ADHD in Young Boys: A Correlational Study Among Early Childhood Educators in Louisiana

Jessica Hart Stubbs
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ADHD IN YOUNG BOYS: A CORRELATIONAL STUDY AMONG EARLY CHILDHOOD EDUCATORS IN LOUISIANA

By

Jessica Hart Stubbs

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 2012
ABSTRACT

ADHD IN YOUNG BOYS: A CORRELATIONAL STUDY AMONG EARLY CHILDHOOD EDUCATORS IN LOUISIANA

by Jessica Hart Stubbs

May 2012

Attention Deficit Hyperactivity Disorder is a psychiatric condition that has been increasingly diagnosed in young American children, with boys being diagnosed three times more frequently than their female peers. As a result, more children than ever are being treated with powerful stimulant medications which can have various desired and undesired effects. Early childhood curriculums have become more academic in nature, and early childhood teachers are under growing pressure to help their students master academic skills at earlier ages than ever before. Pharmaceutical companies aggressively market medications directly to consumers, promising improved academic and behavioral success for even the youngest children. Little boys, by their very nature, are less likely than their female peers to exhibit academic, fine motor, and behavioral school readiness skills. These issues intersect in American early childhood classrooms every day and create environments where medicating little boys for academic success might seem like the right thing to do.

This study examined the relationship between the time early childhood teachers have spent in professional development regarding ADHD, boys’ learning styles, medications used to treat ADHD, the CHAMPS system of classroom management, and Positive Behavior Support, and their attitudes toward the above concepts, as well as their initial reactions to young boys who display symptoms of ADHD. One hundred and
eighty-four early childhood teachers from a large Southeastern Louisiana public school district responded to the questionnaire.

The findings showed that time spent in professional development regarding ADHD did have a moderate positive correlation related to early childhood teachers’ attitudes toward ADHD. The study also found that the more time teachers’ spent in professional development addressing Positive Behavior Support was significantly and positively related to their efforts to collaborate with colleagues in order to develop medication-free behavioral and academic interventions for young boys who display symptoms of ADHD.
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Approved:

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Director

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Dean of the Graduate School

May 2012
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CHAPTER I
INTRODUCTION

In America, Attention Deficit Hyperactivity Disorder (ADHD) is a psychiatric condition that affects over five million children (Centers for Disease Control and Prevention, 2011). ADHD often causes sufferers to experience symptoms of excessive impulsivity, hyperactivity, and limited attention to tasks (Reiff & Tippins, 2004). If left unaddressed, the symptoms of ADHD often interfere with a child’s academic success, as well as social and emotional growth (DuPaul & Kern, 2011). Early childhood teachers are often the first people to observe and identify the symptoms of ADHD in young children and communicate concerns to a child’s parents if ADHD is suspected (Sax & Kautz, 2003). These concerns may prompt parents to seek medical or psychiatric evaluations for their children, with a high likelihood that the child in question will be prescribed stimulant medications used in the treatment of ADHD (Diller, 2006). Boys are more than three times as likely to be diagnosed with ADHD and receive medication for its treatment as their female counterparts (Gurain & Stevens, 2005).

In America, there has been much controversy over who benefits from the diagnoses of ADHD (Baronowski, Jan, Nazos, Rasch, & Smelter, 1996). The production and sales of stimulant medications used to treat ADHD in the United States are five times higher than the rest of the world’s countries combined, creating record profits for the pharmaceutical companies that produce and market these drugs (Gaviria & Smith, 2001). The process of diagnosing ADHD is questionable as no definitive unbiased medical tests exist that can be used to assess the condition, and the checklists used to determine the presence of the disorder in children are subjective in nature (Diller 2010).
Recent research has indicated that there are many differences in the ways that males and females develop, learn, react to stress, process information, and behave in social situations (Medina, 2009). Most traditional schools and classrooms in the United States are structured in ways which require that pupils sit still for extended periods of time, excel at fine motor tasks, possess well-developed language skills, and work independently (Sax, 2006). These skills are more typical of the ways in which girls grow and develop, rather than their male peers who require more movement, cooperative teamwork, and competitive tasks (Gurain & Stevens, 2004). Teacher education programs at the university level may not adequately prepare future teachers in matters regarding student gender differences (Sanders, 2002). Early childhood programs are not always designed to address the distinctions in the natural behaviors and learning styles of boys and girls; rather, schools, classrooms, and academic tasks are often set up in ways that favor the manners in which young girls typically learn and behave (Gurain, Henley, & Trueman, 2001).

Early childhood programs have changed dramatically since they were first established in the early nineteenth century (Brosterman, Togashi, & Himmel, 1997). The school days are now longer, more academically rigorous, and there is less time for outdoor play and movement than in decades past. In today’s all-day kindergarten programs, children spend four to six times as much school time on academic activities focusing on reading and mathematics as they do in child-directed play (Graue, 2009). According to the Archives of Pediatrics and Adolescent Medicine, child-centered playtime was reduced by 25% between 1981 and 1997 in favor of time spent on formal instruction and academic tasks (Burdette, 2005). In addition to shrinking playtime,
higher academic standards, and longer school days, poor economic conditions in the United States have caused many school districts to experience a reduction of classroom teachers, resulting in larger class sizes. More pupils per teacher require that teachers spend less time working with children in small groups and engaging them in high-quality individualized instruction (Pappano, 2010).

The intersection of the conditions listed above, as well as increasing accountability for children to succeed in school, defined by laws such as the No Child Left Behind Act of 2001, have given rise to concerns regarding increasing diagnoses of ADHD in children, especially young boys. As a result of the diagnoses, millions of small children are treated for the condition with powerful schedule II medications such as Ritalin and Adderall, which can improve the symptoms of ADHD but may also involve adverse health and psychiatric effects (Diller, 2006).

The behaviors and learning styles typical of boys are most pronounced during the earliest school years, during which little boys are most active, impulsive, and least motivated to please teachers or other adults than are girls. Instead of working to please an adult, or earn a high grade, little boys are mainly interested in participating in academic tasks which they find interesting, and engaging in activities which offer movement, teamwork, and immediate gratification (Sax, 2005). Research suggests that the structure of typical modern early childhood classrooms, the variations in the ways that boys and girls learn, and the pronounced behavioral differences that they normally exhibit in school settings may be linked to early childhood teachers’ concerns regarding ADHD in their students (Landau, 2010).
Today, there is an emphasis on studying the functions and causes of behaviors and designing behavioral interventions aimed at helping children succeed both socially and academically (Horner, Sugai, Todd, & Lewis-Palmer, 2005). Response to Intervention programs such as school-wide Positive Behavior Intervention and Support (PBIS) and the CHAMPs classroom organizational system, address behaviors in a positive, proactive manner, and explicitly teach children appropriate school behaviors (Sprick, Garrison, & Howard, 1998). Programs such as these are showing potential for helping all children, including those with ADHD succeed in social situations such as school (Whitten, Esteves, & Woodrow, 2009). Teachers who are trained in these programs also have the potential to think differently about their students’ behaviors, analyze their teaching practices, and develop classroom management systems and organizational plans which allow children of both genders to succeed (Whitten, et al., 2009).

Statement of the Problem

Attention Deficit Hyperactivity Disorder is the most commonly diagnosed childhood neurological disorder in the United States. ADHD causes symptoms of inattentiveness, increased locomotive activity, and impulsivity (Reiff & Tippins, 2004). Children who have ADHD often experience many problems with academic achievement and social behaviors. These difficulties put children at increased risk for delinquency, poor performance in school, and conduct disorders (Barkley, 2006a). The presence of ADHD cannot be proven with definitive medical imaging or tests. Rather, it is diagnosed based on the perceptions and observations of adults such as parents and teachers who live and work in close contact with a child (Diller, 2010). ADHD is usually first identified when a child begins school and his or her preschool, kindergarten, or first grade teacher
expresses concern to the child’s family. ADHD is most often treated with powerful stimulant medications such as Ritalin or Adderall, which may have dangerous or undesirable effects (Diller, 2006). There are over five million children in America today who have been diagnosed and are currently taking stimulant medications for the treatment of ADHD symptoms. The United States produces and consumes 85% of the world’s medications used to treat ADHD (Ritalin | CESAR. n.d.), and aggressive marketing campaigns promote the diagnosis of ADHD and the use of medications. Boys are 75% more likely than girls to be diagnosed with this disorder (Diller, 2006).

This study addressed the combination of cultural changes in the scope and expectations of early childhood programs in America, the increasing diagnoses of ADHD in young boys, the aggressive marketing of the disorder and stimulant medications by pharmaceutical companies, the learning styles and typical behaviors of little boys, and early childhood teachers’ initial responses and courses of action when encountering little boys who display symptoms of ADHD.

Purpose of the Study

In light of the above set of circumstances, the purpose of this research was to determine if public school preschool, kindergarten, and first grade teachers in Southeastern Louisiana are more likely to adjust their teaching approach using behavioral modification techniques and behavioral interventions for a little boy displaying symptoms of ADHD, or if they are more likely to ambiguously suggest that the child in question receive a medical evaluation for the condition as a first course of action, based on their levels of professional development and attitudes regarding ADHD, boys’ learning styles,
medications, and the CHAMPs behavioral management system and Positive Behavior Support interventions.

Research Questions

This study was guided by the following five research questions:

1. Is there a statistically significant relationship between early childhood teachers’ attitudes toward ADHD and time spent in professional development addressing ADHD?

2. Is there a statistically significant relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors, and professional development that addresses boys’ learning styles and behaviors?

3. Is there a statistically significant relationship between early childhood teachers’ attitudes toward medications used to treat ADHD and professional development that addresses medications used to treat ADHD?

4. Is there a statistically significant relationship between early childhood teachers’ attitudes toward classroom environments and professional development in CHAMPs?

5. Is there a statistically significant relationship between early childhood teachers’ initial responses to young boys who exhibit symptoms of ADHD and professional development in Positive Behavior Support?

The hypotheses tested in this study were as follows:

H1. There is no statistically significant relationship between early childhood teachers’ attitudes toward ADHD and time spent in professional development addressing ADHD.
H2. There is no statistically significant relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors and time spent in professional development addressing boys’ learning styles and behaviors.

H3. There is no statistically significant relationship between early childhood teachers’ attitudes toward medications used to treat ADHD and time spent in professional development addressing medications used to treat ADHD.

H4. There is no statistically significant relationship between early childhood teachers’ attitudes toward classroom environments and time spent in CHAMPs professional development.

H5. There is no statistically significant relationship between early childhood teachers’ attitudes toward behavioral interventions and time spent in professional development addressing Positive Behavior Support.

Definitions

This research study included the terms listed below. These terms are briefly explained in the following definitions. In some cases, acronyms or abbreviations will be provided.

*ADHD* is an acronym which stands for “Attention Deficit Hyperactivity Disorder,” a neurological condition that causes all or some of the following symptoms: inattention, impulsivity, and excessive movement (Barkley & Murphy, 2006).

*Amphetamines* are a class of psychostimulant drugs known to produce increased wakefulness and attention in association with decreased fatigue and appetite (Mosby’s Medical Dictionary, 2009).
CHADD is an acronym standing for “Children and Adults with Attention Deficit Disorder,” a web-based, non-profit support group for children and adults who have been diagnosed with or have symptoms of Attention Deficit Hyperactivity Disorder (CHADDLive, n.d.).

CHAMPS is an acronym standing for “conversation, help, activity, movement, and participation.” The CHAMPS program is a research-based proactive and positive classroom management plan that overtly teaches students how to behave responsibly (Sprick et al., 1998).

Early Childhood Teachers are professionals who provide direct educational services to children aged birth through eight. For the purposes of this study, early childhood teachers refer to teachers who service children from preschool to first grade (National Association for the Education of Young Children | NAEYC).

FAPE is an acronym which stands for “Free and Appropriate Public Education,” and is an educational right of children with disabilities in the United States that is guaranteed by the Rehabilitation Act of 1973 and the Individuals with Disabilities Education Act (U.S. Department of Education, 2007).

IDEA is an acronym which stands for the Individuals with Disabilities Education Act: a United States Federal Law that governs how states and public agencies provide early intervention, special education, and related services to children with disabilities (U.S. Department of Education, 2007).

PBIS is an acronym which stands for “Positive Behavior Interventions and Support,” and is framework designed to help school leaders, teachers, and staff adopt and
organize evidence-based behavioral interventions into an integrated continuum that improves academic and behavior outcomes for all students (Horner, et al., 2005).

*NCLB* is an acronym which stands for “No Child Left Behind,” a 2001 federal law that revised and upgraded standards for public elementary education (U.S. Department of Education, 2007).

*RtI* is an acronym which stands for “Response to Intervention,” a systematic approach for understanding and addressing students’ behavioral or academic difficulties by determining behavior antecedents, evaluating environments, collecting data, and designing interventions based on data (Whitten, et al., 2009).

*Schedule II Drugs* are a category of drugs which have a strong potential for abuse or addiction but that also have legitimate medical use (Mosby’s Medical Dictionary, 2009).

*Section 504* is a section of the Rehabilitation Act of 1973 which guarantees certain rights to individuals with disabilities (U.S. Department of Education, 2007).

*Stimulants* are a class of psychoactive drugs that temporarily affect the central nervous system and increase activity in the brain (Mosby’s Medical Dictionary, 2009).

Delimitations

This study was delimited in that the findings represent a population of Southeastern Louisiana preschool, kindergarten, and first grade teachers’ beliefs and attitudes toward Attention Deficit Hyperactivity Disorder and the best ways to help children in the classroom. This study should allow researchers to generalize the findings to a broader population of early childhood teachers within Southern Louisiana, but it may not be generalized in the larger population to other grade levels or geographical locations.
A delimitation of this study was put into place by the parameters set by the researcher. Only preschool, kindergarten, and first grade teachers were surveyed, even though research suggests that teachers of any grade level may identify ADHD symptoms in their students. In addition, delimitation existed in the study by only analyzing the identification of ADHD in boys enrolled in public school preschool, kindergarten, and first grade classes, rather than the entire early childhood student population.

This study was meant to identify the predominant first response when Southeastern Louisiana preschool, kindergarten, and first grade teachers first identify children displaying symptoms of ADHD. It did not intend to examine trends of identifying and treating girls with ADHD or study the attitudes or practices of teachers servicing kids with ADHD in any other grade levels.

**Assumptions**

Several assumptions were made by the researcher regarding this study. It was assumed by the researcher that the early childhood teachers who participated would respond to all items of the survey honestly, without fear of confidentiality. It was assumed that teachers participating in the study have had experiences in teaching boys and girls in an early childhood setting. It was assumed that most preschool, kindergarten, and first grade teachers have a general understanding of Attention Deficit Hyperactivity Disorder.
Justification

Early childhood teachers work closely with children every day and care for them deeply. It is this concern and desire for their students’ success which guides the decisions they make on a daily basis. According to the literature and research of ADHD experts, at least 1 in every 10 children in a preschool, kindergarten, or first grade classroom may be on stimulant medications for the treatment of ADHD. It is likely that within the course of a typical school year, an early childhood teacher will identify additional children who exhibit symptoms of ADHD and express concerns to parents which could result in a medical or psychiatric evaluation, leading to stimulant or amphetamine therapy.

Preschool, kindergarten, and first grade teachers must understand that there are outside forces at work that may influence their perceptions of what is appropriate childhood playfulness for little boys versus a neurological condition. Aggressive marketing by the pharmaceutical companies, laws such as the No Child Left Behind Act, pressure from parents and school systems, as well as more advanced curricula and longer school days all intersect in the American early childhood classroom to create conditions where drugging children in an effort to modify their active behaviors and extend their attention spans may seem like the right thing to do. Early childhood teachers must understand that little boys, by their very nature, are more active and are, on a whole, less likely to willingly engage in activities requiring sustained attention, extended language, and small motor tasks than their female classmates.

This study was of importance in its potential to create an awareness of the skyrocketing numbers of children being treated for ADHD with schedule II drugs. This awareness may prompt teachers and school leaders to reflect on classroom design and
behavior management practices in an endeavor to meet a child’s educational and
developmental needs with a more moderate and drug-free approach of positive behavior
management, academic interventions, and high-interest, gender-specific, multi-sensory
lessons. This study will promote a deeper understanding of what is appropriate and
natural behavior for young boys. This study has the potential to encourage early
childhood teachers and school leaders to create curricula and classroom work that is
developmentally suitable for the ways in which typical little boys learn. This research
may prompt early childhood educators to speak up regarding the increasing practice in
America to drug our young boys for success. Finally, this study has the potential to cause
early childhood teachers to reflect upon their philosophies and teaching styles and
examine whether they are part of an interesting national phenomenon at best or if they
unwittingly participate in practices with the potential to harm children at worst.

Summary

Attention Deficit Hyperactivity Disorder is the most commonly diagnosed
neurological condition in American children today and is disproportionate to the
diagnosis of other childhood neurological conditions (Diller, 2010). America produces
and consumes over 80% of the world’s drugs used to treat ADHD (Diller, 2011a). Over
five million children in the United States are being treated for ADHD with powerful
Schedule II stimulant drugs such as Ritalin and Adderall, which may cause adverse
physical and psychiatric effects (Centers for Disease Control and Prevention, 2011).
ADHD is a condition that cannot be diagnosed with any unbiased medical tests or
conclusive imaging procedures; rather, it is subjectively diagnosed based on the attitudes,
experiences, and memories of adults who complete checklists regarding a child’s
behaviors (Diller, 2010). Parents are often made aware of a child’s ADHD symptoms by early childhood educators, who express their concerns regarding a child’s behaviors and ability to focus on school work (Landau, 2010). Boys are 75% more likely to receive a diagnosis of ADHD than are their female counterparts (Gurain & Stevens, 2005). In addition, powerful psychotropic medications are more likely to be used in children diagnosed with ADHD than their typically developing peers (Lahey et al., 2004).

Early childhood programs have evolved over the decades, becoming more academically challenging, as directed by cultural changes and laws such as IDEA, as well as the No Child Left Behind Act (Pappano, 2010). Boys and girls learn differently, and most early childhood classroom settings are designed more in favor of the learning styles of girls (Gurain et al., 2001). There is limited professional development available for early-childhood teachers to study the natural differences in which boys and girls learn, behave, and develop, and to help teachers design gender-specific classroom experiences in order to address those learning and developmental differences (Gurain et al., 2001). All of the above circumstances overlap in early childhood classrooms across the United States. Effective school leaders of early childhood programs can work to ensure that preschool, kindergarten, and first grade teachers are aware of the learning and behavioral differences between boys and girls and see that appropriate programs are implemented which allow students of both sexes to learn in ways that best meet their needs. Even though curricula have become more advanced, methods using high-interest, gender-specific language and materials, as well as proactive behavioral intervention programs such as CHAMPs and Positive Behavior Support may keep little boys more actively engaged and attentive (Wolfgang, 2009). Restructuring early childhood teachers’
attitudes regarding young boys’ behaviors, as well as providing clear, consistent, and positive classroom expectations may have the potential to result in fewer diagnoses of ADHD and a higher percentage of drug-free boys (Diller, 2010).
CHAPTER II
REVIEW OF THE LITERATURE

Introduction

Early childhood programs and the expectations of what young children should know and be able to do have changed dramatically from what they were 50 years ago. In the first half of the 20th century, kindergartens were typically structured as half-day programs, focusing on play, exploration, socialization, story time, music, and mothers’ visits (Wollons, 2000). These programs aimed to prepare children for the social aspects of formal education by offering them a gentle and short separation from their mothers, and as the name “kindergarten” implies, provide a peaceful “garden of learning” for young students. During the second half of the century, the concept of kindergarten began to evolve from a half-day child’s garden of play and exploration to a full day academic program designed to prepare children for the rigors of a modern elementary school education. Several important occurrences intersected which triggered changes in the curriculums and philosophies of educational programs designed for the very young.

Events including, but not limited to, the civil rights movement of the 1950’s and 1960’s, the space race of the 1960’s, the advent of the birth control pill in 1960 which gave more women the opportunity to pursue careers, the Education for All Handicapped Children Act of 1975, and increased federal, state, and local funding promoted a boom in kindergarten enrollments and the development of academically advanced curricula (Fichtner, Kontopodis, & Wulf, 2010).

American students and their teachers are under great pressure to achieve academic success in educational systems that continue to demand ever-increasing improvement and
mastery of skills, as defined by the No Child Left Behind Act of 2001. Research has shown that early childhood programs which embrace play and creativity promote academic achievement for those students in later grades. However, many American preschool, kindergarten, and first grade programs are moving away from encouraging students to participate in self-directed play in favor of mastering more rigid academic instruction (Peck, 2003). As expectations continue to rise, changes have been observed in curricula, laws, school finance, the structure and length of school days and years, and the reduction of recess and explorative play in early childhood programs (Bohn & Pelligrini, 2005). In addition to ever-growing demands placed on teachers and students, young people today experience increasing time spent in highly-structured after-school or extra-curricular activities, ubiquitous exposure to technology, marketing, and communications, less family time, and less “down time” at home than ever before (Dietel, 2009).

When young children fail to succeed in the demanding social and academic conditions that have been created for them, it has become an increasingly accepted practice in America for parents, teachers, and medical professionals to suggest that those children may have a neurological condition known as Attention Deficit Hyperactivity Disorder, or ADHD. ADHD is the most commonly diagnosed brain-based disorder in American children, and the condition often involves treatment likely to include therapy with class II psychotropic drugs (Diller, 2006). In the recent past, the diagnosis of ADHD was almost always given to children before they reach the age of seven, although adult diagnoses for the disorder are on the rise (Ashley, 2005). The diagnosis of ADHD
is most often instigated by teachers of early childhood programs, such as preschool, kindergarten, and first grade (Sax & Kautz, 2003).

Presently, over five million children ages three to 17 have been diagnosed with Attention Deficit Hyperactivity Disorder (Pastor & Reuben, 2008). As of 2008, 11% of the nation’s boys were identified as having the disorder, and the rate of diagnoses is growing (Summary of Health Statistics for U.S. Children, 2009). Today, over five million children in the United States are being treated with stimulant drugs for the condition as a first course of action in behavior modification, and of those children, 75% of them are boys (Diller, 2010).

Well-respected and reputable entities such as The American Academy of Pediatrics, the National Institute for Mental Health (NIMH), and The Centers for Disease Control (CDC) recognize ADHD as a genuine disorder although there are medical professionals who do not accept it as a true condition (Breeding, 2007). Ethics questions have been raised regarding the exponential growth of children who have been identified as having the disorder. To some who question the increasing diagnoses and medications prescribed to children, ADHD seems to be a desired diagnosis for economic gain and enhanced academic achievement (Baranowski et al., 1996). Pharmaceutical companies are aggressively marketing the disorder and the cornucopia of drugs used to treat it (Moynihan & Cassels, 2005). Doctors are often offered attractive financial incentives with the potential to bias them in favor of prescribing drugs used to treat the symptoms of ADHD. Insurance companies reward short doctors’ visits ending with a definitive diagnosis, rather than the longer, more labor-intensive practice of observing and evaluating a patient’s behavior in a variety of settings over an extended period of time.
Teachers, who are experiencing increasing pressure under local, state, and federal systems to ensure that even the youngest children will achieve academic success, are looking for ways to help little children pay attention and stay focused on subject matter for which they may not be developmentally ready (Pappano, 2010). The structure of early childhood programs has become more sophisticated, resulting in longer time spent in school than in years past, with more challenging curricula (Pappano). There are very few professional development opportunities or university-based teacher preparation programs designed to help educators understand the differences between how boys and girls learn and to develop teaching styles and gender-specific behavioral interventions that can help ensure their young students’ success (Gurian & Stevens, 2005).

Research suggests that children with ADHD respond well to clear, concise directions, clearly understood goals, and high-interest lessons (Schlechty, 2005). Today, there is growing interest in the potential for classroom management systems such as CHAMPs (Sprick et al., 1998) and Positive Behavior Support (Whitten et al., 2009) to help children with symptoms of ADHD.

Theoretical Framework

The theoretical framework for this study revolves around the following four themes: teachers’ attitudes toward children with ADHD, boys’ learning styles, professional development, and Positive Behavior Support.

Teachers’ attitudes toward children with ADHD and how they respond to such students can be explained using attribution theory. For the past 40 years, attribution theory has been an important part of the study of social psychology. According to Friedrich Försterling (2001), attribution research is concerned “with the particularity of
human beings to perceive the causes of events and to make causal inferences” (p.1).

Attribution theory is concerned with why events occur, such as “why does the baby cry,” or “why did the dog bite,” and so on. The cry of a baby may be attributed to numerous causes, such as hunger, pain, loneliness, tiredness, or illness. A dog may bite because it is ill, feels threatened, or feels protective. It is human nature to try to determine the causes of behaviors and events so that appropriate courses of action may be taken when undesirable behaviors or events occur (Kelley & Michela, 1980).

In the realm of early childhood education, teachers spend a great deal of time teaching appropriate behaviors to young children who may not have had any formal school experiences. When children exhibit behaviors that are not appropriate or conducive to the school environment, teachers will often attempt to determine the causes of behaviors so that they may develop an effective course of action designed to correct unacceptable conduct (Sailor, Dunlap, Dugai, & Horner, 2010). In some cases, a teacher may attribute a student’s inappropriate behaviors to a misalignment of the teachers’ own teaching styles and classroom management strategies in conjunction with the child’s learning styles and developmental needs. In other cases, a teacher may attribute a child’s inappropriate behaviors to a psychiatric problem within the child himself. Fritz Heider (1958) explained that people often make inferences regarding how their own behaviors may influence the behaviors of others. This study attempts to determine if professional development will result in teachers examining their own behaviors in light of their students’ behaviors.

The learning styles of young boys may be connected to the following learning theories: behaviorism, cognitivism, and constructivism. Behaviorism is the study of
overtly observable and measureable behaviors and the conditions required for new behaviors to become automatic (Good & Brophy, 1977). The theory of behaviorism poses that learning results in changes of observable behaviors, as the result of a stimulus-response pattern, without regard to the learner’s internal thought processes. This theory was developed and studied by several people, including Ivan Pavlov, John Watson, Edward Thorndike, and B.F. Skinner (Baum, 2006). Behavior theory suggests that individuals may learn to behave in predictable ways, through the repeated use of a stimulating event or signal. Behaviors may therefore be modified or rewarded with consistently delivered antecedents and rewards, regardless of variables such as mental ability, disposition, or the tendencies of the learner (Watson, 1970).

Although the consistent use of practices associated with behavior theory have been shown to produce some improvements in the behaviors of young children with ADHD symptoms, a more moderate approach of behavior modification has been shown to offer greater promise for helping such children learn and practice appropriate school behaviors (Braswell & Bloomquist, 1991). Behavior modification techniques involve consistently rewarding a child for appropriate behaviors, combined with consistent reprimands or consequences for inappropriate behaviors (Rabiner, 2011).

Cognitive Theory proposes that an individual may model the behaviors of others, even if there is no reinforcement designed to promote the behavior (Bandura & Walters, 1976). Cognitive theorists consider learning to be a process that involves “the acquisition or reorganization of the cognitive structures through which humans’ process and store information” (Good & Brophy, 1977, p. 187), usually through repetition and contiguity.
Swiss developmental psychologist Jean Piaget (1896-1980) was a pioneer of using cognitive theory in conjunction with the education of children (Piaget, 1985).

Several key concepts of cognitive theory may influence how a teacher approaches teaching a young boy with symptoms of ADHD and how the child may respond to his teacher. “Meaningful effects” is a concept of cognitive theory which states that new information is easier to learn and remember if it is meaningful to the learner (Good & Brophy, 1977). This concept is reiterated by many modern proponents of meaningful education such as Phillip Schlechty in his 2002 book Working on the Work, and Mike Schmoker in his 2006 book Results Now: How We Can Achieve Unprecedented Improvements in Teaching and Learning. Teachers who understand that work must be meaningful in order to produce learning, are likely to be more effective at developing high-interest and engaging lessons for all children and ultimately retain their students’ attention for longer periods of time (Schlechty, 2005). As a result of understanding the Cognitive Theory, teachers of young children may enhance the learning process by designing lessons and experiences that are gender-specific, targeting the kinesthetic, competitive, and mechanical interests of young students and, therefore, increasing the students’ engagement and attention (Willingham, 2009).

Constructivism theory shifts attention from the teacher to the learner. This theory was developed in antiquity but refined in modern times by childhood development theorists Jean Piaget, Lev Vygotsky, and John Dewey. Constructivism proposes that the learner learns through the acquisition of experiences and the construction of logical, sequential inquiry (Fosnot, 2005). Teachers who subscribe to this theory enhance their students’ learning by posing questions and inquiries and then guiding students as they
pursue their own answers through investigation, collaborative learning, and multiple learning styles (Fosnot). In a constructivist classroom, learning is “hands-on,” employing the use of manipulative objects, teamwork, and discussion. Students’ interests are valued and pursued, and learning is interactive, building upon and enhancing what the student already knows. Knowledge is viewed as ever-changing and evolving rather than fully mastered (Marlowe & Page, 2005). This model of learning within a classroom complements the hands-on and cooperative manners in which boys learn best, as written by Michael Gurain in his 2001 book, Boys and Girls Learn Differently: A Guide for Teachers and Parents.

The theme of professional development and how it relates to this study can be explained using Fred Korthagen’s Theory of Realistic Approach. This theory suggests that pre-service teachers traditionally engage in learning formal theory in their university studies. In reality, study of those educational theories often does not assist new teachers when making pedagogical decisions regarding instruction and classroom management once they have entered the workforce (Russel & Korthagen, 2006). The Realistic Approach maintains that the rigor of university learning does not necessarily translate into a relevant and practical knowledge set once the teacher is faced with the real-world challenges of instructing children and adapting to the new reality of working in a school. Some studies have shown that there is little to no transfer between the study of theories of behavior and education in college and the actual practices of the classroom teacher (Cole & Knowles, 1993).

The Realistic Approach theory suggests that pre-service teachers should engage in reflection and the examination of practical problems that have been encountered in real
teaching contexts and discuss those observations with cooperating teachers and other experts in the field (Russel & Korthagen, 2006). Korthagen (2001) expressed his thoughts by saying that “many new teachers encounter a huge gap between theory and practice. As a consequence, they pass through a quite distinct attitude shift during their first year of teaching, in general creating an adjustment to current practices in the schools and not to recent scientific insights into learning and teaching” (p. 2).

The Realistic Approach can be applied to new or experienced teachers who have had no formal or practical training in helping young boys with ADHD symptoms. If teachers are not trained in behavior modification approaches, positive behavioral interventions, learning styles, gender differences, and ADHD itself, they may be less likely to effectively help children who struggle with the disorder (Rief, 2005). In such cases, a realistic approach would be to train teachers to help children with ADHD while they are on the job. In doing so, teachers would be encouraged in the use of reflection, collaboration, readings, and professional development opportunities designed to provide them with practical tools, skills, and experiences that they can draw upon immediately (Reif, 2005).

The Reinforcement Theory may be applied to the behavior-management programs such as CHAMPs and Positive Behavior Interventions and Support. The Reinforcement Theory, which was first proposed by B.F. Skinner and his colleagues, states that an individual’s behavior is formed as a function of positive and negative outcomes (Skinner, 1969). Reinforcement Theory suggests that an individual’s behavior may be shaped by the applications of consistent consequences. For example, consequences that reward desirable behaviors are likely to increase or reinforce the occurrences of those behaviors,
and consequences which punish undesirable behaviors are likely to reduce the frequency of an individual using undesirable behaviors (Keller, 1969).

Reinforcers used to shape behavior may be positive or negative, or a punishment may be delivered. Positive reinforcements include any consequence that increases the likelihood of a specific behavior and are delivered after the behavior has occurred. Negative reinforcers, on the other hand, promote the likelihood of a specific behavior by removing an unpleasant circumstance when the specific behavior occurs. Punishments are considered to be an adverse consequence that has the likelihood of decreasing behaviors, which is delivered after an identified undesirable behavior has taken place (Skinner, 1969). Skinner believed that behaviors could be shaped with the use of positive and negative reinforcers, which increase the likelihood of identified behaviors, rather than through the use of punishments, which are designed to reduce identified behaviors (Skinner, 1965).

Research has shown that using reinforcements for children with ADHD has helped them to develop and consistently use more appropriate school behaviors (Wolfgang, 2009). The CHAMPs program offers explicitly taught school behaviors in combination with a built-in system of rewards. Individuals or a class as a whole may earn rewards at random. The rewards for appropriate behavior may be given immediately, or they may be “accumulated” in order to work toward a more desirable or bigger reward as decided by the class or individual (Sprick et al., 1998).

Positive Behavior and Intervention Support programs also allow teachers and students to develop a system of rewards. This program is built around identifying the causes of behaviors, altering environments to encourage appropriate behaviors, and
monitoring children in a proactive, positive, and consistent manner. The focus on positive behaviors, while dealing with unacceptable behaviors on an individual basis, has shown potential for helping children with ADHD develop and use appropriate school behaviors (Cipani & Schock, 2001).

The History of Performance-Enhancing Drugs

Drugs have been used to enhance physical and cognitive performance since before recorded history. One of the earliest known stimulant drugs is caffeine, which has been used throughout the ages because of its effects of easing fatigue, stimulating awareness, and elevating one's mood (Klosterman, 2007). There has been some speculation that caffeine-wielding plants were discovered as early as 700,000 BC, when Paleolithic humans chewed plant material containing the chemical to achieve the stimulant effect (Weinberg & Bealer, 2002). Evidence suggests that the Chinese took advantage of caffeine found in tea at least as far back as 2700 BC. Coffee first appeared in Ethiopia in the 6th century AD, and civilizations in pre-Colombian South Africa drank both coffee and chocolate, well known for their caffeine content and rejuvenating effects. Caffeine became associated with religious rituals as it suppressed the appetite, allowing people to fast for longer periods of time. It also induced wakefulness, allowing people to pray throughout the night (Weinberg & Bealer, 2002). The use of caffeine was well known in prehistoric agricultural societies for its stimulating effects which allowed farmers to work longer and produce more food (Weinberg & Bealer, 2002). Caffeine is the only stimulant drug that is widely available to all consumers in many foods, beverages, and over-the-counter medications. It is legal and easy to obtain without a
prescription, and products containing caffeine are marketed to children as well as adults (Klosterman, 2007).

In addition to ancient religious leaders and farmers, athletes have been known to take advantage of performance-enhancing drugs. Sporting events have been breeding grounds for performance doping since as early as the third century B.C. During that time, the use of Ma Huang, an extract from the Ephedra plant was used to enhance physical prowess in sporting events (Thieme & Hemmersbach, 2010). Other chemical methods to improve physical stamina and performance in sports included the eating of hallucinogenic mushrooms in the early Olympic Games in Greece, the Huns’ consumption of cattle testicles before battle around 300 B.C., the use of caffeine to improve attention and stamina, and alcohol, which was used to reduce fear (Procop, 2010).

Just as today, such antique forms of doping were prohibited at the Olympic Games of ancient Greece. Death penalties were often the consequences for athletes who chose to use performance-enhancing drugs, and in the year 395 A.D., Emperor Theodosius abolished the Olympic Games because he felt they had become a “hotbed of cheating, affronts to human dignity, and doping” (Procop, 2010).

In addition to stimulants such as caffeine, the source of testosterone and its effects have been known for the past 6,000 years as farmers observed differences in behaviors between castrated and non-castrated animals. Castrated animals were less territorial, more easily fattened, and demonstrated less aggression (Moore, 2005).

In 1767, John Hunter (1728-1793) began experimenting with the effects of testosterone when he performed testicular transplantation by transplanting the testis of a
cock into the abdominal cavity of a hen (Moore, 2005). Charles Edouard Brown-Sequard (1817-1894) experimented with self-injections of a substance extracted from the testicles of dogs and guinea pigs. He reported that the injections increased his physical strength, mental ability, and appetite (Freeman, et.al.). The name testosterone (T) was coined only in 1935, when Ernest Laqueur isolated the substance from bull testes (Nieschlag, n.d.).

Anabolic steroids, which are synthetic versions of testosterone, were introduced in the mid-1940’s. Not long after that discovery, researchers began to study the relationship between synthetic hormones and enhanced athletic ability (deKruif, 1945). Anabolic steroids were found to build bone and muscle mass by stimulating the body to produce protein. Anabolic steroids first came into the world of sports as agents supporting recovery to bone and muscle after stress. (Thieme & Hemmersbach, 2010). In addition to speeding recovery times, it was found that this medical breakthrough also gave athletes a much greater physical enhancement and stamina than the effects of traditionally used stimulants and painkillers (Haley, 2003).

Over the past 50 years, there has been an accepted practice in some modern athletic organizations to administer performance enhancing drugs to athletes. Doping has occurred in every sport, from country junior high school athletics to professional sports and the global competitions of the Olympic Games. In the 1970s, athletes from Soviet Germany were forced to take drugs in order to guarantee medals (Rooper, 2008). These drugs were often administered without regard to any of the shocking physical, emotional, or social side effects, and in many cases, given without the consent or knowledge of the athletes, who were told to “take their vitamins.” As a consequence, many athletes
suffered health problems such as heart attacks, physical and sexual changes, and arthritis. In addition, athletes who used performance-enhancing drugs experienced many psychological and social problems due to changed appearances, isolation, reproductive problems, pressure to win, and consequences of cheating (Rooper, 2008). Young female gymnasts were especially affected by doping; many of them were unable to conceive children as a result. Young female athletes who were administered drugs to enhance their physical strength often developed male sex characteristics, such as deepened voices, facial hair, male-pattern baldness, and enlarged muscle mass. In some cases, these devastating symptoms remained with these women, even after the use of hormone therapy intended to correct such effects. These women often reported feelings of depression and isolation and in some cases resorted to suicide (Hoberman, 2005).

The public culture of doping athletes to enhance performance has changed from one of acceptance during the Cold War era to one of intolerance today. It is now viewed as unethical, unfair, unhealthy, and artificial (Bird & Wagner, 1997). Athletes who are discovered to have turned to drugs in the hopes of achieving victory are often stripped of titles and medals and sometimes even experience loss of revenue from lucrative product endorsements. These athletes are regarded as cheaters and lose respect not only in the sports community but in the eyes of the public. Even so, performance enhancing drugs continue to be developed and to evolve. New designer drugs are constantly being produced in an effort to slide past drug testing-procedures (WADA, n.d.). As long as there are incentives to win, doping is likely to continue to be a problem in the world of modern sports (Eber, 2009).
Stimulant Medication in Education

In the world of education, many of our children and a high percentage of boys are given drugs in order to alter their behavior and enhance their academic performance at school (Brand, Dunn, & Greb 2002). However, unlike the cases of athletes, where the practice of using performance-enhancing drugs is frowned upon, the trends today indicate an increasing social acceptance in the amounts of medications prescribed for and administered to children. Although the scenarios in the worlds of sports and education are very different, questions have been asked if we will one day look back with regret on today’s medical and educational practices with our children in much the same way as we look back on the doping crisis that has occurred in sports (Gaviria & Smith, 2001).

The most common form of behavior-altering and performance-enhancing drugs approved by the United States Food and Drug Administration and administered to school age children are stimulants (Findling, 2008). Stimulants have generalized effects on the body’s organs, specifically the heart, blood vessels, and the brain. The use of stimulants can produce pain-killing and energizing effects, as well as increased blood pressure (Barkley, 2006b). Stimulants have been proven to help individuals attend to tasks longer, improve memory, control impulsivity, and calm locomotive activity levels (Diller, 1999).

As early as 1937, a stimulant drug called “Benzedrine” was being administered to small numbers of children to manage “organic drivenness” (Mayes, Bagwell, & Erkulwater, 2009). That year, Charles Bradley, a Rhode Island psychiatrist, first reported the effects of stimulants in children (Bradley, 1937). Bradley studied 30 children, 21 of whom were boys, whose behaviors varied considerably but included some severe disorders that warranted hospitalization. The young subjects were administered
Benzedrine, which is a form of amphetamine. The children in the study showed improvements in school work and calmer behavior from the first day of therapy (Findling, 2008).

Another early modern stimulant used was the drug methylphenidate, or MPH (Diller, 1999). In 1944, methylphenidate was first synthesized in the laboratory. By 1954, MPH was being tested on humans. Ciba Pharmaceutical Company began marketing the drug under its brand name, Ritalin, in 1957. Physicians prescribed the new drug to treat patients who suffered with depression, chronic fatigue, and psychosis. It was also used to counteract the sedating effects of other medications and to treat symptoms of barbiturate overdose (Ritalin, n.d.). By the 1960’s Ritalin was being mixed with a combination of vitamins and hormones and marketed to improve vitality and mood (Ritalin). Research on Ritalin continued, and in the late 1960’s a pharmacological study focused on the effects of Ritalin on “Hyperkinetic Syndrome,” which today is called Attention Deficit Hyperactivity Disorder. Ritalin, although a stimulant, was found to have the paradoxical effect of calming the symptoms of Hyperkinetic Syndrome in children. By the 1970’s and early 1980’s, the sales of Ritalin and other similar stimulants used to treat behavior disorders in children had steadily increased (Findling, 2008).

In the United States in the 1990’s, the sales of Ritalin had increased 500% since its introduction in 1957. According to the United Nations, 85 % of the world’s production of Ritalin is manufactured and consumed by the United Ritalin | CESAR. (n.d.).
The use of stimulants such as methylphenidate (Ritalin) often helps children who are struggling in academic and social settings modify their behaviors, attend to tasks longer, control impulsivity and calm excessive activity levels (Reiff & Tippins, 2004). It is believed that methylphenidate works by increasing the activity of dopamine, which is a neurotransmitter important for the reinforcement of behaviors and associated with feelings of pleasure (Ritalin, n.d.). Transporters that release dopamine are blocked by the drug, and as a result, dopamine cannot be reabsorbed. It is theorized that by blocking the brain’s transporters, more dopamine is allowed to remain available and reach receptors. This may be why people who take methylphenidate as it is prescribed have an effect of heightened attention to tasks (Diller, 1999).

Amphetamines and Ritalin have similar effects and are dose-dependent. Prescribed dosages are determined based on the age and size of the person for whom the drug is prescribed. Therapeutic dosages of Ritalin usually begin at five to 10 milligrams, one to three times a day for children over six, but should not exceed 60 milligrams per day, even in adults (Ritalin, n.d.). Ritalin is a schedule II substance (Ritalin, n.d.). Schedule II is a term used by the Drug Enforcement Agency used to categorize drugs which are considered to have a strong potential for abuse or addiction but that have legitimate medical use. Among the substances so classified by the Drug Enforcement Agency are morphine, cocaine, pentobarbital, methamphetamines, oxycodone, alphaprodine, and methadone (Mosby’s Medical Dictionary, 2009). Abuse of Ritalin has been reported, and heavily dependent recreational users may take hundreds of milligrams per day in an effort to create feelings of euphoria. Ritalin can be abused by crushing and snorting or injecting the drug. Individuals who take Ritalin as a recreational drug often
must increase their dosages to get the desired effect as they build a tolerance to the drug (Ritalin).

Ritalin and other stimulants have been viewed as “wonder drugs” by many doctors, parents, and teachers because they can calm active children and help them attend to tasks that require sustained concentration. However, even when they are used as prescribed, these medications can cause side effects that may affect individuals in different ways. Some of those side effects are adverse. Effects from taking Ritalin can include: stomach pain, nausea, loss of appetite, vision problems, dizziness, headache, sweating, rashes, numbing of hands and/or feet, nervousness, insomnia, and weight loss (Ritalin, n.d.). These side effects can occur in children who take stimulants, which have the potential for adversely affecting their health and behavior (Gaviria & Smith, 2001). More serious side effects, resulting from taking Ritalin in a manner in which it is not prescribed may result in fast or uneven heartbeat, fainting, fever, sore throat, blurred vision, blistering rash, aggression, restlessness, hallucinations, tics, bruising, high blood pressure, anxiety, confusion, or seizures (Ritalin, n.d.).

Despite much study, there is still uncertainty regarding why stimulants actually seem to suppress hyperactivity and improve concentration (Erkulwater & Mayes, 2008). There has been considerable debate over the risks and benefits of medicating children with drugs that have not been in production long enough for long term study on the effects of their developing brains and bodies (Willis, 2008). Some studies have indicated that the long-term use of Ritalin results in stunted growth in height and weight, but this finding has been contradicted by other studies. Some scientists believe that the growth differences in children who take Ritalin are more an effect of ADHD than the drug
(Ritalin, n.d.). In a recent large-scale study conducted by the National Institute for Mental Health on preschool children, a higher percentage of young children experienced significant adverse effect to Ritalin as compared to their elementary school-age counterparts (Wigal et al., 2006). Considering the risks of serious side effects that come with treating very young children with stimulant medications, the decision to use such drugs must be carefully considered (DuPaul & Kern, 2011). Even when medications are used, the advantages of using stimulant medication to relieve the symptoms of ADHD in young children are unclear when studied over time (Molina et al., 2009).

The socially unacceptable practice of doping athletes for success, and the growing practice of medicating children so they will be more socially and academically successful raises questions. Why is the practice of doping athletes for achievement now considered unethical while medicating children for academic success seems to be increasingly more accepted by American society? Are we medicating increasing numbers of our children because they are more in need of psychiatric help or because we need them to fit into artificial environments that may not be designed for the way their brains and bodies develop and operate? Should we change our boys’ environments, alter their brain function, or do both to help them succeed?

The History of Attention Deficit Hyperactivity Disorder

The psychiatric disorder that is most commonly diagnosed in young children in the United States is Attention Deficit Hyperactivity Disorder, otherwise known as ADHD. Since the early 1930’s different diagnostic labels have been used to describe the symptoms of ADHD, such as “organic drivenness,” “moral defect,” “minimal brain
and “hyperactive child syndrome” (Mayes, Bagwell, & Erkulwater, 2009).

Symptoms of ADHD have existed as long as children have existed. Every culture through the ages has had “problem children.” In the past, such behaviors were attributed to evil spirits, wrongdoing on the part of the mother or father, punishment for transgressions in past lives, or a mother’s sinful thoughts or acts during pregnancies. Such behaviors were often treated with beatings and prayer (Diller, 2006). In more recent times, Sigmund Freud attributed children’s misbehavior to problems with a child’s relationship with his or her mother (Diller 2006). During the 1940’s and well into later decades, Dr. Benjamin Spock suggested that misbehavior in children is the result of poor environments and relationships and encouraged mothers to be more affectionate with children, resist the use of corporal punishment, and view children as individuals (Spock & Rothenburg, 1985). In the 1990’s, children’s misbehaviors were more likely to be blamed on “chemical imbalances” of their brains, rather than the nature of their genetics or the nurture they received at the hands of their families and other relationships (Diller 2006). It is this thinking, as well as a combination of other important factors that has brought American culture to our understanding of the mysterious causes and varied treatments of ADHD (Diller, 2006).

The puzzling disorder now called ADHD is thought to first have been described by Dr. George Frederick Still in 1902 in a series of lectures given in London to the Royal College of Physicians (Hallowell & Ratey, 1995). Dr. Still observed a group of 20 children in 1902 and described them as “defiant, excessively emotional, passionate, lawless, spiteful, and with little inhibitory violation,” (p. 271). He recorded that of all the
children he observed with these “morally deviant” behaviors, there were three boys for every girl, and every child had exhibited troubling behaviors before they reached the age of eight years (Hollowell & Ratey). The doctor acknowledged that most of the children had been raised by competent parents, and he wondered if there might have been a biological explanation for the children’s behavior. He suspected that there might have existed a genetic predisposition to what he described as “moral corruptness.” Dr Still believed that the biological predisposition to certain behaviors could be as much to blame for a child’s actions as his or her free will (Hallowell & Ratey, 1995). During the lectures, he mentioned this idea when he spoke of one six-year-old child in particular in the following quote:

Another boy, aged 6 years, with marked moral defect was unable to keep his attention even to a game for more than a very short time, and as might be expected, the failure of attention was very noticeable at school, with the result that in some cases the child was backward in school attainments, although in manner and ordinary conversation he appeared as bright and intelligent as any child could be. These considerations on the nature of the defect may appear too speculative to have any practical value, but I venture to think that they have some basis in clinical fact, and my reason for bringing them forward in this connection is to emphasize the possibility that other morbid conditions beside defect of moral consciousness may be responsible for defect of moral control (Barkley, 2006a, p. 4).

The doctor’s musings were a new way of thinking about human behaviors, and the “nature vs. nurture” debate continues to be a part of the mystery of ADHD to this day.
(Reiff & Tippins, 2004). The disorder and how to help those children and adults who are diagnosed with it has been a controversial topic in the worlds of education, medicine, law, psychology, economics, and workplaces around the world (Armstrong, 1996).

In the late 1960’s, the concept of metallization emerged in psychoanalytic literature (Busch, 2008). Mentalization is described as a way to find social partners in the world by perceiving and communicating mental states, such as beliefs, desires, plans, and goals (Leonhardt, 2011). Children who are taught to mentalize by being raised by or working with adults who model empathy, an understanding of context, and forethought regarding the causes and outcomes of specific behaviors are thought to be better equipped to exercise control and thoughtfulness in their own behaviors (Fonagy, 2004). The concept of mentalization shaped existing beliefs regarding the behaviors of children, including their emotional intelligence social-emotional maturity, and furthered the interest in behavioral and psychiatric disorders such as those displayed by children with attention problems (Hoermann, Zupanick, & Dombeck, 2011).

Today Attention Deficit Hyperactivity Disorder is recognized by the Center for Disease Control (CDC), The National Institute of Mental Health (NIMH), The American Academy of Pediatrics, and most medical and education professionals as a disorder that causes symptoms that may include the inability to concentrate, irritability, impulsivity, distractibility, hyperactivity, sleeplessness, social/emotional problems, depression, and trouble succeeding in school or at work (Attention Deficit Hyperactivity Disorder, n.d.). People with ADHD often show signs of the disorder by the time they reach school age and are nearly always present before age seven. These symptoms occur in multiple settings, such as at home, in school, and when interacting with peers or adults. ADHD
symptoms can negatively affect every aspect of an individual’s life (Pastor & Reuben, 2008).

Theories abound regarding the causes of ADHD. No single cause has been identified to date although many hypotheses are being studied. According the American Academy of Pediatrics, conditions that can affect brain development and behaviors in a child and may contribute to the possibility of ADHD include genetic factors, variations in individual temperament, individual differences in emotional reactivity, activity levels, medical conditions that may affect brain development, and a host of environmental influences on the developing brain such as toxins from lead, alcohol, allergies, and nutritional deficiencies (Reiff & Tippins, 2004). Risk factors such as low birth weight, maternal illness and drug abuse during pregnancy, as well as delivery complications have also been implicated in contributing to ADHD. Other suspected causes include brain injuries, food additives, insecticides, and social environments (Attention Deficit Hyperactivity Disorder, n.d.). It is believed that people who live with this disorder may have neurotransmitter deficits, and/or genetics that predispose them to the condition (Attention Deficit Hyperactivity Disorder, n.d.). Physicians and mental health providers seem to agree that ADHD runs in families, and siblings of children with ADHD have about a 30% chance of also having the disorder (Reiff & Tippins, 2004).

There have been many studies conducted examining the brains of children diagnosed with ADHD, and it has been speculated that differences may exist in the frontal areas in the brains of children with ADHD and children who do not exhibit symptoms of the disorder. Scientists using magnetic resonance imaging (MRI) scans have discovered that some children with ADHD have smaller brains by volume,
especially in the cerebellum and the basal ganglia. The part of the brain responsible for processing emotional and fact-based information, the anterior cingulate, seems to have thinner gray matter in some children with ADHD compared to their typical peers (ADHD: An Update, 2008). Limited research has shown that the brains of children with ADHD are on average 5% smaller in volume than average children, with the right frontal areas being smaller than the left frontal area (Castellanos et al., 1996). Some brain researchers believe that the forming of complex behaviors and long-term planning occur in the frontal lobes of the brain (Panksepp, 1998); however, no consistent pattern has emerged that would link the differences in brain size and structure to the many varied behaviors and activity levels observed in children diagnosed with ADHD, and research has not yet produced consistent or definitive data on this topic (Rieff & Tippins, 2004).

In an interview with neurosurgeon Dr. Richard Clatterbuck, MD, PhD, he described the research on structural brain differences in people with neurological disorders compared to people without disorders as “murky.” Dr. Clatterbuck was of the opinion that findings for such research were inconclusive, and researchers who persevere long enough are likely to find what they were looking for, whether it’s brain differences, or no differences at all (Clatterbuck, telephone interview, September 20, 2010). Supporting Dr. Clatterbuck’s statements, developmental and behavioral pediatrician Dr. Lawrence Diller stated in a recent interview that there is no conclusive evidence that brain differences in children indicate ADHD (Diller, telephone interview, September 19, 2010).

In an interview, pediatrician Dr. Natalie McConnell, suggested that brain differences may be the result of premature birth, low birth weight, intrauterine growth
restriction (IUGR) or a host of other conditions that could also lead to ADHD-like symptoms (McConnell, 2010).

In addition to the conflicting data suggesting that people with Attention Deficit Hyperactivity Disorder may have brain differences from other typical people, there has been considerable debate over whether ADHD is an actual medical condition. There are professionals in both education and medicine who believe ADHD is a fraudulent excuse for children’s misbehavior, parents’ lack of consistency or discipline skills, the result of boring classroom instruction, or teachers’ ineffective classroom management strategies (Armstrong, 1996).

Symptoms of Attention Deficit Hyperactivity Disorder vary within individuals, but the guidelines set forth by the American Academy of Pediatrics define ADHD as typically including one or more of the following symptoms: inattentiveness, impulsivity, and hyperactivity (Reiff & Tippins, 2004). Inattentiveness in children can be observed when they consistently fail to finish tasks, frequently do not appear to listen, seem to become easily distracted, or have difficulty concentrating on activities requiring sustained concentration, such as school work (Mayes et al., 2009).

Hyperactivity is described as excessive climbing or running, an inability to sit still or constant fidgeting, trouble remaining seated in various settings such as the dinner table, restaurants, religious services, or the classroom, excessive movement during sleep, and the appearance of being “driven by a motor,” or “constantly on the go” (Mayes et al., 2009).

Impulsivity is thought of as a consistent tendency to act before considering consequences, excessive movement from one activity to another, frequent “blurting out”
in inappropriate ways, and difficulty taking turns in group situations or game play (Mayes et al., 2009). Children who consistently exhibit these kinds of behaviors often put themselves and others at risk and require additional supervision and behavior modification. These conditions have the potential to create stress for children and their families as they struggle with ways to manage ADHD symptoms, achieve success in school, and develop appropriate and satisfying relationships with friends and family members (Gaviria & Smith, 2001).

Children with ADHD experience problematic behaviors that often interfere with all areas of their lives, such as family harmony, academics, sports, forming friendships, and social situations (Findling, 2008). Although ADHD was once thought of as a disorder affecting primarily young children, research has indicated that problematic symptoms often persist into adolescence and beyond. It has been reported by the American Academy of Pediatrics that 70 to 85% of children diagnosed with ADHD will continue to experience problems related to the disorder well into their teens (Reiff & Tippins, 2004).

Today, diagnosed cases number approximately 4.5 million children from five to seventeen years of age. Studies have shown that approximately seven to ten % of America’s children are being administered stimulant medications such as Ritalin as the result of a medical diagnosis (Centers for Disease Control and Prevention, 2011). In the past, stimulants such as Ritalin were believed to have a paradoxical effect of calming children with ADHD while energizing others. However, this has been proven to be untrue, as all children generally have the same response to Ritalin, regardless of whether they have been diagnosed with the disorder. In light of this knowledge, a favorable
effect of stimulant therapy cannot be used to make an accurate diagnosis of ADHD (Snider, Busch, & Arrowood, 2003). As Dr. Diller pointed out in his book The Last Normal Child, in the past, a medical condition successfully treated with a chemical indicated a lack of that particular chemical in the brain or body. However, if a headache is successfully treated with an aspirin, we do not say that the patient suffered from an “aspirin deficiency,” so a successful treatment with a chemical does not automatically imply that a person has a “chemical imbalance,” or a medical or psychiatric disorder (Diller, 2006).

Diagnosing ADHD has been a hot button issue over the decades. There is no laboratory test, imaging procedure, genetic screening, or physical symptom that will precisely indicate if an individual has ADHD (Armstrong, 1996). Instead, it is diagnosed in children as an educated guess combining input and observations from the children themselves, parents, teachers, counselors and medical professionals (Diller, 2006). Conversations about a possible ADHD diagnosis involve a multidisciplinary team of individuals that may include any people who are an active part of a child’s life and can offer input (Reiff & Tippins, 2004). Diagnosis is a complicated matter because every child exhibits typical behaviors associated with ADHD from time to time (Armstrong, 1996). A thorough diagnosis of ADHD in a youngster involves comparing the child’s behaviors with other typical behaviors of children of the same age and carefully observing the child in question to determine if identified behaviors are consistently interfering with academic success, family harmony, and social interactions (Ashley, 2005). Questionnaires have been developed that aim to evaluate whether observed
behaviors have a negative impact on a child’s life in a multitude of settings on a daily basis (Reiff & Tippins).

Other disorders may further complicate an accurate diagnosis of ADHD. For example, a child may often present other problems that mimic ADHD such as vision or hearing loss, learning disabilities, stress related to familial discord, anxiety, or other emotional or behavior disorders. These issues may result in an inaccurate ADHD screening and diagnosis (Barkley, 2006a). There are also cases where ADHD may coexist with another health or learning problem that requires a unified team approach to help evaluate and develop a treatment plan for a variety of health and educational concerns (Diller, 2006).

When diagnosing ADHD, medical professionals request that a questionnaire be completed by several people who work closely with the child suspected of having the disorder. If there is agreement between the checklists, a diagnosis of ADHD may be given and a treatment plan is developed that may or may not include medication. ADHD checklists are designed to indicate if the symptoms are more of the “inattentive type” of ADHD, including behaviors such as distractibility, forgetfulness, and consistently leaving tasks unfinished. “Hyperactivity” may also be identified as part of an ADHD diagnosis, as indicated by excessive movement and impulsivity (Barkley, 2006a). Treatments vary depending on the age and developmental levels of an individual child, as well as the type and severity of symptoms. Treatment plans often include a combination of behavior management strategies, such as “chunking” tasks in order to make them more manageable, medication, individual and family counseling, an examination and elimination of potential stressors created by lifestyle choices. Healthy practices such as
good nutrition, exercise, and adequate rest are also a part of any healthy lifestyle and especially important for children with ADHD (Reiff & Tippins 2004).

The symptoms of ADHD often change as children grow and develop. Medications can lose their usefulness over time, or dosing levels may become ineffective. What was successful and appropriate for a child in first grade may no longer be what that same child needs as he or she ages. Behavior management programs can lose their novelty and appeal and must be periodically revisited in order to adapt to a growing child. In doing so, these plans are most likely to remain age-appropriate and motivating (Armstrong, 1996).

In most cases, ADHD is a chronic disorder that is often an exhausting condition for parents and caregivers to manage and deal with consistently. Helping a child with ADHD requires a great deal of love, patience, guidance, understanding, and commitment from the entire family, as well as positive relationships with the child, teachers, doctors, and mental health care providers (Monastra, 2006). It is important that everyone involved in a youngster’s treatment plan be observant of his or her behavioral changes and physical and emotional health. Every member of a child’s “team” must work together in order to maintain an appropriate and effective course of behavioral and/or medical therapy over the years (Ashley, 2005).

Using stimulant medications to treat ADHD in children often requires much trial and error, as there are many different kinds of medications available on the market today, and individual children respond to these drugs in unique ways. The FDA has approved 12 psychotropic medications for the treatment of ADHD in children. Of those 12 drugs, six of them are stimulants (ADHD: An Update, 2008). Finding the most effective
medication for a child living with ADHD can be a drawn-out and frustrating process, as parents, children, doctors and teachers try to find the therapy or combinations of therapies that offer the best results (Monastra, 2006). Medications used to treat ADHD have the potential to produce unwanted side effects, such as ticks, loss of appetite, weight loss, sleeplessness, depression, stomach pain, headaches, cardiac problems, and restlessness (Mental Health Medications, n.d.). Obviously, these side effects may also adversely affect school performance and behavior. However, when the “right” medication at the right dosage is found, the results can be positive and life-changing for those individuals and their families struggling with ADHD (Gaviria & Smith, 2001).

Stimulants prescribed for ADHD can make children easier to manage in the classroom, improve attention to task, and reduce activity levels. However, in addition to reducing impulsivity and improving focus, stimulant drugs may also reduce many positive and precious qualities such as creativity, enthusiasm for life, imagination, and divergent thinking (Breggin, 2002a). In some cases, the temporary calming effects many stimulant drugs produce may mask serious underlying problems such as depression, learning disabilities, or pervasive developmental disorders (Reiff & Tippins, 2004).

By the year 2008, the Center for Disease Control reported that five million children ages three to 17 had been diagnosed with Attention Deficit Hyperactivity Disorder, with 11% of the nation’s boys identified as having the disorder, and the rate of diagnoses is growing (Summary of Health Statistics for U.S. Children, 2009). According to results of the National Survey of Children’s Health, the percentage of children from four to seventeen years of age who have ever been diagnosed has risen from 7.8 % to 9.5 % between the years of 2003 and 2007 (CDC, 2010).
In his book *Creating Great Schools*, author Phillip Schlechty (2005) expresses his skepticism of the diagnosis by offering the following observation:

The most recent diagnostic fad in education concerns the condition called attention deficit hyperactivity disorder. I have no doubt that some students suffer from this disorder and need and deserve special treatment. I am also convinced, however, that many students are labeled attention deficit hyperactivity disorder simply because they do not find much in school worth attending to. Some ADHD-labeled students seem to have little difficulty with attention span or with attending when they find something that that interests them. (p. 27)

Legal Issues Pertaining to Attention Deficit Hyperactivity Disorder

The diagnosis of ADHD in school-age children is a heated political and economic topic, often involving legal issues. The United States Department of Education reports that prior to 1975, children with disabilities were mainly educated in institutions and had little to no contact with their non-disabled peers. State institutions for persons with mental retardation or mental illness were often the homes of children with a wide array of disabilities. Such institutions were the residences for almost 200,000 adults and children with disabilities by the year 1967. Disabled children were segregated from their peers, often forced to attend institutions a good distance away from their families and neighborhoods, and housed in restrictive environments with only minimal food, clothing, and shelter (U.S. Department of Education, 2007).

As time went by, this culture of segregation for disabled children seemed to be outdated thinking in light of recently passed anti-segregation laws such as the 1954 *Brown v. Board of Education* Supreme Court decision, which ruled that racial segregation
in schools was a violation of the rights provided by the 14th Amendment (Brown verses Board of Educaion, n.d.). *Brown v. Board of Education* mandated that children of all races may attend school together. During the following decades, there was growing awareness and sensitivity to segregation of all children in schools, including children with handicaps.

The Federal government was becoming increasingly aware of the practices of segregating disabled students from their typical peers. By 1968, the government had begun the process of making public and private institutions more accessible and inclusive for people with disabilities. For example, more than 30,000 special education teachers had been trained to appropriately teach children with handicaps. Films with captions were produced in order to educate the deaf about newly formed services and were viewed by over three million people. Around the country, disabled children of preschool age, as well as those of age to attend state-operated elementary and secondary schools were given access to free public education (U.S. Department of Education, 2007).

Public Law 94-124, The Education for All Handicapped Children Act, was passed by Congress in 1975. Significant new legal rights and protections were provided to handicapped children through this Act. According to the United States Department of Education, PL 94-142 serves four purposes: 1. to assure that all children with disabilities have available to them a free and appropriate public education (FAPE) in the least restrictive environment, 2. the protection of educational rights of children and their parents, 3. to help states provide for the education of all children with disabilities, and 4. to provide assessment in effectiveness of the education of children with disabilities (U.S. Department of Education, 2007).
In 1990, the Act was renamed the Individuals with Disabilities Education Act, or IDEA. The 1990 change brought some new transition services, as well as changes to some of the terminology, such as the modification of the term “handicapped children” to “children with disabilities.” This revision also provided additional assurances that put programs in place for individuals with disabilities to be evaluated in order to determine the effectiveness and appropriateness of the services they were receiving (LaMorte, 2008).

1990 was an important year for the rights of people with disabilities, as Congress also passed the Americans With Disabilities Act (ADA). This Act provided antidiscrimination safeguards in private as well as public institutions. These protections included provisions made to accommodate people with handicaps in many private sectors, including areas such as transportation, lodging, telecommunications, restaurants, and employment (LaMorte, 2008).

In 1994, Congress once again reauthorized the Individuals with Disabilities Education Act, and in doing so, special education services received extended federal funding. As a result, the IDEA provided more assurance that all children with disabilities were able to receive a free and appropriate public education in the least restrictive environment that is best suited for these children’s individual needs. This reauthorized act also provided further protection for the rights of children with disabilities, and their parents, and allowed federal assistance to be allocated to states in order to provide appropriate educational programs for all children (La Morte, 2008).

Section 504 of the Rehabilitation Act of 1973 is yet another protective measure to ensure that children with disabilities receive a free and appropriate public education.
Section 504 is a civil rights statute designed to protect the rights of disabled individuals in activities and programs that receive federal funds, such as public education and programs sponsored by public schools (U.S. Department of Education, 2007). A 504 plan can be developed for students in order to provide accommodations designed to meet a student’s individual needs. Educational accommodations outlined by 504 plans are usually more flexible and less restrictive than accommodations provided under IDEA, and are often used for children who can function well in a typical educational setting with minimal accommodations (Section 504, 2010). A 504 plan can be created with ease at the school site and can be readily adjusted as a child’s needs change (Educational Rights, 2009).

Under the Individuals with Disabilities Education Act, Section 504, and the Americans with Disabilities Act, children with disabilities have the right to fully participate in a public school education in the least restrictive environment and in programs designed especially for their unique needs, abilities, and learning styles (U.S. Department of Education, 2007). Gone are the days when children with disabilities are “invisible” and institutionalized. Today, efforts continue to be made to support the education of children with disabilities, and since the IDEA was introduced, more medical, physical, and neurological conditions have been identified as disabilities under its protective measures (U.S. Department of Education, 2007).

As the laws regarding educating children with disabilities changed, evolved, and became more inclusive, special interest groups such as the non-profit group CHADD (Children and Adults With ADD) organized nation-wide letter-writing campaigns in order to lobby Congress in the efforts to recognize ADHD as a legitimate neurological
disorder (Gaviria, & Smith, 2001). As a result, new regulations implementing the IDEA Amendments of 1997 were issued on March 12, 1999. These regulations, for the first time in the law’s history, explicitly incorporated ADHD within the definition of the “Other Health Impaired” (OHI) category, consequently providing protection for children diagnosed with the disorder (Cohen, 2007). As a result, children diagnosed with ADHD now have the legal rights to a free and appropriate public education (FAPE) and a multitude of accommodations designed to ensure their developmental, social, and academic achievement in school. These children and their families now have the rights to individualized programs, services, and support in order to be successful in academic settings (Educational Rights 2009).

After ADHD became an accepted disability under IDEA, parents of children with the disorder had the benefit of having accommodations made for their struggling children. Such accommodations may include but are not limited to tutoring, additional time allowed for testing, smaller class sizes, reduced workload, and so on, all at the schools’ expense (Gaviria & Smith, 2001). Many parents of children who exhibited ADHD symptoms were eager to see improved school success for their youngsters via the development of Individual Education Plans (IEPs), 504 plans, mental health services, classroom accommodations, and medication. Over the next decade, parents increasingly visited their pediatricians and psychologists in the effort to receive a diagnosis of ADHD, thus now having the school legally responsible for providing appropriate accommodations in the classroom aimed at improving a child’s academic performance (Diller, 1999).
The No Child Left Behind (NCLB) Act of 2001 mandated a strong academic program in all K-12 schools by requiring every state to implement statewide accountability systems covering all students and public schools. Under NCLB, individual state accountability systems were developed based on rigorous state standards. The new standards emphasized student proficiency in reading and math skills. The law required that all pupils in grades three through eight participate in standardized assessments, designed to measure student proficiency. The results of these assessments are broken down by demographics such as race, poverty, limited English proficiency, and ethnicity in order to ensure that no group or subgroup of children is “left behind” regarding academic success and achievement (U.S. Department of Education, 2007).

Under NCLB, schools and districts that meet or exceed annual yearly progress objectives or close achievement gaps between students will be eligible for State Academic Achievement Awards and financial incentives. Schools or districts that fail to meet state-set annual yearly progress objectives or close achievement gaps will be subjected over time to improvement, corrective action, or restructuring interventions designed redirect schools toward achieving state standards. This act states that all children must be proficient readers by the end of their third grade year, and all children be proficient in math and reading by the year 2014 (Executive Summary of the No Child Left Behind Act of 2001, n.d.).

Recent changes to the Bush Administration-era laws of NCLB have been made by the Obama presidential administration. The changes proposed by the Obama administration would allow states to waive the requirements of NCLB and design their own realistic accountability standards (Johnson, 2011). Under the rewritten law, the
states would focus their interventions on the worst failing schools and use measures besides test scores to evaluate teachers’ effectiveness, eliminating the pressure to “teach to the tests.” Schools would still be required to collect data on all students and subgroups and develop plans for the success of students who are not achieving (Johnson). The new accountability plans focus more on teacher and principal evaluations and less on district and school test scores. If states opt to accept the NCLB waiver in favor of the new accountability system, they would have the responsibility of developing new accountability systems and obtaining statewide acceptance of it. (Dillon, 2011).

Pharmaceutical Companies

Doctors and therapists’ views of mental health have changed dramatically in the past 40 years from philosophies posed by Sigmund Freud to the more modern beliefs that mental health and behaviors are the result of an individual’s brain chemistry. Prior to the 1970’s, most psychiatric and behavioral problems were believed to stem from an individual’s inner conflicts, primarily problems with the mother/child relationship, which led to approaches involving counseling and psychoanalysis (Diller, 2006). Today, doctors are looking more closely at brain function and chemistry in an attempt to help people struggling with neurological disorders. The belief that many behavioral and psychological problems are the result of an imbalance of brain chemistry results in more prescriptions being written to correct that perceived imbalance (Willis, 2008). Such thinking has contributed to a 700 % increase in prescriptions written for stimulant medications to treat ADHD in the past ten years. Today, at least 5 % of America’s children take stimulant medications for Attention Deficit Disorder (Diller, 2010).
Of preschool, kindergarten and first grade aged children who take psychotropic medications, almost 70% of them are boys. Michael Gurian says in his 2001 book *Boys and Girls Learn Differently*:

Using medication in this age group is a cultural resignation to the perceived defectiveness of the male brain system, and it hit parents and teachers of boys especially hard. Boys who are medicated at four, five, or six learn very early that they are “sick” or “defective”; the label sticks in the soul of the child in ways we have not fully understood yet. (p. 119)

It is in the best financial interest of the pharmaceutical companies that manufacture stimulants to do what they can to increase the sales of their medications. These companies now market their products directly to consumers in the hopes that concerned parents will take their children to pediatricians who will give a diagnosis of ADHD or other neurological disorders. In making these diagnoses, physicians and parents are likely to develop a treatment plan, which often includes the use of behavior altering medications (Bradley, 1937). The 1999 inclusion of ADHD under the protective measures of IDEA led pharmaceutical companies to launch advertising blitzes around the country aimed at promoting their products and educating parents and teachers about the disorder and available medical treatments. Many drug companies promised solutions to children’s inattentiveness, poor academic performance, disorganization, and over activity in the form of pills (Baranowski et al., 1996). Public education campaigns designed to inform teachers and parents about the benefits of medical treatments and available classroom modifications for children with the diagnosis resulted in a nation-wide “epidemic” of newly diagnosed cases. As a result of the surge in diagnoses, many
children were put on courses of chemical therapy such as Ritalin (Diller, 2008). As sales of stimulants manufactured to treat ADHD skyrocketed, the manufacturers of these medications enjoyed record profits (Gaviria & Smith, 2001).

Much criticism has emerged regarding the ethics of medicating so many young children without the benefit of long-term study or clear understandings of the effects many of these drugs may have on developing youngsters’ brains and bodies (Baranowski et al., 1996). The United States manufactures and sells five times more stimulant medication for the treatment of ADHD than the rest of the world’s countries combined (Gaviria & Smith, 2001). America alone consumes 90% of the world’s Ritalin (Diller, 2010). Heated debates have occurred and continue to occur in Congress, state school systems, medical organizations, local school boards, and individual families about the ethics of medicating so many children for a disorder that cannot be proven to exist. As a result, many individuals and special interest groups have cried foul as the statistics of medicated children continue to rise in the United States (Gaviria & Smith).

ADHD seems to some to be a desired diagnosis for economic gain (Baranowski, et al., 1996). Pharmaceutical companies work tirelessly to solicit the business of doctors and often offer prescribers attractive incentives to learn about existing medications and those that are in development. Pharmaceutical companies do this with the intention of biasing doctors in favor of their products and consequently promoting an increase in prescriptions and sales of certain drugs (Gaviria & Smith, 2001).

Psychiatric drugs are prescribed for children in the United States ten to twenty times more than they are prescribed by the doctors in Western Europe (Diller, 2008). In a telephone interview with Dr. Lawrence Diller, behavioral and developmental pediatrician
and family therapist, the physician estimated that in his opinion, only 1% of all of the children taking psychotropic drugs for ADHD are really in need of the medication (Diller, 2010). Dr. Diller commented that the assessment tools used to identify children with ADHD such as the Connors Rating Scales and the Test of Variables of Attention (TOVA) are out of context, meaningless in real world situations, and negative in tone. Dr. Diller believes that these tests are vague indicators of behaviors that every normal child exhibits from time to time. He stated that the subjective nature of the person responding to the questionnaires on the Connors Scale should render the tests invalid. Dr. Diller remarked that “the only kid who could really do well on those assessments is a dead kid, because they don’t do anything ‘bad.’” (Diller, 2010). Dr. Diller also expressed serious concern with the pharmaceutical companies developing and promoting the use of such assessment instruments, which in his opinion skewed the results in favor of “big pharma” (Diller, 2010).

In America, the therapy industries and pharmaceutical companies continue to broaden the parameters of what constitutes a neurological disorder, which makes it much easier to justify writing prescriptions for stimulants and other psychotropic drugs and increases the sales of those drugs. Dr. Lawrence Diller expresses his opinion in his article *Pathologizing for Dollars* when he says, “Sometime during the early 1990’s, the drug industry hijacked U.S. psychiatry and its new neurobiological identity. Dominating academic research funding and physician education, the drug companies marketed their products ever more aggressively, at first to doctors and then, in 1997, directly to consumers” (p. 49). Consumers are taught through television advertisements, magazines, and pamphlets in doctors’ offices and pharmacies that there are pills that can fix just
about any alleged brain-based problem, including children’s poor school performance when it is diagnosed as ADHD (Diller, 2008).

According to Dr. Lawrence Diller, in America we focus on feelings much more now than we have in the past. Through powerful media, we are taught that we must feel “good,” and if we don’t, we should be medicated so that we will. He believes that the American phenomenon of over consumption of psychotropic drugs is a reflection of the growth of the therapy industry, slick marketing campaigns, pressure for children to do well in school, pressure to be happy, and our cultural beliefs that medicine is the answer to our problems. In a recent interview, Dr. Diller remarked that the explosive sales in Ritalin are similar to sales trends that were seen in Prozac as people search for ways to make themselves feel “good.” Dr. Diller also remarked that he believes most parents, teachers, and pediatricians are genuinely concerned for their kids, and they want to do the best they can for them. If a trusted pediatrician, teacher, or therapist suggests stimulant or antidepressant drugs, a worried parent is likely to try it (Diller, 2010).

Marketing plays a big part in the overconsumption of medications in America’s children. Pharmaceutical companies have been the subject of scrutiny for the conflict of interest they create by quietly funding ADHD support groups and consumer information programs. One of the ADHD support groups known as the non-profit CHADD (Children and Adults with Attention Deficit Disorder) has come under investigation for accepting large amounts of money from pharmaceutical companies such as Eli Lilly, McNeill, Novartis, and Shire. By June 2009, companies including Eli Lilly, McNeil, Novartis, and Shire US provided $1,174,626.00 to CHADD and represented 26.6% of the organization’s total revenue (CHADD’s Income and Expenditures, 2009). Using these
funds, CHADD was able to promote awareness of the disease and endorse the medications manufactured by its financial supporters. Today, over 50% of the medications recommended on CHADD’s website are produced by the pharmaceutical companies who fund the organization (CHADD, n.d.). The sales of stimulant medications to treat ADHD have risen approximately 40% in every year since 2000 (Barton, 2006). In 2008, the sales of stimulants approached $4.4 billion in the United States, aided by advocacy groups, especially CHADD (Citizens’ Commission on Human Rights, 2010). Since its 2004 conference, CHADD has begun to describe ADHD as a “lifetime disorder.” In doing so, the support group also promotes the sales of stimulant medications to a new adult demographic (Moynihan & Cassels, 2005). With the concentration on a relatively new adult market, pharmaceutical companies have launched assertive advertising campaigns aimed at helping adults learn about “Adult ADHD,” locate testing facilities and visit doctors who will prescribe drugs to treat the condition. For example, Shire, the maker of Adderall, is currently launching a travelling campaign called “RoADHD Trip.” This program is scheduled to tour eight states in order to help adults self-diagnose ADHD through a simple screening involving six questions and learn about the treatment options (Shire, 2010). These direct-to-consumer marketing campaigns have been developed to further increase and ensure the sales of the pharmaceutical companies’ products to both adults and children and enhance their healthy profit margins well into the future since adults are unlikely to “outgrow” the condition (Moynihan & Cassels, 2005). Dr. Lawrence Diller stated in a recent interview that the sales of stimulant drugs for adult ADHD have only just eclipsed the sales of drugs for children with ADHD (Diller, 2010).
Despite the ethical issues surrounding the over-diagnoses of ADHD and the big pharmaceutical companies, many children seem to greatly benefit from effective medications thoughtfully prescribed under careful medical supervision. There are children for whom medication is an important component of a holistic treatment plan for ADHD and other neurological and behavioral disorders. For these youngsters, medication seems to be an important contributor to their positive self-esteem, success in school, family harmony, and a big support in ensuring a bright future (Gaviria & Smith, 2001). In some cases, the right medications, combined with healthy relationships between parents, teachers, children, doctors, and counselors seems to be the key to raising happy, well-adjusted and successful youngsters who otherwise may have dropped out of school, been unable to form healthy relationships, or even succumbed to depression or suicide. There is really no way to know how many children have been rescued from potentially terrible circumstances as the result of effective treatment plans involving a combined approach of family support, appropriate educational programs, and the right medications (Brand, Dunn, and Greb, 2002).

Boys’ Learning Styles

In the United States, there is enormous pressure for children to succeed academically and emotionally in a culture that is experiencing the breakdown of family bonding. With 24-hour access to internet, cell phones, video games, and a cornucopia of television programming, there is increasingly stimulating input from children’s environments and less uninterrupted time spent conversing as a family (Gurian & Stevens, 2005). Children participate in more extracurricular activities than ever before, more parents work outside of the home, school days and years are longer than in the past,
and recess times are shrinking or disappearing all together (Panksepp, 1998). According to child psychologist David Elkind, (2008) over the past two decades in America, children play eight hours less per week and 30,000 schools have eliminated recess times in favor of more time spent in academic study. In addition, young children are getting less sleep, spending less time exercising, and consuming more refined sugars and processed foods laden with fats and sodium (Dietel, 2009). These conditions, in combination with the federal, state, and local pressures on teachers and schools to achieve, the unique nature of young boys’ learning styles and typical behaviors, the aggressive and omnipresent marketing campaigns for ADHD drugs, and parents’, doctors’ and teachers’ genuine desire to help struggling children seem to be working together to put our boys especially at risk for an ADHD diagnoses and medical treatment (Sax, 2007). When children begin a course of stimulant medication for the treatment of ADHD, it is likely that the use of drugs may continue throughout their lives, possibly leading to an emotional or chemical dependency (Gurian & Stevens, 2005).

Studies have proven that there are differences in the learning styles and behaviors of boys and girls and that they learn in ways specific to their gender (Gurian et al., 2001). These differences may play a part in the high percentage of boys diagnosed with ADHD (Gurian & Stevens, 2005). According to author and medical doctor Louanne Brizendine, boys are programmed to “move, make things move, and watch things move” (p. 10). Because of the ways in which the brains of little boys develop, it is natural and appropriate for boys, especially young boys, to be active and to be attracted to activity (Brizendine, 2011).
More than 100 structural differences have been identified by researchers when comparing the differences between the brains of boys and girls (King & Gurian, 2006). For example, girls generally have more advanced verbal-emotive processing skills due to more cortical emphasis on the areas of the brain that are devoted to language. Girls are more in tune to the subtle tones of voice of speakers and are better at deriving meaning from others’ body language and facial expressions. Girls use more words in their conversations than boys do whereas boys have greater brain area devoted to spatial-mechanical tasks. This may be why, on average, girls excel in language skills while boys tend to be better at kinesthetic tasks and think more pictorially (Blum, 1997).

Boys can and girls exhibit differences in the way they process visual input. Boys can quickly detect movement because the male visual system relies heavily on movement detector type M ganglion cells. Type P ganglion cells are sensitive to color and fine sensory activity and more concentrated in the visual systems of typical female brains. Because of these genetic differences, boys’ writing tends to include more pictures and moving objects while girls use more descriptive language such as referencing color and fine sensory details (Sax, 2005).

The brains of both boys and girls go into a state of what neurologists refer to as “neural rest” throughout the day. These rest periods can be observed when students “zone out,” fall asleep, or lose attention during tasks (Gurian & Stevens, 2005). Girls tend to be able to work through these rest periods, and much of a girl’s brain tends to remain active and able to take in new information. By contrast, boys’ brains tend to shut down periodically. Boys will try to remain alert and attentive through self-stimulation such as tapping fingers, talking, or fidgeting. Such behaviors are typical when a boy is in
a learning environment that is not suited for the way his brain processes information and may be disruptive to the class or teacher, resulting in greater discipline issues or suspicions of ADHD for male students (Gurain & Stevens, 2005).

The frontal lobes of girls typically develop at a faster rate than the same area of their male peers (Gurian, & Stevens, 2005). This area of the brain assists in decision making, and this knowledge may explain why girls tend to be less impulsive than boys. The areas of the brain responsible for literacy, reading and writing are more developed in girls at a young age than their male counterparts. When comparing the academic achievement of students of different sexes, boy’s hard-wired behaviors and naturally less developed impulse control may lead teachers to suspect a conduct disorder or learning disability. Educating teachers about these differences is essential in order to prevent excessive referrals to medical professionals and over diagnoses of ADHD or other behavior and neurological disorders that are predominantly observed in boys (King & Gurain, 2006).

Girls, because their brains are structured to allow for more “cross talk” between the hemispheres, are able to switch tasks more quickly and easily and pay attention to several different subjects simultaneously. Boys tend to compartmentalize information and process things more laterally. Boys work best when they think about things in a liner fashion, completing one task from beginning to end before beginning a new one. In this way, boys are better able at project-driven learning, where there is a clear end product or result to strive for (Sax, 2005).

Boys and girls react differently to stressful situations. Girls’ brains are driven in part by the hormone oxytocin while male brains react to stress with an increase in
testosterone. Studies have shown that an increase in oxytocin, known as the “bonding hormone,” results in a female using behaviors meant to soothe, diffuse tension, and bond. On the other hand, the testosterone which floods a male brain experiencing stress results in a tendency to react with aggression (Gurian & Annis, 2008). These very natural reactions to stress in the classroom often cause boys to be viewed as problematic in many school settings (Gurian & Stevens, 2004).

In the United States, male students represent half of the classroom populations. However, boys dominate our special education programs by about three to one, have more discipline issues, and of the children who drop out of school, 80% are boys (Holt, McGrath, & Herring, 2007). Brain-related learning and behavior disorders such as ADHD are dominated by boys, millions of whom are now on schedule II medications. In colleges around the country, males make up fewer than 40% of the total enrollment, since boys are more likely to drop out of high school than girls (Gurian & Stevens, 2004). In our schools, the curricula continue to become more challenging, test scores have become more important, and the brains of our children are expected to grow, develop and compete at an earlier age than it may be ready for (Gurian & Stevens, 2005).

Because of chemical, hormonal, and structural differences in the brains of boys, they are more at risk in many ways than their female counterparts (Gurian et al., 2001). Boys are three times more likely to die before they reach the age of twenty one than girls due to their tendency toward risky or impulsive behaviors. Boys are five times more likely to experience academic and social problems in school, leading to a gender imbalance within our special education classes and detention halls. Many boys are at risk because the adults in their lives have failed to provide enough love, acceptance,
mentors, understanding, and security. Many people erroneously believe that because boys tend to internalize their feelings and emotions, they are less fragile than girls and, therefore, more resilient in life (Biddulph & Standish, 2008).

Boys, by their nature, bring a certain set of behaviors into the classroom. These behaviors may include single-task focus, impulsivity, a spatial-kinesthetic learning style, and physical aggression. They may also bring exuberance, noise, activity, and laughter (Gurian, 2006). These qualities in our boys are often viewed as problematic, as curricula have been developed more for learners who demonstrate good verbal-emotive skills, fine-tuned auditory processing, well-developed fine motor skills, proficiency at switching tasks, low movement levels, good organizational skills, and attention to detail. The prized characteristics listed above are much more evident in the learning styles and classroom behaviors of females than of males (Gurain & Stevens, 2005).

Although there are always exceptions, research has noted some consistent differences in the cognitive strengths of boys and girls and how the different genders employ these assets in their approach to academic tasks (Gurian et al., 2001). Boys tend to use deductive reasoning and apply general principals to individual cases. Girls are more prone to use inductive thinking, focusing on details and then building a knowledge base. Boys perform better on average on timed standardized test multiple choice items as a result of this kind of quick thinking and deduction (Gurian et al., 2001).

Boys, on average, are more skilled than girls at abstract thought and solving problems without manipulating or seeing an object, such as math problems displayed on a black board. Girls, as a group, prefer to manipulate concrete objects, gain understanding, and then move to more abstract problem solving. This may be why males are more likely
to choose careers focused on abstract reasoning and special relationships such as engineering and architecture (Gurian et al., 2001).

On average, girls use more words in conversation and more descriptive language than do boys. Girls are also more prone to talk through their learning and work cooperatively while boys prefer to work in silence and with less peer interaction. Girls are more likely to use descriptive, everyday language while boys favor more coded language and jargon (Gurian et al., 2001). On standardized tests, boys usually score lower on average in reading and writing tasks, use fewer words in their written language, and use less descriptive language in their writing assignments (Taylor & Lorimer, 2003).

In his book, Boys and Girls Learn Differently, Michael Gurian emphasizes that with more understanding of how the brains of males and females work and learn, professions that were dominated by one or the other sex are becoming more balanced (2001). However, data shows that teachers of early childhood academic programs are still predominantly female. According to the National Center for Education Statistics, 98% of the United States’ public school kindergarten teachers are women (NCES, n.d.). There is research that indicates that the predominance of female teachers may contribute to the imbalance of academic and behavioral problems between boys and girls (Krieg, 2005). Today’s early childhood programs put great emphasis on reading preparation, and in doing so, mandate environments and tasks that favor the learning styles and strengths of girls and emphasize boys’ weaknesses (Sax, 2001). Female teachers, by their very nature, may teach to students in the ways in which they learned best as children (Krieg, 2005).
There is little importance placed on teachers and parents regarding the differences between the brains and learning styles of boys and girls. Most teacher preparation programs do little to address learning styles as they relate to sex and gender (Sax, 2001). In just the past ten years, researchers have begun to discover the relationships between a child’s gender and how he or she is likely to learn best. Although there are differences in all abilities within individuals, when studying populations, there are some statistically significant differences between the natural abilities, tendencies and learning styles of boys and girls (Medina, 2009). Emerging research has distinguished differences between males and females in areas of sensation and perception. For example, the organization of the retina, the senses of vision, hearing, smell, and the autonomic nervous system give men and women different perceptions which affects the ways in which they process information (Sax, 2006).

Differences in the autonomic functions of males and females have also been discovered although, according to Dr. Leonard Sax, these differences are not emphasized in educational literature discussing the potential importance such knowledge may have on how educators approach academic programs for boys and girls (2006). Within the autonomic nervous system, two separate systems are at work. The sympathetic nervous system that is responsible for the “fight or flight response,” including adrenaline induced heart rate increases, dilated pupils, and vasoconstriction that occurs as a response to confrontation or violence. On the other hand, the parasympathetic nervous system, also known as the “rest and digest” system, regulates a slower heart rate, flushing, and vasodilatation (Sax, 2006). A multitude of studies conducted in the 1990’s have revealed that there are differences in the ways that men and women are influenced by their
autonomic nervous systems. Research has shown that the parasympathetic nervous system is more influential in females, while the sympathetic nervous system is more influential in the responses of males (Sax, 2006). Dr. Sax went on to say that when faced with conflict or stressful situations, boys tend to react with sharpened senses and may experience a sense of thrill while girls are more prone to become “muddled” or “frozen” or have trouble with language and expression (2006). In times of stress, studies have shown that different parts of the male and female brain responsible for emotion respond in different ways. Dr. John Medina reported the result of an experiment in his book *Brain Rules* during which men’s and women’s brain activity was observed as they viewed a disturbing horror film. The experiment illustrated that the males’ brains were highly active in the right hemisphere, especially the amygdala, while the left was comparatively calm. This part of the male brain seems to be responsible for remembering the broad scope of events, or the “big picture.” However, the females who participated in the study were more likely to handle the experience by utilizing the opposite brain hemisphere, with a great deal of activity occurring in the right amygdala. This part of the brain is highly responsible for helping a person remember the details of an emotional experience (Medina, 2008). This study suggests that men and women learn and remember events differently, with men more prone to recall the “gist” of events while women are more likely to remember specific details. In other words, as Dr. Medina stated, “Men and women respond differently to acute stress. Women activate the left hemisphere’s amygdala and remember the emotional details. Men use the right amygdala and get the gist” (p. 260).
These differences affect the ways in which boys and girls learn, the strengths of developmental abilities and interests, and their responses to stress (Gurain & Stevens, 2004). Having an understanding of these differences is a critical component to creating classrooms utilizing best teaching practices that are conducive to the ways in which boys learn (Sax, 2006). Designing classrooms and learning experiences with the male learner in mind may help to enhance the natural strengths and abilities of boys, reduce diagnoses of ADHD, stem the growing use of stimulants and amphetamines, reduce the numbers of male drop outs and discipline issues, and motivate boys to engage in their own learning (Sax, 2006).

Over the years, there have been programs designed for the ways in which boys’ learn which have pioneered education for male students. The Boys’ Town Orphanage, opened in 1917 by Roman Catholic priest, Father Edward J. Flanagan, used new methods of caring for juvenile males, with a strong emphasis on the instruction of social skills (Tierney, 1992). The modern Boys’ Town model emphasizes cooperation, a family-oriented philosophy, spirituality, and the care of self and others (Beals & Bertonneau).

Today, the Boys Town Model is a nation-wide non-profit organization that works to help disadvantaged youth of both genders, as well as their families heal emotionally, physically, and spiritually (Giving the Right Kind of Care at the Right Time, n.d.). The Boys Town organization works closely with other agencies in efforts to offer consistent care and support to young children who are most in need of help and support. Boys Town often helps children with behavior disorders and has successfully assisted many children with ADHD and other psychiatric disorders, significantly reducing their reliance
on medications through research and compassionate behavior therapy (Giving the Right Kind of Care at the Right Time, n.d.).

Early Childhood Programs

The concept of kindergarten or “the children’s garden of learning” was first developed in the 1830’s and 1840’s by a German educator, Friedrich Fröbel, who believed that children have unique needs and capabilities. He developed his program based on his faith in the inherent goodness of children and their natural desire for exploration (Fröbel, 2009). It was Fröbel who first advocated that young children be exposed to music, the study of nature, and play. He argued that young children learn best when allowed to explore what he called “gifts” which are more commonly called “manipulatives” in today’s classrooms. He believed that children should involve themselves in “occupations,” which are what we think of today as arts and crafts (Wollons, 2000). The natural pace of learning and exploration through self-directed play, gardening, music and dance was a novel pedagogical practice at its time, and the foundation for modern kindergartens around the world (Brosterman et al., 1997).

Dr. Maria Montessori was another educator who had profound influence on the development of early childhood programs. She was an Italian-born physician and philosopher, who first gained recognition through her works with mentally disabled children in a Roman housing project (Kramer, 1988). Through her life-long study of the ways in which children learn, Dr. Montessori proposed that all children pass through what she called “sensitive periods of development” or developmental stages during which children are most likely to learn skills such as language and reason. She emphasized that during such sensitive periods, children must be provided with “work” that is motivating,
stimulating, and appropriate for each individual child’s development. In doing so, Dr. Montessori believed that children would be at the greatest susceptibility to learn new concepts and build upon previously learned skills (Cesarone, 2003).

Dr. Montessori was influenced by Fröbel’s work, and used manipulatives, self-directed exploration, and natural elements in her thoughtfully created environments. She believed strongly that the natural process of learning is carried out by each human individual, and cannot be accomplished by simply listening to words. Dr. Montessori believed that leaning must occur via authentic experiences with the environment” (Kramer, 1988).

The first kindergarten in the United States was founded in Watertown, Wisconsin, by Margarethe Schurz in 1856. She was impressed by Fröbel, whom she had met in Germany, and employed his practices and philosophies in her German-language kindergarten. Mrs. Schurz worked tirelessly advocating for her kindergarten program in America. She befriended fellow teacher Elizabeth Peabody in 1859. Mrs. Peabody was impressed with Mrs. Schurz’s maturity and demeanor with her young pupils, and as a result of this friendship, Mrs. Peabody was inspired to establish English-speaking kindergarten programs in America (Swart, 1967).

Although formalized education for children under the age of six was not provided in America at that time, Elizabeth Peabody employed the philosophies of Fröbel and Margarethe Schurz in the opening of the first English-speaking kindergarten in America in 1860. There, she encouraged the children’s development and education through play, as well as instructing them in cleanliness, self-control, and industry. Her curriculum included the introduction of geometric forms, numbers and letters, and she taught her
pupils how to represent these forms with a pencil. Home visits and weekly mothers’
meetings were also an integrated component of helping the teacher work closely with the
mother in a combined effort to develop the “whole child” (Peabody, 2010).

As the concept of kindergarten spread throughout the United States during the late
nineteenth and early twentieth centuries, most kindergarten programs sought to educate
the “whole child” including components of play and self-help skills such as dressing,
toileting, washing, and feeding one’s self. The curriculum also included instruction and
exploration in music, art, and gardening (Wollons, 2000). The first school system to
adopt kindergarten in America was St. Louis, Missouri, and by the advent of World War
I, kindergartens were present in all major urban school systems in America (Hawes &
Beatty, 1997).

By the 1920’s, kindergartens were publicly funded as a part of most public school
systems. As a result, many stakeholders demanded that the focus of kindergarten should
be more academic and redesigned to prepare five-year-old children socially and
academically for first grade. Schools began teaching kindergarten in two half-day
sessions, limiting time for mothers’ meetings and practically eliminating home visits. As
time went by, kindergartens in America developed into programs quite different from the
teachings and practices of Friedrich Fröbel, Elizabeth Peabody, and Maria Montessori
(Hawes & Beatty, 1997).

Today, all states in America have embraced the concept of kindergarten, and
about four million children attend a kindergarten program every school year (U.S.
Department of Education, 2010). From 1940 to 1950 kindergarten enrollments in
America’s public schools had increased by 150%.
Several historical events have caused kindergarten programs to change and evolve. For example, the 1957 launch of the Russian satellite Sputnik demonstrated on a global scale the scientific and engineering advancements of Russia. This was a national embarrassment to the United States and initiated the space age (Dickson, 2003). Proficiency in mathematics and sciences was considered vital as Americans raced for global technological superiority in their quest to land on the moon and once again establish the United States as the world leader in math, sciences, and technology (Gerald, 2007). As a result, public school curricula became more academically rigorous, including grade levels servicing very young children (Hawes & Beatty, 1997).

The year 1960 saw a major cultural change for women with the advent of the birth control pill. For the first time, women were effectively able to plan their families, delay pregnancies and exert more control over the numbers of children they wanted to have. This new freedom allowed more women to pursue higher education and career goals (May, 2010). As more women entered the workforce, there was a greater need for children to be cared for by others, and enrollment in kindergarten programs across the United States boomed. Approximately 85% of five-year-olds attended kindergarten by 1965, a year that also saw the advent of the Head Start program, which further promoted the inclusion of kindergarten in American schools (Hawes & Beatty, 1997).

By the 1980’s, many kindergarten programs began moving away from the historic child-centered approach in favor of more academic programs designed to prepare children for the rigorous demands of first grade (Hawes & Beatty, 1997). Today these trends continue, with longer school days than children have attended in the past, more
structured activities, fewer opportunities for play and exploration, and greater academic demands placed on young children and their teachers than ever before (Pappano, 2010).

In America today, approximately 64% of all four year old children attend preschool programs incorporating technology in an effort to prepare them for kindergarten (Lester, n.d.). With greater access to computers, electronic devices, and video games, children seem to be growing more technologically savvy and in possession of more sophisticated thinking skills at earlier ages than ever before (Bauman & Tatum, 2009). This trend has prompted some teachers and researchers to question whether today’s youngsters are smarter than children of past decades (Pappano, 2010). A recent study conducted by the Gesell Institute has demonstrated that this is not the case, and children have the same developmental schedules that they have always had and reach intellectual, physical and social milestones at predictable ages consistent with past generations (Pappano, 2010).

In Dr. Lawrence Diller’s book The Last Normal Child (2006), the author maintains that an intersection of culture, economics, marketing, greater academic demands, busy lifestyles, and children’s resulting behaviors are increasingly to blame for the growing diagnoses of ADHD in the United States. Dr. Diller emphasized that in his opinion, children’s behaviors, which often have many causes and functions, are too quickly attributed to brain disorders and too quickly treated with stimulants. He suggests that ADHD is often hastily and subjectively diagnosed resulting in a great percentage of young children, mainly little boys, subjected to not only the demands of their busy lives and increased academic pressure but also increasingly medicated with powerful and potentially addictive drugs. It is the children whom we love and aim to help who often
suffer the negative physical and psychological side effects of chemical therapy as we
dope them for success (Diller, 2006).

Classroom Interventions

People do not pay attention to boring things; interest and importance is
inextricably linked to attention (Medina, 2009). Children must find the work they are
expected to do interesting and meaningful in order for them to attend and engage in
classroom tasks and lessons (Schlechty, 2002). Typically designed school tasks may
have qualities built into them that appeal to some students and not others. Teachers and
school leaders must rethink the design of work that children are expected to attend to.
Work must have meaning and intrinsic motivation for a child to fully engage in academic
learning (Schlechty, 2005). Work must also be structured in such a way that children can
take a break, and not be forced to process so much information that learning and attention
wanes (Medina). Even when school work is meaningful, interesting, and delivered in a
manner that promotes time for processing, some children still have difficulty with focus
and attention. In such cases, a thoughtful approach to behavioral and academic
interventions is required (DuPaul & Kern, 2011).

In today’s early childhood classrooms, many schools and teachers are adapting to
students’ behavioral and academic needs using innovative “Response to Intervention”
(RtI) programs such as CHAMPS and Positive Behavior Interventions and Support
(PBIS). RtI is a multi-tiered model of instruction designed to ensure success for all
students (Whitten et al., 2009). RtI programs which address academics and behaviors are
designed to help children succeed in all academic, behavioral, and social components of a
classroom setting by analyzing the effectiveness of classroom instruction. Response to
Intervention, or RtI, is a data-driven assessment and intervention plan of action that enables teachers to deliver effective instructional and classroom management strategies to students who may not show success with academics, behavior, or both using traditional teaching and classroom management practices (Barnes & Harlacher, 2008). RtI is a scientific initiative designed to give the classroom teacher the data and tools he or she needs in order to evaluate the appropriateness of material and effectiveness of instruction, rather than “blame the student” for academic or behavioral problems that interfere with learning (Brown-Chidsey & Steege, 2010).

Effectively implemented RtI programs have the potential to result in more school-wide positive interactions between all members of a school community, mitigate disruptive student behaviors, increase the interest levels of classroom activities and lessons, and reduce the numbers of children referred to special education programs. Intervention models such as CHAMPs and PBIS require that teachers be trained in the philosophies and practices of the programs, and use behavioral and academic data to carefully analyze the effectiveness of classroom management plans and interventions. Proactive social behavior-focused response to intervention programs like CHAMPs and PBIS also have the potential for helping young children, including little boys with ADHD symptoms, learn to control and monitor their own behaviors more effectively (DuPaul & Kern, 2011). These programs offer direct social skills instruction, clear expectations and parameters, as well as active monitoring and reinforcements (Positive Behavioral Interventions and Supports, n.d.). With successfully implemented RtI plans, direct social skills instruction occurs school-wide, not just in the classroom. Every faculty and staff member of a school is trained in delivering consistent, positive instruction,
encouragement, and rewards to children who use the appropriate behaviors defined through ongoing instruction. The RtI framework is based on student need. It includes high quality differentiated instruction, progress monitoring and changes to intensity, frequency and duration of instruction, as directed by collected data (Barnes & Harlacher, 2008). Research has shown that most students will experience behavioral and academic success when a positive school culture is promoted. Such a culture incorporates direct and informative corrective feedback within all members of a school or classroom, the acknowledgment of pro-social skills, a meaningful system of motivators, progress monitoring, and clearly stated goals (Positive Behavioral Interventions and Supports, n.d.). Consistent and proactive social/behavioral instruction, monitoring, and encouragement may result in a higher occurrence of appropriate behaviors in early childhood classrooms, and fewer diagnoses of ADHD (DuPaul & Kern, 2011).

Effectively implemented RtI programs involve important components of school leadership and teacher collaboration. School leadership teams can help ensure the success of RtI programs by prioritizing time spent with teachers in planning differentiated instruction and small group activities, which are essential components of successful response to intervention (Buffum, Mattos, & Weber, 2009).

“CHAMPS” is a response to intervention framework of classroom management that is designed to be positive, proactive, and responsive to the needs of individual students. It focuses on the acronym “CHAMP,” which stands for conversation, help, activity, movement, and participation. Through CHAMPS training, classroom teachers learn how to teach children the appropriate levels of conversation, help, activity, movement and participation that are considered acceptable in different classroom settings
and situations (Sprick et al., 1998). As part of the program, teachers create “CHAMPs boards that are displayed throughout the room, which clearly illustrate to the students behaviors that are appropriate in each area throughout the classroom. The students are instructed to help one another with self-monitoring behaviors, and encouragement and celebrations are built into the program. The CHAMPs program includes eight modules including vision, organization, expectations, “the first month,” motivation, monitor and revise, correction procedures, along with class and school-wide motivation systems (Sprick, et al, 1998).

According to the authors, each module of the CHAMPs program serves a specific purpose for creating a positive and productive classroom environment, free of unnecessary distractions and conductive to learning. The “vision” module is designed to offer strategies for helping the teacher create a personal vision of his/her classroom and working to achieve it. The “organization” module helps the teacher to encourage optimum student behavior by providing strategies for effectively organizing the classroom space and materials. The “expectations” module helps the teacher to provide clearly detailed expectations to the students. It is during this module that the “CHAMPs board” is introduced to the students, which clearly outlines appropriate and acceptable behaviors specific to each classroom activity or area. The “first month” module details the importance of using the first month of school as a time to develop a positive “team approach” between all members of the classroom. The “motivation” module helps the teacher to identify his or her students’ motivators and use those incentives to support student success. The module entitled “monitor and revise” is used to examine classroom procedures that have been established and how to know if revisions are necessary. The
“correction procedures” module is designed to address specific behaviors in an otherwise well-functioning class. Finally, the function of the “class wide motivation” module helps the teacher and students identify and choose an enticing classroom motivation system (Sprick, et al, 1998).

The CHAMPs model of classroom management is considered a response to intervention framework. It is designed to help teachers collect data, evaluate the effectiveness of classroom management, monitor progress, identify goals, and implement new procedures via a positive set of interactions between all members of a school community (Sprick, et al, 1998).

Another framework for social behavior instruction that is being widely implemented in many schools is PBIS, or “Positive Behavioral Intervention and Support.” The acronym PBIS is sometimes also referred to as “PBS” which stands for “Positive Behavior Support.” For the purposes of this paper, PBIS will be referred to simply as “PBS.”

PBS is similar to the CHAMPs organizational system of shaping positive and appropriate social school behaviors. Like CHAMPs, PBS provides clear and direct instruction, data collection, progress monitoring, instructional modification, and school-wide systems of student-centered motivators and rewards (Bambara & Knoster, 2009).

The difference is that PBS addresses not only social behaviors but the underlying causes and functions of problem behaviors. The PBS framework offers school leadership teams and teachers a systematic approach that helps them understand and address environmental factors that contribute to a child’s inappropriate behaviors. This plan of action concentrates on prevention by evaluating and changing problem-causing
environments. PBS utilizes direct, consistent instruction to help children recognize disruptive or inappropriate behaviors and teaches children appropriate alternatives that may be used. The PBS framework helps teachers and school staff members to investigate the functions of negative behaviors and identify behavior antecedents. Teachers may then instruct students to use socially acceptable behaviors and communication skills in order to get his or her needs met. The implementing of a PBS program in schools has shown to enhance the students’ quality of life by improving their self-awareness, academic, and social skills when used as designed (Bambara & Knoster, 2009).

PBS is an empirically driven system which relies on data and progress monitoring. Until quite recently, the PBS framework was used exclusively in special education settings with students who had behavior disorders or other disabilities which limited their communication and/or social skills. However, the documented success students were able to achieve when consistently instructed and rewarded within the framework of PBS was recognized and has since gained more school-wide use with the general population of students (Bambara & Knoster, 2009). In the *Handbook of Positive Behavior Support*, contributors say “School wide PBS is an approach to school discipline that incorporates specific practices and systems designed to produce socially important and sustained improvement in the behavioral culture of a school” (Horner et al., 2005, p.383).

Schoolwide PBS programs incorporate three systems of interventions that are designed to address students’ needs as a whole, in small groups, and individually. These programs may vary in intensity based on the severity of observed behaviors. The first intervention used in the model is called “primary prevention” or “universal strategies.”
Primary prevention offers clear behavioral instruction and goals that are delivered to every student within a school building. It targets the general student population and involves teaching students acceptable and appropriate behaviors. School wide behavioral expectations are taught in every area of the school, and signage is posted reminding children of acceptable behaviors in every area. Rewards for expected behaviors are also defined and emphasized in the primary prevention component of school wide PBS (Bambara & Knoster, 2009).

Secondary prevention offers small group instruction to children who have not responded to primary prevention and whose conduct is severe enough to compromise learning in the traditional classroom. Students who exhibit disruptive or other inappropriate behaviors despite engaging in the primary prevention lessons are often considered at risk for academic failure or long-term behavior challenges. These children must have their behavioral needs identified and addressed to ensure social and academic success in school (Sailor & Dunlap, 2009). Students selected to participate in secondary prevention are grouped based on their at-risk behaviors, and interventions are designed and delivered to address specific issues. During the secondary phase of prevention, struggling students are often assigned a “behavior mentor”; an adult who is assigned to develop a supportive relationship and work on social skills with identified at-risk students (Crone & Horner, 2003). Direct behavioral instruction may focus on skills such as conflict resolution, anger management, and problem solving. This instruction is delivered through frequently occurring, small group interactions between the mentor and the students (Bambara & Knoster, 2009). In addition, the behavior mentor serves as a liaison between the identified children, their classmates, classroom teachers, and other
adults and children with whom they interact. The behavior mentor also checks and connects frequently with the identified children, tracking data for the purposes of progress monitoring, offering support and encouragement, and evaluating the children’s’ environments (Sailor & Dunlap, 2009).

The third tier of intervention is called “tertiary prevention” or “individualized PBS.” This intense, individualized intervention is designed for children who do not respond to primary or secondary prevention. Children such as these present persistent and pervasive behavioral challenges, and are at risk of suspension, expulsion, self-harm, and academic failure (Bambara & Knoster 2009). In this tier, supports and interventions are uniquely customized to a child’s learning styles, history, environments, motivators, and personal needs. Tertiary prevention is frequently utilized with children with emotional or behavioral disabilities in order to mitigate problems and help a child develop strategies that he or she can use in normal social or academic situation (Sailor & Dunlap, 2009).

For any child displaying inappropriate behaviors who has also not been responsive to primary intervention, a Functional Behavioral Assessment (FBA) should be conducted to evaluate the antecedents and functions of behavior. An FBA is a tool used to collect data about situational events that predict and sustain troubling behaviors (Crone & Horner, 2003). There are five reasons for conducting an FBA on a specific child. The first reason is to offer a clear description of problem behaviors, including types of behaviors that occur together. The second is to determine the antecedents of problem behaviors, and predict the likelihood of the occurrence of the behaviors over the full range of a child’s daily routine. The third reason is to determine the outcomes or
functions that maintain problem behaviors for a child. The fourth reason for conducting and FBA is to develop one or more hypotheses or summary statements that describe the antecedents, environments, duration, frequency, outcomes and reinforcers of problem behaviors. The fifth and final reason is to collect direct observational data that support the summary statements developed (O’Neill, Horner, Albin, Storey, & Sprague, 1997).

An FBA conducted for school purposes involves data collection from many people involved with a child, starting with an interview of parents or guardians. Parents are asked questions regarding a student’s daily routines, interests, and behaviors. Observations may be conducted in the environments that a child may display problem behaviors, and those environments may be systematically modified as a result (Crone & Horner, 2003). The data collected with the FBA tool can help school personnel identify significant features of a child’s environments that influence inappropriate behaviors and identify the functions of problem behaviors. They can then manipulate environments in a way that will reduce behavioral antecedents, and develop a plan of positive reinforcement for socially acceptable alternative behaviors (Cipani & Schock, 2011).

Schoolwide behavioral intervention systems such as CHAMPs and PBS have proven to be effective plans of actions for students who need support in order to learn appropriate social behaviors in typical settings (Bambara & Knoster, 2007). There is now emerging research which suggests that the use of such behavioral intervention plans may be effective when introduced in early childhood settings.

In the book *Young Children With ADHD Early Identification and Intervention*, authors DuPaul and Kern (2011) say “Although PBS and RtI models are primarily prevention paradigms, the tiered approach to treatment based on individual response can
be applied to early intervention for young children with ADHD. Because the most intensive treatment resources are provided only to those in need of such services, this model can be time and cost efficient (p. 20).

Preschool children as young as three years of age who display symptoms of ADHD have shown improvement with social behaviors when individualized interventions are implemented (DuPaul & Kern, 2011). Recent research suggests that the severity of ADHD symptoms in young children and associated costs of medical and psychological treatment may be significantly reduced by early intensive intervention (Kern, et al., 2007). Such interventions may ultimately reduce the numbers of little boys in early childhood programs who exhibit symptoms of ADHD and are at risk of being treated with stimulant drugs (DuPaul & Kern, 2011)
CHAPTER III
METHODOLOGY

Introduction

Chapter III is intended to outline the research design for this study. This chapter includes the research questions and hypotheses that were the basis of the study, as well as the methodology used to conduct the research. The participants, survey instrument, procedures, and method of analysis are described in this chapter.

Research Questions and Hypotheses

Research has shown that early childhood teachers’ professional development experiences in behavioral classroom interventions such can have a positive impact on their responses when encountering children with ADHD symptoms (DuPaul & Kern, 2011). In light of that research, early childhood teachers should engage in appropriate training in order to proactively and systematically develop classroom interventions so that children with symptoms of ADHD may be successful in early childhood programs. This study investigated five questions:

1. Is there a significantly significant relationship between early childhood teachers’ attitudes toward ADHD and time spent in professional development addressing ADHD?

2. Is there a significantly significant relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors, and professional development that addresses boys’ learning styles and behaviors?
3. Is there a significantly significant relationship between early childhood teachers’ attitudes toward medications used to treat ADHD and professional development that addresses medications used to treat ADHD?

4. Is there a significantly significant relationship between early childhood teachers’ attitudes toward classroom environments and professional development in CHAMPs?

5. Is there a significantly significant relationship between early childhood teachers’ initial responses to young boys who exhibit symptoms of ADHD and professional development in Positive Behavior Support?

The hypotheses tested in this study were as follows:

1. There is no significantly significant relationship between early childhood teachers’ attitudes toward ADHD and time spent in professional development addressing ADHD.

2. There is no significantly significant relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors and time spent in professional development addressing boys’ learning styles and behaviors.

3. There is no significantly significant relationship between early childhood teachers’ attitudes toward medications used to treat ADHD and time spent in professional development addressing medications used to treat ADHD.

4. There is no statistically significant relationship between early childhood teachers’ attitudes toward classroom environments and time spent in CHAMPs professional development.
5. There is no significantly significant relationship between early childhood teachers’ attitudes toward behavioral interventions and time spent in professional development addressing Positive Behavior Support.

Participants

The subjects for this research were pre-school, kindergarten, and first grade teachers employed in a Southeastern Louisiana public school district. Every certified classroom preschool, kindergarten, and first grade teacher within the school district was selected to participate in the study. Twenty-two schools from the district were invited to participate, and superintendent and principal permission was requested (see appendices C and D). Each survey participant was the primary teacher in a pre-school, kindergarten, or first grade classroom in one of districts’ public, non-charter elementary schools. The participating district offers a developmental first grade program entitled “transitional first grade:” however, the state of Louisiana does not recognize transitional first grade as a legitimate grade level. For the purposes of this study, the transitional first grade teachers were considered and labeled “first grade teachers,” since that is what they are considered at the state level. The total possible number of participants was 369 preschool, kindergarten, transitional first grade, and first grade teachers.

Instrumentation

This study was created as a correlational design. There were five variables identified including early childhood teachers’ participation in professional development concentrating on the following areas: Attention Deficit Hyperactivity Disorder, boys’ learning styles, medications used to treat ADHD, Positive Behavior and Intervention Support, and CHAMPs. The method of measuring teachers’ participation in professional
development was through the use of a researcher-created survey instrument that measured hours spent in professional development addressing the above five independent variables. Demographic data examined included participants’ grade levels taught, total years of teaching kindergarten through 12th grade, total years of teaching in an early childhood classroom (preschool through first grade), highest level of education, and the numbers of boys and girls in each teacher’s classroom at the time they participated in the survey. Participants were surveyed on the numbers of students they have taught with the following disabilities: anxiety disorders, ADHD, depression, language and/or communication disorders, and oppositional defiance disorders. This demographic data was used to provide descriptive information for the study.

The researcher created a survey instrument for this study which was titled “Early Childhood Attention Deficit Hyperactivity Questionnaire,” which can be found as Appendix A. The instrument contained 25 items, eight of which will collect demographic or descriptive data, and 18 Likert scale items which were intended to evaluate teachers’ attitudes toward ADHD, boys’ behaviors, medications used to treat ADHD, classroom environments, and teachers’ responses to children who exhibit symptoms of ADHD. Questions concerning teachers’ attitudes toward ADHD included items 9, 10, and 27. Questions used to measure teachers’ attitudes toward boys’ behaviors included numbers 12, 17, 21, 22, and 26. The items addressing medications included numbers 11, 16, 23, and 24. The survey questions concerning classroom environments included numbers 20, 25, and 28. The items addressing teachers’ responses to children displaying symptoms of ADHD included numbers 13, 14, 15, 18, and 19. The researcher has determined the content validity of the instrument by asking a
panel of four experts to review it and offer feedback. It has been reviewed by an early
colorful public school principal, who holds a Ph.D. in curriculum and instruction and is
nationally board certified, a licensed marriage and family therapist, who holds a Ph.D.
and is a university professor of child development and family relationships, a practicing
psychiatrist who served as a clinical associate professor in the supervision of psychiatry
residents, and a kindergarten teacher with 11 years of teaching experience, who holds a
master’s degree in curriculum and instruction, as well as National Board Certification in
early childhood education. Adjustments to the instrument were made based on the
experts’ advice. The instrument was submitted to The University of Southern
Mississippi’s Institutional Review Boards. After receiving approval from USM’s IRB
(see appendix B), the survey was pilot tested with 13 early childhood teachers in order to
obtain a Cronbach’s alpha to determine internal reliability. The survey questions
pertaining to boys’ learning styles obtained a Cronbach’s alpha of .701, the questions
pertaining to medications used to treat ADHD obtained a Cronbach’s alpha of .653, the
questions pertaining to school environments obtained a Cronbach’s alpha of .281, and the
questions pertaining to symptoms of ADHD obtained a Cronbach’s alpha of .715.

Procedures

The superintendent was contacted requesting a meeting to explain the nature and
scope of the study. During the meeting with the superintendent, permission to contact
each early childhood school principal and school building resource helping teacher
(RHT) or technology helping teacher (TRT) was requested. The letter of permission to
conduct the study from the superintendent can be found as Appendix C. A letter of
introduction was sent to each school principal. This letter can be found as Appendix D.
This letter informed the principals that a packet of surveys would be distributed to each school’s RHT or TRT at a district-wide fall RHT/TRT meeting. A letter requesting permission to distribute the survey packets during the fall RHT/TRT meeting was sent to the supervisor of curriculum and instruction who oversees the RHT/TRT meetings. This letter can be found as Appendix E.

During the fall RHT/TRT meeting, individual packets of surveys were given to each participating school’s Resource Helping Teacher (RHT) or Technology Helping Teacher (TRT) for distribution to every preschool, kindergarten, transitional first and first grade teacher within the district. A letter for each school’s RHT or TRT was included in the envelope explaining the procedures for distributing and collecting the survey instrument. The letter can be found as Appendix F. The researcher also included a self-addressed envelope for convenient return of all survey instruments via the school district courier.

The participating RHTs and TRTs were offered the incentive of having their names put into a drawing for a $100.00 Visa gift card to thank them for their help and timely return of the survey instruments. This gift card was awarded at the following month’s RHT/TRT meeting.

Once the RHT/TRTs were in possession of the survey, a letter of introduction was emailed to each early childhood teacher selected to participate in the study. The letter explained that data would be collected regarding the teachers’ perceptions of young boys with ADHD as part of a doctoral study. The email is included as Appendix G.
Analysis of Results

A Spearman rank correlation coefficient was used to determine if a relationship existed between teachers’ participation in professional development and attitudes in four distinct areas. The four areas were: participating in professional development focusing on ADHD, and teachers’ attitudes toward ADHD; teachers’ participation in professional development concerning boys’ learning styles, and their attitudes towards boys; teachers’ participation in professional development regarding medications used to treat ADHD, and their attitudes towards medications used to treat ADHD; teachers’ involvement in professional development in CHAMPs, and their attitudes regarding classroom environments, and teachers’ involvement in professional development in PBS and their initial responses to children who display symptoms of ADHD. The means, frequencies, and standard deviations of each research question were analyzed.
CHAPTER IV

RESULTS

Introduction

The purpose of this study was to determine if public school preschool, kindergarten, and first grade teachers in Southeastern Louisiana are more likely to adjust their teaching approach using behavioral modification techniques and behavioral interventions for a little boy displaying symptoms of ADHD, or if they are more likely to suggest that the child in question receive a medical evaluation for the condition as a first course of action, based on their levels of professional development and attitudes regarding ADHD, boys’ learning styles, medications, the CHAMPs behavioral management system and Positive Behavior Support interventions.

Study participants were given a survey instrument titled *Early Childhood Attention Deficit Hyperactivity Survey* (Appendix A). The participants were asked to provide information describing their current grade level, total years of teaching experience, years of experience in early childhood grade levels, level of education, time spent in professional development, the numbers of boys and girls in their classes, numbers of male children who have been diagnosed with certain disorders, and their knowledge of the numbers of male students they have taught who have been treated with ADHD medications. The study participants provided the above information by responding to questions one through eight on the survey instrument. The following questions, (numbers nine through 28) assessed the teachers’ beliefs and attitudes toward ADHD, boys’ learning styles, medications used to treat ADHD, the CHAMPs system of classroom management, and Positive Behavior Support (PBS).
Descriptive Statistics

Questionnaires were delivered to 369 preschool, kindergarten, transitional first grade, and first grade teachers in a public school district within a Southeastern Louisiana parish. These teachers represented 23 public schools within the state. Schools containing grades pre-kindergarten through first grade within the parish were included in the study. One hundred and eighty-four surveys (49.86%) representing 19 schools were returned within four weeks of distribution and included in the analysis. Sixteen surveys were returned after the data was analyzed and were not included in the study. It was known by the researcher that only one early childhood teacher within the parish is male, so teacher gender was not included as a descriptor in the survey instrument.

Of the teachers who returned the surveys, one (.5%) did not report their grade levels. The remaining 184 teacher participants (99.5%) reported their current grade levels as illustrated in Table 1.

Table 1

Teachers' Current Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Numbers of Teachers in Each Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>36 (19.6%)</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>58 (31.5%)</td>
</tr>
<tr>
<td>Transitional First Grade</td>
<td>10 (5.4%)</td>
</tr>
<tr>
<td>First Grade</td>
<td>79 (42.9%)</td>
</tr>
</tbody>
</table>
Survey results indicated that 36 (19.6%) of the participants teach preschool, 58 (31.5%) currently teach kindergarten, 10 (5.4%) teach transitional first grade, and 79 (42.9%) of the teachers instruct first grade classes.

Descriptive information was collected from the teachers regarding their levels of education. All of the participants responded regarding their levels of education, with 108 (58.7%) participants reporting having earned bachelor’s degrees, 63 (34.2%) holding masters’ degrees, 10 (5.4%) having masters plus 30 additional hours of graduate level coursework, and one participant (.5%) who has earned a PhD. Table 2 illustrates the levels of education achieved by the survey participants.

Table 2

*Early Childhood Teachers’ Levels of Education*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s Degree</td>
<td>108</td>
<td>58.7</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>63</td>
<td>34.2</td>
</tr>
<tr>
<td>Masters +30</td>
<td>12</td>
<td>6.5</td>
</tr>
<tr>
<td>Specialist</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ED</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PhD</td>
<td>1</td>
<td>.5</td>
</tr>
</tbody>
</table>

The total years of experience for all teachers was reported. The data, including means, standard deviation, range and sample size for the participants’ total teaching
experience, as well as experience within the teachers’ current grade levels are provided in Table 3.

Table 3

*Teachers’ Total Teaching and Early Childhood Grade Level Experience*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Minimum</th>
<th></th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Maximum</td>
<td></td>
<td>Deviation</td>
</tr>
<tr>
<td>Total Years</td>
<td>180</td>
<td>1-35</td>
<td></td>
<td>15.56</td>
<td>8.91</td>
</tr>
<tr>
<td>Years Pre K</td>
<td>66</td>
<td>1-35</td>
<td></td>
<td>7.58</td>
<td>7.00</td>
</tr>
<tr>
<td>Years K</td>
<td>92</td>
<td>1-26</td>
<td></td>
<td>8.54</td>
<td>7.27</td>
</tr>
<tr>
<td>Years T-1</td>
<td>25</td>
<td>1-33</td>
<td></td>
<td>7.16</td>
<td>6.69</td>
</tr>
<tr>
<td>Years 1</td>
<td>108</td>
<td>1-33</td>
<td></td>
<td>9.49</td>
<td>7.98</td>
</tr>
</tbody>
</table>

This data indicates that all early childhood teacher participants have 180 years of combined teaching experience, with a range of 1-35 years, a mean of 15.56 years, and a standard deviation of 8.91 years. Preschool teachers have 66 years of combined experience within the preschool setting, with a range of 1-25 years, a mean of 7.58 years, and a standard deviation of 7.00. Kindergarten teachers reported a combined 92 years of experience within their grade level, with a range of 1-26 years, a mean of 8.54 years, and a standard deviation of 7.27. Transitional first grade teacher participants have 25 total years of T-1 experience, with a range of 1-33 years, a mean of 9.49 years, and a standard deviation of 7.98. First grade teachers reported a combined 108 years of experience, with a range of 1-33 years, a mean of 9.49, and a standard deviation of 7.98.
Teacher participants were questioned about the numbers of male and female students enrolled in their current classrooms. Table 4 illustrates the number of early childhood students enrolled in the participating teachers’ classrooms:

Table 4

*Student Gender in Early Childhood Classrooms*

<table>
<thead>
<tr>
<th>Student Gender</th>
<th>n</th>
<th>Minimum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Maximum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>1815</td>
<td>2-18</td>
<td>10.20</td>
<td>2.40</td>
</tr>
<tr>
<td>Girls</td>
<td>1508</td>
<td>1-14</td>
<td>8.52</td>
<td>2.90</td>
</tr>
<tr>
<td>Total</td>
<td>3323</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 illustrates that of the 3,323 children were enrolled in the participating teachers’ early childhood classes, 1815 (54.61%) of the children are male, and 3323 (45.38%) are female.

Teachers were questioned about the hours of professional development experiences they have participated in within the past three years regarding the following topics: attention deficit hyperactivity disorder (ADHD), boys’ learning styles, medications used to treat ADHD, CHAMPS, and Positive Behavior Support (PBS). Tables 5-9 illustrate the demographic data regarding teachers’ house of participation in professional development.
Table 5

*Hours of Professional Development in Attention Deficit Hyperactivity Disorder (ADHD)*

<table>
<thead>
<tr>
<th>Hours of Prof. Development</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>63</td>
<td>35.8</td>
</tr>
<tr>
<td>1-3</td>
<td>81</td>
<td>46.0</td>
</tr>
<tr>
<td>4-6</td>
<td>19</td>
<td>10.8</td>
</tr>
<tr>
<td>7-8</td>
<td>9</td>
<td>5.1</td>
</tr>
<tr>
<td>9 or more</td>
<td>4</td>
<td>2.3</td>
</tr>
<tr>
<td>Missing</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>184</td>
<td></td>
</tr>
</tbody>
</table>

This table illustrates that 63 (34.4%) teachers have had no professional development in ADHD, 81 (44.0%) have had one to three hours of professional development, 19 (10.3%) have had between four to six hours of training in ADHD, and four teachers (2.2%) have had nine hours or more of professional development. Eight teachers (4.3%) did not respond to the survey item questioning professional development in ADHD.

Table 6

*Hours of Professional Development Regarding Boys’ Learning Styles*

<table>
<thead>
<tr>
<th>Hours of Prof. Development</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>89</td>
<td>51.4</td>
</tr>
</tbody>
</table>
This data shows that 89 (48.4%) of early childhood teachers have not participated in any professional development focusing on the learning styles of boys. Sixty-nine (37.5%) teachers have had one to three hours of professional development on boys’ learning styles, 12 (6.5%) teachers have had between four and six hours of professional development, one (.5%) teacher has had seven to eight hours of professional development, and two (1.1%) teachers have had nine hours or more of training regarding boys’ learning styles.

Table 6 (continued).

<table>
<thead>
<tr>
<th>Hours of Prof Development</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>69</td>
<td>39.9</td>
</tr>
<tr>
<td>4-6</td>
<td>12</td>
<td>6.9</td>
</tr>
<tr>
<td>7-8</td>
<td>1</td>
<td>.6</td>
</tr>
<tr>
<td>9 or more</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Total</td>
<td>173</td>
<td>100</td>
</tr>
<tr>
<td>Missing</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

Table 7

*Hours of Professional Development in Medications Used to Treat ADHD*

<table>
<thead>
<tr>
<th>Hours of Prof Development</th>
<th>Frequencies</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>111</td>
<td>60.3</td>
</tr>
<tr>
<td>1-3</td>
<td>45</td>
<td>24.5</td>
</tr>
</tbody>
</table>
Table 7 (continued).

<table>
<thead>
<tr>
<th>Hours of Prof. Development</th>
<th>Frequencies</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-6</td>
<td>8</td>
<td>4.3</td>
</tr>
<tr>
<td>7-8</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Missing</td>
<td>15</td>
<td>8.2</td>
</tr>
<tr>
<td>Total</td>
<td>184</td>
<td>100</td>
</tr>
</tbody>
</table>

This data illustrates that 111 (60.0%) of the early childhood teachers who participated in the study have never engaged in professional development regarding medications used to treat ADHD. Forty-five (24.5%) teachers reported having had between one and three hours of professional development regarding medications used to treat ADHD. Eight (4.3%) teachers have had four to six hours of professional development in medications used to treat ADHD, and two (1.1%) have had seven to eight hours of professional development. Three (1.6%) reported participating in nine or more hours of professional development focusing on medications used to treat ADHD. Fifteen teachers did not respond to the survey item.

Table 8

Hours of Professional Development in CHAMPs

<table>
<thead>
<tr>
<th>Hours of Prof. Development</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>97</td>
<td>52.7</td>
</tr>
<tr>
<td>1-3</td>
<td>41</td>
<td>23.8</td>
</tr>
</tbody>
</table>
This data indicates that 97 (52.7%) teachers have never participated in professional development regarding the CHAMPs behavioral and classroom management program. Forty-one teachers (22.3%) have received one to three hours of CHAMPs professional development. Sixteen teachers (8.7%) have participated in between four to six hours of professional development focused on CHAMPs. Four teachers (2.2%) have had seven to eight hours of CHAMPs professional development, and 14 (7.6%) of surveyed teachers have had nine hours or more. Twelve (6.5%) did not respond to the survey item regarding numbers of hours spent in CHAMPs professional development.

**Table 9**

*Hours of Professional Development Spent in Positive Behavior Support*

<table>
<thead>
<tr>
<th>Hours of Prof. Development</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6</td>
<td>3.3</td>
</tr>
</tbody>
</table>
Table 9 (continued).

<table>
<thead>
<tr>
<th>Hours of Prof. Development</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>46</td>
<td>25.5</td>
</tr>
<tr>
<td>4-6</td>
<td>41</td>
<td>22.3</td>
</tr>
<tr>
<td>7-8</td>
<td>25</td>
<td>13.6</td>
</tr>
<tr>
<td>9 or more</td>
<td>63</td>
<td>34.2</td>
</tr>
<tr>
<td>Total</td>
<td>181</td>
<td>98.4</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td>184</td>
<td>100</td>
</tr>
</tbody>
</table>

This data shows that six teachers (3.3%) have not participated in professional development regarding Positive Behavior Support (PBS). Forty-six teachers (25.0%) have engaged in one to three hours of professional development focused on PBS. Forty-one teachers (22.3%) reported that they have participated in four to six hours of PBS professional development. Twenty-five teachers (13.6%) have had seven to eight hours of professional development in PBS, and 63 teachers (34.2%) have had nine or more hours of PBS professional development. Three teachers (1.6%) did not respond to the survey item.

Teacher participants were questioned regarding the numbers of male students that they have taught within the past three school years who have been diagnosed with the following conditions: anxiety disorders, ADHD, depression, language/communication
disorders, and oppositional defiance disorder (ODD). Tables 10-14 illustrate the
demographic data regarding diagnosed conditions within their male students.

Table 10

*Numbers of Boys in the Past Three Years with Anxiety Disorders:*

<table>
<thead>
<tr>
<th>Boys diagnosed with Anxiety Disorders</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>79</td>
<td>42.9</td>
</tr>
<tr>
<td>1-3</td>
<td>84</td>
<td>45.7</td>
</tr>
<tr>
<td>4-6</td>
<td>9</td>
<td>4.9</td>
</tr>
<tr>
<td>7-8</td>
<td>8</td>
<td>4.3</td>
</tr>
<tr>
<td>9 or more</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>182</td>
<td>98.9</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>184</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 10 indicates that 79 teachers (42.9%) reported that they have had no male students within the past three years who have been diagnosed with anxiety disorders. Eighty-four teachers (45.7%) reported that they have had between one and three male students in the past three years with anxiety disorders. Nine teachers (4.9%) reported that they’ve had between four to six male students diagnosed with anxiety disorders within the past three school years. Eight teachers (4.3%) reported that they have taught between seven to eight male students within the past three years with anxiety disorders, and two teachers (1.1%) reported that they have had nine or more male students within the past three years with anxiety disorders.
three school years that have been diagnosed with anxiety disorders. Two teachers (1.1%) did not respond to the survey item regarding the numbers of male students diagnosed with anxiety disorders.

Table 11

*Numbers of Boys in the Past Three Years with Attention Deficit Hyperactivity Disorder (ADHD)*

<table>
<thead>
<tr>
<th>Boys Diagnosed with ADHD</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>1-3</td>
<td>49</td>
<td>26.6</td>
</tr>
<tr>
<td>4-6</td>
<td>64</td>
<td>34.8</td>
</tr>
<tr>
<td>7-8</td>
<td>36</td>
<td>19.5</td>
</tr>
<tr>
<td>9 or more</td>
<td>30</td>
<td>16.3</td>
</tr>
<tr>
<td>Total</td>
<td>183</td>
<td>99.5</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>.5</td>
</tr>
<tr>
<td>Total</td>
<td>184</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 11 shows that 183 (99.5%) of surveyed teachers responded regarding male students that they have taught within the past three school years who have been diagnosed with ADHD. The data indicates that four early childhood teachers (2.2%) have had no male students in the past three years with ADHD. Forty-nine teachers (26.6%) reported that they have had between one and three male students in the past three school years with ADHD. Sixty-four teachers (34.8%) have had between four to six male
students within the past three years with ADHD. Thirty-six teachers (19.5%) reported that they have taught between seven and eight male students in the past three years diagnosed with ADHD. Thirty early childhood teachers indicated that they have had nine or more boys in the past three years who have been diagnosed with ADHD. One teacher (.5%) did not report regarding male students with ADHD.

Table 12

*Numbers of Boys in the Past Three Years with Depression*

<table>
<thead>
<tr>
<th>Boys Diagnosed with Depression</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>121</td>
<td>65.8</td>
</tr>
<tr>
<td>1-3</td>
<td>57</td>
<td>31.0</td>
</tr>
<tr>
<td>4-6</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>7-8</td>
<td>1</td>
<td>.5</td>
</tr>
<tr>
<td>9 or more</td>
<td>1</td>
<td>.5</td>
</tr>
<tr>
<td>Total</td>
<td>182</td>
<td>98.9</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>184</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 12 illustrates that 182 (98.9%) of participating early childhood teachers responded to the survey item regarding the numbers of male students they have taught within the past three years who have been diagnosed with depression. One hundred twenty-one teachers (65.8%) responded that they have not had any male students within the past three school years that have been diagnosed with depression. Fifty-seven
teachers (31.0%) reported that they have taught between one and three male students who have had depression. Two teachers (1.1%) indicated that they have taught between four and six male students with depression within the past three school years. One teacher (.5%) reported that she has taught between seven and eight male students with depression within the past three school years, and one teacher (.5%) reported that she has had nine or more male students within the past three school years with depression. Two teachers (1.1%) did not respond to the survey item regarding male students with depression.

Table 13

*Numbers of Boys in the Past Three Years with Language/Communication Disorders*

<table>
<thead>
<tr>
<th>Boys Diagnosed with Language/Communication Disorders</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>13</td>
<td>7.1</td>
</tr>
<tr>
<td>1-3</td>
<td>52</td>
<td>28.3</td>
</tr>
<tr>
<td>4-6</td>
<td>40</td>
<td>21.7</td>
</tr>
<tr>
<td>7-8</td>
<td>28</td>
<td>15.2</td>
</tr>
<tr>
<td>9 or more</td>
<td>46</td>
<td>25.0</td>
</tr>
<tr>
<td>Total</td>
<td>179</td>
<td>97.3</td>
</tr>
<tr>
<td>Missing</td>
<td>5</td>
<td>2.7</td>
</tr>
<tr>
<td>Total</td>
<td>184</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 13 illustrates that 179 early childhood teachers (97.3%) responded to the survey item regarding the numbers of male students diagnosed with
language/communication disorders. Thirteen teachers (7.1%) reported that they have had no male students within the past three years with language/communication disorders.

Fifty-two teachers (28.3%) reported that they have had between one and three male students in the past three years with language/communication disorders. Forty teachers (21.7%) responded that they have had between four and six male students within the past three school years with language/communication disorders. Twenty-eight teachers (15.2%) indicated that they have taught between seven and eight male students within the past three years with language/communication disorders. Forty-six teachers (25.0%) indicated that they have had nine or more male students within the past three school years with language/communication disorders. Five teachers (2.7%) did not respond to the survey item regarding male students with language/communication disorders.

Table 14

*Numbers of Boys in the Past Three Years with Oppositional Defiance Disorder (ODD)*

<table>
<thead>
<tr>
<th>Boys Diagnosed with ODD</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9</td>
<td>4.9</td>
</tr>
<tr>
<td>1-3</td>
<td>68</td>
<td>37.0</td>
</tr>
<tr>
<td>4-6</td>
<td>58</td>
<td>31.5</td>
</tr>
<tr>
<td>7-8</td>
<td>28</td>
<td>15.2</td>
</tr>
<tr>
<td>9 or more</td>
<td>18</td>
<td>9.8</td>
</tr>
<tr>
<td>Total</td>
<td>181</td>
<td>98.4</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td>184</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 14 illustrates that 181 (98.4%) of the participants responded to the survey item regarding boys diagnosed with Oppositional Defiance Disorder (ODD). Nine early childhood teachers (4.9%) reported that they have not taught any male students within the past three school years with ODD. Sixty-eight teachers (37.0%) reported that they have had between one and three male students in the past three school years diagnosed with ODD. Fifty-eight teachers (31.5%) reported that they have taught between four and six male students in the past three school years who have been diagnosed with ODD. Twenty-eight teachers (15.2%) responded that they have had between seven and eight male students in the past three school years with ODD. Eighteen early childhood teachers (9.8%) indicated that they have taught nine or more male students within the past three school years who have been diagnosed with ODD. Three participants (1.6%) did not respond to the survey item regarding male students with ODD.

Early childhood teachers were asked to report the numbers of male students they have had within the past three school years who have (to their knowledge) been treated with medications used to treat Attention Deficit Hyperactivity Disorder (ADHD). Table 15 illustrates the teachers’ responses.

Table 15

<table>
<thead>
<tr>
<th>Boys on Medication to treat ADHD</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9</td>
<td>4.9</td>
</tr>
<tr>
<td>1-3</td>
<td>68</td>
<td>37.0</td>
</tr>
<tr>
<td>4-6</td>
<td>58</td>
<td>31.5</td>
</tr>
</tbody>
</table>
Table 15 shows that 181 (98.4%) of early childhood teachers responded to the survey item concerning the numbers of male students who, to their knowledge, have been on medications used to treat ADHD within the past three school years. Nine teachers (4.9%) reported that they have had no male students to their knowledge within the past three years who have been on medications used to treat ADHD. Sixty-eight teachers (37.0%) reported that they have had between one and three male students within the past three years who they knew were being treated for medications for ADHD. Fifty-eight teachers (31.5%) responded that they had between four and six male student that they knew to be on medications used to treat ADHD within the past three school years. Twenty-eight early childhood teachers reported that they have had between seven and eight male students that they knew to be on medications used to treat ADHD within the past three years. Eighteen teachers indicated that they have taught nine or more male students within the past three years who they knew to be on medications used to treat ADHD.
ADHD. Three participants (1.6%) did not respond to the survey item regarding male students on medications used to treat ADHD.

Early childhood teachers were asked to answer questions on a survey instrument entitled *Early Childhood Attention Deficit Hyperactivity Disorder Questionnaire*. The questionnaire was designed by the researcher in order to evaluate early childhood teachers’ beliefs and attitudes concerning ADHD, boys’ learning styles, medications used to treat ADHD, the CHAMPs classroom management system, and Positive Behavior Support (PBS). This questionnaire can be found as Appendix A. Teachers were asked to rate a series of questions regarding the above topics using a five point Likert scale with a score of one indicating strong disagreement with the statement and a score of five indicating strong agreement with the statement. Tables 16 and 17 illustrate the descriptive statistics of the participants’ survey responses.

Table 16

*Descriptive Data for Early Childhood Teachers’ Responses to questions 9-17 of the Early Childhood Attention Deficit Hyperactivity Questionnaire*

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>n</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. I am familiar with the symptoms of ADHD in young children.</td>
<td>184</td>
<td>4.35</td>
<td>.74</td>
</tr>
<tr>
<td>10. I am familiar with ADHD checklists.</td>
<td>184</td>
<td>4.32</td>
<td>.92</td>
</tr>
<tr>
<td>11. I am familiar with the effects and side-effects of medications used to treat ADHD.</td>
<td>181</td>
<td>3.60</td>
<td>1.10</td>
</tr>
</tbody>
</table>
Table 16 (continued).

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>n</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. I have male students who exhibit occasional boredom or distractibility during instructional time.</td>
<td>183</td>
<td>4.17</td>
<td>.89</td>
</tr>
<tr>
<td>13. If I am concerned that a male student in my class may have ADHD, I speak with my school administrators/counselors about academic and behavior interventions that do not involve medications.</td>
<td>182</td>
<td>4.43</td>
<td>.82</td>
</tr>
<tr>
<td>14. If I am concerned that a male student in my class may have ADHD, I speak with my colleagues about academic and behavioral interventions that do not involve medications.</td>
<td>183</td>
<td>4.22</td>
<td>.91</td>
</tr>
<tr>
<td>15. If I am concerned that a male student in my class may have ADHD, I speak with my students’ parents/guardians about academic and behavioral interventions that do not involve medications.</td>
<td>183</td>
<td>4.14</td>
<td>.96</td>
</tr>
<tr>
<td>16. Within the past three years, I have had male students who’ve exhibited the symptoms of ADHD and felt they would have benefitted from medications.</td>
<td>182</td>
<td>4.24</td>
<td>.95</td>
</tr>
<tr>
<td>17. My female students use more appropriate behaviors than my male students.</td>
<td>181</td>
<td>3.31</td>
<td>1.15</td>
</tr>
</tbody>
</table>

Note: Scale 1 (strongly disagree) – 5 (strongly agree)
Table 17

Descriptive Data for Early Childhood Teachers’ Responses to questions 18-28 of the Early Childhood Attention Deficit Hyperactivity Questionnaire

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>n</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. If a male student exhibits symptoms of ADHD, I speak with his parents in a timely manner regarding my concerns.</td>
<td>182</td>
<td>4.22</td>
<td>.89</td>
</tr>
<tr>
<td>10. If I see male students exhibiting symptoms of ADHD, I implement behavioral and instructional interventions in my classroom before speaking to a student’s parents about my concerns.</td>
<td>182</td>
<td>4.22</td>
<td>.89</td>
</tr>
<tr>
<td>11. I consider my classroom environment to be highly organized.</td>
<td>182</td>
<td>4.16</td>
<td>.79</td>
</tr>
<tr>
<td>12. My male students are all engaged in learning during instructional time.</td>
<td>183</td>
<td>3.28</td>
<td>1.10</td>
</tr>
<tr>
<td>13. I notice a difference between the general behaviors of my male and female students.</td>
<td>183</td>
<td>3.72</td>
<td>.99</td>
</tr>
<tr>
<td>14. I think that ADHD medications are an important part of ADHD treatment.</td>
<td>180</td>
<td>3.57</td>
<td>.98</td>
</tr>
<tr>
<td>15. I am unsure of how I feel about medications used to treat ADHD.</td>
<td>180</td>
<td>2.57</td>
<td>1.19</td>
</tr>
<tr>
<td>16. I feel that the academic program at my school is developmentally appropriate for my students.</td>
<td>181</td>
<td>4.23</td>
<td>.97</td>
</tr>
<tr>
<td>17. My male students have more behavior problems than my female students.</td>
<td>181</td>
<td>3.43</td>
<td>1.20</td>
</tr>
</tbody>
</table>
According to the study, item number 13, which states “If I am concerned that a male student in my class may have ADHD, I speak with my school administrators/counselors about academic and behavioral interventions that do not involve mediations,” had the most positive feedback, with 182 teachers responding, with a mean score of 4.43 and a standard deviation of .82. Item number 24, which states, “I am unsure of how I feel about medications used to treat ADHD,” had the most negative feedback, with 180 responses, a mean of 2.57, and a standard deviation of 1.19.

Regarding the participants’ attitudes toward ADHD, medications, boys’ learning styles, and classroom environments, early childhood teachers’ attitude toward ADHD (n=184) was highest, reported as a mean of 4.3 with a standard deviation of .76. The second highest attitude was related to classroom environments classroom environments (n=183), which had a mean score of 4.19 and a standard deviation of .56. Third was teachers’ attitude toward medications. Early childhood teachers’ attitudes toward medications used to treat ADHD (n=183) had a mean score of 3.72 and a standard deviation of .73. The lowest score for attitude related to the respondents’ attitudes toward boys (n=183), which had a mean score of 3.66 and a standard deviation of .77.
Analysis of Hypothesis

The first research question in this study was stated: Is there a statistically significant relationship between early childhood teachers’ attitudes toward ADHD and time spent in professional development addressing ADHD? It was addressed by the related hypotheses: there is no statistically significant relationship between early childhood teachers’ attitudes toward ADHD and time spent in professional development addressing ADHD. The hypothesis was tested by conducting a Spearman’s Rank-Order correlation. This hypothesis was rejected, \( r_s(175) = .215, p < .01 \). This analysis indicates a moderate positive relationship between early childhood teachers’ time spent in professional development regarding ADHD, and their attitudes toward ADHD.

The second research question in this study was stated: Is there a significant relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors, and professional development that addresses boys’ learning styles and behaviors? It was addressed by the related hypotheses: There is no statistically significant relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors, and professional development that addresses boys’ learning styles and behaviors. The hypothesis was tested by conducting a Spearman’s Rank-Order correlation. The null hypothesis was supported, \( r_s(171) = .003, p > .01 \). There was no correlation in the data set between teachers’ attitudes towards boy’s learning styles and behaviors, and professional development that addresses boys’ learning styles and behaviors.

The third research question in this study was as stated: Is there a significantly significant relationship between early childhood teachers’ attitudes toward medications
used to treat ADHD and professional development that addresses medications used to treat ADHD? It was addressed by the related hypotheses: There is no statistically significant relationship between early childhood teachers’ attitudes toward medications used to treat ADHD and time spent in professional development addressing medications used to treat ADHD. This hypothesis was tested by conducting a Spearman’s Rank-Order correlation. The null hypothesis was supported, $r_s (167) = .071, p > .01$. This data indicated no relationship in the data set between early childhood teachers’ attitudes toward medications used to treat ADHD and professional development that addresses medications used to treat ADHD.

The fourth research question in this study was as stated: Is there a significantly significant relationship between early childhood teachers’ attitudes toward classroom environments and professional development in CHAMPs? This question was addressed by the related hypotheses: There is no statistically significant relationship between early childhood teachers’ attitudes toward classroom environments and time spent in CHAMPs professional development. The hypothesis was tested by conducting a Spearman’s Rank-Order correlation. The null hypothesis was supported, $r_s (170) = .051, p > .01$. There was no relationship between early childhood teachers’ attitudes toward classroom environments and professional development in CHAMPs.

The fifth research question in this study was as stated: Is there a significantly significant relationship between early childhood teachers’ initial responses to young boys who exhibit symptoms of ADHD and professional development in Positive Behavior Support (PBS)? The question was addressed by the related hypotheses: There is no statistically significant relationship between early childhood teachers’ attitudes toward
behavioral interventions and time spent in professional development addressing Positive Behavior Support. The hypothesis was tested by conducting a Spearman’s Rank-Order correlation. This hypothesis was rejected, $r_s(179) = .232, p < .01$. The null hypothesis was rejected, as this analysis indicates a moderate positive relationship between early childhood teachers’ time spent in professional development regarding Positive Behavior Support, and their initial responses to young boys who exhibit symptoms of ADHD.

Summary

This study tested five research questions. The first question examined if there was a relationship between early childhood teachers’ professional development in ADHD and their attitudes toward ADHD. This research question was tested through one hypothesis that stated that there was no relationship between early childhood teachers’ professional development in ADHD and their attitudes toward ADHD. This hypothesis was found to have a moderate positive correlation and, therefore, rejected. The second research question asked if there was a relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors, and professional development that addresses boys’ learning styles and behaviors. The second question was tested through one hypothesis that stated that there was no relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors and professional development that addresses boys’ learning styles and behaviors. The hypothesis was accepted. There was no relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors and professional development that addresses boys’ learning styles and behaviors. The third question examined if there was a relationship between early childhood teachers’ attitudes toward medications used to treat ADHD and
professional development that addresses medications used to treat ADHD. The third question was tested through one hypothesis that stated that there was no relationship between early childhood teachers’ attitudes toward medications used to treat ADHD and professional development that addresses medications used to treat ADHD. The hypothesis was accepted. There was no relationship between early childhood teachers’ attitudes toward nearly childhood teachers’ attitudes toward medications used to treat ADHD and professional development that addresses medications used to treat ADHD. The fourth question asked if there was a relationship between early childhood teachers’ attitudes toward classroom environments and professional development in CHAMPs. The fourth question was tested through one hypothesis that stated that there was no relationship between early childhood teachers’ attitudes toward classroom environments and professional development in CHAMPs. The hypothesis was accepted. There was no relationship between early childhood teachers’ attitudes toward classroom environments and professional development in CHAMPs. The fifth question asked if there was a relationship between early childhood teachers’ initial responses to young boys who exhibit symptoms of ADHD and professional development in Positive Behavior Support (PBS). This question was tested through one hypothesis that stated that there was no relationship between early childhood teachers’ initial responses to young boys who exhibit symptoms of ADHD and professional development in Positive Behavior Support. This hypothesis was rejected, and a significant positive relationship was found between early childhood teachers’ initial responses to young boys who exhibit symptoms of ADHD and professional development in Positive Behavior Support.
CHAPTER V

DISCUSSION

Introduction

The purpose of Chapter V is to discuss the findings and limitations of this study. This chapter will also address implications for future practice and policy, as well as suggestions for future research.

Conclusions and Discussion

This study was intended to determine if southeastern Louisiana public school early childhood teachers’ attitudes toward ADHD, medications used to treat ADHD, boys’ learning styles, classroom environments as promoted by CHAMPs, and Positive Behavior Support are related to time spent in professional development addressing ADHD, medications used to treat ADHD, boys’ learning styles, classroom environments as promoted by CHAMPs, and Positive Behavior Support. The relationships were tested with five research questions which are stated as follows:

1. Is there a significantly significant relationship between early childhood teachers’ attitudes toward ADHD and time spent in professional development addressing ADHD?

2. Is there a significantly significant relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors and professional development that addresses boys’ learning styles and behaviors?

3. Is there a significantly significant relationship between early childhood teachers’ attitudes toward medications used to treat ADHD and professional development that addresses medications used to treat ADHD?
4. Is there a significantly significant relationship between early childhood teachers’ attitudes toward classroom environments and professional development in CHAMPs?

5. Is there a significantly significant relationship between early childhood teachers’ initial responses to young boys who exhibit symptoms of ADHD and professional development in Positive Behavior Support?

The following five hypotheses were analyzed in conjunction with each of the above research questions:

1. There is no significantly significant relationship between early childhood teachers’ attitudes toward ADHD and time spent in professional development addressing ADHD.

2. There is no significantly significant relationship between early childhood teachers’ attitudes toward boys’ learning styles and behaviors and time spent in professional development addressing boys’ learning styles and behaviors.

3. There is no significantly significant relationship between early childhood teachers’ attitudes toward medications used to treat ADHD and time spent in professional development addressing medications used to treat ADHD.

4. There is no statistically significant relationship between early childhood teachers’ attitudes toward classroom environments and time spent in CHAMPs professional development.

5. There is no significantly significant relationship between early childhood teachers’ attitudes toward behavioral interventions and time spent in professional development addressing Positive Behavior Support.
All five of the hypotheses were tested using a researcher created instrument entitled “Early Childhood Attention Deficit Disorder Survey Instrument,” which can be found as Appendix A.

The first null hypothesis, which tested early childhood teachers’ attitudes toward ADHD in relation to their time spent in professional development, was rejected. A moderate positive relationship was found between teachers’ time spent in professional development regarding ADHD and their attitudes regarding ADHD. The results indicated that as early childhood teachers learn more about ADHD, they feel more positive about their knowledge of ADHD symptoms, checklists which are typically used to help diagnose ADHD, and the academic performance of children who have been diagnosed with ADHD. This finding seems to be in line with the belief that early identification and diagnosis of ADHD is an important component of giving young children a strong academic foundation in the early grades of preschool, kindergarten, and first grade (DuPaul & Kern, 2011). Of the early childhood teachers who participated in this study, 65.8% indicated that they have participated in some professional development regarding ADHD, with the majority of that percentage (44.0%) reporting that they have had between one and three hours of professional development focused on ADHD.

The second research question examined the relationship between early childhood teachers’ attitudes toward young boys and teachers’ involvement in professional development regarding boys’ learning styles. The null hypothesis was supported; there was no significant correlation between teachers’ involvement in professional development addressing boys’ learning styles and their attitudes toward young boys. This may be explained by the very small amounts of professional development regarding
boys’ learning styles that the study participants took part in. According to the data analysis, almost half (48.4%) of all teachers surveyed reported that they had not participated in any professional development addressing boys’ learning styles within the past three years. The next majority (37.5%) of early childhood teachers reported having between one and three hours of professional development within the last three years. This data indicates that more professional development regarding boys’ learning styles is required.

The third research question examined the relationship between early childhood teachers’ attitudes toward medications used to treat ADHD and professional development that addresses medications used to treat ADHD. The null hypothesis was supported; there was no significant correlation between teachers’ involvement in professional development addressing medications used to treat ADHD and their attitudes toward medications used to treat ADHD. This may be explained because there was essentially no professional development reported by the participants in this study regarding professional development addressing medications used to treat ADHD. A majority of respondents (60.3%, n= 111) reported that they had received no professional development regarding medications used to treat ADHD within the past three years. Forty-five teachers (24.5%) reported having received three hours or less of professional development addressing medications used to treat ADHD within the last three years. Only 7.0% (n = 13) of early childhood teachers surveyed reported that they had had four or more hours of professional development regarding medications used to treat ADHD.

Of the teachers who participated in this study, 97.8% (n = 180) reported that they have taught little boys diagnosed with ADHD within the past three years. 95 % of
participating early childhood teachers reported that they have had boys on medications used to treat ADHD within the past three years, with over half (56.2 % n = 104) reporting that they’ve had four or more boys on medications used to treat ADHD over the past three years.

Research shows (Breggin 2002b) that the medications used to treat ADHD, typically stimulants, can have many effects including but not limited to: irritability, headaches, appetite suppression, insomnia, nervousness, emotional distress, apathy, stomach pain, psychosis, and cardiovascular episodes. Some medical experts also warn that popular stimulant medications used to treat ADHD are akin to street drugs, addictive in nature, and may have the effect of reducing a person’s ability to think divergently and successfully engage in creative activities (Diller, 1999). Effects from medications used to treat ADHD have the potential to negatively impact a child both in and out of the early childhood classroom. Children who, due to medications, are hungry, have not had enough sleep, are experiencing discomfort, or who are irritable cannot experience the same levels of academic and social success as their typical peers who are not experiencing such effects (Diller, 2009).

The fourth research question examined if a relationship exists between early childhood teachers’ attitudes regarding classroom environments and their time spent in professional development regarding the CHAMPs system of classroom management. The null hypothesis was supported; there was no significant correlation between teachers’ involvement in professional development addressing CHAMPs and their attitudes toward classroom environments. This may be related to the fact that professional development in the CHAMPs system of classroom management has only recently been promoted across
the school district examined in this study. Of the participating teachers, 52.7% (n = 97) reported that they had not participated in any professional development regarding CHAMPs within the past three school years. Forty-one teachers (22.3%) reported that they had had less than three hours of professional development in CHAMPs over the last three years. Only 9.8% of early childhood teachers (n = 18) reported that they had had seven or more hours of professional development addressing the CHAMPs classroom managements system.

The CHAMPs system of classroom management is a program that requires time, collaboration, professional development, and trial and error to implement properly. The CHAMPs program is detailed enough that entire university courses have been dedicated to it, but educator training can also be accomplished via six 45-minute to one-hour sessions available on DVD (Sprick et al., 1998). One of the authors of the CHAMPs system, Dr. Randy Sprick, (1998), has also written extensively about the positive outcomes of effectively implementing a well-understood and consistent CHAMPs program. This program directly addresses classroom climate, routines, and behavior expectations, as well as school-wide climate, routines and behavior expectations for every member of the school community. School leaders and educators who understand and use this system as it is designed know how to design tools and strategies specifically aimed at explicitly teaching young children the appropriate behaviors to use in all school academic and social settings.

The majority of early childhood teachers in this study (83.7% n = 154) indicated that they have not participated in an appropriate amount of time spent in professional development designed to learn the CHAMPs system of classroom management and
organization. With so little appropriate training among the study participants, it seems logical to conclude that there would be no meaningful relationship between the participating early childhood teachers’ time spent in professional development addressing the CHAMPs system of classroom management and their attitudes toward classroom environments.

The fifth research question in this study examined the relationship between early childhood teachers’ time spent in professional development regarding Positive Behavior Support and their initial responses to young boys who display symptoms of ADHD. The null hypothesis was rejected; there was a moderate positive correlation between teachers’ involvement in professional development addressing Positive Behavior Support and their initial responses to young boys who display symptoms of ADHD. The study indicated that as early childhood teachers engage in more professional development focused on PBS, their initial responses to young boys who display symptoms of ADHD are more likely to include behavioral interventions that do not involve medications.

The early childhood teachers who participated in this study indicated that they have had a good amount of professional development concentrating on Positive Behavior Support. Of the teachers who responded to the survey item assessing time spent in PBS professional development, 129 (70.1%) reported that they have had four or more hours of professional development in PBS. Only six teachers (3.3%) reported that they have not received any professional development addressing PBS within the past three years, and 46 teachers, (25.0%) reported having received between one and three hours of PBS professional development.
The moderate positive correlation between early childhood teachers’ participation in professional development which addresses Positive Behavior Support and their initial responses to young boys with symptoms of ADHD may be attributed to the increased time teachers have spent learning about the behavioral interventions that PBS encourages teachers to use. The data suggests that early childhood teachers who are knowledgeable about PBS are more thoughtful in their approach to young boys with symptoms of ADHD, and are more likely to collaborate with their colleagues, administrators, and school counselors regarding non-medical interventions that can be used to help young boys who display symptoms of ADHD.

A child’s behaviors and environment can have a profound impact on his or her ability to learn (Rief, 2005). Environments can positively or negatively impact behaviors. Teachers’ influence in designing positive classroom environments may lead to the desired outcomes of children’s increased productivity, cooperation, attention, discipline, and cooperation. On the other hand, chaotic or negative environments may lead to the undesirable outcomes of student stress, inattention, antisocial behaviors, defiance, or boredom (Whitten et al., 2009). Professional development focused on Positive Behavior Support systems teaches school leaders and educators how to analyze school environments, identify the antecedents of children’s behaviors, note patterns which promote appropriate or inappropriate student behaviors, and develop proactive interventions which can be implemented in order to encourage and reward appropriate school behaviors (Sailor & Dunlap, 2009). When early childhood teachers are cognizant of the causes or antecedents of specific negative student behaviors and the patterns of the occurrence of such behaviors, they can develop proactive strategies which will reduce the
occurrence of negative behaviors. In conjunction with this knowledge, professional
development focused of PBS instructs teachers to develop interventions for children who
may continue to have difficulty with certain environments, people, schedules, or events.
Data is collected regarding student behavior, accommodations, interventions and student
responses to interventions, which are used to determine the success of a specific child’s
PBS plan. Collaboration, teamwork, and a clear understanding of behavioral goals must
be shared between administrators, teachers, parents, and the students themselves as an
important component of a successful PBS program and student achievement (O’Neill et
al., 1997).

The district that was examined in this study seems to be experiencing success
with Positive Behavior Support. The early childhood teacher participants indicated that
they understand the value of talking together about designing behavioral interventions for
young boys who display symptoms of ADHD. It is recommended that school leaders,
counselors, and early childhood teachers continue to learn about and implement the
strategies of Positive Behavior Support, as well as collaborate to design specific
interventions in an effort to help young boys who are at risk of an ADHD diagnosis, or
who have already received one, to succeed in school.

Recommendation for Policy and Practice

Research has shown (Diller, 2011) that children in America are being diagnosed
with Attention Deficit Disorder at an increasing rate, and the use of medications to treat
symptoms of ADHD has also steadily risen. As of 2011, over five million children have
been diagnosed for ADHD (Centers for Disease Control and Prevention, 2011). Boys are
more than three times as likely to be diagnosed with ADHD and receive medication for
its treatment as their female counterparts (Gurain & Stevens, 2005). Early childhood teachers are often the first people to observe and identify the symptoms of ADHD, and communicate concerns to a child’s parents (Sax & Kautz, 2003). The data gained from this study indicates that teachers who spend time in professional development focused on ADHD feel more confident in their knowledge of the symptoms, diagnosis and treatment of ADHD.

Research suggests (Pappano 2010) that school curriculums, even in grades which service the youngest children, are becoming more challenging and focusing less on cooperative play and more on highly structured academic lessons which may not be appropriate for the youngest learners. Research tells us (Gurain et al., 2001) that boys and girls learn differently, and have different social, emotional, and academic needs. Gender differences should be acknowledged and addressed by school leaders and teachers, who invest the time in professional development designed to address the specific needs and learning styles of boys and girls (Sax, 2006). It is known that effective classroom management, paired with a system of consistent and appropriate consequences and rewards can be effective in helping children to learn appropriate behaviors. Learned behaviors that promote positive outcomes of cooperation, discipline, and civility, and which promote safety, security, and respect, result in increased academic and social success for all students (Sprick et al., 1998). Research in Positive Behavior Support shows that certain negative student behaviors may be increased by environmental stressors or other antecedents which can be identified. Environments can be modified to reduce stressors and antecedents which promote negative behaviors may be eliminated. Children can be taught coping skills to help self-regulate in the event that antecedents or
stressors cannot be eliminated or adjusted (Sailor & Dunlap, 2009). Interventions and individualized behavior coaching maybe developed to address and correct specific behaviors when more general classroom management strategies, reward and consequence plans, and environmental modifications prove ineffective (DuPaul & Kern, 2011). The positive relationship this study found between early childhood teachers’ involvement in professional development addressing PBS and their initial responses to young boys who display symptoms of ADHD indicate that PBS is an important component of helping to make schools a safe place for young boys, and a place in which they can be taught appropriate behaviors in a consistent and positive fashion.

No research was available to indicate exactly what was covered during the professional development session that teachers participated in regarding ADHD, and the review of the literature did not specify exactly how such professional development designed for early childhood teachers should be addressed. Further study is required in order to determine the most important topics related to ADHD that teachers should be exposed to in order for them to maintain a positive attitude toward ADHD and children diagnosed with ADHD. It is recommended that when school leaders plan professional development for early childhood teachers regarding ADHD, they should keep in mind, and encourage the teachers to keep in mind, the subjective nature of the diagnosis, as well as the national trends in the United States regarding diagnosing this disorder. The benefits and drawbacks of psychiatric labeling must be discussed, as well as the very nature of young children, especially little boys, as related to the symptoms of ADHD. Finally, it is recommended that professional development addressing ADHD give early childhood teachers the knowledge and tools that they need to make thoughtful decisions
about how to approach teaching a child with ADHD symptoms, and create an awareness of the political and ethical issues surrounding ADHD in America.

Gender-based research suggests that teachers with knowledge of the differences in the learning styles and behaviors of boys and girls are more likely to implement innovative teaching strategies which can engage, motivate, and appeal to male and female learners (Gurain et al., 2001). Teachers who participate in professional development regarding boys’ learning styles, as well as general gender differences, will be better equipped to address the natural behaviors and academic needs of young boys. Early childhood teachers are also predominantly female (NCES, n.d.). Some researchers have expressed concern that most teachers are likely to teach in ways that appeal to their own learning styles and gender differences (Krieg 2005). Gender-based professional development for early childhood teachers has the potential to help them design lessons and activities in line with their students’ gender differences, and also create awareness that they cannot, by their nature as women, be the same kind of role-model for their male students as they are for their female students. It is recommended that early childhood educators, elementary school leadership teams, universities, and school system recruiting personnel coordinate efforts designed to encourage more males to become early childhood educators in an effort to create a more gender-balanced early childhood educator community for the benefit of all students.

This study showed that a high percentage of early childhood teachers (97.8%) reported that they have had male students within the past three years who have been diagnosed with ADHD and treated with medications. It is advised that school leaders and early childhood teachers become more knowledgeable about stimulant drugs as well as
other medications used to treat ADHD. Although medications may be the right choice for many students struggling with ADHD, research suggests that it is not the right choice for every student (Diller, 2011). School leaders and teachers must have a deep understanding that medications used to treat ADHD make children behave and pay attention, but they do not teach children to behave and pay attention.

It is also recommended that school leaders and early childhood teachers learn more about the politics of medications used to treat ADHD, the subjective nature of the diagnosis of the disorder, the profits and incentives that promote the diagnosis and consequent use of medications, and the fact that this phenomenon seems to be unique to America. Implications for further research include learning more about how other developed and academically successful countries help young boys with symptoms of ADHD achieve academic and social success in the early childhood classroom. It is also recommended that American school leaders and early childhood educators study other developed nations’ early childhood professional development designed to help children with symptoms of ADHD. It is recommended that school leaders and early childhood educators in America study the pedagogical practices of early childhood teachers in other nations, who are not as highly influenced by profit and marketing campaigns promoting the diagnosis and treatment of ADHD.

Research shows (Schlechty, 2005) that classrooms that are well-managed and organized produce students who are more engaged and attentive. This study indicated that some participating early childhood teachers were familiar with the CHAMPs system of classrooms management, but very small percentage of teachers (9.8%) had participated in adequate training designed to effectively implement CHAMPs in the classrooms.
It is recommended that school districts such as the one examined in this study invest the time and resources to appropriately train all school leaders and teachers in the CHAMPs system of classroom management. School leaders and early childhood teachers who have the knowledge and tools that they need to effectively implement CHAMPs in their schools and classrooms can work together to consistently, positively, and implicitly teach young children appropriate behaviors and routines that are encouraged and expected. By doing so, there is the potential for relying less on the use of ADHD medications which make children behave, and instead relying on strategies which teach children to behave.

It is recommended that once all school leaders and teachers of young children within a school and/or school district have received the appropriate and in-depth training in the CHAMPs system of classroom management, they are allowed enough time and support to correctly implement CHAMPs within the classrooms and school-wide. Further research is warranted in order to see if, after time and training, the CHAMPs system of classroom management will have a greater effect on early childhood teachers’ attitudes toward the importance of classroom environments than this study indicated.

Positive Behavior Support has been shown to help children by addressing specific behaviors which interfere with learning and disciplined classroom environments. Interventions developed to target and shape identified behaviors can be implemented in an effort to help teach individual children appropriate academic and social conduct (Whitten et. al., 2009). Children’s responses to individualized behavioral interventions must be tracked to determine effectiveness, and modified if needed (DuPaul & Kern, 2011).
The early childhood teachers in the district studied reported that they have participated in in-depth professional development focused on Positive Behavior Support. Of the early childhood teachers who responded, 70.1% (n = 129) reported that they have participated in four or more hours of professional development focused on Positive Behavior Support. The moderate positive relationship between teachers’ professional development which addressed PBS and their initial reactions to young boys who display symptoms of ADHD indicated that these teachers were more likely to collaborate with their colleagues, school administrators, and counselors in an effort to design behavioral interventions for young boys with symptoms of ADHD.

It is recommended that school leadership teams and teachers trained in the implementation of PBS build time into their schedules to collaborate on a regular basis. In this way, they may share concerns and solutions, support one another in their efforts to successfully implement PBS, and engage in professional conversations with the common goal of helping children achieve academic, social, and emotional success. By doing so, it may be the case that greater numbers of young boys, who may have otherwise been diagnosed with ADHD and medicated with powerful and potentially dangerous stimulant drugs, may experience the gift of learning to use appropriate behaviors. Such learning has the potential to help reduce the numbers of American children who are given psychiatric labels and medications. We, as educators who care deeply for the well-being of our little students, must be mindful that psychiatric labels have the potential to influence the way a child thinks about himself, and that a young child’s early use of ADHD medications may be the beginning of a lifetime of dependence.
Limitations

This study may not be generalized to other populations due to the following limitations:

1. The study only questioned teachers within a single school district in Southeastern Louisiana and generalizations to other states or districts should not be assumed.

2. With the exception of one early childhood teacher, the study participants were all female, and generalizability of the results may not be applicable to a more gender-balanced teacher population.

3. This study only examined early childhood teachers’ reactions to young boys in preschool, kindergarten, and first grade programs, and the result may not be applicable to young female students, or boys in other grade levels.

4. The size of the population was limited. There were 369 potential participants with 184 actual participants. A larger number of participating early childhood teachers within the district may have produced different results.

Recommendations for Future Research

The findings in this study indicate that professional development in ADHD and PBS are positively correlated to the attitudes of early childhood teachers regarding their attitudes toward ADHD, and the ways in which they respond to male students exhibiting symptoms of ADHD. This study did not address the ways in which teachers respond to little girls who exhibit the symptoms of ADHD. It is recommended that research be conducted to determine if professional development in ADHD and Positive Behavior
Support have a different impact on the ways in which early childhood teachers perceive female students who display symptoms of ADHD.

The population of teachers who participated in this study all came from one school district in Southeastern Louisiana. A total of 369 teachers were invited to participate in the study with 184 teachers who actually responded to the survey instrument. The researcher was aware that of the 369 early childhood teachers in the district, only one teacher was male. It is unknown whether the one male teacher participated in the study. The overwhelming majority of female teachers indicate a gender imbalance among early childhood educators. Further research is recommended to determine whether male early childhood teachers would respond to young boys with symptoms of ADHD differently than their female colleagues.

It is recommended that further research be conducted regarding teachers’ attitudes toward gender differences after additional professional development regarding the differences between the cognitive, physical, and emotional development young boys and girls. This is necessary to determine if a greater understanding of the ways in which boys and girls learn and develop is related to the imbalance of ADHD diagnoses between boys and girls.

The teachers who participated in this study indicated that they have not had adequate training in the CHAMPs classroom management system. Further research is recommended in order to determine if adequate professional development and training in CHAMPs would give different results regarding early childhood teachers’ attitudes toward classroom environments, and how classroom environments they affect young boys with symptoms of ADHD.
Summary

Attention Deficit Hyperactivity Disorder is a psychiatric condition that has been increasingly diagnosed in young American children. Boys are 75% more likely to receive a diagnosis of ADHD as their female peers. More children than ever are being treated with powerful stimulant medications. These medications may produce a variety of effects which have the potential to enhance or harm a child’s quality of life and school success. Classroom teachers are often the first people to identify the symptoms of ADHD in a child, and alert the child’s parents, frequently leading to the diagnosis and treatment. Early childhood curriculums have become more academic in nature, and early childhood teachers are under growing pressure to help young children master academic skills at earlier ages than ever before. Pharmaceutical companies aggressively market ADHD medications directly to consumers, promising improved academic and behavioral success for even the youngest children. Little boys, by their very nature, are less likely than their female peers to exhibit academic, fine motor, and behavioral school readiness skills. All of these issues intersect in American early childhood classrooms every day and create environments where medicating high numbers of little boys for academic success might seem like the right thing to do.

This study examined the relationship between the time early childhood teachers have spent in professional development regarding ADHD, boys’ learning styles, medications used to treat ADHD, the CHAMPs system of classroom management, and Positive Behavior Support, and their attitudes toward the above concepts, as well as their
initial reactions to young boys who display symptoms of ADHD. One hundred and eighty-four early childhood teachers from a large Southeastern Louisiana public school district responded to the questionnaire.

The results from the study indicated that 97.8% of the early childhood teachers surveyed have had male students diagnosed with ADHD over the past three school years. The study also showed that 95.1% of early childhood teachers reported that they have had male students who have been treated with medications for ADHD in the past three years.

The findings also showed that time spent in professional development regarding ADHD did have a moderate positive correlation related to early childhood teachers’ attitudes toward ADHD. The study showed no relationship between time spent in professional development addressing boys’ learning styles, medications used to treat ADHD, and the CHAMPS system of classroom management and early childhood teachers’ attitudes toward those three subjects. However, this study did find that the more time teachers’ spent in professional development addressing Positive Behavior Support was significantly and positively related to their efforts to collaborate with colleagues in order to develop medication-free behavioral and academic interventions for young boys who display symptoms of ADHD.
APPENDIX A

EARLY CHILDHOOD ATTENTION DEFICIT HYPERACTIVITY DISORDER SURVEY INSTRUMENT

Early Childhood Attention Deficit Hyperactivity Disorder Questionnaire

Instructions: Please answer each question by circling only one answer or filling in the appropriate blanks. Do not put your name on this paper. When finished, return the questionnaire to your Resource Helping Teacher. Thank you for your participation!

Teacher Information

1. What grade level do you teach? (Please circle one.)
   
<table>
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<th>Pre-School</th>
<th>Kindergarten</th>
<th>Transitional First Grade</th>
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2. How many total years of teaching experience (K-12) do you have? _________

3. How many years of teaching experience do you have in the following grade levels?
   
   | Kindergarten | _________ |
   | First Grade  | _________ |
   | Transitional First Grade | _________ |
   | First Grade  | _________ |

4. Please circle your highest level of education.
   
   | BA | Masters | Masters +30 | Specialist | Ed.D. |
   |    |         |             |            |       |
   |    |         |             |            |       |
   |    |         |             |            |       |

5. Approximately how many hours of professional development have you had in the past 3 years about the following topics? (Please circle one):

   ADHD
   0  1-3  4-6  7-8  9 or more
Boys’ Learning Styles
0  1-3  4-6  7-8  9 or more

Medications used to treat ADHD
0  1-3  4-6  7-8  9 or more

CHAMPs
0  1-3  4-6  7-8  9 or more

Positive Behavior Support (PBS)
0  1-3  4-6  7-8  9 or more

6. How many boys and girls are in your class this school year?
   Boys: _________   Girls: _________

According to the American Academy of Pediatrics, Attention Deficit Hyperactivity Disorder (ADHD) is the most commonly diagnosed childhood psychiatric disorder, with boys diagnosed nearly 3 times more frequently than girls. The following questions address ADHD in male students attending preschool, kindergarten, transitional first grade, and first grade.

7. To the best of your knowledge, approximately how many male students have you had in the past 3 years with the following diagnoses? (Please circle one choice for each category.)

   Anxiety Disorders
   0  1-3  4-6  7-8  9 or more

   Attention Deficit Hyperactivity Disorder (ADHD)
   0  1-3  4-6  7-8  9 or more

   Depression
   0  1-3  4-6  7-8  9 or more

   Language/Communication Disorders
   0  1-3  4-6  7-8  9 or more

   Oppositional Defiance Disorder (ODD)
   0  1-3  4-6  7-8  9 or more
8. To the best of your knowledge, approximately how many male students have you had within the past 3 years who have been on medication to treat ADHD? (Please circle one.)

0  1-3  4-6  7-8  9 or more

*Please answer the remaining questions to the best of your ability using the following Likert Scale*

1 = Strongly Disagree    2 = Disagree
3 = Neither agree nor disagree  4 = Agree
5 = Strongly Agree

9. I am familiar with the symptoms of ADHD in young children.

1 2 3 4 5

10. I am familiar with ADHD checklists.

1 2 3 4 5

11. I am familiar with effects and side-effects of medications used to treat ADHD.

1 2 3 4 5

12. I have male students who exhibit occasional boredom or distractibility during instructional time.

1 2 3 4 5

13. If I am concerned that a male student in my class may have ADHD, I speak with my school administrators/counselors about academic and behavioral interventions that do not involve medications.

1 2 3 4 5
14. If I am concerned that a male student in my class may have ADHD, I speak with my colleagues about academic and behavioral interventions that do not involve medications.

15. If I am concerned that a male student in my class may have ADHD, I speak with my students’ parents/guardians about academic and behavioral interventions that do not involve medications.

16. Within the past three years, I have had male students who’ve exhibited the symptoms of ADHD and felt they would have benefitted from medications.

17. My female students use more appropriate behaviors than my male students.

18. If a male student exhibits symptoms of ADHD, I speak with his parents in a timely manner regarding my concerns.

19. If I see male students exhibiting symptoms of ADHD, I implement behavioral and instructional interventions in my classroom before speaking to a student's parents about my concerns.

20. I consider my classroom environment to be highly organized.
21. My male students are all engaged in learning during instructional time.

   1  2  3  4  5

22. I notice a difference between the general behaviors of my male and female students.

   1  2  3  4  5

23. I think ADHD medications are an important part of ADHD treatment.

   1  2  3  4  5

24. I am unsure of how I feel about medications used to treat ADHD.

   1  2  3  4  5

25. I feel that the academic program at my school is developmentally appropriate for my students.

   1  2  3  4  5

26. My male students have more behavior problems than my female students.

   1  2  3  4  5

27. Children with ADHD do not perform as well academically as typical children.

   1  2  3  4  5

28. I feel that the classroom environment that I create has an impact on my male students’ behaviors.

   1  2  3  4  5
APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.6820 | Fax: 601.266.4377 | www.usm.edu/irb

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board 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: 11101705
PROJECT TITLE: ADHD in Young Boys: A Correlational Study Among Early Childhood Educators in Louisiana
PROJECT TYPE: Dissertation
RESEARCHER/S: Jessica Hart Stubbs
COLLEGE/DIVISION: College of Education & Psychology
DEPARTMENT: Educational Leadership & School Counseling
FUNDING AGENCY: N/A
IRB COMMITTEE ACTION: Exempt Approval
PERIOD OF PROJECT APPROVAL: 10/26/2011 to 10/25/2012

Lawrence A. Hosman, Ph.D.
Institutional Review Board Chair

10-28-2011
APPENDIX B

PERMISSION REQUEST LETTER TO THE SUPERINTENDANT

Jessica Stubbs
420 Parlang Dr.
Pearl River, LA 70452

September 15, 2011

I am a student in the Educational Leadership Ph.D. program at the University of Southern Mississippi. I am in the process of writing my dissertation and would like to request permission to survey preschool, kindergarten, and first grade teachers as part of a study.

I would like to speak with you at your convenience to explain the scope and procedures of this study, and address any concerns you may have.

It is my hope that through this study, I can develop leadership skills and knowledge that will be of benefit to the teachers and students of our school district.

Thank you for considering this request. I look forward to hearing from you.

Sincerely,

Jessica Stubbs
Resource Helping Teacher
September 19, 2011

Instructional Review Board
University of Southern Mississippi
118 College Drive #5147
Hattiesburg, MS 39406-0001

Dear Human Subjects Protection Review Committee,

Jessica Stubbs has my permission to conduct research in the [REDACTED] Public School System regarding attention deficit hyperactivity disorder in preschool, kindergarten, and first grade boys, and early childhood teacher attitudes and professional development experiences as they relate to attention deficit hyperactivity disorder. She has my permission to administer a survey called Early Childhood Attention Deficit Hyperactivity Disorder Questionnaire to early childhood teachers within the school district.

Sincerely,
APPENDIX D

LETTER TO SCHOOL PRINCIPALS

Jessica Stubbs
420 Parlange Dr.
Pearl River, LA 70452

November 7, 2011

Dear Principal,

I am a student in the Educational Leadership Ph.D. program at the University of Southern Mississippi. I have received permission from [REDACTED] to survey preschool, kindergarten, and first grade teachers as part of a dissertation study.

I will distribute packets of questionnaires to each early childhood elementary school RHT/TRT at their meeting. Each RHT/TRT will be asked to distribute a questionnaire to every preschool, kindergarten, and first grade teacher. The completed surveys will be returned to me via the school courier, or at the next RHT/TRT meeting. It will take no more than a few minutes to complete this questionnaire.

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.

Questions concerning the research, at any time during or after the project, should be directed to Mrs. Jessica Stubbs at (985) 863-1846. This project and this consent form have been reviewed by the Human Subject 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.

It is my intent to use the data collected from this research project to inform teacher and learning practices.

I thank you in advance for your cooperation, and encourage you to contact me with any questions or concerns.

Sincerely,

Jessica Stubbs
Resource Helping Teacher
APPENDIX E

PERMISSION REQUEST LETTER TO THE RHT/TRT SUPERVISOR

Jessica Stubbs
420 Parlange Dr.
Pearl River, LA 70452
July 25, 2011

October 10, 2011

I am a student in the Educational Leadership Ph.D. program at the University of Southern Mississippi. I have received permission from Mr. Folse to survey preschool, kindergarten, and first grade teachers as part of a dissertation study.

I would like to request permission to speak for a few moments at the September RHT/TRT meeting, distribute packets of survey instruments to each early childhood elementary school RHT/TRT at the September meeting. Each RHT/TRT will be asked to distribute a survey to every preschool, kindergarten, and first grade teacher. The completed surveys will be returned to me via the school courier, or at the October RHT/TRT meeting. This survey will take no more than a few moments to complete, and will not take up much time from the RHT/TRT. At the October RHT/TRT meeting, I would like permission to conduct a quick drawing for a $100.00 Visa gift card. The gift card will be awarded to a randomly selected RHT/TRT who has helped distribute, collect, and return the surveys, as an expression of my thanks.

It is my intent that the data collected from this survey will be used to inform teaching and learning practices.

I thank you in advance for your cooperation, and encourage you to contact me with any questions or concerns.

Thank you for considering this request. I look forward to hearing from you.

Sincerely,

Jessica Stubbs
Resource Helping Teacher
APPENDIX F

LETTER TO ALL PARTICIPATING RHT/TRTS

Jessica Stubbs  
420 Parlange Dr.  
Pearl River, LA 70452

September 20, 2011

Dear Elementary School RHT/TRT,

I am a student in the Educational Leadership Ph.D. program at the University of Southern Mississippi. I have received permission from Mr. Folse to survey preschool, kindergarten, and first grade teachers as part of a dissertation study.

Please distribute one survey to every preschool (including P.E.I., LA-4, or combo class preschool teacher), kindergarten, transitional first grade, and first grade teacher at your school. The survey should only take a few moments for each teacher to complete.

Once the surveys are completed, please return them to me in the envelope provided either via courier or at the October RHT/TRT meeting.

To thank you for your trouble, each RHT/TRT who returns completed surveys to me by October 18, 2011 will be entered into a drawing for a $100.00 Visa gift card. The gift card will be awarded at the October RHT/TRT meeting.

It is my hope that the data collected from this survey will be used to improve teaching and learning in St. Tammany Parish.

I thank you in advance for your cooperation, and encourage you to contact me with any questions or concerns.

Sincerely,

Jessica Stubbs  
Resource Helping Teacher
APPENDIX G

LETTER TO PRESCHOOL, KINDERGARTEN, AND FIRST GRADE TEACHERS

Jessica Stubbs
420 Parlange Dr.
Pearl River, LA 70452

All preschool, kindergarten, T-1, and first grade teachers

November 7, 2011

I am a student in the Educational Leadership Ph.D. program at the University of Southern Mississippi. I have received permission from [redacted] to survey preschool, kindergarten, and first grade teachers as part of a dissertation study.

I will distribute packets of questionnaires to each early childhood elementary school RHT/TRT at their meeting. Each RHT/TRT will be asked to distribute a questionnaire to every preschool, kindergarten, and first grade teacher. The completed surveys will be returned to me via the school courier, or at the next RHT/TRT meeting. It will take no more than a few minutes to complete this questionnaire.

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.

Questions concerning the research, at any time during or after the project, should be directed to Mrs. Jessica Stubbs at (985) 863-1846. This project and this consent form have been reviewed by the Human Subject 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.

It is my intent to use the data collected from this research project to inform teacher and learning practices.

I thank you in advance for your cooperation, and encourage you to contact me with any questions or concerns.

Jessica Stubbs
Resource Helping Teacher
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