. In addition, they were less likely to graduate from college than those without the condition (Heiligenstein, Guenther, Levy, Savino, & Fulwiler, 1999; Murphy et al., 2002; Wolf, 2001). Additional studies on the different types of ADHD have revealed that there are significant relationships between those who exhibit primarily symptoms of inattention and GPA, whereas there was no significant relationship to academic performance for those who display primarily symptoms of hyperactivity and impulsivity (Glutting, Monaghan, Adams, & Sheslow, 2002; Rabiner et al., 2008).

A reason for the significantly lower academic performance in adults with ADHD, as compared to their non-ADHD peers, may lie in a deficit in the basic skills typically required to succeed in the learning environment. Turnock, Rosen, and Kaminski (1998) found that those adults who self-reported ADHD symptoms had significantly less academic preparation skills than those without the condition. For example, those who identified as ADHD were less organized, procrastinated more, and had “fewer self-control or self-disciplinary behaviors” (Weyandt & DuPaul, 2008, p. 313). In addition,
Reaser, Prevatt, Petscher, and Proctor (2007) studied the academic coping skills of 50 adults with ADHD, 50 with learning disabilities such as dyslexia, and 50 with no disability. He found that students with ADHD and learning disabilities scored lower than those with no disabilities on the following dimensions of the Learning and Study Strategies Inventory: motivation, anxiety, information processing, and self-testing. Those with ADHD also scored significantly lower than both those with learning disabilities and no disabilities on time management, concentration, selecting main ideas, and test strategies (as cited in Weyandt & DuPaul, 2008).

In addition, research (Barkley et al., 2006; Weiss & Hechtman, 1993) has shown that adults with ADHD struggle with employment issues. Barkley et al. (2006) found that compared to a non-ADHD control group, adults with ADHD were more likely to be of a lower socio-economic status and to change jobs more often. Employees also rated them lower in job performance, the ability to work independently, the ability to complete work-related projects, and the ability to get along with those in positions of authority. The mean job rating for those with ADHD was 3.4, whereas that of the control group was 4.1 (p < .001). Seventy-three percent of those with ADHD had been terminated from their jobs, whereas only 23% of the control group had (p < .001). The findings of Barkley et al., then, agree with those of Weiss and Hechtman (1993) who found that adults with ADHD were significantly more likely to have been terminated or laid off from their jobs.

The results of the research on adults with ADHD reveal that many struggle both in the learning and occupational environments. They tend to have significantly lower GPAs, graduation rates, and sustained employment rates. In addition, they tend to lag
behind their non-ADHD peers in job performance, the ability to complete job-related or learning tasks, and the ability to work effectively with others, especially those in authority. Thus, if individuals with ADHD do not receive needed accommodations, they may be at further risk for failure in the learning or occupational environment.

**History of ADHD**

German physician Heinrich Hoffman provided one of the earliest references to the hyperactive behaviors often manifested in what is known today as ADHD in his poem “The Story of Fidgety Philip,” written in 1845 as part of the children’s book *Der Struwwelpeter*.

“Let me see if Philip can
Be a little gentleman;
Let me see if he is able
To sit still for once at table.”

Thus spoke, in earnest tone,
The father to his son; . . .

But Philip he did not mind
His father who was so kind.

He wriggled
And giggled,

And then, I declare,
Swung backward and forward
And tilted his chair,
Just like any rocking horse:

“Philip! I am getting cross! . . .” (Godwin-Jones, 1999)

The first scientific writings on what is now called ADHD, however, were done by George Still (1902) in a lecture series delivered to the Royal College of Physicians. He discussed 43 children (a ratio of 3:1 males) who had difficulties with “sustained attention” (Barkley, 2006, p. 4). He described these children as overactive, “defiant, resistant to discipline, and excessively emotional or passionate” (p. 4). In addition, they seemed to have little control over their behavior and constantly sought instant gratification. He also noted that in the more chronic cases, there was more of a tendency toward criminal behavior and that in some cases there was a lack in intellectual or academic performance. The children in his sample all began exhibiting symptoms before the age of eight. Still perceived the condition as a “defect in moral control of behavior” which could stem from defects in the following three areas: “cognitive relation to the environment; moral consciousness; and inhibitory volition” (Still, 1902, p. 1011).

Interest in what is now called ADHD began in the United States after an encephalitis epidemic in 1917-18 left many children exhibiting symptoms of inattention, hyperactivity, and a lack of social skills. Physicians began to refer to these behaviors as postencephalitic behavior disorder. More and more research began to be conducted on other causes of brain injury such as traumatic brain injury, measles, exposure to high levels of lead, or head injuries that could cause these behaviors. Terms such as “organic driveness” and “restless syndrome” were used. It was also discovered during this time that there were similarities between children who were hyperactive and “the behavioral sequelae of frontal lobe lesions in primates” (Barkley, 2006, p. 6). Studies conducted on
monkeys with frontal lobe lesions revealed that they exhibited a lack of sustained focus, hyperactivity, and excessive appetites. During this time period, many children exhibiting excessive amounts of these behaviors were institutionalized. Many of those institutionalized, however, had other conditions such as mental retardation or other more serious behavioral disorders, in addition to symptoms such as hyperactivity or inattention. It was not until the 1940s that attempts were made to separate the different conditions (Barkley, 2006).

Most of the children who were institutionalized for behaviors such as hyperactivity and/or inattention were thought to have some type of brain injury, even though in many there was no evidence of such an injury. Strauss and Lehtinen (1947) began to use the term minimal brain dysfunction (MBD) to refer to these children. They made many recommendations for educating children with these behaviors and were pioneers in developing special education services in the public schools. Some of their recommendations included smaller class sizes and a lack of distractions in the learning environment. It was commonly referred to as minimal brain dysfunction until the 1960s when researchers determined that even though they strongly suspected that the symptoms were neurologically based, there was little evidence that there was sufficient neurological damage. In addition, there was the confusion of grouping all neurologically based disorders into one category. Thus, terms which addressed specific behaviors such as dyslexia, language disorders, and hyperactivity began to be used (Barkley, 2006).

During the 1950s, researchers began to examine the neurological underpinnings of the behavioral manifestations of the condition now known as ADHD. Laufer, Denhoff, and Solomons (1957) referred to the condition as hyperkinetic impulse disorder
and concluded that it resulted from a deficit in the thalamic area of the central nervous system. People with this deficit, they concluded, had a poor filter control which did not allow them to block out extraneous stimuli. Others researchers during this time period concluded that the condition was the result of a lack of balance between the cortical and subcortical areas of the brain, causing a reduced amount of control for sensory filtering (Barkley, 2006).

During the 1970s, copious amounts of research on the condition to be known as ADHD were conducted. Previously, the major focus had been on hyperactivity, with little attention paid to common symptoms such as impulsivity, reduced capabilities for sustained attention, and high levels of frustration and anger. Researchers once again reiterated that children with hyperactivity did not necessarily have brain damage. An important discovery made during this time was that the symptoms manifested themselves differently in people. Therefore, it was difficult to develop a uniform set of standards or specific behaviors. Wender’s theory (1971), one of major ones of this decade, was developed during this time. He divided the symptoms into six categories: (a) a lack of motor skills or hyperactive behavior; (b) attentional and perceptual-cognitive functioning, which included a reduced attention span and ability to concentrate for sustained periods of time; (c) learning, which included the tendency toward poor performance in the classroom; (d) poor impulse control, which included an inability to control one’s behavior; (e) interpersonal relations, which included a lack of ability to read social cues and skills; and (f) emotion, which included mood lability and an ease toward anger (Barkley, 2006, p. 10). While later research has claimed that Wender was actually combining the symptoms of what would be known as ADHD with ODD (oppositional
defiant disorder), he did develop a theory which accounted for many of the behaviors exhibited by people with this condition (Barkley, 2006).

Douglas (1983) further determined that difficulties with sustained attention and impulsivity in combination with hyperactivity were most likely creating the difficulties exhibited by children with this condition (Barkley, 2006). She developed the idea that four primary deficits could account for the symptoms of the condition: (a) difficulty maintaining attention levels for sustained periods of time; (b) poor impulse control; (c) poor control of arousal or stimulus levels; and (d) the need for immediate gratification and/or reinforcement. Based on her research, the condition was renamed attention deficit disorder (ADD) in 1980 in the American Psychiatric Association’s *Diagnostic and Statistical Manual of Mental Disorders-III* (DSM-III). At first the disorder was called ADD with hyperactivity or ADD without hyperactivity. The 1987 DSM-III-R, however, renamed the condition attention deficit hyperactivity disorder (ADHD) and subtypes were created so that those who exhibited symptoms of inattention and/or impulsivity, but not hyperactivity, could be included.

The current *Diagnostic and Statistical Manual, IV-TR* (DSM-IV-TR) lists the following criteria for a diagnosis of ADHD:

A. Either (1) or (2):

(1) *inattention*: six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

(a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
(b) often has difficulty sustaining attention in tasks or play activities
(c) often does not seem to listen when spoken to directly
(d) often does not follow through on instructions and fails to finish school work, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
(e) often has difficulty organizing tasks and activities
(f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
(g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
(h) is often easily distracted by extraneous stimuli
(i) is often forgetful in daily activities

(2) hyperactivity-impulsivity: six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity
(a) often fidgets with hands or feet or squirms in seat
(b) often leaves seat in classroom or in other situations in which remaining seated is expected
(c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
(d) often has difficulty playing or engaging in leisure activities quietly

(e) is often “on the go” or often acts as if “driven by a motor”

(f) often talks excessively

**Impulsivity**

(g) often blurts out answers before questions have been completed

(h) often has difficulty awaiting turn

(i) often interrupts or intrudes on others (e.g., butts into conversations or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.

C. Some impairment from the symptoms is present in two or more settings (e.g., at school [or work] and at home).

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning. (American Psychiatric Association, 2000, pp. 93-94; reprinted with permission from the *Diagnostic and Statistical Manual of Mental Disorders*, [2000], [4th ed., Text Revision], see Appendix A).

In order for a person to be diagnosed with ADHD, at least six of the nine criteria for inattention and/or at least six of the nine criteria for hyperactivity and impulsivity must be present. Based on the number of the above criteria exhibited, a person may be diagnosed as one of three types: (a) ADHD, combined type—exhibiting symptoms of inattention, hyperactivity, and impulsivity; (b) ADHD, predominantly inattentive type; or (c) ADHD, predominantly hyperactive-impulsive type (Barkley, 2006, p. 86). While
most people exhibit symptoms of inattention, impulsivity, and hyperactivity at one time or the other, a diagnosis of ADHD should only be made when the symptoms are exhibited to a much greater degree than that of their non-ADHD peers and when the symptoms interfere with one or more aspects of their daily lives (Barkley, 2006).

Manifestation of Symptoms in Adults

For many years, the symptoms of ADHD were thought to disappear when one reached adolescence. It has only been in the past 25-30 years that researchers have discovered that many adults maintain symptoms of ADHD. Many researchers since the 1970s (Hallowell & Ratey, 1994; Reilley, 2005; Resnick, 2005) have maintained that the DSM-IV-TR criteria were developed based on data collected from children ranging from four to 17 years old and thus may not be the most accurate diagnostic tool for adults. Murphy and Barkley (1996) found that while the “six of nine symptoms rule” specified by the DSM-IV and DSM-IV-TR is successful in identifying 7% of children with severe ADHD, these same criteria are successful in identifying only 1% of the adults with the most severe symptoms. They contend, then, that because adults were not included in the clinical trials used to establish the diagnostic criteria, the criteria do not contain “sufficient examples of the changes in ADHD symptoms by adulthood” (Resnick, 2005, p. 154).

Barkley, Murphy, and Fischer (2008) examined the data from 146 adults with ADHD, 97 adults who had been referred to the clinic for other issues, but were not ADHD, and a community control group consisting of 109 non-clinic referred adults who also did not have ADHD. All participants were part of the University of Massachusetts
(UMASS) study. The results showed that when applying the DSM-IV-TR criteria to all three groups, the following four symptoms of inattention discriminated among the community control and ADHD groups with 97% accuracy:

- often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
- often has difficulty organizing tasks and activities
- often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
- is often easily distracted by extraneous stimuli. (American Psychiatric Association, 2000, p. 93).

They also found that these four criteria successfully identified 98% of those in the ADHD group. In addition, they discovered that the following four items from the impulsivity and hyperactivity criteria successfully discriminated the two groups with 90% accuracy and correctly identified 91% of those with ADHD:

- Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
- Often has difficulty playing or engaging in leisure activities quietly
- Often talks excessively
- Often has difficulty awaiting turn. (pp. 93-94)

Barkley, Murphy, and Fischer suggest that if subsequent editions of the DSM retain the eighteen criteria, that they make four symptoms from either list or seven overall the diagnostic criteria for adults rather than at least six from either list.
Research has also shown, for example, that many of the symptoms of ADHD manifest themselves differently in adults than they do children. For example, symptoms of hyperactivity such as “running or climbing in situations in which it is inappropriate” or “leaving [one’s] seat in the classroom or in other situations in which remaining seated is expected” often are significantly reduced by adulthood (Pary, Lewis, Matuschka, & Lippmann, 2002; Stern, Garg, & Stern, 2002). Thus, rather than being in constant motion as they were when they were children, adults may have frequent feelings of restlessness and impatience or fidgeting, frequently tap their fingers or feet, or twirl their hair (Kelly & Ramundo, 1996).

Impulsive behaviors such as “blurting out socially inappropriate, rude, or insulting comments” tend to remain the same in children as adults (Resnick, 2005, p. 155). Adults with ADHD, however, may also be impatient, easily angered, and frequently speak or make decisions before thinking. In addition, impulsivity in adults with ADHD may manifest itself as frequent job changes, frequent traffic violations or accidents, and/or excessive spending, drinking, or gambling. Thus, adults with ADHD may also have trouble with addictive behaviors such as gambling or overusing their credit cards (Kelly & Ramundo, 1996).

In contrast to hyperactive and impulsive behaviors, inattentive behaviors “remain fairly stable into adulthood and are reported in more than 90% of adults with ADHD” (Resnick, 2005, p. 155). Inattentiveness in adults may include poor organizational skills, frequent tardiness or absences from work and/or school, difficulty completing projects for work or school, or difficulty paying bills in a timely manner. Adults with ADHD may also have difficulty with sustained focus on a topic or interactions with people and may
appear to “zone out” in the middle of a conversation or lecture (Resnick, 2005; Hallowell & Ratey, 1994; Kelly & Ramundo, 1996). Research has shown, then, that since the symptoms for ADHD in adults may be very different from those exhibited in children, the criteria for a diagnosis of ADHD developed for the DSM-IV-TR may not be the most accurate way to determine if an adult has the condition.

*Diagnostic Instruments*

Because most of the initial research on ADHD focused on children, very few diagnostic criteria exist for adults with ADHD. Working with the World Health Organization (WHO), Adler, Kessler, and Spencer (2003) of the New York University School of Medicine, Department of Psychiatry, have developed a rating scale called the Adult ADHD Self-Report Scale (ASRS-v.1.1) Symptom Checklist, which is based on the DSM-IV-TR. The 18 items consist of the DSM-IV-TR criteria, but are focused on adults. The first six items are thought to be the most frequent indicators of ADHD and are Part A. The remaining 12 items make up Part B. The entire questionnaire is given below and may also be accessed at


1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?

2. How often do you have difficulty getting things in order when you have to do a task that requires organization?

3. How often do you have problems remembering appointments or obligations?

4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?

6. How often do you feel overly active and compelled to do things, like you were driven by a motor?

7. How often do you make careless mistakes when you have to work on a boring or difficult project?

8. How often do you have difficulty keeping your attention when you are doing boring or repetitive work?

9. How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?

10. How often do you misplace or have difficulty finding things at home or at work?

11. How often are you distracted by activity or noise around you?

12. How often do you leave your seat in meetings or other situations in which you are expected to remain seated?

13. How often do you feel restless or fidgety?

14. How often do you have difficulty unwinding and relaxing when you have time to yourself?

15. How often do you find yourself talking too much when you are in social situations?

16. When you’re in a conversation, how often do you find yourself finishing the sentences of the people you are talking to, before they can finish them themselves?
17. How often do you have difficulty waiting your turn in situations when turn taking is required?

18. How often do you interrupt others when they are busy? (World Health Organization, 2003; reprinted with permission from the World Health Organization; see Appendix B).

In addition, psychiatrists Hallowell and Ratey (1994) developed a “Suggested Diagnostic Criteria for Attention Deficit Disorder in Adults” based on their professional experience with hundreds of adult patients with ADHD. Their criteria include many traits primarily associated with adult ADHD such as mood lability, recurring feelings of failure or of not meeting one’s goals, tendency toward addictive behaviors, and frequent searches for activities which are highly stimulating. They list a total of 20 criteria, at least 15 of which must be present on a regular basis in order for an official diagnosis of ADHD to be made. In addition to the presence of at least 15 of the 20 criteria, symptoms of ADHD must have been present since childhood and must not be able to be explained by any other medical condition.

In addition to Hallowell and Ratey’s (1994) diagnostic criteria, several other scales such as the Brown ADD Scale have been developed to assess adult ADHD. All of these scales address the primary symptoms of inattention, impulsivity, and hyperactivity, in addition to some of the secondary symptoms of ADHD—mood lability or mood swings, frequent feelings of anger and insecurity, low self-esteem, and creativity, which are often present in adults with ADHD (Hallowell & Ratey, 1994; Kelly & Ramundo, 1996; Weiss, 1997).
Differences in Those Diagnosed with ADHD as Adults and Those Diagnosed as Children

While there is a lack of research conducted on whether age of diagnosis makes a difference in the manifestation of ADHD symptoms, several studies exist which examine educational and intellectual differences among those diagnosed as adults and those diagnosed as children. Even though research has indicated that those diagnosed with ADHD as children tend to fall significantly below (at least seven to 10 points below) their non-ADHD peers on measures of intelligence, this has not been found in those diagnosed as adults (Barkley, 2006; Barkley, Murphy, & Fischer, 2008). Rather, their measures of intelligence generally tend to fall in the normal range and do not differ significantly from adults who do not have ADHD (Barkley, Murphy, & Kwasnik, 1996; Murphy & Barkley, 1996; Murphy, Barkley, & Bush, 2002).

Additionally, research has found that those who are diagnosed with ADHD as adults had some of the same difficulties in school as those who were diagnosed as children. The percentage of those who were diagnosed as adults who had to repeat a grade was 16% to 40%, whereas approximately 43% received some type of tutoring or extra academic aid to help them succeed in school. Both of these percentages are comparable to what is found in those adults who were diagnosed as children (Biederman et al., 1993; Murphy & Barkley, 1996). However, research has also indicated that those diagnosed with ADHD as adults are much more likely to have graduated from high school and attended college than those diagnosed as children. Approximately 64% of those adults diagnosed with ADHD in childhood complete high school, whereas for those with adult-diagnosed ADHD, the rate is approximately 80-90% (Barkley, Murphy, & Fischer, 2008). Finally, research has suggested that persons with adult-diagnosed ADHD
are less likely to have co-morbid learning disabilities than those who were diagnosed as children. Studies show, then, that those diagnosed with ADHD as adults tend to have higher scores on intelligence tests, higher high school graduation rates and college attendance, and are less likely to have learning disabilities than adults who were diagnosed as children (Barkley et al., 2008).

*Treatment Options for Adults with ADHD*

Medication is considered to be the most effective treatment for adults with ADHD because it tends to work well and quickly. However, some adults do not wish to take medication, cannot tolerate the side effects, find that it does not work for them, or they need other forms of treatment in addition to medication. Thus, it is important to examine both medication and non-medication options when determining a course of treatment for adult ADHD. While there are many different treatment options available, the following have been found to be most effective: medication, cognitive behavioral therapy, and coaching. In addition, a combination of two or more of these has also been found to be successful with many adults (Ramsay, 2010b).

**Medication.** Thus far, five medications have been approved by the United States Food and Drug Administration for the treatment of adult ADHD: four stimulants (Adderall XR, Focalin XR, Vyvanse, and Concerta) and one non-stimulant (Strattera) (Ramsay, 2010b). Three categories of medication are available: stimulants, non-stimulants, and antidepressants.

**Stimulants.** Stimulants include amphetamines and methylphenidate. Some of the common names for methylphenidate are Ritalin and Concerta. They serve to increase levels of dopamine and norepinephrine, two neurotransmitters, in the bloodstream
(Dodson, 2005). While there have been many studies which show high levels of effectiveness of stimulant medications for children with ADHD, there is relatively little data available for the treatment of adults. Earlier studies with adults, however, did reveal that the medications were not nearly as effective with adults (Dodson, 2005). This was thought to be because the doses were not adequate and there was a lack of adequate diagnostic instruments for adults. Later studies (Spencer et al., 1995; Spencer et al., 2001) have revealed a much higher rate of effectiveness.

Nonstimulants. Atomoxetine (Strattera) was recently developed as a non-stimulant option for those adults who do not tolerate the stimulant medications well and was the first medication to be approved by the FDA for adults with ADHD (Dodson, 2005). It also works well for those who have conditions such as anxiety disorders or tics which may be negatively impacted by stimulants. Atomoxetine targets the neurotransmitter norepinephrine, although studies have shown that it also increases dopamine levels. Whereas stimulants begin to work very quickly, non-stimulants can take approximately two weeks to show any effects. Patients usually begin with a lower dosage and gradually increase it until optimum benefits are achieved (Harvard Medical School, 2009). Two studies have shown, though, that the response rate to the drug is only 56% (Dodson, 2005).

Antidepressants. Studies have shown that two antidepressants in particular, bupropion (Wellbutrin) and desipramine (Norpramin) increase norepinephrine levels. Effects can often be felt within two to three days, with full benefits developing over eight to ten weeks. Antidepressants are particularly effective for those who have mild symptoms of ADHD and a co-morbid condition such as depression, anxiety, or panic.
disorder; those who have conditions such as seizures, glaucoma, tics, or Tourette’s syndrome which may be negatively affected by stimulants; and those who have a history of drug abuse (Dodson, 2005). Barkley (2006) examined 33 studies of children, adolescents (1,139 children and adolescents), and adults (n = 78) who were prescribed tricyclic antidepressants (TCAs) for ADHD and found that 91% responded favorably and showed improvement in ADHD symptoms.

*Cognitive behavioral therapy (CBT)*. Cognitive behavioral therapy (CBT) is a type of psychotherapy which assumes that a person’s negative feelings lead to beliefs and behaviors that are detrimental to his or her psychological well-being. Each person is responsible for his or her moods and behaviors. The goal of CBT is to create an awareness of these negative thoughts and feelings and to change them so a person has a more realistic perception of their behavior. This will allow a person to behave and react to situations in a more positive way (Ramsay, 2010b). The key element is that the therapist and the client work together as a team to challenge and change a person’s schema (core belief system) and to develop new, more positive beliefs and thus change a person’s behaviors. CBT generally takes less time than traditional psychotherapy and usually lasts anywhere from 6-20 sessions, with the average number being 16 (National Association of Cognitive-Behavioral Therapists, 2009). For adults with ADHD, CBT can be used to aid them in developing organizational and time management skills that will help them to be more successful in all areas of their lives and to help them to change negative thought patterns and beliefs about themselves that interfere with their being successful (Ramsay, 2010a).
Several studies have been conducted with adults with ADHD and CBT (Bramham et al., 2009; Philipsen et al., 2007; Solanto, Marks, Mitchell, Wasserstein, & Kofman, 2008). CBT sessions ranged from 4-13. Themes for the sessions included development of organizational skills, time management, self-esteem, personal relationships, and procrastination. Results have shown improvement in ADHD symptoms, co-morbid mood and anxiety disorders, and in overall functioning (Ramsay, 2010a).

Even though CBT has been shown to be successful with adults with ADHD, Ramsay (2010b) suggests that traditional models of CBT may need to be adapted. Because executive functions such as memory or emotional stability and regulation may “develop later and less efficiently” in those with ADHD, managing and changing their beliefs and behaviors may be more difficult. He suggests using “prolongation” (p. 41), which is the ability to step back and analyze a situation before making a rash decision, during CBT sessions. Patients should be given ample opportunity to process all aspects of an issue, develop a series of steps for dealing with the issue, and to examine all potential barriers to achieving the desired outcome. Since adults with ADHD tend to have difficulty with problem management, he recommends that a lot of time during sessions be spent on developing these skills.

He also recommends that extra time be spent on “environmental engineering” (p. 42), which is the ability to structure one’s space to minimize distractions. He suggests working on such skills as using a daily planner, managing paperwork, and setting up a study or work area. Since many adults with ADHD struggle with organizational and time management skills, Ramsay states that extra time needs to be spent developing these skills.
Finally, he suggests that adults with ADHD may have to work harder than others on ridding themselves of negative thoughts and beliefs about themselves. Because many feel that they have failed in many areas of their lives, they may suffer from low self-esteem and very negative self-images. Replacing a lifetime of negative self-thoughts can be very difficult and thus may require a lot of time to accomplish.

*Coaching.* Executive function coaching or training (EFT) is also being used as a way to improve the academic and/or occupational performance of adults with learning disabilities and/or ADHD. It may be defined as support and guidance for developing skills such as time management, organization, and reflective thinking that is provided for participants for up to one hour per week via face-to-face meetings, e-mail, or telephone conversations (Parker & Boutelle, 2009). A coach is one who works with an adult with ADHD and provides feedback, encouragement, and direction (Ramsay, 2010b). A coach may be anyone from a friend, a counselor, or a teacher. Hallowell and Ratey (1994) offer the following tips for coaches, called H.O.P.E.

**H**—Help—Coaches should have an introductory session with the person they are working with in order to determine what type of help is needed, how often they need to meet, and what specific tasks are needed from the coach.

**O**—Obligation—Coaches should ask the people they are working with for a list of upcoming specific tasks or assignments and what they are doing to prepare for these tasks.

**P**—Plans—Coaches should often ask about short- and long-term plans. People should be reminded of their goals and what they are doing to work toward them.
If they are uncertain of their goals, the coaches can help set, clarify, and develop a plan for meeting them.

E—Encouragement—The coach should become a “cheerleader” for whom he or she works. Frequent positive feedback is often needed and may take the form of verbal praise, notes, or e-mails. (p. 227)

There is a paucity of research on adults with ADHD and coaching, but that which has been conducted has yielded positive results (Kubik, 2007; Parker & Boutelle, 2009; Zwart & Kallemeyn, 2001). Parker and Boutelle (2009) conducted a phenomenological study with students at Landmark College in order to determine if coaching could aid them in increasing their self-determination, which may be defined as follows:

a combination of skills, knowledge, and beliefs that enable a person to engage in goal directed, self-regulated, autonomous behavior. An understanding of one’s strengths and limitations together with a belief in oneself as capable and effective are essential to self-determination. When acting on the basis of these skills and attitudes, individuals have greater ability to take control of their lives and assume the role of successful adults. (Field, Martin, Miller, Ward, & Wehmeyer, 1998)

Seven students were interviewed about their perceptions of the coaching experience. Of these students, two had ADHD, one had a learning disability, and four had both ADHD and a learning disability. The students’ perceptions were overwhelmingly positive, with many reporting becoming more goal-oriented as a result of coaching, and that they learned how to set goals, break large assignments down into smaller segments, and increased their time management skills. In addition, many felt better able to manage their anxiety and felt an increased sense of self-worth.
Additionally, in a study of a six-week coaching workshop with 45 adults where they were asked to rate 22 areas of concern, Kubik found that participants benefitted greatly from the coaching they received. A factor analysis of these 22 areas revealed the following five factors: (a) cognitive concerns; (b) distractibility; (c) social outcomes; (d) inattentive concerns; and (e) behavioral concerns. Follow-up data collected between one and four years after the workshops were completed revealed that participants showed significant improvement in most of the areas of concern. The above studies, then, reveal that coaching has the potential to be a successful method of treatment for adults with ADHD.

**Gender Differences in ADHD**

Very little research has been conducted on gender differences in adults with ADHD. That which has been conducted on children has revealed boys are three times more likely to have or be diagnosed with ADHD than girls. In addition, they are five times more likely than girls to be referred for psychological services (Barkley, 2006). Brown, Abramowitz, Madan-Swain, Eckstrand, and Dulcan (1989) and Gershon (2002) found that girls were more likely to show symptoms of social withdrawal, anxiety, and/or depression than boys. Research (Gaub & Carlson, 1997; Gershon, 2002) has shown, however, that girls tend to exhibit less aggression, fewer behavioral problems and hyperactive behaviors, and lower ratings on inattentive behavior and impulsivity scales than boys. Stein et al. (1995) found that the most common ADHD symptoms reported by women included difficulties with organization, impulsivity, inattentive behavior, and dysphoria.
Quinn (2005) contended that because girls and women tend to have the inattentive type of ADHD rather than exhibit symptoms of hyperactivity, they may remain undiagnosed for a longer period of time than boys or men. Rather than the hyperactive behaviors typically illustrated by males or men, hyperactivity in women may manifest itself as “hypertalkativeness or emotional reactivity” (p. 580). The symptoms of women with ADHD may be less obvious than those of men and manifest themselves as “forgetfulness, disorganization, internal anxiety, restlessness, and low self-esteem” (Waite, 2007, p. 117), causing women to remain undiagnosed.

Research (Biederman, 1997; Faraone, 1997; Milberger, 1997) on ADHD and co-morbidity with other conditions has shown that girls showed a higher rate of having major depressive disorder, anxiety disorders, and/or bipolar disorder than boys. Boys, however, showed a higher rate of having ODD (oppositional defiant disorder) and/or CD (conduct disorder) than girls. Quinn (2005) found that adolescent females tended to be treated for depression before they were treated for ADHD at a much greater rate than adolescent males were (14% of the females vs. 5% of the males). Biederman et al. (2002) also found that girls were less likely to have learning disabilities or difficulties in school than boys, even though boys were found to have significantly higher IQ scores. In addition, Biederman et al. (2004), in a study of 219 adults with ADHD, found that a higher percentage of female subjects were classified as the inattentive type than males and that even though both genders were at a high risk for co-morbid conditions, males were at a significantly higher risk for problems with substance abuse and antisocial personality disorder.
Balint et al. (2009) conducted a meta-analysis of 25 studies in order to compare the performance of adult males and females on various performance measures such as Stroop Color-Word Test, the Trail Making Test (TMT), and the Wechsler Adult Intelligence Scale-Revised (WAIS-R). Comparisons were made between those with ADHD and those without and then by ages and gender. In the 25 studies, there were a total of 1711 participants with ADHD and 1731 in the control group. All participants were at least 18 years of age. The results on the Stroop test revealed that a higher proportion of males were associated with poor attention skills.

ADHD and Co-morbidity with Other Conditions

Research has shown that approximately 80% of adults with ADHD who have been referred for treatment have at least one other co-morbid condition (Brown, 2009). Twenty-four to 60% suffer from anxiety, 16-31% from major depression, 19-37% from dysthymic disorder, 32-53% from alcohol abuse, and 19-37% from other substance abuse (Barkley, 2006; Biederman et al, 2004; Montes, Hernandez-Garcia, & Ricardo-Garcell, 2007; Safren, Lanka, Otto, & Pollack, 2001). Kessler’s (2004) results were even higher. He found that 88% of adults with ADHD also had at least one other psychiatric disorder, with 45% having a mood disorder, 59% having an anxiety disorder, and 35% having a problem with substance abuse. In addition, several researchers (Adler & Cohen, 2004; Biederman et al., 1993; Hornig, 1998; Murphy & Barkley, 1996; Shekim et al., 1990) have found that the co-morbidity rate of ADHD and personality disorders was 10-20% and 18-28% for ADHD and antisocial disorders (as cited in Brown, 2009).

Millstein et al. (1997) compared adults with the combined type and those with the inattentive type of ADHD for the existence of co-morbid conditions. They found that
69% of those with the combined type and 43% of those with the inattentive type also had a problem with substance abuse. Sixty-three percent of those in both groups also suffered from major depression. Additionally, 40% of those with the combined type and 16% of those with the inattentive type also had oppositional defiant disorder, whereas 35% of those with the combined type and 23% of those with the inattentive type had been diagnosed with multiple anxiety disorders. Thus, in spite of the subtype of ADHD an adult is diagnosed with, the prevalence of comorbid psychiatric disorders is high.

Research (Dykman & Ackerman, 1991; McGee & Share, 1988; Wilcutt & Pennington, 2000) has shown that reading disorders such as dyslexia and ADHD exist comorbidly in 25% - 40% of children diagnosed with ADHD. Studies have also shown that both conditions, separately, tend to manifest themselves in adults. Thus, many adults who have been diagnosed with both ADHD and reading disorders as children could continue to struggle with both as adults (Bruck, 1990; Byrne & Ledez, 1983; Klein & Mannuzza, 1991; Paulesu et al., 2001). While it is difficult to obtain statistics on comorbidity of ADHD and learning disabilities in adults, researchers estimate that between 10-60% of adults diagnosed with one condition also have the other.

Studies have shown, however, that there are not significant differences in word decoding skills among those adults with ADHD and a reading disorder and those adults with a reading disorder and no ADHD (Biederman et al., 1994; Seidman, Biederman, Weber, Hatch, & Faraone, 1998). Samuelsson, Lundberg, and Herkner (2004) also found that there were no significant differences between adults with ADHD and those without in phonological skills, word decoding, and spelling. They did find, however, that there was a significant difference in reading comprehension.
Creativity and ADHD

Some researchers (Hallowell & Ratey, 1994; Weiss, 1997) believe that there is a link between ADHD and creativity and that many people with ADHD are highly creative. However, the results of several research studies have been mixed. Researchers have used various instruments for testing creativity such as teacher ratings on the Conners’ Abbreviated Teaching Rating Scale, figural form of the Torrance Tests of Creative Thinking (TTCT), the Creative Ability Test, and Object Usage Test. While most of the research on children, adolescents, and adults has found no differences in creativity between those with ADHD and those without (Alt, 1999; Barkley, Edwards, Laneri, Fletcher, & Metevia, 2001; Healey & Rucklidge, 2005, 2008), several studies have found significant differences in creativity. Shaw and Brown (1991), for example, found that children with ADHD used a greater amount of imagery when solving problems and scored much higher on a test of figural creativity than did the children in the control group. In addition, in a study with 90 adults (45 in the ADHD group and 45 in the non-ADHD control group), White and Shah (2006) found that adults with ADHD scored significantly higher on all three components of the Unusual Uses Task (UUT) than the control group did. The three components were fluency, flexibility, and originality. Thus, the research on creativity and its relationship to ADHD thus far provides no clear relationship between the two.

Learning Disabilities

Definitions of Learning Disabilities

While this study focuses on adults with ADHD, learning disabilities are included here for four reasons. First, ADHD and learning disabilities have a shared history of both
being classified as part of a condition called minimal brain dysfunction. It has only been in the last 30-40 years that they have been thought of as separate conditions. Second, like adults with ADHD, those with learning disabilities often under-perform in educational and occupational arenas. Third, many people who have learning disabilities also have ADHD. Fourth, many adults with learning disabilities or ADHD struggle with a lack of social skills and low self-esteem (Gregg, 2009).

Although experts are not sure what causes learning disabilities, there are three primary theories. First, many maintain that learning disabilities are hereditary. Many adults with learning disabilities have parents, siblings, or other relatives with the same condition. Second, some experts claim that learning disabilities can be caused by prenatal issues or a difficult birth. They suggest that they can be caused by a lack of oxygen during birth, an illness or injury to the mother during pregnancy, or the use of drugs or alcohol by the mother while pregnant. Third, many believe that head injuries, malnutrition, or exposure to toxic substances such as lead can lead to learning disabilities (National Center for Learning Disabilities, 2010).

Adults with learning disabilities have dropped out of high school at a rate of two to three times greater than that of those who do not have a learning disability. In addition, their enrollment rate in colleges or universities is one-tenth less than that of their non-learning disabled peers and they comprise 20-60% of the U.S. population who receive welfare each month (Gregg, 2009). In addition, adults with learning disabilities account for almost one-half of the college or university students who report having a disability. Approximately 12% of college students report having a learning disability,
making it the most reported condition to offices of disability accommodations (Parker & Boutelle, 2009).

Learning disabilities were federally designated as a “handicapping condition” in the United States in 1968, and since then, the number of people classified as learning disabled has grown exponentially. Since then, though, the amount of available research has greatly increased the understanding of what constitutes a learning disability and how they are classified. However, over the past four decades, the definition(s) of learning disabilities has been greatly debated for two reasons. First, learning disabilities is an “unobservable variable that does not exist apart from attempts to measure it” (Fletcher, Lyon, Fuchs, & Barnes, 2007, p. 27). The manifestations of learning abilities such as poor academic achievement may be observed, but the underlying causes are not always easily identified. Second, learning disabilities exist on a continuum ranging from mild to severe and are not easily placed into “discrete categories” (p. 27).

Learning disabilities, like ADHD, were once part of a group of disorders known as minimal brain dysfunction (MBD). One of the first concrete definitions was developed in 1962 in a joint effort between the Easter Seals Society and the National Institute of Neurological Disorders and Stroke. The definition read as follows:

The term “minimal brain dysfunction syndrome” refers to children of near average, average, or above average general intelligence with certain learning or behavioral disabilities ranging from mild to severe, which are associated with deviations of function of the central nervous system. These deviations may manifest themselves by various combinations of impairment in perception,
conceptualization, language, memory, and control of attention, impulse, or motor function. (Clements, 1966, pp. 9-10)

There were several objections to this definition. The major one was that the definition was too broad and did not provide clear guidelines on what constituted a learning disability. Thus, this too broad range of symptoms often made diagnosis and treatment very difficult.

In 1966, the United States Department of Education produced the following definition of learning disabilities:

The term “specific learning disability” means a disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, which may manifest itself in an imperfect ability to listen, speak, read, write, spell, or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and development aphasia. The term does not include children who have learning disabilities, which are primarily the result of visual, hearing, or motor handicaps, or mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage. (p. 34)

This definition, though similar to the one created in 1962, contained more specific descriptive terms and discussed what disabilities were not attributable to (i.e., visual or hearing difficulties or mental retardation). However, many felt that the definition still did not contain enough inclusionary criteria which identify specific attributes of various types of learning disabilities or disorders. This became especially problematic with the passage
of Public Law 94-142, the Education for All Handicapped Children Act of 1975. Therefore, the following was added by the U.S. Office of Education in 1977:

[Learning disabilities are] a severe discrepancy between achievement and intellectual ability in one or more of the areas: (a) oral expression; (b) listening comprehension; (c) written expressions; (d) basic reading skills; (e) reading comprehension; (f) mathematics calculation; or (g) mathematical reasoning. The child may not be identified as having a specific learning disability if the discrepancy between ability and achievement is primarily the result of: (a) a visual, hearing, or motor handicap; (b) mental retardation; (c) emotional disturbance; or (d) environmental, cultural, or economic disadvantage. (p. G1082)

However, there were still major issues with this definition. First, many researchers and/or educators question linking achievement with intelligence or scores on an IQ test. Even though early studies showed strong reliability and validity for basing diagnoses of learning disabilities on IQ test scores (Rutter & Yule, 1975), subsequent research has not shown this. Second, it does not clearly claim that learning disabilities are a heterogeneous group of disorders. Third, it only addresses children with learning disabilities. It makes no mention of learning disabilities in adults. Fourth, it does not address that no matter what the disability is, the result is a difficulty or inability to process information. Finally, it does not address co-morbidity of learning disabilities with other conditions (Fletcher et al., 2007). Even though there continue to be arguments against the federally accepted definitions, there has been little change over the years. The currently accepted definition set forth by Individuals with Disability Act (IDEA) is:
a disorder in one or more of the basic psychological processes involved in understanding or using language;
may manifest itself in an imperfect ability to: listen, think, speak, read, write, spell, or do math
Does not include learning problems that are the result of other disabilities or environmental, cultural, or economic disadvantage. (IDEA Definition of Learning Disabilities, n.d., para. 1)

In the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III), learning and behavioral disorders were reclassified as specific developmental disorders and attention deficit disorder. Learning disorders were referred to as “Academic Disorders.” Thus, even though many individuals met the criteria for both learning disabilities and attention deficit disorder, they were, from then on, separate conditions (Fletcher et al., 2007).

In the current Diagnostic and Statistical Manual of Mental Disorders, the DSM IV-TR, learning disabilities are grouped under the heading “Learning Disorders.” These include reading disorder, mathematics disorder, and disorder of written expression. The criteria for a diagnosis of a reading disorder are as follows:

A. Reading achievement, as measured by individually administered standardized tests of reading accuracy or comprehension, is substantially below that expected given the person's chronological age, measured intelligence, and age-appropriate education.

B. The disturbance in Criterion A significantly interferes with academic achievement or activities of daily living that require reading skills.
C. If a sensory deficit is present, the reading difficulties are in excess of those usually associated with it. (American Psychiatric Association, 2000, p. 50; reprinted with permission from the *Diagnostic and Statistical Manual of Mental Disorders*, [2000], [4th ed., Text Revision], see Appendix A).

The criteria for a diagnosis of a mathematics disorder are as follows:

A. Mathematical ability, as measured by individually administered standardized tests, is substantially below that expected given the person’s chronological age, measured intelligence, and age-appropriate education.

B. The disturbance in Criterion A significantly interferes with academic achievement or activities of daily living that require mathematical ability.

C. If a sensory deficit is present, the difficulties in mathematical ability are in excess of those usually associated with it. (American Psychiatric Association, 2000, p. 51; reprinted with permission from the *Diagnostic and Statistical Manual of Mental Disorders*, [2000], [4th ed., Text Revision], see Appendix A).

The criteria for a diagnosis of a disorder of written expression are as follows:

A. Writing skills, as measured by individually administered standardized tests (or functional assessments of writing skills), are substantially below those expected given the person’s chronological age, measured intelligence, and age-appropriate education.

B. The disturbance in Criterion A significantly interferes with academic achievement or activities of daily living that require the composition of
written texts (e.g., writing grammatically correct sentences and organized paragraphs).

C. If a sensory deficit is present, the difficulties in writing skills are in excess of those usually associated with it. (American Psychiatric Association, 2000, p. 53; reprinted with permission from the Diagnostic and Statistical Manual of Mental Disorders, [2000], [4th ed., Text Revision], see Appendix A).

While these criteria address the issue of separation and clarification of various types of learning disorders, they still do not provide the concrete guidelines and manifestations of each that so many professionals have sought.

A major problem with many current definitions of learning disabilities is that they primarily address the manifestations of LD in children. The first definitions geared primarily toward adults in the workplace were developed by the U.S. Office of Special Education and Rehabilitation Services in 1985. In 1993, Reiff, Gerber, and Ginsburg proposed the following definition geared toward adults:

Learning disabilities in adulthood affect each individual uniquely. For some, difficulties lie in only one specific functional area; for others, problems are more global in nature, including social and emotional problems. For many, certain functional areas of adult life are limited compared to other areas. Adults with learning disabilities are of average or above-average intelligence, but intelligence oftentimes has no relation to the degree of disability. Learning disabilities persist throughout the lifespan, with some areas improving and others worsening. Although specific deficits associated with learning disabilities are real and
persistent, such deficits do not necessarily preclude achievement and, in some cases, may have a positive relationship with achievement. In almost all cases, learning disabilities necessitate alternative approaches to achieve vocational and personal success. (pp. 19-20)

Unlike the previous definitions, which focus on language processing deficits, this one focuses on two important facets: (a) that learning disabilities may affect one particular area of processing; and (b) they may occur as a cluster of disorders and the fact that learning disabilities tend to last throughout one’s lifetime. The authors also mention the need for vocational, rather than educational, accommodations (Jordan, 2000).

Types of Learning Disabilities

There are many types of learning disabilities, some occurring by themselves and others co-morbid with each other or with other conditions such as ADHD or ODD. The primary learning disabilities seen in adults tend to be dyslexia, referred to in the DSM-IV as “reading disorder,” dysgraphia, and dyscalculia. Dyslexia may be defined as a disorder involving the ability to read. Those with visual dyslexia misinterpret the printed word and often “scramble” syllables or phonemic symbols, causing them to have difficulty comprehending what they read. For example, the word “from” could be read as “form” or “mollycoddle” as “collymoddle” (Jordan, 2000).

Those with auditory dyslexia have difficulty with sounds or groups of sounds. Therefore, they have trouble parsing or hearing different sounds within a word or words. Sounds may be “jumbled” or heard only partially. Instead of hearing the word “making,” they may hear “make” or instead of hearing “chicken,” they may hear “chick” (Jordan, 2000, p. 9).
Dysgraphia is a condition in which there is an inability to hold a pencil or pen correctly. This results in a lack of ability to produce clear writing. It manifests itself in poor production of letter formation in printing or poor cursive writing skills. Even though persons with this condition know how to format the letters, they cannot correctly form them. Dysgraphia is caused by the nerve pathways which connect the motor cortex and the finger muscles sending “confused” signals which cause letters to be misshapen or missized or uneven spacing between letters or words (Jordan, 2000, p. 9).

Dyscalculia is a condition in which there is an inability to solve mathematical problems and equations. Persons with this condition may also have difficulty with telling time, measurements, and spatial relationships. There is a difficulty with committing rules and directionality for addition, subtraction, multiplication, and division to long-term memory. For example, if persons with this condition are attempting to solve an algebra equation, they will likely have trouble determining whether to begin solving at the left or right side of the equation.

The HEATH Resource Center (1989) has identified the following characteristics which may indicate the presence of a learning disability in adults. First, they may have difficulty with reading, writing, spelling, and/or math, even though other skills are average to superior. Second, their handwriting may be poor, with odd spacing between letters or words, or they may print and not write. Third, they may have difficulty taking notes while listening to a speech or lecture. Fourth, they may have difficulty following a schedule or with time management. Fifth, they have difficulty with directionality, or determining left from right. Sixth, they may have episodes of severe anger, frustration, or
depression when in various social situations. Finally, they may have trouble determining verbal cues such as tone of voice or intonation in conversations (Lowry, 1990).

**Accommodations for Adults with Learning Disabilities**

As discussed previously, almost 12% of college or university students report having a learning disability. In addition, many adults in basic education classes and/or those who read at a low level may have undiagnosed learning disabilities (Ross-Gordon, 1989). Thus, it is important to develop accommodations that will help them to succeed in the learning environment and in their jobs.

Ross-Gordon (1989) recommends the following “interventions” for adults with learning disabilities. First, they may need remediation in basic reading, writing, and mathematical skills. Second, if they are preparing for a standardized test such as the GED, SAT, or GRE, they may need subject specific tutoring in areas such as algebra, history, or English. Third, the learning environment and/or assignments may need to be modified. Fourth, they may need training in cognitive processing or learning strategies such as the use of mnemonic devices. Fifth, instruction in survival or basic social skills may be needed. Finally, they may need vocational training or career guidance.

In addition, Gadbow and Du Bois (1998) offer the following suggestions for aiding adults with learning disabilities. First, they recommend providing notetakers for class lectures and activities when needed. Second, they suggest that instructors or facilitators incorporate a variety of activities which incorporate all different learning styles—visual, auditory, and kinesthetic. Third, they suggest using electronic communication between learners and the instructor as much as possible so that there is a written record in which to refer back. Fourth, they recommend alternative testing formats
or locations such as oral tests when needed or being able to take tests in a quiet environment or on a computer. Fifth, they recommend that instructors become familiar with various assistive technologies and what is available for little or no cost so that they can provide access to these resources to learners who need them. Sixth, extra time should be allowed on exams or class assignments when needed. Seventh, important points of class lectures should be highlighted and emphasized multiple times. In addition, the lectures could be made available beforehand and online. Eighth, Gadbow and Du Bois recommend opportunities for multiple showing of any videos used in the learning environment. Finally, short frequent breaks are recommended for those who have difficulty with sustained attention.

The Learning Disabilities Association of America (2010) recommends the following job accommodations that will help those adults with reading, writing, or auditory deficits. They recommend the use of tape recorders, taped materials, written instructions, or the use of dictation. Further, they recommend the use of demonstrations, illustrations, or diagrams to explain or demonstrate an assignment or work task. Finally, they advocate the use of speaking software such as Dragon Speak and color-coded files.

Federal Laws Pertaining to ADHD and Learning Disabilities

Because this study focuses on adults with ADHD and/or learning disabilities and their experiences in the educational and occupational environments, it is important to include information on the federal laws regarding disabilities and what they dictate about providing reasonable accommodations. It is incumbent upon educators to be familiar with these laws and how they impact the educational and occupational experiences of those
adults with disabilities. Therefore, this section will outline the major laws regarding classification of and accommodations for various disabilities.

**IDEA**

Three major pieces of legislation relate to adults with learning disabilities in the educational setting: The Individuals with Disabilities Act (IDEA—Public Law 94-143), Section 504 of the Rehabilitation Act of 1973 and Title II of the Americans with Disabilities Act of 1990. Even though IDEA predominantly focuses on K-12 education, it is included here for three reasons. First, IDEA covers those between the ages of three to twenty-one, which includes those who are chronologically considered by most of society to be adults. Second, because the age limit is 21, some adult education programs who serve younger adults could possibly qualify for federal funding under IDEA. Finally, IDEA was the first law to provide a definition of a learning disability. The definition of disability under IDEA is that an individual may be classified as such if he or she has “mental retardation, hearing impairments, visual impairments, serious emotional disturbance, orthopedic impairments, autism, traumatic brain injury, other health impairments, or specific learning disabilities” (Shapiro & Rich, 1999, p. 10). Learning disabilities under IDEA are defined as:

- a disorder in one or more of the basic psychological processes involved in understanding or using language [which] may manifest itself in an imperfect ability to: listen, think, speak, read, write, spell, or do math [and] does not include learning problems that are the result of other disabilities or environmental, cultural, or economic disadvantage. (IDEA Definition of Learning Disabilities, n.d., para. 1)
The definition of learning disability is important because even though ADHD is not classified as a learning disability, approximately 30-50% of those with a learning disability also have ADHD (Shapiro & Rich, 1999). The primary goal of IDEA is to provide “free and appropriate public education in the least restrictive environment” possible to those individuals who have a disability (Horton & Hall, 1998, p. 51).

*Rehabilitation Act of 1973*

Unlike IDEA, the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) were created to include the adult population. The Rehabilitation Act of 1973 (Public Law 93-112) was passed to revise and expand upon the grants given to states for vocational rehabilitation services in the Vocational Rehabilitation Act. Many consider it to be the most significant piece of legislation to offer protection of the civil rights of those with disabilities (Shapiro & Rich, 1999). Section 504 states that any program, entity or agency which receives federal funding may not discriminate against individuals with a disability who are otherwise qualified to participate in a program, class, or job. In 1987, the act was amended to say that if any part of a program or activity is federally funded, then the entire program is covered under Section 504. Section 504, then, includes protection for those individuals with disabilities in institutions of higher learning, training programs, and federal agencies, impacting those in both the educational and occupational settings. Persons with disabilities may be defined as those who have a physical or mental impairment which substantially limits one or more major life activities, [or those] who have a history of, or who are regarded as having a physical or mental impairment that substantially limits one or more major life activities. (Fact Sheet, 2006, para. 3)
According to the Americans with Disabilities Act of 1990 (P. L. 101-336), in order to be covered, an individual must have: “(a) a physical or mental impairment that substantially limits one or more of the major life activities of such individual; (b) a record of such impairment; or (c) be regarded as having such an impairment” (Americans with Disabilities Act of 1990, as Amended by the ADA Amendments Act of 2008, 2009). Major life activities include “caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, breathing, learning, reading, concentrating, thinking, communicating, and working” (Americans with Disabilities Act with ADA, As Amended by the ADA Amendments Act of 2008, 2009). In addition, major life activities may include bodily functions of the immune, digestive, or neurological, circulatory, or respiratory systems.

Both the Section 504 and the ADA definitions, therefore, state that in order for a person to be classified as disabled and thus receive reasonable accommodations, his or her condition must severely limit one or more major life functions. Since learning, reading, and concentration, which may be affected by ADHD, are considered major life functions, then, depending on their severity of their conditions, persons with ADHD may be able to receive educational accommodations under Section 504 or the ADA.

The definitions of disabilities in the Rehabilitation Act and the ADA are very similar. One major difference is that the ADA definition expands upon Section 504 and discusses accommodations and auxiliary aid availability, in addition to physical access to services. In addition, the ADA requires that, in addition to federally funded entities being required to provide accommodations, all “programs, services, buildings, and facilities
available to the public,” regardless of federal funding, must provide accommodations to those with a documented disability (Shapiro & Rich, 1999, p. 176).

ADA was amended in 2008 because the courts were applying the law too rigorously and thus denying accommodations for those individuals who did have disabilities. One of the major reasons for the 2008 amendments was to provide clear guidelines for eliminating discrimination against those who have a documented disability by having a broad scope of protection under ADA. In addition, in the case of Sutton v. United Air Lines, Inc., 527 U. S. 471 (1999), the Supreme Court ruled that whether a disability significantly limits a major activity is contingent upon whether medication or other forms of treatment can mitigate the condition such that an individual may perform comparably to those without the disability. Some individuals, then, were being denied accommodations on the basis of the effects of the treatment(s) for their conditions. One of the purposes of the ADA Amendments Act of 2008 (P. L. 110-325) is “to reject the requirement enunciated by the Supreme Court in Sutton v. United Air Lines, Inc., 527 U.S. 471 (1999) and other similar cases that whether an impairment substantially limits a major life activity is to be determined with reference to the ameliorative effects of mitigating measures” (Section 12101, b). The new wording could help those with ADHD and/or learning disabilities qualify for accommodations in either the educational or occupational setting by not allowing the use of medication or other forms of treatment to be considered as having a “mitigating effect” on the condition (Americans with Disabilities Act of 1990, as Amended by the ADA Amendments Act of 2008, 2009, Section 12101b).
Reasonable Accommodations

The legal rights of adults with disabilities include equal access to programs, use of auxiliary aids such as tape recorders, and reasonable accommodations (Horton & Hall, 1998). Both Section 504 of the Rehabilitation Act and the ADA require that those individuals with qualified and documented disabilities be given reasonable accommodations that will “level the playing field” and thus provide them with opportunities equal to that of their non-disabled peers. Accommodations may be defined as

any change to a classroom [or occupational] environment or task that permits a qualified student [or employee] with a disability to participate in the [learning] process, to perform the essential [required] tasks, or to enjoy benefits and privileges of . . . participation equal to those enjoyed by adult learners without disabilities. (Horton & Hall, 1998, p. 7)

Common accommodations include extra time on tests or other assignments, assistive devices such as tape recorders or software which will translate oral text to written, large print or Braille text, private work spaces, calculators, note takers, sign language interpreters, changes in lighting, white noise machines, or modification of existing office or classroom equipment.

When organizations do not have to provide accommodations. Programs or institutions are not required to provide accommodations which would significantly alter the job, assignment, or activity. They are also not required to provide those services which would result in undue financial or administrative hardships (Americans with Disabilities Act, as Amended by the ADA Amendments Act of 2008, 2009). Each
program or entity is allowed to determine the essential requirements for assignments or job tasks and to determine if providing a certain accommodation would change these requirements in any significant way. If a program or entity deems accommodations to be unreasonable, however, they must attempt to provide accommodations that, to the greatest extent possible, do not discriminate against individuals with disabilities (Horton & Hall, 1998).

Documentation required for accommodations. In order for individuals entering a college, university, or workplace to qualify for accommodations due to a disability, they must provide a comprehensive evaluation or assessment of their condition and how it affects them in the learning environment to their college or university office of disability services or to their employer. The office of disability services or employer then determines whether or not the documentation provided proves the existence of a disability, the need for accommodations, and what those accommodations should be (Cope, 2005). However, one of the major issues with Section 504 and ADA is that while they require documentation of a disability in order for an individual to receive accommodations, they do not provide clear guidelines as to what documentation is necessary. Therefore, most institutions create their own guidelines, causing inconsistency among different entities. This issue has caused confusion for many individuals entering higher education or the workplace and thus has made their qualifying for accommodations sometimes very difficult.

Guidelines for selecting accommodations. Horton and Hall (1998) list the following guidelines in selecting accommodations. First, the accommodation(s) should be based on the individual’s documented needs. Second, it should allow “the most
integrated experience possible” (p. 10). Third, the accommodation(s) should not alter the essential task or requirements of the assignment or job. Fourth, it should not threaten the safety of learners or employees. Fifth, it should not cause financial or administrative hardships on the organization. Sixth, it should not be personal items such as eyeglasses or assistance with personal needs such as eating or using the toilet.

Additionally, in order to combat the problem of inconsistency in documentation requirements for disabilities among colleges and the universities, the Association of Higher Education and Disability (AHEAD) has established the following guidelines for documentation of a disability. First, proper documentation of a disability should be provided by a licensed professional who has had comprehensive training and experience with the disability being documented. Second, documentation should contain information on how the diagnosis was made, the impact of the disability on the individual, and information on the prognosis. Third, documentation should include the results of both formal (standardized assessment instruments) and informal evaluation methods (history of educational performance; interviews with the individual). Fourth, information should be provided on how an individual’s learning will be affected by his or her disability and what specific accommodations are needed. Fifth, information should be provided on how the disability or its manifestations may change over time. Sixth, current and past accommodations or auxiliary aids should be described. Finally, if possible, recommendations from former educators or other professionals who have worked with the individual in the past should be obtained. These guidelines are provided in order to aid postsecondary institutions and other agencies or programs in developing
criteria for documentation of various disabilities (National Joint Committee on Learning Disabilities, 2007).

A major issue with the guidelines created by most colleges and universities or workplaces for determining whether or not a disability exists is that these guidelines are much more stringent than those put forth under IDEA, the primary piece of legislation which governs educating students with a disability in the K-12 setting. For example, under IDEA, to receive accommodations an individual has to be formally diagnosed as ADD or ADHD and there has to be a “certification that the condition adversely affects a child’s educational performance” (Cope, 2005, p. 41). In addition, the First Circuit of the U.S. Court of Appeals has ruled that those with ADHD must prove that in spite of any treatment, they cannot “learn during the activities of everyday life” (p. 41). Thus, many students who had qualified for accommodations for their ADHD in the K-12 learning environment may no longer qualify when they enter college or the workforce.

A final issue which persons with disabilities have faced is that the U.S. courts have ruled against them in decisions about what constitutes a disability. As previously discussed, courts often considered medications and other forms of treatment or assistive devices which serve to lessen the effects of a disability as grounds for denying needed accommodations. Thus, to reject some of the decisions made against persons with disabilities, ADA Amendments Act of 2008 (P.L. 110-325) was created and the following new wording was added:

The determination of whether an impairment substantially limits a major life activity shall be made without regard to the ameliorative effects of mitigating measures such as:
medication, medical supplies, equipment, or appliances, low-vision
devices (which do not include ordinary eyeglasses or contact lenses),
prosthetics including limbs and devices, hearing aids and cochlear
implants or other implantable hearing devices, mobility devices, or oxygen
therapy equipment and supplies;

(II) use of assistive technology;

(III) reasonable accommodations or auxiliary aids or services; or

(IV) learned behavioral or adaptive neurological modifications. (Section
12102, 4(e))

Thus, the ADA Amendments Act of 2008 could aid those with ADHD and/or
learning disabilities in receiving needed accommodations by not allowing the effects of
treatment to be considered as grounds for not providing needed accommodations.

Beginning in the 1960s and 1970s, more attention began to be paid to individuals
with disabilities. Upon passage of IDEA, children (and some adults) were entitled to free
public education in the least restrictive environment. The Rehabilitation Act of 1973 and
the Americans with Disabilities Act provided rights to adults with disabilities in
educational and occupational settings by making it illegal to discriminate against
someone who has a disability. In addition, these laws clarified definitions of disabilities
and provided guidelines for reasonable accommodations in the workplace and learning
environment.

Summary

Only in the last 25-30 years has ADHD in adults been acknowledged. Prior to
that time, it was thought that the symptoms went away with onset of puberty or
adulthood. Since the realization that, for many, the symptoms continue throughout their lives, many books have been written on the subject. While most of what has been written contains valuable information on such topics as how the symptoms manifest themselves differently in adults than children, coping skills, educational accommodations, and ways to develop social skills, there is little to no information on adults with ADHD and how a lack of readiness for self-directed learning could possibly contribute to the difficulties exhibited by many in the learning and occupational environments. In addition, little research has been conducted on adults with ADHD and gender differences or on those who have co-morbid conditions such as learning disabilities or depressive disorders.
CHAPTER III
METHODOLOGY

Overview

This study investigated the readiness of adults with Attention Deficit Hyperactivity Disorder (ADHD) for self-directed learning using the Self-Directed Learning Readiness Scale for Adults (SDLRS-A) questionnaire and explored their overall educational experiences using interviews. In addition, the study investigated whether or not their readiness for self-directed learning was significantly related to gender, age of diagnosis, level of education, prior treatment, and co-morbid conditions such as learning disabilities. Specifically, the researcher tested the following hypotheses:

H₁ There is a significant difference in the scores for the general population and the mean score for adults with ADHD on the Self-Directed Learning Readiness Scale for Adults (SDLRS-A).

H₂ There is a significant difference in scores on the SDLRS-A between those adults diagnosed with ADHD as a child or adolescent and those diagnosed as adults.

H₃ There is a significant difference in scores on the SDLRS-A between those adults who have received treatment for their ADHD at some point for a period of at least six months and those who have not.

H₄ There is a significant difference in scores on the SDLRS-A of adults with ADHD based on their level of education.

H₅ There is a significant difference in scores on the SDLRS-A between males and female adults with ADHD.
H₆ There is a significant difference in scores on the SDLRS-A between those adults with ADHD who have co-morbid conditions such as bipolar disorder, depression, or a learning disability and those who do not.

In addition, in interviews with ten of the participants, the researcher investigated the following questions:

R₁ How do adults with ADHD describe their educational experiences?
R₂ What are the participants’ greatest struggles in their educational endeavors?
R₃ How does having ADHD affect the participants’ educational experiences?
R₄ What aspects of their educational experiences are common among the participants?

Research Design

This study used a mixed methodology, which included a questionnaire and interviews, in order to investigate the readiness of adult learners with ADHD for self-directed learning and their overall educational experiences. The quantitative method of study used was a survey, whereas the qualitative used interviews. The questionnaire used was the Self-Directed Learning Readiness Scale form for adults (SDLRS-A or Learning Preference Assessment), developed by Lucy Guglielmino, a professor of adult education, in 1977 (see Appendix C). All questionnaires were administered online and the following demographic information was collected: gender, age range, country of residence, highest level of education completed, and occupation (SDLRS/LPA, n.d.). In addition, the researcher also collected the following information: age of diagnosis of ADHD, types of treatment undergone for a period of at least six months at some point in their lives, and the existence of co-morbid conditions such as learning disabilities.
**Self-Directed Learning Readiness Scale for Adults (SDLRS-A)**

The purpose of the SDLRS-A is to “measure the complex of attitudes, skills, and characteristics that comprise an individual’s current level of readiness to manage his or her own learning” (SDLRS/LPA, n.d., para. 1). It is based on the assumption that the ability to be self-directed occurs on a continuum, with everyone possessing some degree of self-directedness. Extensive research has been performed to establish the validity and reliability of the SDLRS-A. A principal factor analysis with varimax rotation yielded an 8-factor solution. These factors, with item loadings of greater than or equal to .30 included “(a) openness to opportunities to learn; (b) perception of self as a strong learner; (c) independent learning; (d) assumption of responsibility for one’s own learning; (e) love of reading; (f) creativity; (g) positive feelings about the future; and (h) ability to apply basic study problem-solving skills” (Guglielmino, 1977, pp. 61-69). No information was provided on double-loadings. The reliability estimate, calculated using a split-half Pearson product moment correlation with Spearman-Brown correction, is .91 (Straka, 1995).

There are 58 items on the instrument which address the aforementioned aspects of self-directedness (see Appendix C). The answers to each question are on a 5-point scale, with 1 being *Almost never true of me; I hardly ever feel this way*; 2 being *Not often true of me; I feel this way less than half the time*; 3 being *Sometimes true of me; I feel this way about half the time*; 4 being *Usually true of me; I feel this way more than half of the time*; and 5 being *Almost always true of me; there are very few times when I don’t feel this way* (SDLRS/LPA, n.d.). In order to avoid a response set, some items are positively phrased, whereas others are negatively phrased.
The scores range from 58-176—Low; 177-201—Below Average; 202-226—
Average; 227-251—Above Average; and 252-290—High. Based on the scores of the
many people who have taken the test since its inception, 214 is the established mean
score for adults completing the questionnaire. Adults with high SDLRS-A scores are
more likely to prefer to develop their own learning goals and plan their own learning
projects. Those with above average and average scores will most likely be able to plan
and implement their own learning projects successfully, but they may need more
guidance than those scoring in the high range. Those with below average and low scores
generally do better in very structured situations where the learning is teacher or
instructor-centered (SDLRS/LPA, n.d.).

Previously there has been a lot of controversy over the use of the SDLRS due to
issues some researchers have had with its validity and reliability. Field (1989, 1991),
maintained that those items on the SDLRS which correlate most with readiness for self-
directed learning have very weak correlations with the total SDLRS score. Straka (1995)
did a study of Guglielmino’s original 8-factor analysis and compared it to other factor
analyses done on the instrument. He found that while both his and Mourad and
Torrance’s (1979) factor analysis account for similar amounts of variance (39% and 42%,
respectively) and that almost three-fourths (71%) of the items loaded on each of the eight
factors were comparable, this number was reduced to one-third of the items when applied
cross-culturally. He recommended that further analyses with different samples
representing different cultures be conducted.
Various additional studies have been conducted to assess the reliability of the SDLRS—A (Finestone, 1984; Wiley, 1981). Based on the results from over 3,000 individuals over the past 33 years, reliability values between .72 and .96 have been found, indicating that the instrument is a consistent measure of readiness for self-directed learning. In addition, the SDLRS-A has test-retest reliability coefficients of .82 and .79 (SDLRS/LPA, n.d.). Delahaye and Choy (2000) examined both the validity (content, construct, and criterion-related) and the reliability and found the instrument to be both a reliable and valid measure of readiness for self-directed learning. The SDLRS-A continues to be the most widely-used instrument for measuring self-directed learning. Since its inception, over 300,000 adults have used the instrument and it has been translated into over 20 languages, including French, Korean, Greek, Arabic, and Russian (SDLRS/LPA, n.d.). Since the most recent studies have shown the reliability and validity measures to be strong and since the SDLRS-A, in spite of the criticism, has been used in over 500 dissertations and research studies, it was chosen for this study.

Interviews

The interview questions were developed by the researcher and focused on participants’ abilities and attitudes toward self-directed learning, their overall educational experiences, what they have struggled the most with in their educational experiences, and how having ADHD affected their educational experiences. The researcher asked 14 initial questions and participants were then encouraged to add any additional thoughts or questions at the end of the interviews (see Appendix D).
Participants

Questionnaire

Participants in the questionnaire portion of the study were 54 adults who indicated that they were at least 18 years old and self-reported an official diagnosis of ADHD. Twenty-two (41.5%) of the participants were male, and 31 (58.5%) were female. They ranged in age from their early 20s to late 50s and were from the following countries: Canada, Great Britain, Norway, and the United States.

Interviews

The researcher asked all of those completing the questionnaire to contact her via e-mail or telephone if they were interested in being interviewed for the study. While 16 participants contacted the researcher about being interviewed, only 10 of those actually responded when contacted about scheduling a time to be interviewed. Thus, the researcher conducted 10 interviews. Of the 10 participants, ten were female and four were male. They ranged in age from their late 20s to their early 50s. The interviews were conducted online; therefore, the researcher was not able to determine the race or ethnicity of the interviewees. Because the focus of the interviews was on overall educational experiences and how these experiences were affected by the participants’ ADHD and not on the role race or ethnicity played in their educational experiences, these data were not collected. Nine of the participants were from the United States and one was from Great Britain.
Procedure

_ Institutional Review Board Approval_

Approval for the study was attained from the Institutional Review Board (see Appendix E) in order to ensure that the researcher adhered to the following three principles: (a) Respect for person (informed consent, participant confidentiality, and right to privacy); (b) Beneficence; and (c) Justice. A cover letter (see Appendix F) was provided to each participant to read before they completed the questionnaire, and an additional written consent form (see Appendix G) was written for those who were interviewed.

_Questionnaire_

To identify potential participants, the researcher made contact with ten online groups, four library and information science message boards or list-servs to which the researcher, as a librarian, had access; one adult education list-serv of which the researcher was a member; and five message boards or online support groups for adults with ADHD, to which anyone who joins the group has access. In addition, the researcher placed notices at various locations on multiple campuses of a university in the southern part of the United States. The researcher posted messages asking adults who were at least 18 years old with a formal diagnosis of ADHD to participate in an anonymous questionnaire which would take 15-20 minutes to complete (see Appendix H). Those who were interested in completing the questionnaire were asked to e-mail the researcher. When the researcher received an e-mail from a potential participant, she sent them the cover letter and instructions for accessing and completing the questionnaire and asked that they contact her if they had any further questions. The researcher deleted all e-mails
immediately after responding with the cover letter and instructions. All participants reported that they were at least 18 years old and had an official diagnosis of ADHD.

**Interviews**

Each participant completing the SDLRS-A was asked to contact the researcher if they were interested in being interviewed for the study. The researcher then contacted those who expressed an interest in being interviewed, with the result that 10 people participated in this part of the study. Once participants agreed to be interviewed and established a date and time for the interview, the researcher sent each of them an instruction sheet for logging into an online coursesite. The researcher conducted all of the interviews online in a chatroom which was part of a library and information science online course offered at a university in the southern part of the United States via Blackboard software. In order to maintain confidentiality, each participant logged in under the user name “Jane Cool.” All participants selected a pseudonym to use in the data analysis and description of themselves. In order to protect the participants’ privacy, the chats were recorded, printed out, and then immediately deleted from the coursesite. Their geographical location was reported in generic ways (i.e., from a midwestern or southern state), as was their occupation or status (student, accountant, psychologist).

The interviews were approximately one to one-and-a-half hours in length and focused on the participants’ educational experiences, whether formal experiences, informal experiences, or both. The researcher asked 14 initial questions (see Appendix D) which focused on such topics as general educational experiences, difficulties in the educational setting, and how participants wished their educational experiences had been structured. All written transcriptions were kept in a locked filing cabinet so that
confidentiality would be maintained. All transcripts will be destroyed one year after the completion of the project.

Data Analysis

Questionnaires

The researcher entered the data from the questionnaires into SPSS version 16 software. The SDLRS-A was scored by Dr. Guglielmino and her colleagues as part of the cost for the test. The score report included the following: “the individual's name or ID, SDLRS score, sample mean, standard deviation, variance, range, standard error, kurtosis, minimum and maximum score, skewness, number of valid observations, and missing observations” (SDLRS/LPA, n.d). The researcher entered the overall score of each participant, along with demographic information on gender, age of diagnosis, level of education, type of treatment received, and the existence of co-morbid conditions into SPSS. All demographic information was coded numerically (i.e., gender—Female = 1; Male = 0) before entering it into SPSS. After the data were entered into SPSS, the researcher examined them at least three times in order to ensure that they have been entered accurately into SPSS. In addition, another person examined the data for accuracy as well.

Statistical Tests

Frequencies and percentages were collected for the following: gender, age of diagnosis, level of education, type of treatment received, and the existence of co-morbid conditions and what those conditions were. Any missing data were classified as “system missing” and valid percentages were used in the descriptive data.
For hypothesis 1, using a one-sample t-test, the mean score from all of the participants in this study was compared to the Guglielmino’s established mean of 214 in order to determine if the participants scored differently than the general population, which may also include those with ADHD. Using SPSS software, the researcher ran a multiple regression analysis for hypotheses 2-6 in order to determine if scores of the SDLRS-A were significantly affected by age of diagnosis, treatment, level of education, gender, or the existence of co-morbid conditions.

Interviews

The researcher read all of the transcripts from the interviews and identified patterns, themes, and keywords or topics from each participant. Passages from the interviews were coded using open coding. Each pattern, theme, or keyword was identified. After the researcher completed the analysis of each individual interview, a list was made of the major themes and categories identified. The names of interviewees whose responses placed them within each theme were placed under each category. Comparisons and contrasts were then made among the participants in order to determine commonalities among participants’ experiences. In order to increase validity, another person was asked to look at the data and coding schemes.

All quotations from the interview transcripts were written exactly as the interviewees typed them. The researcher made minor additions only when needed for clarification of meaning. These additions were identified by placing them in square brackets.

The researcher provided interviewees with the opportunity to view the transcripts of their interviews and to read written analysis. They were able to ask the researcher
questions about the analysis via e-mail or telephone. They were also told during the interviews that parts of the results may be used in a future publication and conference presentation.
CHAPTER IV
RESULTS

Description of the Questionnaire Participants

Fifty-four participants completed the questionnaire, 22 (41.5%) males and 31 (58.5%) females. One person did not indicate his or her sex. They ranged in age from 19 to 58 years old. Because the relationship of race and ethnicity to adults with ADHD was not a focus of this study, the researcher did not collect data on the race or ethnicity of the participants. The participants were from the following countries: Canada (one participant), Norway (one participant), the United Kingdom (11 participants), and the United States (40 participants). One participant did not indicate his or her country.

Level of Education

Forty (75.5%) of the participants were college graduates (bachelor’s degree or higher), whereas 13 (24.6%) were not. One participant did not indicate his or her educational level. Of the 40 college graduates, 23 (43.4%) had a Bachelor’s degree, whereas the remaining 17 had either a master’s or doctorate degree (see Table 1).

Table 1

*Highest Level of Education Completed by Participants*

<table>
<thead>
<tr>
<th>Highest Level of Education Completed</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary School</td>
<td>1</td>
<td>1.9</td>
</tr>
<tr>
<td>High School</td>
<td>10</td>
<td>18.8</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>2</td>
<td>3.8</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>23</td>
<td>43.4</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>15</td>
<td>28.3</td>
</tr>
</tbody>
</table>
Table 1 (continued).

<table>
<thead>
<tr>
<th>Highest Level of Education Completed</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctorate Degree</td>
<td>2</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Age of Diagnosis of ADHD

Thirty-seven (74%) of the participants were diagnosed with ADHD as adults (age 18 or over). Eight (16%) were diagnosed as children (age 4-12) and five (10%) were diagnosed as adolescents (age 13-17). Four of the participants did not indicate at what age they were diagnosed.

Treatment Received

Forty-two (82.4%) of the participants received treatment for a period of at least six months for their ADHD, whereas nine (17.6%) did not receive any treatment. Three of the participants did not indicate whether or not they had received any type of treatment for a period of at least six months. Of those who received treatment, 20 (39.2%) received more than one form of treatment and 18 (35.3%) received medication alone (see Table 2 for a complete list of treatments.)

Table 2

<table>
<thead>
<tr>
<th>Type of Treatment</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Treatment Received</td>
<td>9</td>
<td>17.6</td>
</tr>
<tr>
<td>Medication</td>
<td>18</td>
<td>35.3</td>
</tr>
<tr>
<td>Professional Counseling</td>
<td>3</td>
<td>5.9</td>
</tr>
<tr>
<td>Cognitive Behavioral Therapy</td>
<td>1</td>
<td>2.0</td>
</tr>
</tbody>
</table>
Table 2 (continued).

<table>
<thead>
<tr>
<th>Co-Morbid Condition</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than One Form of Treatment</td>
<td>20</td>
<td>39.2</td>
</tr>
</tbody>
</table>

Co-Morbid Conditions

Thirty-nine (74.8%) of the participants indicated that they had co-morbid conditions, whereas 13 (25%) did not. Two of the participants did not respond to the question. The most common co-morbid conditions were depression and anxiety disorder, with 10 (19.2%) participants each, whereas the least common was Asperger’s Disorder with one (1.9%) participant. Five (9.6%) of the participants indicated that they had more than one co-morbid condition. Because the additional questions on the SDLRS-A only allowed for multiple choice answers and provided no way to list conditions, the researcher was not able to obtain information on what those “other” or “more than one co-morbid” conditions were (see Table 3).

Table 3

Co-Morbid Conditions

<table>
<thead>
<tr>
<th>Co-Morbid Condition</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Other Condition</td>
<td>13</td>
<td>25.2</td>
</tr>
<tr>
<td>Depression</td>
<td>10</td>
<td>19.2</td>
</tr>
<tr>
<td>Bipolar Disorder</td>
<td>6</td>
<td>11.5</td>
</tr>
<tr>
<td>Anxiety Disorder</td>
<td>10</td>
<td>19.2</td>
</tr>
<tr>
<td>Asperger’s Disorder</td>
<td>1</td>
<td>1.9</td>
</tr>
<tr>
<td>Dyslexia or Other Learning Disability</td>
<td>5</td>
<td>9.6</td>
</tr>
</tbody>
</table>
Table 3 (continued).

<table>
<thead>
<tr>
<th>Co-Morbid Condition</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Co-Mor. Con.</td>
<td>2</td>
<td>3.8</td>
</tr>
<tr>
<td>More than One Co-Mor. Con.</td>
<td>5</td>
<td>9.6</td>
</tr>
</tbody>
</table>

Scores on the SDLRS-A

The scores on the SDLRS-A ranged from 179-262, with a median score of 214.50 and a mode of 213. The mean score was 217.39, with a standard deviation of 20.41. Slightly less than half of the participants, twenty-six (48.1%), scored in the “average” range, whereas only 3 (5.5%) scored in the “high range” (see Table 4).

Table 4

Range of Scores on the SDLRS-A

<table>
<thead>
<tr>
<th>Guglielmino’s Established Categories and Range of Scores</th>
<th>Number in This Sample Scoring in Each Category/Range</th>
<th>Percentage in the Sample Scoring in Each Category/Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (58-176)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Below Average (177-201)</td>
<td>11</td>
<td>20.4</td>
</tr>
<tr>
<td>Average (202-226)</td>
<td>26</td>
<td>48.2</td>
</tr>
<tr>
<td>Above Average (227-251)</td>
<td>14</td>
<td>25.9</td>
</tr>
<tr>
<td>High (252-290)</td>
<td>3</td>
<td>5.5</td>
</tr>
</tbody>
</table>

Even though Guglielmino (1977) does not divide the SDLRS-A into subscales, she did a factor analysis as part of her dissertation and the following eight factors emerged: openness to learning opportunities, self-confidence as an effective learner, initiative and independence in learning, informed acceptance of responsibility for one’s
own learning, love of learning, creativity, positive orientation to the future, and ability to use basic study skills and problem-solving skills. The researcher compared these factors to the themes which emerged from the interviews conducted for this study (analyzed later in this chapter). Three of Guglielmino’s factors were similar to the themes from the interviews: self-confidence in learning, creativity, and the ability to use basic study skills and problem-solving skills. Thus, these three areas were chosen as subcategories. The items included in each subcategory were those identified by Guglielmino’s initial factor analysis, with additions made by the researcher. Items included by the researcher were those which related to the subcategory, but had not been included in Guglielmino’s factor analysis. Due to the small sample size and the issue of empty cells, the researcher collapsed Guglielmino’s 5-point scale into a 3-point scale for the analysis of the subcategories. Response choices 1 and 2 (Almost Never True of Me and Not Often True of Me) were combined, response choice 3 (Sometimes True of Me) was left the same, and response choices 4 and 5 (Usually True of Me and Almost Always True of Me) were combined.

For self-confidence in learning, the researcher identified the following 13 items for analysis: 3, 4, 9, 12, 14, 16, 18, 21, 27, 38, 40, 41, and 57. Most of the participants indicated a low level of self-confidence on their overall effectiveness as a learner, the ways that they approach or solve problems, and their time management skills. For example, on item 57 (“I am an effective learner in the classroom and on my own.”), only 20 (37%) of the participants answered that this statement was usually or always true of them, whereas 34 (63%) answered that this was almost never, not often, or sometimes true of them. In addition, 30 (55.6%) said that they avoided something they did not
understand (Item 3), whereas 20 (37.4%) said that they were happy with the way they investigated problems.

The participants, however, displayed a higher degree of self-confidence on items related to knowing what they need to learn, knowing when they need to learn more, and judging whether or not they have learned something well. For example, on Item 4 ("If there is something I want to learn, I can figure out a way to learn it.")

41 (76%) stated that this was usually or almost always true of them. In addition, on Item 21 ("I know when I need to learn more about something.")

41 (75.9%) participants indicated that this was usually or almost always true of them (see Table 5).

Table 5

**Learner Self-Confidence Ratings**

<table>
<thead>
<tr>
<th>Item and Item Number</th>
<th>Number and Percentage: Almost Never or Not Often True of Me</th>
<th>Number and Percentage: Sometimes True of Me</th>
<th>Number and Percentage: Usually or Almost Always True of Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>3: When I see something I don’t understand, I stay away from it.</td>
<td>9 (16.7)</td>
<td>15 (27.8)</td>
<td>30 (55.6)</td>
</tr>
<tr>
<td>4: If there is something I want to learn, I can figure out a way to learn it.</td>
<td>3 (5.6)</td>
<td>10 (18.5)</td>
<td>41 (76)</td>
</tr>
<tr>
<td>9: I don’t work very well on my own.</td>
<td>11 (20.4)</td>
<td>15 (27.8)</td>
<td>28 (51.8)</td>
</tr>
<tr>
<td>12: Even if I have a great idea, I can’t seem to develop a plan for making it work.</td>
<td>20 (37)</td>
<td>21 (38.9)</td>
<td>13 (24.1)</td>
</tr>
<tr>
<td>Item and Item Number</td>
<td>Number and Percentage: Almost Never or Not Often True of Me</td>
<td>Number and Percentage: Sometimes True of Me</td>
<td>Number and Percentage: Usually or Almost Always True of Me</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td>14: Difficult study doesn’t bother me if I’m interested in something.</td>
<td>7 (13)</td>
<td>8 (14.8)</td>
<td>39 (72.2)</td>
</tr>
<tr>
<td>16: I can tell whether I’m learning something or not.</td>
<td>6 (11.2)</td>
<td>10 (18.5)</td>
<td>38 (70.4)</td>
</tr>
<tr>
<td>18: If there is something I have decided to learn, I can find time for it, no matter how busy I am.</td>
<td>23 (42.6)</td>
<td>13 (24.1)</td>
<td>18 (33.4)</td>
</tr>
<tr>
<td>21: I know when I need to learn more about something.</td>
<td>1 (1.9)</td>
<td>12 (22.2)</td>
<td>41 (75.9)</td>
</tr>
<tr>
<td>27: I am capable of learning for myself.</td>
<td>12 (22.2)</td>
<td>19 (35.2)</td>
<td>23 (42.6)</td>
</tr>
<tr>
<td>38: I’m better than most people at trying to find out the things I need to know.</td>
<td>8 (14.9)</td>
<td>16 (29.6)</td>
<td>33 (35.6)</td>
</tr>
<tr>
<td>40: I can make myself do what I think I should.</td>
<td>26 (48.1)</td>
<td>17 (31.5)</td>
<td>11 (20.4)</td>
</tr>
<tr>
<td>41: I’m happy with the way I investigate problems.</td>
<td>12 (22.2)</td>
<td>22 (40.7)</td>
<td>20 (37)</td>
</tr>
</tbody>
</table>
The data from the interviews revealed that a number of the participants considered themselves creative, “outside of the box” thinkers. The following five items were included in the creativity category: 25, 29, 30, 34, and 36. The results revealed that 48 (88.9%) of the participants have a high level of curiosity (Item 30) and that 36 (66.6%) said that being able to think of many different ways to learn about a new topic (Item 25) was usually or almost always true of them. In addition, 33 (61.1%) of the participants said that they were good at thinking of unusual ways to approach a task (Item 36) (see Table 6).

Table 6

Learner Creativity Ratings

<table>
<thead>
<tr>
<th>Item and Item Number</th>
<th>Number and Percentage: Almost Never or Not Often True of Me</th>
<th>Number of Percentage: Sometimes True of Me</th>
<th>Number and Percentage: Usually or Almost Always True of Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>25: I can think of many different ways to learn about a new topic.</td>
<td>4 (7.5)</td>
<td>14 (25.9)</td>
<td>36 (66.6)</td>
</tr>
<tr>
<td>29: I don’t like dealing with questions where there is not one right answer.</td>
<td>17 (31.5)</td>
<td>13 (24.1)</td>
<td>24 (44.4)</td>
</tr>
</tbody>
</table>
Table 6 (continued).

<table>
<thead>
<tr>
<th>Item and Item Number</th>
<th>Number and Percentage: Almost Never or Not Often True of Me</th>
<th>Number of Percentage: Sometimes True of Me</th>
<th>Number and Percentage: Usually or Almost Always True of Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>30: I have a lot of curiosity about things.</td>
<td>3 (5.6)</td>
<td>3 (5.6)</td>
<td>48 (88.9)</td>
</tr>
<tr>
<td>34: I like to try new things, even if I am not sure how they will turn out.</td>
<td>9 (16.7)</td>
<td>14 (25.9)</td>
<td>31 (57.4)</td>
</tr>
<tr>
<td>36: I’m good at thinking of unusual ways to do things.</td>
<td>5 (9.3)</td>
<td>16 (29.6)</td>
<td>33 (61.1)</td>
</tr>
</tbody>
</table>

In the interviews, several of the participants mentioned that they had difficulty with specific skills such as understanding what they read, developing good study skills, and getting started on a learning project. Items 6, 10, 19, 22, 33, and 51 of the SDLRS-A address specific learning skills. The results revealed that most participants (39 or 71.4%) indicated that taking a long time to get started on a new project was not an issue for them (Item 6). In addition, the majority of participants (42 or 77.7%) indicated that they knew where to find information needed to complete a project (Item 10). However, 25 (46.3%) indicated that understanding what they read was usually or almost always true of them, with another 13 (24.1%) indicating that this was sometimes true of them (Item 19). Thirty-six (66.7%) indicated that they had problems with basic study skills (Item 33). Forty-three (79.6%) indicated that learning how to learn was important to them (Item 51).
Analysis of the Results

_Hypothesis 1: There Is a Significant Difference in the Mean Scores for the General Population and the Mean Score for Adults with ADHD on the Self-Directed Learning Readiness Scale for Adults_

The researcher performed a one-sample t-test in order to determine if the mean score of the participants on the SDLRS-A (217.39) was significantly different from 214, the established mean from Guglielmino’s data over the past 30 years. The participants’ mean score was not significantly different from that of 214, t (53) = 1.200, p = .228. Therefore, the hypothesis was not supported.

The researcher used a multiple regression analysis to determine if Hypotheses 2-6 were significant. The regression analysis revealed that the model accounted for 11.7% of the total variance. In addition, the overall model did not significantly predict readiness for self-directed learning, $R^2 = .117$, $R^2_{adj} = .017$, $F (5, 44) = 1.171$, $p = .339$.

Table 7

_Coefficients Table_

<table>
<thead>
<tr>
<th>Variable</th>
<th>b</th>
<th>Std. Error</th>
<th>$\beta$</th>
<th>T</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Diag.</td>
<td>.763</td>
<td>3.974</td>
<td>.028</td>
<td>.192</td>
<td>.849</td>
</tr>
<tr>
<td>Level of Educ.</td>
<td>4.946</td>
<td>2.426</td>
<td>.293</td>
<td>2.039</td>
<td>.047</td>
</tr>
<tr>
<td>Treatment Received</td>
<td>4.435</td>
<td>7.970</td>
<td>.080</td>
<td>.556</td>
<td>.581</td>
</tr>
<tr>
<td>Gender</td>
<td>3.168</td>
<td>6.189</td>
<td>.077</td>
<td>.512</td>
<td>.611</td>
</tr>
<tr>
<td>Co-Morbid Conds.</td>
<td>-1.438</td>
<td>1.417</td>
<td>-.156</td>
<td>-1.015</td>
<td>.316</td>
</tr>
</tbody>
</table>
Hypothesis 2: There Is a Significant Difference in Scores on the SDLRS-A between Those Adults Diagnosed with ADHD as a Child or Adolescent and Those Diagnosed as an Adult

The mean score on the SDLRS-A was 211.1 for those who were diagnosed as children, 226.2 for those diagnosed as adolescents, and 216.7 for those diagnosed as adults (see Table 8). However, there was no significant difference in those adults diagnosed with ADHD as children, adolescents, or adults, (t = .192, p = .849). Therefore, the hypothesis was not supported.

Hypothesis 3: There Is a Significant Difference in Scores on the SDLRS-A between Those Adults Who Have Received Treatment for Their ADHD at Some Point for a Period of at Least Six Months and Those Who Have Not

The mean scores for treatment type ranged from 199.3 for those who had received only professional counseling as treatment for their ADHD to 220.6 for those who had received more than one form of treatment (see Table 8). However, there was no significant difference in those adults who have or had received treatment for their ADHD for a period of at least 6 months and those who have received no treatment, (t = .556, p = .581). Therefore, the hypothesis was not supported.

Hypothesis 4: There Is a Significant Difference in Scores on the SDLRS-A of Adults with ADHD Based on Their Level of Education

There was a difference in means of 203 for those whose highest level of completed education was elementary school and 225.7 for those who had received a master’s degree (see Table 8). There was a significant difference in scores on the SDLRS-A based on participants level of education, (t = 2.039, p = .047). Therefore, for
every unit increase in level of education, there will be a 4.941 unit increase on the SDLRS-A score. Thus, the hypothesis was supported. Further, those who earned a college degree (bachelor’s degree or higher) had a mean score of 220.18, whereas those who did not have a college degree had a mean score of 206.38 on the SDLRS-A.

*Hypothesis 5: There Is a Significant Difference in Scores on the SDLRS-A between Male and Female Adults with ADHD*

The mean score on the SDLRS-A was 214.5 for the males and 218.4 for the females (see Table 8). This difference was not significant, (t = .512, p = .611). Therefore, the hypothesis was not supported.

*Hypothesis 6: There Is a Significant Difference in Scores on the SDLRS-A between Those Adults with ADHD Who Have Co-morbid Conditions such as Bipolar Disorder, Depression, or a Learning Disability and Those Who Do Not*

The mean scores ranged from 205 for those who had more than one co-morbid condition to 229 for the participant with Asperger’s Disorder (see Table 8). However, there was no significant difference in mean scores on the SDLRS-A between those participants who had one or more co-morbid conditions and those who did not, (t = -1.015, p = .311). Therefore, the hypothesis was not supported.

Table 8

*Means for Each Group within Each Hypothesis*

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Number in Each Group</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2: Age of Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood</td>
<td>8</td>
<td>211.1</td>
</tr>
<tr>
<td>Adolescence</td>
<td>5</td>
<td>226.2</td>
</tr>
<tr>
<td>Adulthood</td>
<td>37</td>
<td>216.7</td>
</tr>
</tbody>
</table>
### Table 8 (continued).

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Number in Each Group</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3: Treatment Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Treatment</td>
<td>10</td>
<td>217.4</td>
</tr>
<tr>
<td>Medication</td>
<td>17</td>
<td>216.4</td>
</tr>
<tr>
<td>Professional Counseling</td>
<td>3</td>
<td>199.3</td>
</tr>
<tr>
<td>Cognitive Behav. Ther.</td>
<td>1</td>
<td>210.0</td>
</tr>
<tr>
<td>More than One Treatment</td>
<td>20</td>
<td>220.6</td>
</tr>
<tr>
<td><strong>4: Level of Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td>1</td>
<td>203.0</td>
</tr>
<tr>
<td>High School</td>
<td>10</td>
<td>207.7</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>2</td>
<td>201.5</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>23</td>
<td>216.6</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>15</td>
<td>225.7</td>
</tr>
<tr>
<td>Doctorate Degree</td>
<td>2</td>
<td>220.0</td>
</tr>
<tr>
<td><strong>5: Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>22</td>
<td>214.5</td>
</tr>
<tr>
<td>Female</td>
<td>31</td>
<td>218.4</td>
</tr>
<tr>
<td><strong>6: Co-Morbid Conditions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Co-Morbid Conds.</td>
<td>13</td>
<td>219.2</td>
</tr>
<tr>
<td>Depression</td>
<td>10</td>
<td>219.4</td>
</tr>
<tr>
<td>Bipolar Disorder</td>
<td>6</td>
<td>222.2</td>
</tr>
<tr>
<td>Anxiety Disorder</td>
<td>10</td>
<td>211.9</td>
</tr>
<tr>
<td>Asperger’s Disorder</td>
<td>1</td>
<td>229.0</td>
</tr>
<tr>
<td>Dyslexia or Other LD</td>
<td>5</td>
<td>221.6</td>
</tr>
<tr>
<td>Other Co-Morbid Cond.</td>
<td>2</td>
<td>208.0</td>
</tr>
<tr>
<td>More than One Co-Mor. Cond.</td>
<td>5</td>
<td>205.0</td>
</tr>
</tbody>
</table>

**Assumptions of Multiple Regression**

*Curvilinearity.* The researcher centered and squared the variable “Level of Education” in order to determine if there was a curvilinear relationship with the scores on
the SDLRS-A. The significance value of the squared variable (p = .672) indicated no curvilinear relationship.

_Homoscedasticity._ A scatterplot analysis indicated that there was not equal variability of all predicted values because the data were not distributed equally from left to right, with large gaps in the data.

_Normality of Residuals._ The following variables had evidence of skewness (values beyond plus or minus 3): Age of Diagnosis (-4.31) and Treatment Received (5.25), whereas Gender had evidence of kurtosis (-3.01). Level of Education, however, which was significant, had no issues with either skewness (-2.66) or kurtosis (.893).

_Multicollinearity._ The values for multicollinearity were all above .2, ranging from .851 to .972. Thus, there were no issues with multicollinearity.

**Interviews**

_Profile of the Interviewees_  

The researcher interviewed 10 people, four males and six females. All interviews were conducted online using Blackboard course software. The researcher conducted the interviews using the chat function of a University of Southern Mississippi graduate course. The time for each interview ranged from one to one-and-a-half hours and consisted of a series of general questions regarding educational experiences (see Appendix D). Because the interviews were conducted online, all punctuation within the quotations that follow were placed there by the interviewees except for that which was added by the researcher in square brackets for clarity of meaning.

The researcher conducted the interviews online because nine of the 10 participants were from different states or countries than the researcher, making it
impossible to travel to conduct the interviews face-to-face. The one interviewee who was located in the same state as the researcher was also interviewed online to maintain similar interview conditions among all of the participants. Even though some of the typical facets observed during a face-to-face interview such as facial expressions, eye contact, and hand gestures were lost during online interviews, the researcher was able to interview a more geographically diverse sample than would otherwise be possible.

The interviewees ranged in age from their early 30s to mid-50s. One participant resides in the United Kingdom, whereas the other nine reside in the United States. All have bachelor’s degrees, whereas seven have or are pursuing master’s degrees. One is currently pursuing a second master’s degree and two are currently working on their doctorates. Because the focus of the study was not on the relationship of race and ethnicity to ADHD, this information was not collected. Each interviewee chose his or her own pseudonym to be used in the data analysis. A description of the interviewees, using their chosen pseudonyms, follows.

*Amber*

Amber is a 27-year-old female from Great Britain who has a bachelor’s degree in English and creative writing and hopes to eventually obtain her master’s and doctoral degrees. She is working on a screenplay on education in the United Kingdom, with one of the foci being school bullying. Even though her educational experiences were not very positive in the beginning, she had one teacher, her “headteacher” in high school who made a great difference in her life by convincing her that she was intelligent and that she could succeed academically.
She took the time to teach me on a one-to-one basis, and I found myself looking forward to her lessons more than anything else. . . She was encouraging more than anything. If I felt down about something and said I couldn’t do it, she would talk me out of such silly thoughts. . . And in all honesty I think that all my achievements go back to having my headteacher in school. She did so much for me (and still does).

[She worked with me on] any form of fact learning. It changed quite a lot, but I’d get interested in say the first world war and then I’d want to learn absolutely everything I could about it. So she would use whatever my obsession was that week as a way of developing my reading or she’d get me to write about it etc. I think mainly, whenever I read stuff, it usually ends up history related.

Based largely on her earlier negative experiences in elementary school, Amber has decided to become a teacher so that she can “show other kids that they might think they are rubbish and thick (English slang for stupid) but that they are not.” Thus, based on her own experiences, Amber has found a career path that will allow her to help others and instill in her students a sense of self-worth.

Bill

Bill is a 28 year-old-male from the United States who recently finished his bachelor’s degree in library and information science. He recently began a full-time job in his hometown and would like to eventually obtain a master’s degree. He described his educational experiences as having “more rough spots than smoother ones.”
Having a need for detailed instructions and directions, Bill struggled in school due to feeling like he did not always understand an assignment, but did not want to ask for clarification. His ideal learning environment would be one-on-one with a professor.

If I had to do it all again, I would say I would have preferred to have a classroom type environment to where it would be just myself and the teacher working one on one with no other students present. That way I could stay focused and the person could give me enough time to come up with a logical answer. In a regular classroom setting you have to give an answer almost immediately. That upset me in a lot of cases and I would end up say[ing] something that’s completely irrelevant or wrong.

He prefers that professors use a lot of concrete examples when teaching because it helps him to understand the material better. The major role of the professor or facilitator in his learning process should be to clarify questions he has or to “point him in the right direction.”

Encouragement and someone to help him organize an assignment are what Bill needs most in order to feel successful. When asked if he needed a lot of encouragement in order to succeed, Bill answered that he did need a lot of feedback because he is “very worried about screwing up.” In addition to copious feedback, Bill also needs someone to help him with the organization and development of a clear outline in order to complete a learning project successfully.

Johnny

Johnny is a 55-year-old male from the United States who has a bachelor’s degree in philosophy and has taken graduate courses in theology. He is employed at a university
in the southern part of the United States. He began graduate programs in two different
academic areas, but did not complete either one because they involved “massive amounts
of reading.”

Difficulties in school, my biggest problem was always having enough time to
finish. But there are topics I’m no good with. I avoided math & science because
I couldn’t understand what the teachers were talking about. Too many
abstractions.

His educational experiences were hindered by his need to do things slowly. What
he requires most for learning is “to have plenty of time and to be interested in what I’m
learning.” His preferred role for the instructor in the learning environment is a
collaborative approach where the teacher and students learn together.

My father tended to answer our [me & siblings] questions by asking us a question,
and I’ve always liked it that way. When I teach, I like to ask questions and use
students’ answers to decide where to go next. So I like learning that way, too. I
think the best classes are those where teacher and students are learning
together. . . . The teacher can still kind of direct things. It’s kind of like
behavioral “shaping.” The teacher asks individuals to express their opinions or
experiences, then takes what’s most on topic for the lesson and follows in that
direction.

Even though Johnny expressed a love for learning and teaching, he also expressed regret
at about his educational experiences and career path:
I think ADHD took my grades a step or two down from what they would have been otherwise. I now feel certain that I would have become a college professor in something if I’d had medication during my school years.

Thus, even though Johnny has a college degree and has been successful in many ways, there is a lingering sense of “what could have been” if not for his ADHD.

Liz

Liz is a female in her mid-40s who lives in the United States. She has a bachelor’s degree in interdisciplinary studies with concentrations in business and communications and a master’s degree in English and currently works at a university where her major duties include planning and hosting alumni events throughout the United States and updating the alumni section of the university’s website.

She described herself as extroverted and “liked being at school for the most part.” She did well in most areas, but “did struggle with talking too much in class and procrastinating on projects or homework.” Her preference is to work with others rather than alone on learning projects because she learns best by discussing something with someone else—talking about it out loud. . . . [while her ideal learning project is one that] would have a clear statement of the purpose of the project as well as what was expected. It would also include suggestions for research or guidelines about how to accomplish the project. An example would be ideal, too.

Liz prefers unconventional approaches to learning and likes to be kept busy with a variety of different tasks.
Jonathan

Jonathan is a 31-year-old male who lives in the United States and has a master’s degree in literature. He is currently working as a data analyst and is studying for a second master’s degree in library and information science. Even though he has “always valued an education and thought of it as necessary to do the things [he wants] to do, . . ., the execution has not always been easy.” Although he has been successful education-wise in earning bachelor’s and master’s degrees, he believes that

I often do not achieve my personal goals or I don’t live up to my expectations because I waste so much time. It took me a very long time [to figure out what I wanted to do]. I finally just decided what I wanted to do and do it the way I wanted to do it. That and [the] support of a network of professors is the only way that I was able to finish. Though I struggled more outside of school than I did within.

J. Swift

J. Swift is a male in his late 30s who lives in the United States. He has a bachelor’s degree in English and is working on a master’s degree in library and information Science. Upon completion of his master’s degree, he would like to work as a public librarian and teach classes in information literacy.

In the educational environment, he likes to be “presented with enough of a challenge” so that he feels neither “drowned or bored.” One of his best educational experiences was with a professor “who was able to direct the class like a teamster would a half-dozen horses drawing a carriage and [at the same time] she left it open enough that I was able to sink my teeth into the work.”
Jane Jitters

Jane Jitters is female in her early 30s from the United States. She has a bachelor’s degree in English education and a doctor of jurisprudence degree. She is currently in the sales and the title industry and described her educational experiences as “less successful than they might otherwise have been because of the ADD.” Many times she “didn’t learn effectively even though [she] certainly wanted to,” but identified an intense need for perfection in her studies and was greatly disappointed that she did not graduate in the top 10% of her law school class. She said of her experiences in law school:

Law school was the worst because I needed to focus and couldn’t. . . . I mean there were classes where I never opened the textbook. How I managed to get through it is a mystery. I was eighth from the bottom in my class.

However, the pressure for perfection, she stated, could have been “a way to compensate for the fear I had because I knew I wasn’t able to focus.” The most difficult part for her was hyperfocusing on the course grade at the end of the semester and not being able to concentrate enough on the “day-to-day work necessary to be as successful as possible.”

Jane’s best educational experience in terms of success was her second year of her undergraduate degree in English because she “was able to write impressive papers at the last minute.” Her most successful educational experience in terms of enjoyment was her first semester of law school because “I was still hopeful that I would do well and I was doing well.”
Lily

Lily is a female in her late 30s who currently lives in the United States. She has a bachelor’s degree in dance and would eventually like to return to school for a graduate degree. She works in sales in the interior design field and described her educational experiences in the following way: “school was not fun for me. I enjoyed college a little more because of being a dance major. That was a saving grace for me. But super structured learning situations were not good for me.”

Lily identified her best learning experiences as those where she was in practical and hands-on environments. Her ideal learning project would be one where she could have a lot of hands on participation because “seeing and doing is what works for me.” The arts in high school provided her with a “creative and physical outlet [that] was the only thing that kept me from being a crazy person.”

Lily would like to go back to school and earn an advanced degree, but she is not sure she could handle the work right now because she is raising four-year-old twins and thinks she would be too easily distracted by her family obligations. She is currently thinking about studying photography, which, in her words, is “hands on and creative,” and she may pursue this in the future.

JB

JB is a female in her late 40s who lives in the United States. She has bachelor’s and master’s degrees and is currently working on a doctoral degree in communication and information sciences. She is interested in people and how they interact with and relate to technology. Even though she was placed in gifted or advanced classes in K-12, she described her educational experiences as “segmented, varied, and continuing.” After
finishing high school, she began studying at a university 1,100 miles away from her home. For many years after high school, though, she attended at least six colleges or universities before receiving her undergraduate degree. Becoming “distracted” by or entering into relationships with other people often deterred her from her educational pursuits:

I applied to that school for college and got in and began it in the fall after high school. . . . I stayed at that university for less than a semester because I got distracted by my friendship with my roommate and when she skipped classes so did I.

I finally went to a university close to work and took classes there part time for 11 years. Then I met someone online and moved 1200 miles from home. I did not finish at that university. [I was] about a year from graduating (even after 11 years of part time classes) After I relocated, the relationship did not work, but I stayed. I met someone else and moved about 70 miles, which was near a large university. A year after moving there, I started at that school and FINISHED [all capitals in original] my bachelor’s degree. This was 25 years after I graduated from high school.

Even though JB attended many different schools before receiving her bachelor’s degree, she has subsequently been successful in the formal learning environment, receiving a master’s degree and working toward a doctorate.
Anne

Anne, a female in her early 50s who resides in the United States, received her bachelor’s degree in philosophy, and is currently pursuing a doctorate in sports psychology. She chose sports psychology because I’ve been in and out of therapy since 1983 (which has really helped me a ton) and I was very interested in what I learned about the human mind—both on my own, and everyone else’s. Sport Psycho appealed to me because I’d also started doing endurance sports at age 40 in 1997, and evolved from a nerd into a pretty respectable athlete. It changed my whole self-perception and it certainly changed how the rest of the world saw me. And it was all to me emotional and psychological benefit. I wanted to help provide that experience for other people.

She said that she was “pretty happy” in elementary school, but that she was “really miserable, probably depressed” in junior high school. Even though a straight-A student in grades K-12, she maintained that she had no friends in junior high because she was “entirely too focused on getting good grades. I was a nerd before nerds were in fashion. People called me the computer.”

Although high school was better because she began to make more friends, she also began a recurrent battle with her weight. When she began college, her struggles with weight and depression manifested themselves again.

College was really tough. I was surrounded by people who were smarter and brighter than me. Plus I got depressed although I didn’t realize it. Some of that was seasonal affective disorder. Some of it was another breakup with another boyfriend. My first winter I just cried all the time and barely studied (and gained
a lot of weight). Spring I pulled myself together physically and academically.

But like I said, this pattern recurred throughout college, and after.

In spite of her difficulties, Anne finished her bachelor’s degree in four years and went on to earn a master’s degree.

*Description of Interviewees’ Educational Experiences*

Most of the interviewees’ descriptions of their educational experiences were predominantly negative. They used the following words and phrases to describe their educational experiences: “scary,” “intimidating,” “ample opportunity but unmotivated,” “hampered all the way through school,” “bored,” “acting out,” “not fun for me,” “easily distracted,” “worthless and depressed,” “more rough spots than smoother ones,” “stress, failure, and anxiety (and that’s how I felt about learning in general).” Amber described her early educational experiences in the following way: “I hated anything academic because I thought I was too thick to do it all. But the stupid thing is I used to read a lot of non-fiction and watch documentaries, so I loved learning.”

When speaking of his high school years, J. Swift said that “[I was] not a high-performing student. Like . . . at all. Really they could have kept me from graduating, but I think the powers that be wanted to keep the graduation rate at 100%.”

Thus, even though all of the participants have a Bachelor’s degree and most have advanced degrees, they described their educational experiences in predominantly negative terms.

Three of the participants mentioned feeling depressed through much of their formal education. Jonathan “entered college on a scholarship and immediately struggled with attendance, alcohol, drugs, and depression. . . . I often felt worthless and depressed.”
The doctors I saw wanted to treat the symptoms and not the causes.” He was diagnosed with depression and anxiety disorder before he was diagnosed with ADHD, but said that the drugs the doctors prescribed often made him feel much worse than he had previously. Johnny wanted to attend graduate school, but he was “frequently depressed (diagnosed) and couldn’t muster the drive for a graduate program.” Anne became depressed in college and spent most of her first winter there “crying all the time and barely studying.”

One of the participants was placed in special education classes after her diagnosis, whereas another had a teacher who wanted to place her in special education. Lily, who was placed in special education classes, described her experiences in the following manner:

When I was young and first diagnosed they just stuck me in special ed and I hated it. . . . Special education was probably the worst. In the 80s when I was diagnosed, they didn’t know what to do with kids like me. Not being challenged at all was so terrible, but you would get into trouble for being bored and acting out.

The label of being stupid or something being wrong with me was worst part of the education experience for me. I wanted to do well in school just like everyone else, I just didn’t have the resources at that point to make it happen.

Amber stated that her primary school teacher “wanted me to go to a special needs school even though I had not been diagnosed with anything wrong with me.” Although both Amber and Lily were bright, teachers thought that they needed to be placed in special education classes due to a lack of ability to focus for extended periods of time.
Several of the participants, however, did describe school as being relatively easy for them, even though they did struggle in other ways. For example, JB stated that she was reading the copyright notices on the Weekly Readers when she was in kindergarten. In the middle of her first-grade year, her school advanced her a grade level to finish the year as a second-grader. She eventually graduated from high school ninth out of 1,100 students. However, she struggled throughout her undergraduate career to maintain her focus and transferred to many different schools before obtaining her degree.

Liz described herself as being extroverted and said she “always liked being at school for the most part.” She stated that even though she “did well in most subjects,” she “did struggle with talking too much in class and procrastinating on projects or homework.” She further stated that she had difficulty determining how or where to begin a project, so she would avoid doing assignments in a timely manner. Therefore, even though some of the participants did not struggle as much as others and for the most part, enjoyed school, there were still obstacles that they had to overcome due to their ADHD.

**Interviewees’ Greatest Educational Struggles**

The focus of some of the interview questions was to determine where interviewees struggled most in the educational process. In addition to difficulty with typical ADHD symptom manifestations such as difficulties with organization, time management, and procrastination, their responses also included mention of such areas as difficulties with projects that required rote memorization, specific subject areas, and time pressure. J. Swift, for example, realized early on that projects that required a lot of memorization, but no practical application, were very difficult for him. For example, he said of his middle school French class:
It was all rote memorization crap, and none of it made any sense what so bloody ever, and I flunked hard. I have figured out that straightforward data cramming is NOT what I am good at; if I can relate incoming content in SOME narrative fashion, it sticks much better. Even better if I get a chance to apply what I’m learning, as I’m learning it.

Ok, so (briefly) 6-8th grade French; awful because it was presented to me in a way where I was virtually guaranteed to fail miserably, but I didn’t realize that at the time; I just knew that French sucked and I was trapped.

Lily and Johnny both mentioned having difficulties with math during high school and college. Both had difficulties with parts of math that required a lot of abstract thinking. For example, Lily stated that “math was very hard for me also. Or at least geometry,” whereas Johnny stated that he avoided math and science “because I couldn’t understand what the teacher were talking about. Too many abstractions.” In addition, Lily also had difficulty with essay tests:

Trying to capture my thoughts and put them on paper was very difficult.

I have gotten better at that now that I have [X medication] but when I was in school and college writing papers was the most horrible thing. I hated doing it because I could never get my thoughts together to make sense. I had tutors in high school but it was really hard in college. . . . The organizing and outlining was the worst part.

Amber, Anne, and Johnny had difficulty with time constraints or pressure when completing learning projects. Amber stated that
I love reading books and researching but as long as there is no pressure of time (I am quite a slow reader) and I can research what I want to. Deadlines are good to keep me focused, but being told I have a week to read a book really puts the pressure on and I can’t do it.

In addition, she identified her worst learning experiences as those where she would have to write something in a designated time frame.

Like Amber, Johnny preferred learning experiences where he had copious amounts of time to process and complete projects. His preference when approaching a new learning project is “to read about it, on my own timeline and then discuss it with a teacher-type or in a small group.” What he requires most for learning is “to have plenty of time. . . ., while his biggest problem was “having enough time to finish.”

For Anne, having “just a little more time to do the assignments would be nice.” The most difficult assignments for her are those which require a lot of preparation and organization.

In my statistics class, I just don’t get the stuff the first several times I go through it. Moreover, if I don’t review it constantly, I forget it again immediately. We get assigned a lot of homework problems and even if I start on them right away, I barely get them turned in on time. That’s one big difficulty.

The other one is with written essays. It takes me several drafts over several days to figure out how to say what I want to say. Again, if the deadline gets too close, I freak out and can’t think clearly.

Another difficulty some participants had was with balancing a need for perfection in the learning environment with their ADHD. Jane Jitters, for example, focused more on
the fact that she did not finish in the top 10% of her class, rather than on the reality that she completed law school and earned a doctor of jurisprudence degree. She stated that “I was eighth from the bottom in my class. I hate to think what those other seven people were like.” Amber mentioned that she would write with one of her friends and sought feedback before implementing a project, but she generally likes to work alone because “I am such a perfectionist that if it is my project, I want to make sure everything runs smoothly.” Finally, Liz would sometimes stay up all night to complete a project because “I want the ‘A.’ Perfectionism and ADHD. . . evil combination.”

The Influence of ADHD on Participants’ Educational Experiences

One of the questions asked of the interviewees was how having ADHD had influenced their educational experiences, positively, negatively, or both. All participants easily identified the negative effects, but most were also able to discuss the positive aspects as well. J. Swift summed up the feelings of most of the participants:

ADHD has probably been more curse than boon. Certainly there are circumstances and contexts in which it makes me a more effective learner, but for the most part I’d say it’s put me behind the 8-ball.

The negative effects included feelings of wasted potential, not being able to focus and complete projects, and a lack of organizational skills. Liz stated that having ADHD “made things much more challenging and frustrating along the way,” whereas JB said that “I don’t like to sit still so I have to really work at sitting still and getting one thing done and I procrastinate. I get all into planning sometimes and forget to actually DO it.” Anne mentioned becoming miserable and worried when she is not able to focus.
When I can’t get myself to focus, when I’m anxious and distractible, I’m miserable. And like I said, the more time passes while I’m unproductive, the more I worry about how I’ll ever get it all done in time. What if I can never make forward progress again. That’s catastrophic thinking, I know, but that’s what I do.

Two of the participants, Jonathan and Johnny, both focused on regrets they had about not being diagnosed sooner as negative influences. Jonathan described the effects of being medicated on his ADHD:

Now that I am medicated, I am able to stay on task and deal with things a lot easier. I noticed the depression I felt left me rather quickly when I was able to start focusing on things. Without that I would probably not have returned to get another degree. The negative feelings I have stem from not seeking help sooner. I thought ADHD was a made-up [disorder] before I started receiving treatment. So, I do feel like I have missed out on success and other treatment.

Many of the interviewees mentioned their creativity, their being able to hyperfocus, and ADHD making them stronger when asked about the positive influences of the condition. Both Anne and Jane Jitters maintained that ability to hyperfocus at times can really work to their advantage when completing an assignment. Bill, Liz, and Johnny, on the other hand, maintained that ADHD has made them more creative and able to think outside of the box. Liz, specifically, claimed that “positively, it [ADHD] has caused me to become strong, creative, and perseverant.”

J. Swift described the typical educational set-up and its relationship to ADHD:
Most instruction simply HAD to be designed to fit the needs of a large classroom due to economic and legal considerations. ADHD is, Darwinistically speaking, a maladaptive mutation.

**Common Themes among Interviewees’ Educational Experiences**

Six major themes regarding participants’ educational experiences emerged from their responses to the interview questions. First, eight of the participants had an interest in liberal arts or “creative” areas of study. Six of the participants have degrees in or an interest in English and/or creative writing (Amber, J. Swift, Jane Jitters, Johnny, Jonathan, and Liz), Lily majored in dance, and Bill minored in music and played the flute for many years. Thus, eight of the 10 interviewees have degrees in and/or an interest in creative or liberal arts endeavors.

Second, in addition to many of the participants having a liberal arts background, six of them specifically discussed being creative or “outside of the box” thinkers who often approached tasks or projects in an unconventional manner. For example, even in areas such as mathematics, Johnny would develop unconventional means to solve problems.

I . . . tended to figure things out using my own means rather than the ones prescribed in school. In 3rd grade my class had a math test with a question that required converting yards to inches and then adding double-digit figures (which we had just studied in class). Apparently we hadn’t learned it well, and I was the only student who got the right answer.

The teacher was curious about how I’d done it and even took me to the principal so I could explain it to her. All I did was separate the tens [and] digits
and add them separately, which I could do. Then I put them back together. I’m always figuring out a way to learn something that I prefer over conventional means.

In addition, Johnny said that one of the positive aspects of having ADHD was that he taught himself how to learn and that has increased his creativity and helps him think outside the box when his colleagues cannot.

Liz also discussed her creativity in her occupational and vocational experiences. She stated that her best educational experience was in high school when she attended a commercial art program half-days because it was “hands on, challenging, and involved [her] creative side.” She further stated that her position at her current job has evolved into something different than what was originally intended because of her “art background and strong creative side.”

When asked about what role they tend to play in group work and activities, both Lily and Bill both said that what they most bring to a group activity is their creativity. Lily stated that

I am good at being really creative just not the one to keep everyone on track. . . . I am willing to work with someone who is super organized and what they lack in fun creative energy I can make up the difference.

Bill believed that what he brings to group work is “thinking outside the box, rather than just coming up with a regular run of the mill answer. I like getting creative with my responses. But that’s just me.” Jonathan, on the other hand, stated that he preferred to work alone rather than in groups because “I tend to approach a problem differently or not
take what would be considered a safe approach. Most people are not always comfortable with this approach in a group setting.”

In addition, both Bill and Liz stated that one of the ways in which having ADHD has positively affected their educational experiences was that it made them more creative. Bill maintained that after learning to manage his ADHD, it became an asset because it forced him to “come up with creative ideas to solve certain problems.”

The third theme common to many of the interviewees was difficulty with or a lack of organizational skills. Seven of the participants discussed having difficulty getting organized. Jane Jitters commented that when in law school, she would look at other students who had very detailed outlines of their readings and would feel “incredibly disorganized and overwhelmed.” She also stated that she couldn’t give an example of how she organized her materials during exam time because she never did. Lily stated that the worst part of school and college for her was writing papers. “I hated doing it because I could never get my thoughts together to make sense. . . . The organizing and outlining was the worst part,” she said. JB stated that she relies on to-do lists to keep herself organized. She maintained that she needs to “organize everything or I will forget everything. . . . If I am not organized, I’ll forget everything.”

Four of the participants said that they like or need others to do the organization of a task or project for them. Amber, for example, stated that one of the roles her head-teacher played was to make “a lot of lists for how to organize work and such, to do lists.” Liz maintained that she often has difficulty
figuring out where to begin on a project and then how to organize it. A lot of times it’s easier to let someone else in your life who is good at the minute details and organization help you map out a plan.

When asked how he would organize and complete a project from start to finish, Bill said, I would just get someone to help me organize an outline and break it down into the points I want to talk about. After that, I can pretty much handle it on my own. I just need help coming up with ideas on specific points. I’m worried that they aren’t specific enough. After that, I’m peachy.

When asked how he would organize a project from start to finish, J. Swift maintained that he would “simply dive in and thrash about and not make a lot of headway.” He also stated that he had only recently begun to use “organizational tools” in part, this has been because I have HAD to; my divorce after 11 years of marriage was finalized... and for most of my life someone else has handled organizational matters, especially finance. . . . Checklists are my friends. They are my personal equivalent of a structured teacher assigning bite sized chunks of homework. Best of all? They’re pass/fail. I *know* when I’ve done what I need to do.

When asked what role she tended to play in a group project, Lily stated that “when I was younger I would want to be the leader but now I’ve learned to quickly decide who has the organizational skills I lack and let them be the ‘leader.’”

The fourth theme to emerge from the interviewees’ responses was the need for feedback, especially at the beginning of a learning project. Six of the interviewees, JB, J.
Swift, Bill, Amber, Lily, and Liz, said that they needed feedback in order to determine if they are on the right track and if they are doing their work well.

Amber and Lily both stated that they like to get other peoples’ feedback on their ideas for a project before completing it. Amber maintained that even though she wants to be in control of her learning projects, she does like to discuss her ideas with others “so I like to talk my ideas out with people before I implement them. So I still like a sounding board.” Lily stated

I bounced a lot of things off of my husband and got his opinions . . . LOL

[laughing out loud] . . . I do like feedback—in class or online. . . . For me I need encouragement to keep focused.

JB, Bill, and J. Swift all like feedback to ensure that they are on the right track. JB said that she needs feedback at first in order to make sure she is doing the work correctly: “At first, I like a lot of feedback, but then once I know what I’m doing I don’t.”

Bill, like JB, worries about not completing work correctly and needs feedback in order to ensure that he is on the right track. He said, “I’m very worried about screwing up. But there are times where I would say I don’t need it [feedback] as much. Even at my age, [though], I still need a good bit.”

Like JB and Bill, J. Swift likes feedback in order to determine if he is doing well.

If the parameters are not made very clear up front, then, yes, I probably would prefer—no strike that—I definitely do want – feedback to let me know I’ve done what needs to be done, and that I’ve done it well. . . . Since I am not the one setting up the assignments. . . . , I want another set of eyes/ears reviewing my work and letting me know when I’ve done what is desired. . . .
From the interviewees’ responses, it can be determined that most like feedback when working on a learning project. However, that feedback does not necessarily need to come from the instructor. Rather, it may also come from friends, spouses, or classmates.

The fifth theme to emerge from the interviewees’ responses was a tendency to procrastinate when they had a project to complete. Five (Liz, J. Swift, Johnny, Jonathan, and JB) of the 10 interviewees mentioned that they often procrastinate, a common trait in adults with ADHD. Liz, for example, stated that when she has trouble beginning or organizing a project, “avoidance and distraction factors set in.” One of the most difficult parts of online learning for her was “all those required discussion [that] had deadlines, which most ADHD people aren’t good at meeting . . . LOL.” However, she also stated that

as the deadline approaches, I finally get “in the zone” and crank out the final part of the project. Even if that means staying up all night and then going to work the next day. . . . I am really stubborn, so I just keep plugging away and somehow, usually get there. . . to the end by the deadline (or near it, anyway).

Like Liz, Johnny also would procrastinate when he had difficulty beginning an assignment. He stated that “I never really learned very well how to study. I wouldn’t be able to decide where to start or how to approach it, and I’d end up procrastinating.”

J. Swift prefers that instructors give smaller assignments throughout the terms, rather than one big assignment due at the end because he often procrastinates and then has difficulty completing a large assignment or project by the deadline: “My capacity to delude myself into believing I can tackle that big project ‘later’ is almost mythologically vast.” Jonathan, on the other hand, would often procrastinate when he became bored.
I often find myself easily distracted or bored with the education process. I would tend to procrastinate and get behind with course work or reading though I often would get higher scores on exams than my peers. I feel like I often do not achieve my personal goals or I don’t live up to my expectations because I waste so much time.

As an example of not living up to his expectations, Jonathan once failed a course because he quit shortly before his final exam and term paper were due “because I had allowed myself to get so far behind. Though I had a high B, I could not reasonably finish everything that I needed to do. So, I broke under the pressure at the very last moment.”

When asked to compare his educational experiences before and after his diagnosis of ADHD, Jonathan stated that

Everything feels like it fits into its compartments. Being, that I am able to focus and often finish what I start. . . . Now it is easy to finish a paper a week before it is due compared to when I would write a twelve page term paper a day before it is due. It is a little less hectic and a lot less stressful.

Finally, JB claimed that one of ways that ADHD has negatively affected her educational experiences is that she procrastinates. However, like Liz, she stated that what she produces usually turns out well “and if I don’t get myself excited about it, I will procrastinate and do it at the last minute. The problem is, what I do at the last minute usually ends up coming out really well.”

The final theme in the interviewees’ responses was the need for hands-on experiences or concrete examples in the learning process. Bill, Johnny, Lily, and Liz all stated that they need or prefer hands-on learning and/or a lot of concreted examples in the
learning process. Bill, for example, stated that one of his biggest challenges in the classroom was when his teacher would say something that he could not comprehend:

“Eh, I’d have to say when the teacher would say something, but it’s not phrased in a way that I could understand it. I would need a specific example.” He further stated that one of his best educational experiences was with a history professor who used many concrete examples in his teaching: “Dr. [X] made it fun to learn mainly because whatever period we were going over he would use examples, examples, examples. I loved it.”

Johnny, like Bill, preferred learning experiences with hands-on activities and concrete examples. When asked how he accomplished a learning project from start to finish, he stated that “Yes, I’m very visual, and I learn much quicker by exposure to examples than by formal education practices.”

Lily claimed that her best learning experiences were the ones with hands-on activities:

The best learning experiences were practical learning situations. Hands-on were great. I hated chemistry but the labs I did great. This is why dance was good because even the “lecture” classes had some kind of movement in them. Her ideal learning project would be one with a lot hands-on activity. She describes this ideal project as “one where I can have hands-on participation. If I see it done or listen to someone explain, I can usually do it. Seeing and doing is what works best for me.”

Like Lily, Liz also expressed a preference for hands-on learning. Her best educational experience was a commercial art program that was “hands-on.” In addition, she said that she preferred hands-on learning experiences because “lectures are difficult for me—I think I’m paying attention, and then I realize that I just missed something
important.” Her ideal learning project would be one that is clearly structured, has practical suggestions or guidelines for completing it, and examples:

I think it [the ideal learning project] would have a very clear statement of the purpose of the project as well as what was expected. It would also include suggestions for research or guidelines about how to accomplish the project. An example would be ideal, too.
CHAPTER V

DISCUSSION AND CONCLUSION

The purpose of this study was two-fold. First, it was to investigate the readiness of adults with attention deficit hyperactivity disorder (ADHD) for self-directed learning and whether factors such as age of diagnosis, treatment, and gender are related to their level of readiness. Second, the researcher investigated the overall educational experiences of adults with ADHD and how having ADHD influenced or affected these experiences. Even though there have been copious amounts of research conducted on both ADHD and adults and self-directed learning, very little exists on the two together. Therefore, this study offered new information on what factors are related to adults with ADHD and their readiness for self-directed learning.

This study’s theoretical framework was based on the theory of self-directed learning. Self-directed learning may be defined as an individual’s ability to “plan, implement, and evaluate his or her own learning” projects (Brockett & Hiemstra, 1991, p. 3). Although others may be involved in a learning project, it is the primary responsibility of the learner to plan the project, determine what materials are needed and to acquire these materials, implement the project, revise and rework it, and then finally, evaluate it. Three major types of self-directed learning models exist: linear, interactive, and instructional. Whereas the linear and interactive models focus more on the learner, the instructional models focus on the instructor or facilitator and their roles in helping learners become self-directed.

To determine participants’ readiness for self-directed learning, the researcher used Guglielmino’s Self-Directed Learning Readiness Scale for Adults (SDLRS-A), a 58-item
questionnaire. The questionnaires were distributed online through Guglielmino & Associates. The researcher made posts on different adult ADHD support groups and library and information science message boards asking for individuals who were at least 18 years of age with a diagnosis of ADHD to contact her if they were interested in completing the questionnaire. The researcher sent potential participants a cover letter, which explained the purpose of the study, and an instruction sheet for accessing and completing the questionnaire. Fifty-four participants from Canada, Norway, the United Kingdom, and the United States completed the instrument.

At the end of the instruction sheet for the questionnaire, the researcher asked for volunteers to be interviewed for the study. Ten people contacted the researcher and agreed to be interviewed. All interviews were conducted online using a library and information science graduate course chatroom at a university in the southern part of the United States. All interviews were printed immediately after their completion and the online transcript deleted. The questionnaires were completed from July 2010 through November 2010. The interviews were conducted from July 2010 through October 2010.

Major Implications

Results from the Questionnaire

The results revealed that there was no significant difference in the mean score on the SDLRS-A for the participants in this study (217.39) and that of the general population (214). There are two possible reasons for this. First, the sample was relatively small and comprised mostly of college graduates. College graduates may have developed more self-directed learning skills than their non-college graduate counterparts. Since 76% of the participants were college graduates, the sample was atypical of both the general
population and the population of adults with ADHD and thus may have affected the results. Therefore, it is not able to be determined whether or not the population of adults with ADHD as a whole have a greater or lesser tendency to be self-directed than the general population due to the sample in this study being very well-educated. Further research, then, comparing college-educated adults with and without ADHD needs to be conducted in order to determine if the findings are supported. In addition, more research with a much larger sample and a greater number of non-college graduates needs to be conducted and these results compared to that of the general population. Second, most of the participants are members of one or more online support groups for adults with ADHD. Because most of them, then, took the initiative to join groups where they would learn more about the condition from others, the sample may be biased toward those who have a higher degree of readiness for self-directed learning.

The results also revealed that only level of education had a significant relationship with readiness for self-directed learning. The following did not have a significant relationship with self-directed learning readiness: age of diagnosis of ADHD, gender, treatment received for a period of at least six months, and the existence of co-morbid conditions.

The results for level of education indicated that those who were college graduates had a significantly higher mean score on the SDLRS-A than those who did not (206.4 for non-college graduates and 220 for college graduates). Frazier, Youngstrom, Glutting, and Watkins (2007) maintained those adults with ADHD who are college students or college graduates are more likely to have “(a) higher ability levels, (b) greater academic achievement during primary and secondary school, and better compensatory skills than
individuals with ADHD from the general population” (p. 54). Thus, the results of this study could possibly indicate that adults with ADHD who have graduated from college are or have become more ready to assume primary control of planning, implementing, and evaluating their own learning projects. However, because 40 out of the 54 participants were college graduates, more research, particularly on those adults with ADHD who do not have a college degree, needs to be conducted in order to support the findings.

Age of diagnosis was not significantly related to readiness for self-directed learning. The group with the highest mean score were those who were diagnosed as adolescents (226.2), whereas those who were diagnosed as children had the lowest mean score (211.1). An almost equal percentage in each group graduated from college (75% each of those diagnosed as children and adolescents and 78.4% of those diagnosed as adults). The results of this study, then, disagree with previous research, which found that those diagnosed with ADHD as adults are much more likely to have graduated from high school and attended college than those diagnosed as children or adolescents (Barkley, Murphy, & Fischer, 2008). Peters (1989) maintained that adults engage in self-directed learning in order to find solutions to problems or issues in their lives. Perhaps, then, the sample was biased toward those who were more educated and more willing to accept their diagnosis of ADHD and seek help. More research would need to be conducted in this area.

Gender was not significantly related to readiness for self-directed learning. Even though a greater percentage of the female participants had graduated from college than the males (80% for the females and 68% for the males) and even though the females had
a slightly higher mean score on the SDLRS-A than the males did, the difference was not significant. This could have been due to the small sample size. In addition, the sample was not balanced in terms of males (22) to females (31). Further, the greater percentage of female college graduates could also be a reflection of the national trend of a greater percentage of females (57%) who comprise college enrollment in the United States (American Council on Education, 2006). In order to investigate the issue of gender further, more research with a larger, more balanced sample would need to be conducted.

The use of various treatments for a period of at least six months was not significantly related to readiness for self-directed learning. Ramsey (2010b) maintained that a combination of more than one treatment (medication, professional counseling, coaching) has been found to be successful with many adults with ADHD. In addition, Ramsay and Rostain (2005) found that the use of medication alone was not sufficient for approximately 50% of adults. The results of this study revealed that most of the participants who had undergone treatment had participated in more than one form (20 or 39.2%) either at separate times or simultaneously. This was followed by those who had received only medication (18 or 35.3%), which is considered to be the most common form of treatment (Barkley, 2006). Of those who underwent treatment, those who participated in more than one form of treatment had the highest mean score (220.6), followed by those who used medication only (216.4). Because of the small sample size, though, more research would need to be conducted in order to determine if those who participate in either more than one form of treatment or take medication only demonstrate a higher degree of readiness for self-directed learning than those who do not participate in treatment or participate in one form of treatment other than medication.
Even though the existence of co-morbid conditions with ADHD was not significantly related to readiness for self-directed learning, it was interesting to note that the mean score for those who had more than one co-morbid condition was 205, whereas it was 219.2 for those with no co-morbid conditions and ranged from 208 to 229 for those with one co-morbid condition. Further research with a larger sample size would be interesting to conduct in order to determine if having more than one co-morbid condition with ADHD is significantly related to learners’ readiness for self-directed learning.

The two most common co-morbid conditions in this sample were anxiety disorder and depression, which affected 10 participants (19.2%) each. This agrees with previous research findings that many adults with ADHD also have an anxiety disorder (24-60%) and/or a depressive disorder (16-31%) (Barkley, 2006; Biederman et al, 2004; Montes, Hernandez-Garcia, & Ricardo-Garcell, 2007; Safren, Lanka, Otto, & Pollack, 2001). Research (Kessler, 2004; Millstein et al., 1997) has consistently shown that two of the most common co-morbid conditions with ADHD are anxiety disorders and depression. Further, research has shown that adults with ADHD are often first diagnosed with depression or anxiety before they are officially diagnosed with ADHD (Quinn, 2005).

Findings from the Interviews

The participants were bright, well-spoken, and seemed to enjoy telling their stories. Overall, they demonstrated an incredible amount of resilience and sense of humor about themselves and about life in general. They were very self-reflective and able to discern exactly what they had difficulties with and why. When asked whether ADHD had influenced their educational experiences positively and negatively, even
though most were quick with the negatives, they were able to see the condition in a positive light as well.

Even though the majority of the participants scored at the average or above levels on the SDLRS-A and in spite of the interviewees being well-educated, most of the participants described their educational experiences using negative terms and exhibited low self-esteem and self-confidence. This corresponds with participants’ answers on the questionnaire where they indicated low levels of self-confidence about their abilities to succeed in the learning environment. Even those who did well academically struggled in the educational environment at some point in their lives. Participants mentioned feeling that they were stupid or “thick” and that they were worried about doing or saying the wrong thing in the learning environment. Even those with master’s and doctorate degrees expressed feelings of regret that they had not performed better in school or about what might have been if they had not had ADHD. Further, the results of the SDLRS-A revealed that many of the participants had little self-confidence in their abilities and skills. Even though they had a high degree of self-confidence about knowing what they needed to learn and knowing when they needed to learn more, many did not rate their abilities to actually learn very highly. Much of the research on adults with ADHD state that low self-esteem is a common trait among this population (Barkley, 2006; Hallowell & Ratey, 1994). Thus, the results of the questionnaire and the interviews seem to support the current research.

The reasons for the low self-confidence or low self-esteem exhibited by many of the interviewees in spite of their successes could be due to external influences such as having teachers who wanted to put them in special education classes, or classmates who
ridiculed them for thinking unconventionally, or parents who berated them when they did not do as well as they should. In addition, their low self-esteem could be due to not living up to their potential on occasion. Many commented that they knew that they were intelligent or that they had a high IQ, but their performance in the learning environment did not always reflect that.

The following major themes or patterns emerged from the interviews: (a) creativity; (b) difficulty with or lack of organizational skills; (c) a need for feedback during the learning process; (d) procrastination; and (e) a need for hands-on learning experiences or concrete examples.

While several researchers mention that creativity is often associated with individuals with ADHD (Hallowell & Ratey, 1994; Shaw & Brown, 1991; Weiss, 1997), the research on the relationship between the two has been mixed (Alt, 1999; Healey & Rucklidge, 2005, 2008). Many of the interviewees mentioned that they were creative or liked to think “outside of the box.” Many of these interviewees also had college majors or minors in creative fields such as English or creative writing, dance, or music. It is difficult to determine if their creativity reflects a larger trend toward the connection between creativity and ADHD, or if this particular sample was one who just happened to be creative and have ADHD.

The difficulties with organizational skills and procrastination are those which are common to many with ADHD. The research often lists these two traits as major symptoms for ADHD and/or as diagnostic criteria for the condition (Barkley, 2006; Hallowell & Ratey, 1994; Weiss, 1997). This idea was also supported during the interviews, with several participants indicating that they needed help with organization
and using the following strategies for help: (a) allowing someone else who had good organizational skills to assume the leadership role in group assignments; (b) allowing the instructor or facilitator of a course to help them with organization; and (c) using checklists and organizational charts.

Many of the participants expressed a need for frequent feedback during the learning process or during the implementation and completion of an assignment or project. Some maintained that they needed feedback especially during the beginning stages of a project to make sure they were on the right track. Two possible explanations exist for this. First, since many of the participants seemed to not have a great amount of self-confidence, this could reflect a self-perceived lack of ability to complete projects correctly. Second, because distractibility is a major manifestation of ADHD, the participants could be concerned about missing part of the instructions in class and, therefore, need feedback to ensure that they heard the instructions correctly.

Finally, many participants had a preference for hands-on activities and concrete examples in the learning environment. This could be due to a lack of self-confidence in participants’ abilities. They may need to have hands-on activities that they can complete in class in order to demonstrate to their instructors and to themselves that they understand the material. They may need concrete examples in order to ensure that their work resembled the model given. In addition, they may need hands-on activities and/or concrete examples in case they become distracted during the facilitator’s lectures or instructions and need the activities or examples to ensure that they understand the material.
Factors Which May Impede Participants' Readiness for Self-Directed Learning

Several factors emerged from the interviewees’ responses which may impair or diminish readiness for self-directed learning. If adults with ADHD are to engage in self-directed learning, they must be able to assume the responsibility for planning, implementing, and evaluating their own learning projects. Data from the interviews revealed that most of the participants had negative thoughts about the educational environment and a low self-concept. Thus, because they have a low sense of self-esteem about their ability to succeed in the learning environment, they may be reluctant to engage in self-directed learning and may avoid opportunities to learn new material or complete learning project.

Others factors which may diminish readiness for self-directed learning include a lack of organizational skills, procrastination, and the need for feedback. Because a large part of self-directed learning involves being able to organize materials and the sequence of the project itself, those who have difficulties with organization may not succeed in self-directed learning projects. In addition, another part of self-directed learning is establishing a time-line for completion of projects. Because many of the participants had difficulty with both organization and procrastination, this could limit them in the timely completion of projects. Finally, many of the participants expressed a need for feedback during the learning process. If there is not a mentor or someone to offer feedback and guidance to them during the learning process, engaging in projects which require a large amount of independent work may be very difficult.
Implications for Adult Educators

This section focuses on both specific theories of self-directed learning and how they can be used with adults with ADHD and on general suggestions for adult educators who work with this population.

The interviews with adults with ADHD conducted as part of this study were important for three reasons. First, the benefits of qualitative research are threefold: (a) they are a way to explain, clarify, and comprehend phenomena; (b) they can create an understanding of how participants understand and make sense of their situations; and (c) finally, they allow readers to see conditions or life situations through the lens of others (Hill, 2009). Therefore, conducting interviews with adults with ADHD about their experiences in the learning environment offered insight into how they thought about their educational experiences, what they needed in order to be successful in the learning environment, and what they struggled with the most in their educational experiences.

The participants’ stories of their educational experiences can be used to inform others of what the learning environment can be like for those who do have ADHD. In addition, since the participants’ experiences in various learning environments were predominantly negative, the results can be used as a basis for suggesting that additional research with a larger number of participants needs to be conducted in the area. Finally, the results can be used to inform practice and create changes in the structure, content, and/or assessment process in the classroom.

The data from the interviews could also be used to create a new, preliminary theory about learning and well-educated adults with ADHD and/or learning disabilities. In grounded theory, which may be defined as “the study of experience from the
standpoint of those who live it” (Charmaz, 2000, p. 522), the final result is the building and development of a theory which is “grounded” in the data. Thus, even though grounded theory generally requires that there be at least 30 participants, the data from the ten interviews could be used to develop preliminary theories about the components necessary for a successful learning experience for adults with ADHD and/or learning disabilities, why adults with ADHD feel that they have struggled in the learning environment, and/or why they have succeeded in their educational endeavors. These preliminary theories could then be used as the basis for and justification of further research.

**Theories of self-directed learning.** Based on the patterns which emerged from the interviews, some of the needed skills for successful self-directed learning (self-confidence, organizational and time management skills) may be those with which adults with ADHD experience difficulty. Thus, in order to aid them in the process of becoming better self-directed learners, some of the models for self-directed learning could be altered. For example, as discussed in Chapter II, Knowles’ (1975) linear model is a six-step process where the learner sets goals, chooses materials, and plans, implements, and evaluates his or her learning project. While none of the above steps would necessarily need to be radically altered, perhaps the instructor could play more of a directive role. He or she could help learners organize their materials, create a timeline for completion of a project, channel their thought processes into a clear, concise focused project, provide frequent encouragement and feedback, and/or provide frequent guidance during each step of the process. With the instructor’s increased role, some of the more frequent manifestations of adult ADHD such as lack of focus, low self-esteem, and poor
organizational skills could possibly be managed, and thus the chance for successful completion of a self-directed learning project increased.

The data from the study could also play a role in applying the instructional models of self-directed learning when working with learners or employees with ADHD. For example, Grow’s (1991) staged theory of self-directed learning has four stages: (a) Stage 1: Dependent learners who rely very heavily on the instructor or facilitator to lead and guide them through the educational process; (b) Stage 2: Learners of moderate self-direction who are eager to learn, but lack knowledge in the content area and have to rely on the instructor to assume a primary role in the learning process; (c) Stage 3: Learners of intermediate self-direction who are eager to learn and have a certain amount of knowledge in the content area, but often lack the self-confidence to undertake learning projects almost entirely on their own; and (d) Stage 4: Learners of high self-direction who are able to plan, implement, and evaluate their own learning projects with little or no aid from the instructor.

Two ways exist in which to apply Grow’s theory of self-directed learning to adults with ADHD. First, those adult educators who use the SDLRS-A with their learners could easily compare the stages of Grow’s theory to the range of scores and levels of interpretation on the SDLRS-A. When compared to the interpretation of the range of scores on the SDLRS-A, Grow’s stages 1 and 2 could be comparable to the low and below average range on the SDLRS-A where learners rely heavily on the instructor or facilitator and prefer “very structured learning options such as lecture and traditional classroom settings” (SDLRS/LPA, n.d., section 5, para.4). Grow’s Stage 3 (learners of intermediate self-direction) could be compared to the average range in which learners
“are more likely to be successful in more independent situations, but are not fully comfortable with handling the entire process of identifying their learning needs and planning and implementing the learning” (SDLRS/LPA, n.d., section 5, para. 5), whereas Grow’s Stage 4 could be compared to Guglielmino’s above average and high ranges, those ranges in which learners usually prefer to determine their learning needs and plan and implement their own learning. Many of the participants (48.1%) in this study scored in the average range (Grow’s Stage 3), with 20.4% scoring the below average range (Grow’s Stages 1 and 2) and 25.9% scoring in the above average range (Grow’s Stage 4). For each stage, Grow lists activities which could be used to aid learners in becoming more self-directed. For example, for someone who scores in the below average range on the SDLRS-A, the adult educator could choose activities recommended for stages 1 and/or 2 such as assignment planning (organizational skills, goal setting or clarification, or guided discussions).

A second way in which Grow’s theory could be used in working with adults with ADHD is much like the first, but without the use of the SDLRS-A. Rather, the adult educator could determine at what stage a learner functions by personal observations, interviews or informal conversations with him or her, or by his or her performance on specific tasks or projects. After determining at what stage a learner is, the adult educator could use activities suggested by Grow for that stage. For example, if a learner is at stage 3, the adult educator could have collaborative meetings with him or her to provide feedback (one of the needs identified by many of the interviewees) on his or her progress or offer encouragement.
Garrison’s (1997) model for self-directed learning could also be effective with adult learners with ADHD. The adult educator could aid the learner in self-monitoring (one of the dimensions of Garrison’s theory), which is a learner’s ability to monitor the cognitive or metacognitive processes he or she engages in while planning, implementing, and completing a learning project. The questionnaire data revealed that the participants had a strong sense of what and how much they needed to learn. The adult educator could build on this by helping learners become aware of how they organize projects, process information, and manage their time. If learners are made aware of specific deficits in their cognitive processes, it could be easier for them to address these issues and become more self-directed.

Specific recommendations for adult educators. Based on the themes identified in the interviews, the following specific recommendations could be made for adult educators. First, because the majority of the interviewees identified themselves as being creative or unconventional thinkers or problems solvers, the adult educator could give a lot of latitude in assigning projects. They could have somewhat loose guidelines for the design and implementation of assignments or projects, while learners could assume the primary control for determining how to approach these projects. Latitude could also be given in how or in what media an assignment is completed. For example, learners could be allowed to present their research using computer graphics or video rather than by writing a traditional research paper. The use of multimedia could make projects more interesting to adult learners with ADHD and also, with programs such as PowerPoint, provide a built-in organizer for them.
Second, specific instruction on developing or creating organizational skills could be given to those adults with ADHD who need it. Tips could be given on how to create check-lists or how to effectively organize a project. Adult educators could also recommend certain online or print organizers in which learners could create an organizational chart or timeline for completion of projects. In addition, the instructor or facilitator could meet periodically with the learner throughout the course or throughout the learning project and aid them in organizing their projects, course notes, or study guides. They could also aid learning in organizing their materials for a project and in prioritizing tasks for completion of the project. Finally, in group projects, adults with ADHD could be placed in groups where there are others with good organizational skills.

Third, copies or outlines of lectures could be given to learners. Since many adults with ADHD easily become distracted, they may have difficulty following a lecture or taking adequate notes. Providing copies of notes or handouts could greatly aid learners in becoming more self-directed or successful in the learning environment.

Fourth, because many of the interviewees indicated a need for feedback, especially at the beginning of a project, the instructor or facilitator could meet frequently with learners to discuss their projects and to reassure learners that they are completing the project correctly. The instructor could act as a frequent sounding board and offer encouragement. In addition, these frequent meetings could also aid the learner in remaining on-task, from venturing too far off topic, and keep him or her from trying to incorporate too many ideas or items into one project. Since one of the traits of ADHD is distractibility, the instructor could really play a role in keeping the learner on task by
having frequent meetings. If frequent face-to-face meetings are not feasible, the instructor could remain in contact via e-mail or an online chat tool.

Fifth, many of the participants indicated a need for hands-on activities and/or concrete examples. In the learning environment, frequent activities which allow learners to experiment with what is being learned could be provided. For example, if a library and information science professor is demonstrating how to use a database, he or she could provide sample searches for the learners to conduct so that they could use the database. In addition, if an instructor wants learners to write a paper, examples of what constitutes a good paper could be provided. If he or she wants learners to prepare an outline of an upcoming presentation, samples of outlines could be provided.

Limitations of the Study

Several limitations of the study exist. First, the sample was small and very well-educated and thus may not reflect the population of adults with ADHD. In addition, there were not sufficient participants in a number of categories such as those with an elementary school level of education or those with co-morbid conditions with ADHD such as Asperger’s Disorder. Further research with a much larger sample would need to be conducted in order to determine if the results of this study are supported. Second, since only 18% of American adults 18 years and older have a bachelor’s degree (United States Census Bureau, 2009) and even less of those with ADHD have a college degree (Barkley et al., 2006), the sample in this study was atypical in that 75.5% of the participants were college graduates. Therefore, the results may not be generalizable to the total population of adults, with or without ADHD. Third, the sample was not randomly selected, but was obtained via purposive sampling. Therefore, once again, it may not be
reflective of the population of adults with ADHD. Fourth, most of the participants were members of online support groups for adults with ADHD. Thus, this may have biased the sample in favor of those who have a higher degree of self-directedness. Fifth, since the major recruitment for participants was done online, the sample could be biased toward those who have access to and facility with a computer. Thus, in future research, more effort should be made to recruit in ways which do not require access to a computer. Finally, because procrastination and distractibility are common manifestations of adult ADHD, many potential participants may have delayed participation until after the deadline for the questionnaire or become distracted and could not complete the instrument. The researcher sent out over 100 instruction sheets and cover letters to individuals who indicated interest in completing the questionnaire. However, only 54 completed it. Further, 16 people indicated that they would like to be interviewed for the study. However, six never responded when asked to provide the researcher with convenient times to be interviewed. Therefore, ADHD itself could have been a limitation of the study.

Implications for Future Research

The researcher recommends further research in the following areas: specific skill deficits such as a lack of organizational skills which may inhibit the ability of adults with ADHD to become self-directed learners, the relationship between level of education and readiness for self-directed learning in adults with ADHD, self-confidence and how it is related to readiness for self-directed learning, and creativity and its relationship to ADHD and how it is related to self-directed learning. Research could be done either quantitatively using a questionnaire, qualitatively using interviews, observation, and/or
analysis of learning projects, or a combination of both. Valuable information may be gained using both methods.

The results of this study could potentially be used as a basis for conducting or funding further research with larger samples. Once a significant amount of research has been conducted in the area, the results could be used as a basis for funding for the development of new programs where skill deficiencies could be improved. Thus, instead of providing accommodations which only lessen the effects of the symptoms without necessarily increasing skill levels in managing these effects, new programs which would teach content to improve these skills could be created. The results may be used, then, to improve practice in educational and occupational settings for those adults with ADHD.

Conclusion

The results of the study showed that adults with ADHD who have a college education scored significantly higher on the SDLRS-A than those who did not. In addition, the results showed that the participants had a low level of self-confidence regarding their ability to learn, problems with organizational skills and procrastination, and creativity. Even though more research would need to be conducted in order to support these claims, this study can aid adult educators in developing methods to aid adult learners with ADHD with working on skills such as organization and allowing learners to develop their own “outside of the box” methods for completing a project. If skill deficits and low self-confidence could be addressed in adults with ADHD, it is possible that they would feel more successful in the learning environment and be more apt to engage in self-directed learning projects.
APPENDIX A

PERMISSION FROM THE AMERICAN PSYCHIATRIC ASSOCIATION TO
REPRINT THE DIAGNOSTIC CRITERIA FOR ADHD, READING DISORDER,
MATHEMATICS DISORDER, AND DISORDER OF WRITTEN EXPRESSION

From: Cecilia Stoute
Sent: Thursday, January 20, 2011 5:33 PM
To: 'melissa.wright@eagles.usm.edu'
Subject: RE: Request for permission to reprint Text from APA/APPI books and journals
including all editions of the DSM

Dear Ms. Wright,

Permission is granted for use of 4 DSM-IV-TR Diagnostic Criteria as outlined on the
form below. Permission is granted under the following conditions:

- Permission is nonexclusive and limited to this one time use
- Permission is granted for 6 print copies and one electronic copy
- Use is limited to English language only
- Permission must be requested for additional uses (including subsequent
  editions, revisions and any electronic use)
- Permission is gratis for this one time use

No commercial use is granted

In all instances, the source and copyright status of the reprinted material must appear with
the reproduced text. The following notice should be used:

Reprinted with permission from the Diagnostic and Statistical Manual of Mental
Association.

Sincerely,

Cecilia Stoute
Licensing and Permissions Manager
American Psychiatric Association
AMERICAN PSYCHIATRIC PUBLISHING, INC.

REQUEST FOR PERMISSION TO REPRINT TEXT FROM APA/APPI BOOKS AND JOURNALS INCLUDING ALL EDITIONS OF THE DSM

Is this a Rush Request?  No
(Standard processing time is 2-4 weeks. With rush service your request will be processed within 2 business days. A $50 rush processing fee will apply.)

PART I. Contact Information:

Melissa Wright
University of Southern Mississippi

Are you the author of the material you are requesting?  No
Are you a member of the American Psychiatric Association?  No

PART II. Material to be Reproduced:

(Note: Sections of DSM-IV-TR that may NOT be reprinted include complete chapters or Appendices A, G, and H.)

Books:

Book Title: DSM-IV-TR
Author: American Psychiatric Association
Year Published: 2000

Sections, Figures, Tables, or Images to be produced (List and Specify Page numbers):
For DSM IV TR Criteria Requests (List Criteria): Attention Deficit Hyperactivity Disorder; Reading Disorder; Mathematics Disorder; Disorder of Written Expression

PART III. Description of Your Proposed Product:

**Your Product Type:** Dissertation or Thesis

**Title of your proposed product:** The Readiness of Adults with Attention Deficit Hyperactivity Disorder for Self-Directed Learning

**Author (if applicable):** Melissa Wright

**Publisher or Distribution Company Name:** Dissertation

**Number of Copies to Print:** 6

**Unit Retail Price:** N/A

**Is your product a printed publication or an electronic product or both?** Print (available electronically on the database Dissertations and Theses)

**In which countries are you planning to distribute your product?** N/A

Please provide a general description of your proposed Product.

- The product is my doctoral dissertation and will be printed, with three copies maintained by the graduate school and the library at the University of Southern Mississippi. Three additional copies will be printed for me, the author. In addition, an electronic copy will be available on the database Dissertations and Theses.

**Attached file:**

**Types of Rights You are Requesting:** Print, Electronic database Dissertations and Theses

PART IV. Acknowledgements and Signature:

I acknowledge that submission of this Request for Permission or receipt of a permission fee quote does not constitute permission, and that any use of any copyrighted text owned by APA or APPI is unauthorized unless and until I am in receipt of a permissions grant, electronic product license agreement, or email granting permission.

I further acknowledge that my proposed use may be such that I may be required to enter into an Electronic Product License Agreement in APA or APPI's sole discretion.

I further acknowledge that if any usage or administrative fees are assessed by APA or APPI, the signed permission may be withheld until such fees are paid.

(date) February 15, 2011

(signature of authorized representative)

On Behalf of:
APPENDIX B

PERMISSION FROM THE WORLD HEALTH ORGANIZATION (WHO) TO
REPRINT THE ADULT ADHD SELF-REPORT SCALE (ASRS-V1.1) SYMPTOM
CHECKLIST

Fwd: 60005 Form to request permission to reproduce or reprint WHO copyrighted materi...  Page 1 of 3

----- Forwarded message -----  
From: Campanario, Dolores <campanariod@who.int>  
Date: Fri, Jan 14, 2011 at 8:30 AM  
Subject: 60005 Form to request permission to reproduce or reprint WHO copyrighted material  
To: melissa.wright@eagles.usm.edu

Dear Ms Wright,

Thank you for your enquiry. On behalf of the World Health Organization, we are pleased to grant you permission to reproduce the following WHO item(s), as indicated in your message below:

Please note that this permission is granted under the following terms:

• WHO material should not be reproduced for use in association with commercial nor promotional activities. WHO does not endorse any specific company or products.
• The WHO Logo/Emblem should not be reproduced, unless it appears on an original WHO publication or unless a specific permission is given by WHO for its use.
• Please ensure that the original WHO source is appropriately acknowledged, with bibliographic reference(s) and/or Web URL (site(s)) if appropriate.

Please provide me an original copy of your publication for our records, showing where/how WHO material appears and how it is referenced on your product.

Thank you for your interest in WHO publications and best regards,

Ms Dolores Campanario
WHO Press (Permissions Management, Translation and Reprint Rights)
Knowledge Management and Sharing
WORLD HEALTH ORGANIZATION
20, avenue Appia, CH-1211 Geneva 27, Switzerland
Tel.: 0041 22 7912483 or Fax.: 0041 22 7914857
e-mail: campanariod@who.int

• For permission to reproduce Parts of texts/Tables/Figures/Pages/Chapters/WHO Logo/Posters/Images or other WHO Materials/Publications:  
  http://www.who.int/about/licensing/copyright_form/en/index.html
• WHO BOOK ORDERS http://apps.who.int/bookorders/anglais/home1.jsp?sessionlan=1
• Licensing and copyrights: http://www.who.int/about/licenseng/en/
• WHO RSS news feeds http://www.who.int/about/licensng/rss/en/index.html

--- Original Message ---
From: internet@who.int [mailto: internet@who.int]
Sent: 14 January 2011 00:31
To: permissions
Subject: [DataCol Web] Form to request permission to reproduce or reprint WHO copyrighted material

DataCol Web: Form to request permission to reproduce or reprint WHO copyrighted material

============================================================================================================

--- Original Message ---
From: internet@who.int [mailto: internet@who.int]
Sent: 14 January 2011 00:31
To: permissions
Subject: [DataCol Web] Form to request permission to reproduce or reprint WHO copyrighted material

DataCol Web: Form to request permission to reproduce or reprint WHO copyrighted material

============================================================================================================
Submitted by: ()

Section: CONTACT DETAILS

* Title
* Ms

* First name
* Melissa

* Family name
* Wright

* Organization/affiliation
* University of Southern Mississippi

* Website address
* http://www.usm.edu

* Type of organization/affiliation
* Academic

* Position
* Doctoral Student

* Telephone
* +601-214-6051

* Fax
* +

* Address
* Department of Educational Studies and Research
* University of Southern Mississippi
* 118 College Drive #5093
* Hattiesburg, MS 38406

* Country
* United States of America

* Email
* melissa.wright@eagles.usm.edu

Section: INFORMATION ABOUT WHO MATERIAL TO BE REPRODUCED

* Full title of WHO publication, document or website to be reproduced
* Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist Instructions
* Available at http://webdoc.nyumc.org/nyumc/files/psych/attachments/psych_adhd_checklist.pdf

* Website URL where this material is published
* Year of Publication
  * 2003

* Please select the item(s) to be reproduced
  * Other

* For each item selected, please provide a reference and page number
  * I would like to reprint the Adult ADHD Self-Report Scale (ARSR-V1.1) Symptom Checklist in my doctoral dissertation, "The Readiness of Adults with Attention Deficit Hyperactivity Disorder for Self-Directed Learning."

Section: INFORMATION ABOUT YOUR PUBLICATION

* Please provide the title of the publication or the website address that the above materials are to be published in
  * The Readiness of Adults with Attention Deficit Hyperactivity Disorder for Self-Directed Learning

* Publishing format
  * print, Web

* Target audience and planned distribution
  * Published in print and on the electronic database Dissertations and Theses as my doctoral dissertation

* Planned publication date
  * 2011

* If your publication is to be sold, please indicate the planned selling price
  * N/A

* If your publication is sponsored or funded by an organisation other than your own, please provide additional information
  * N/A

Click the following link to access a format view of this record:
http://apps.who.int/datacol/survey.asp?survey_id=258&respondent_id=60005

This email was automatically sent to you by the WHO Intranet Data Collector. The DataCol can send emails to accounts specified by the Form focalpoint. You can contact the focalpoint for this form: chambosl@who.int
APPENDIX C

SDLRS-A

QUESTIONNAIRE

INSTRUCTIONS: This is a questionnaire designed to gather data on learning preferences and attitudes towards learning. After reading each item, please indicate the degree to which you feel that statement is true of you. Please read each choice carefully and circle the number of the response which best expresses your feeling.

There is no time limit for the questionnaire. Try not to spend too much time on any one item, however. Your first reaction to the question will usually be the most accurate.

RESPONSES

ITEMS:

1. I'm looking forward to learning as long as I'm living.  
   Almost always true of me: 1 2 3 4 5  
   Not often true of me: 1 2 3 4 5

2. I know what I want to learn.  
   Almost always true of me: 1 2 3 4 5  
   Not often true of me: 1 2 3 4 5

3. When I see something that I don't understand, I stay away from it.  
   Almost always true of me: 1 2 3 4 5  
   Not often true of me: 1 2 3 4 5

4. If there is something I want to learn, I can figure out a way to learn it.  
   Almost always true of me: 1 2 3 4 5  
   Not often true of me: 1 2 3 4 5

5. I love to learn.  
   Almost always true of me: 1 2 3 4 5  
   Not often true of me: 1 2 3 4 5

6. It takes me a while to get started on new projects.  
   Almost always true of me: 1 2 3 4 5  
   Not often true of me: 1 2 3 4 5

7. In a classroom, I expect the teacher to tell all class members exactly what to do at all times.  
   Almost always true of me: 1 2 3 4 5  
   Not often true of me: 1 2 3 4 5

8. I believe that thinking about who you are, where you are, and where you are going should be a major part of every person's education.  
   Almost always true of me: 1 2 3 4 5  
   Not often true of me: 1 2 3 4 5

9. I don't work very well on my own.  
   Almost always true of me: 1 2 3 4 5  
   Not often true of me: 1 2 3 4 5
10. If I discover a need for information that I don’t have, I know where to go to get it.

11. I can learn things on my own better than most people.

12. Even if I have a great idea, I can’t seem to develop a plan for making it work.

13. In a learning experience, I prefer to take part in deciding what will be learned and how.

14. Difficult study doesn’t bother me if I’m interested in something.

15. No one but me is truly responsible for what I learn.

16. I can tell whether I’m learning something well or not.

17. There are so many things I want to learn that I wish there were more hours in a day.

18. If there is something I have decided to learn, I can find time for it, no matter how busy I am.

19. Understanding what I read is a problem for me.

20. If I don’t learn, it’s not my fault.

21. I know when I need to learn more about something.

22. If I can understand something well enough to get a good grade on a test, it doesn’t bother me if I still have questions about it.

23. I think libraries are boring places.

24. The people I admire most are always learning new things.
<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>25. I can think of many different ways to learn about a new topic.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>26. I try to relate what I am learning to my long-term goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>27. I am capable of learning for myself almost anything I might need to know.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>28. I really enjoy tracking down the answer to a question.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>29. I don’t like dealing with questions where there is not one right answer.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>30. I have a lot of curiosity about things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>31. I’ll be glad when I’m finished learning.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>32. I’m not as interested in learning as some other people seem to be.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>33. I don’t have any problem with basic study skills.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>34. I like to try new things, even if I’m not sure how they will turn out.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>35. I don’t like it when people who really know what they’re doing point out mistakes that I am making.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>36. I’m good at thinking of unusual ways to do things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>37. I like to think about the future.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>38. I’m better than most people are at trying to find out the things I need to know.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>39. I think of problems as challenges, not stop signs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>40. I can make myself do what I think I should.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>159</td>
</tr>
<tr>
<td>Statement</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td></td>
</tr>
<tr>
<td>41. I'm happy with the way I investigate problems.</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42. I become a leader in group learning situations.</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>43. I enjoy discussing ideas.</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>44. I don't like challenging learning situations.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>45. I have a strong desire to learn new things.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>46. The more I learn, the more exciting the world becomes.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>47. Learning is fun.</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>48. It's better to stick with the learning methods that we know will work instead of always trying new ones.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>49. I want to learn more so that I can keep growing as a person.</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>50. I am responsible for my learning — no one else is.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>51. Learning how to learn is important to me.</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>52. I will never be too old to learn new things.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>53. Constant learning is a bore.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>54. Learning is a tool for life.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>55. I learn several new things on my own each year.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>56. Learning doesn't make any difference in my life.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>57. I am an effective learner in the classroom and on my own.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>58. Learners are leaders.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
HOW TO SCORE GUGLIELMINO’S LEARNING STYLE ASSESSMENT

1. Place a box □ around your response for items numbered:
   3, 6, 7, 9, 12, 19, 20, 22, 23, 29, 31, 32, 35, 44, 48, 53 and 56

2. Now, count up all the 1’s you boxed. Place the number of 1’s in the box below. Do the same thing for the 2’s, 3’s, 4’s and 5’s.

3. Next multiply the number of 1’s, 2’s, 3’s, 4’s and 5’s by the number provided.

   Number of: 1’s __________ 2’s __________ 3’s __________ 4’s __________ 5’s __________
   x 5 + x 4 + x 3 + x 2 + x 1

   Sub Totals (R) __________ + __________ + __________ + __________ + __________ = R-Total

4. Now add the Sub Totals (R); this is your R-Total.

5. Write this R-Total in the box under step 10.

6. Now look at your responses that are not marked with a □.

7. Count up all the 1’s. Place the number of 1’s in the box below. Then do the same thing for the 2’s, 3’s, 4’s and 5’s.

8. Next multiply the number of 1’s, 2’s, 3’s, 4’s and 5’s by the number provided under each box.

   Number of: 1’s __________ 2’s __________ 3’s __________ 4’s __________ 5’s __________
   x 1 + x 2 + x 3 + x 4 + x 5

   Sub Totals (P) __________ + __________ + __________ + __________ + __________ = P-Total

9. Now, add the Sub Totals (P); this is your P-Total.

10. Write this P-Total in the box below:

       R-Total + P-Total = TOTAL SCORE

11. Finally, add the R-Total and P-Total. Put this number in the space provided. It is a measure of your current readiness for self-directed learning. It must be between 58 and 290.
APPENDIX D

INTERVIEW QUESTIONS

1. What is the highest level of education you have completed?
2. Describe your ideal learning experience.
3. Describe your worst learning experience.
4. What was the best actual learning experience you ever had?
5. Do you like to complete learning or work assignments alone or in collaboration with others?
6. What role do you tend to play in group assignments?
7. Is a lot of feedback from others necessary for you to complete a project successfully? Why or why not?
8. Describe how you would organize a learning or work assignment/project from start to finish.
9. What is your first thought or reaction when you receive a new assignment?
10. Describe the best instructor you’ve ever had. What did he or she do that made him or her the best instructor?
11. If you could design a learning assignment or project on any topic what would it be?
12. How would you implement this project from beginning to completion?
13. How has having ADHD influenced you educational experiences, positively, negatively, or both?
14. Is there anything that I haven’t asked that you wished I had?
APPENDIX E

THE UNIVERSITY OF SOUTHERN MISSISSIPPI INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Institutional Review Board
118 College Drive #5147
Hattiesburg, MS 39406-0001
Tel: 601.266.6820
Fax: 601.266.5509
www.usm.edu/irb

HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE
NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 10061401
PROJECT TITLE: The Readiness of Adults with Attention Deficit Hyperactivity Disorder for Self-Directed Learning
PROPOSED PROJECT DATES: 07/01/2010 to 06/30/2011
PROJECT TYPE: Dissertation
PRINCIPAL INVESTIGATORS: Melissa Wright
COLLEGE/DIVISION: College of Education & Psychology
DEPARTMENT: Educational Studies and Research
FUNDING AGENCY: N/A
HSPRC COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 06/14/2010 to 06/13/2011

[Signature]
Lawrence A. Hosman, Ph.D.
HSPRC Chair

[Signature]
6-14-2010
Date
Dear Participant:

I am a doctoral student in Adult Education at the University of Southern Mississippi conducting research on adults with Attention Deficit Hyperactivity Disorder (ADHD) and their readiness for self-directed learning. This research is for my dissertation, which is under the supervision of Lilian H. Hill, Ph.D., Associate Professor of Adult Education. The purpose of this study is to investigate the readiness of adults with Attention Deficit Hyperactivity Disorder (ADHD) for self-directed learning and to determine if readiness is related to gender, level of education, prior or present treatment(s), age of diagnosis, and the existence of co-existing conditions such as learning disabilities or bipolar disorder.

I am requesting your help. I am asking you to complete a questionnaire called the Self-Directed Learning Readiness Scale for Adults (SDLRS-A) about your learning preferences. It should take no more than 15-20 minutes of your time. Your participation is anonymous and voluntary. You may stop responding at anytime. The information you provide will remain confidential, be statistically analyzed, and summarized in my dissertation. In addition, the data may be presented at the annual conference of the American Association for Adult and Continuing Education (AAACE) and published in a peer-reviewed journal. The questionnaires will be kept in a locked filing cabinet until data analysis is complete. Following data analysis, all questionnaires will be destroyed after one year. By completing and returning the attached questionnaire you (the respondent) give permission for this anonymous and confidential data to be used for the purposes described above.

This project has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about your rights as a research participant should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 266-6820.

If you have any questions, please feel free to contact me at the following e-mail address or telephone number: Melissa Wright (melissa.wright@eagles.usm.edu) or 601-214-6051.

Thank you for your participation.

Melissa Wright
How to Access the Self-Directed Learning Readiness Scale for Adults (SDLRS-A)

(1) Go to the following website: http://www.lpasdlrs.com/login.html.

(2) Choose a name (NOT your real name) and enter it under Name.

(3) Enter the following password: 9152.

(4) Complete all items on the SDLRS-A.

(5) After completing the instrument, please answer the following questions concerning your gender, age, level of education, and occupation. In addition, the following questions will NOT be printed on the SDLRS-A. Please answer them in the section called “Special Code.”

Question 1: When were you diagnosed with ADHD/ADD?

(Please answer 1, 2, or 3).

1. During childhood (Ages 3-11)
2. During adolescence (Ages 12-17)
3. During adulthood (Age 18 or over)

Question 2: If you have received treatment in the past or present for a period of at least 6 months, what type(s) have you or are you receiving?

(Please answer 1, 2, 3, 4, 5, or 6)

1. Medication
2. Professional Counseling
3. Informal Treatment or “Coaching”
4. Cognitive Behavioral Therapy
5. More than one form of treatment
6. No treatment received for a period of at least 6 months.
Question 3: In addition to ADHD, do you also have a formal diagnosis of one of the following?

(Please answer 1, 2, 3, 4, 5, 6, 7, or 8).

1. Depression
2. Bipolar Disorder
3. Anxiety Disorder
4. Asperger’s Disorder
5. Dyslexia or other learning disability
6. Other
7. More than one diagnosis
8. I do not have a formal diagnosis of any other condition.

I will also be interviewing 10 people about their educational experiences. The interviews will be conducted using an online chat tool. If you are interested in being interviewed or if you have any questions about the project, please contact me at melissa.wright@eagles.usm.edu or at 601-214-6051.

Thank you for participating in the survey.
APPENDIX G

CONSENT FORM FOR THE INTERVIEWEES

Participant’s Name _________________________________________

I am a doctoral student at the University of Southern Mississippi conducting a research project as part of my dissertation requirements for my Ph.D. in Adult Education. The purpose of this study is to investigate the readiness of adults with Attention Deficit Hyperactivity Disorder (ADHD) for self-directed learning and to determine if readiness is related to gender, level of education, prior or present treatment(s), age of diagnosis, and the existence of co-existing conditions such as learning disabilities or bipolar disorder.

Consent is hereby given to participate in the research project entitled “The Readiness of Adults with Attention Deficit Hyperactivity Disorder for Self-Directed Learning.” All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained by Melissa Wright. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

The opportunity to ask questions was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.

Data will be analyzed and compiled and presented during the dissertation defense. In addition, a presentation of the results may be made at the American Association for Adult and Continuing Education (AAACE) annual conference. Finally, the results may be published in a peer-reviewed journal.

The research is being conducted under the supervision of Lilian H. Hill, Ph.D. Questions concerning the research may be directed to Melissa Wright at 601-214-6051 or melissa.wright@eagles.usm.edu at any time during or after the project.

This project and this consent form have been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, 601-266-6820.

_____________________________  _______________________
Signature of Participant                                                                           Date

_____________________________  _______________________
Signature of Person Explaining the Study                                               Date
APPENDIX H

SAMPLE MESSAGE POSTED ON MESSAGE BOARDS

My name is Melissa Wright and I am working on my PhD in adult education at the University of Southern Mississippi and need help with my dissertation.

The study is about adults with ADHD and their readiness to engage in self-directed learning. Specific factors to be examined will be how self-directed learning readiness in adults with ADHD is related to gender, age of diagnosis of ADHD, level of education, types of treatment received, and other co-existing conditions. The study has been reviewed and approved by the University of Southern Mississippi's Institutional Review Board.

If you are at least 18 years old AND have an official diagnosis of ADHD, would you please consider completing a questionnaire for me? It is anonymous and should only take about 15-20 minutes of your time. All responses will remain anonymous. If you are or know someone who is 18 or over and has ADHD and are willing to complete the questionnaire, could you please e-mail me at melissa.wright@eagles.usm.edu with your/their e-mail address and I will send you/them a letter which explains the study and the instructions and link to complete it.

If you are interested, please e-mail me at melissa.wright@eagles.usm.edu.
REFERENCES


Alt, C. A. (1999). The relationship among attention deficit/hyperactivity disorder (ADHD), personality type and creativity in adults using the Myers-Briggs Type Indicator (MBTI) and the Torrance Test of Creative Thinking (TTCT). *Dissertation Abstracts International Section A: Humanities and Social Sciences, 60* (4-A), 1007.


Kubik, J. A. (2007, November). *Efficacy of ADHD coaching for adults with attention deficit disorder*. Poster session presented at the 19th annual International Conference on Children and Adults with Attention Deficit Disorder, Crystal City, VA.


doi:10.1097/00004583-198805000-00009


doi:10.1177/002221940003300206

