Teachers' perceptions of the educational needs of attention deficit hyperactivity disorder students

by

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INTRODUCTION

There is a growing interest in children who are hyperactive, or easily distracted in the classrooms of public schools. These children are found to have difficulty staying on task, and engage in impulsive behavior that can be harmful to them. Experts now agree that the disorder that these children have is called Attention Deficit Hyperactivity Disorder (ADHD). Experts don't agree on the cause of the disorder, the treatment of the problem, or the interventions that are used for these children.

The diagnosis of this disorder involves several experts within a multitude of professions. Pediatricians conduct physical examinations, parents and teachers observe and record behavior, psychologists conduct IQ tests, and special education consultants analyze the situation to determine if learning disabilities are involved. Interventions, such as medication or behavior modification are tested to determine the best treatment therapy for the child.

The classroom teacher seems to be the most important person throughout diagnosis and treatment. It is usually the teacher that first detects a problem. It is then the teacher's responsibility to observe and record data on the child's behavior before treatment can be diagnosed, and the child's reaction during and after treatment. These same teachers may have difficulty in dealing with ADHD students if they have not been properly trained in the subject and have had no intervention experience in dealing with an ADHD child. A teacher's perception of the student and their own ADHD training may come into play when dealing with the student.

Need for the Study

Many children share a similar problem that has the following symptoms: hyperactivity, inattention, and impulsivity. The diagnosis for these types of behaviors is labeled Attention Deficit Hyperactive Disorder (ADHD) (American Psychiatric Association, 1994).

Different teachers perceive these students in different ways. Some educators' tolerance level is higher than their peers when educating ADHD students, and more often than not, ADHD students are placed in regular education classrooms. These students take the same classes as their classmates, and few teachers have the necessary training to adapt for these students. Presently, many teachers working with ADHD students do not recognize the characteristics of ADHD and have never been trained in the subject. Are today's educators prepared to meet the diverse needs of ADHD students?

With diagnosis of ADHD students on the increase each year, educators need to assess their teaching adaptations and modifications to best meet the educational needs of these students.

Statement of the Problem

The research problem for this study is as follows: What are teachers' perceptions of their needs for educating ADHD students in the classroom? The purpose of this study is to determine if there is a difference in the way teachers educate ADHD students as to how they perceive these same students. Items specifically looked at will be the teacher's personal

performance, ADHD training that the teacher has had, and important concepts related to the ADHD student's success in the educational setting.

Limitations of the Study

The limitations inherent to this study were:

1. A survey questionnaire was sent out to a random selection of four hundred secondary teachers in the State of Iowa.

2. The survey questions were written by this researcher and had not been used previously.

Hypotheses

The main foci of this study compared teachers' perceptions of the importance of ADHD students' education and the teachers' perception of their teaching performance of ADHD students. The following null hypotheses were used to direct the study:

H(1) There will be no significant differences in the mean scores of teachers' related to the years of teaching experience when rating their perception of the importance of ADHD students' education.

H (2) There will be no significant differences in the mean scores of teachers related to the years of teaching experience when rating their perceptions of their teaching performance of ADHD students.

H(3) There will be no significant differences in the mean scores of teachers related to the age of teachers when rating their perceptions of the importance of ADHD students' education.

H(4) There will be no significant differences in the mean scores of teachers related to the age of teachers when rating their perceptions of their teaching performance of ADHD students.

H(5) There will be no significant differences in the mean scores between male and female teachers when rating their perceptions of the importance of ADHD students' education.

H(6) There will be no significant differences in the mean scores between male and female teachers when rating their perceptions of their teaching performance of ADHD students.

H(7) There will be no significant differences in the mean scores between teachers who graduated from different Iowa public universities when rating their perceptions of the importance of ADHD students' education.

H(8) There will be no significant differences in the mean scores between teachers who graduated from different Iowa public universities when rating their perceptions of their teaching performance of ADHD students.

H(9) There will be no significant differences in the mean scores between teachers who graduated from different Iowa public universities and those who graduated from different Iowa private universities when rating their perceptions of the importance of ADHD students' education.

H(10) There will be no significant differences in the mean scores between teachers who graduated from different Iowa public universities and those who graduated from different Iowa private universities when rating their perceptions of their teaching performance of ADHD students.

H(11) There will be no significant differences in the mean scores between teachers who graduated from Iowa universities and those who graduated from non-Iowa universities when rating their perceptions of the importance of ADHD students' education.

H(12) There will be no significant differences in the mean scores between teachers who graduated from Iowa universities and those who graduated from non-Iowa universities when rating their perceptions of their teaching performance of ADHD students.

H(13) There will be no significant differences in the mean scores between teachers related to the years teachers have held their degrees when rating their perceptions of the importance of ADHD students' education.

H(14) There will be no significant differences in the mean scores between teachers related to the years teachers have held their degrees when rating their perceptions of their teaching performance of ADHD students.

H(15) There will be no significant differences in the mean scores between teachers who have a master's degree or a bachelor's degree when teachers are rating their perception of the importance of ADHD students' education.

H(16) There will be no significant differences in the mean scores between teachers who have a master's degree or a bachelor's degree when teachers are rating their perception of their teaching performance of ADHD students.

H(17) There will be no significant differences in the mean scores between teachers related to the size of a school district a teacher teaches in when rating their perception of the importance of ADHD students' education.

H(18) There will be no significant differences in the mean scores between teachers related to the size of a school district a teacher teaches in when rating their perception of their teaching performance of ADHD students.

H(19) There will be no significant differences in the mean score between teachers related to the size of a class a teacher teaches when rating their perception of the importance of ADHD students' education.

H(20) There will be no significant differences in the mean scores between teachers related to the size of a class a teacher teaches when rating their perception of their teaching performance of ADHD students.

H(21) There will be no significant differences in the mean scores between teachers related to the number of hours of classes teachers have had when rating their perception of the importance of ADHD students' education.

H(22) There will be no significant differences in the mean scores between teachers related to the number of hours of classes teachers have had when rating their perception of their teaching performance of ADHD students.

H(23) There will be no significant differences in the mean scores between teachers who are willing and those who are not willing to take classes for training on ADHD when rating their perception of the importance of ADHD students' education.

H(24) There will be no significant differences in the mean scores between teachers related to the number of ADHD students teachers have had in their classes when rating their perception of the importance of ADHD students' education.

H(25) There will be no significant differences in the mean scores between teachers related to the number of ADHD students teachers have had in their classes when rating their perception of their teaching performance of ADHD students.

Definition of Terms

The diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) is based on the list of symptoms below taken from American Psychiatric Association (1994, p. 83-85). The problems must exist for at least six months, and include at least six of the symptoms from A and must include B-E.

A. Either (1) or (2):

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

Inattention

(a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities

(b) often has difficulty sustaining attention in tasks or play activities

(c) often does not seem to listen when spoken to directly

(d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)

(e) often has difficulty organizing tasks and activities

(f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)

(g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)

(h) is often easily distracted by extraneous stimuli

(i) is often forgetful in daily activities

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

Hyperactivity

(a) often fidgets with hands or feet or squirms in seat

(b) often leaves seat in classroom or in other situations in which remaining seated is expected

(c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)

(d) often has difficulty playing or engaging in leisure activities quietly

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

(f) often talks excessively

Impulsivity

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

(h) often has difficulty awaiting turn

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

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

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

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not

better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

In summary, the characteristics of the ADHD child would appear to be a challenge to the classroom teacher. Teachers can make or break a student's self confidence in the educational setting. If a teacher feels competent in dealing with the many problems that today's child brings to the classroom, that feeling will transfer to the student. All disabled children are capable of learning in an appropriate setting, and the feeling of the classroom depends on the teacher's attitude and adequacy.

REVIEW OF THE LITERATURE

In previous years, attention deficit hyperactivity disorder (ADHD) has had many different titles. Some of the more common ones have been hyperkinesis, minimal brain damage, hyperactivity, Werner-Strauss Syndrome, learning disability, impulse disorder, and postencephalitic hyperactivity (Phelan, 1989). But in 1980, the American Psychiatric Association changed the title of hyperactivity to Attention Deficit Disorder with Hyperactivity (ADD-H) in the Diagnostic and Statistical Manual (DSM III). In the 1987 publishing of the DSM III-R, the term Attention Deficit Hyperactivity Disorder (ADHD) was created. The most recent publishing is the 1994 DSM IV version, which continues to use the ADHD term with the new definition, which is listed on the previous pages.

Other countries report the same attention disorders are being diagnosed with similar percentages. Copeland (1991) found that:

> There are now international efforts to understand and treat attention disorders. England, calling these problems 'conduct disorders', previously reported a much smaller percentage with ADHD than the U.S. When using similar diagnostic criteria, however, other countries have been found to have similar, and often even higher, percentages of ADHD children and adolescents than the U.S. (3-8%): New Zealand - 13%; West Germany - 8%; Italy - 12%; Spain - 16%; Great Britain - 10%; and China - 11%. (p. 5)

In a classroom, children who have ADHD can display the following symptoms: difficulty remaining seated, calling out information without being asked, interrupting others, or talking excessively. ADHD children are easily distracted; they are often disorganized,

deficient in fine motor skills, likely to shift from one uncompleted activity to another, and have limited attentions (Barkley, 1981). "Children with ADHD are likely to exhibit ADHD symptoms across most, if not all, school and home situations" (DuPaul and Stoner, 1994, p. 84).

Children's restlessness in the classroom can affect how the classroom teacher treats that student and the rest of the students in the classroom. Teachers may show little tolerance for students who cannot control their fidgeting distractibility, which could be caused by little knowledge of ADHD. Many ADHD students lose the valuable classroom information because of their disorder, and much of this could be avoided if the teacher had background knowledge in the assessment, diagnosis, and management issues of children with ADHD. Numerous teachers end up spending extra time with disruptive ADHD students, while regular students suffer the lost time.

Because of an increase of ADHD students placed in the regular classrooms, teachers need to be aware of the ways in which to deal with the problems these students can create and become accepting of them. Research estimates that two to five percent of elementary school children meet the diagnostic criteria for ADHD (Barkley, 1990). It is also a common misconception that children outgrow ADHD by puberty and that it is thought of as a childhood disorder. Recent studies show that ADHD can and does continue throughout the adult years. Current estimates suggest that approximately 50-65% of the children with ADHD will have symptoms of the disorder as adolescents and adults (Barkley, 1990). Boys are six to nine times more likely to be affected than girls. Even though 60 to 70 percent of

ADHD children show symptoms of the disorder during infancy, it is commonly not recognized until the child starts school (Barkley, 1980).

According to DuPaul and Stoner (1994):

> problems in the domains of academic achievement and antisocial behavior that were noted for adolescents with this disorder continue to be the highest risks for this group in adulthood. Almost a third of these adults will have dropped out of high school, with only 5% completing a university degree program as compared to over 40% of control group subjects. Approximately 25% or more of these children will develop chronic patterns of antisocial behavior that persist into adulthood and are associated with other adjustment problems (e.g., substance abuse, interpersonal difficulties, occupational instability). On a positive note, approximately one-third of children followed into adulthood are seen as symptom free and relatively well adjusted. (p. 14)

Causes

The cause of ADHD is still unknown, though many professionals attribute it to a biochemical abnormality in the brain (Ingersoll, 1988). According to Assessing and serving children with attention deficit hyperactivity disorder: A report to the seventy-second Texas legislature and memorandum from the United States Department of Education (1992):

> a number of biological, genetic and environmental factors have been associated to the development of ADHD. Genetic influences seem to be important, with

> some research suggesting that disorders characterized by deficits in impulse control are transmitted across generations. Some evidence suggests a link with prenatal factors such as the mother's health, drug and alcohol abuse, fetal development and birth events, especially oxygen deprivation. Other studies fault the combination of genetic and biological factors in the development of brain chemistry abnormalities. While the link between ADHD and environmental factors such as family stress and poor parenting has been noted, these factors are generally not considered as causal. However, they can significantly affect the course and severity of the disorder. (p. 6)

According to Fowler (1991) scientific evidence suggests that the disorder is genetically transmitted in many cases, and is caused by a "chemical imbalance or deficiency in certain neurotransmitters (chemicals that regulate the efficiency with which the brain controls behavior)" (p. 1). Zametkin et al. (1990) found that the rate at which the brain uses glucose, its main energy source, is lower in subjects with ADHD than in subjects without ADHD.

According to Silver (1993) the cause of ADHD is not known. It is possible that there are several reasons why children might have this problem. Some children may have had difficulties during pregnancy or delivery and might have subtle brain damage. About 25-40% have inherited a type of nervous system; brothers or sisters are found to have the same problems. Often, a parent remembers having the same difficulties as a child. For some, the nervous system is developing slower than average. This maturational lag causes the problems. Such children may not catch up until about age 9 or 11.

Copeland (1991) has found:

> a growing concern in the area of ADHD and ADD resulting from specific physiological insult, due to the number of babies being born whose parents used and/or abused drugs such as cocaine, crack and heroin either before pregnancy, affecting the sperm or egg, or during pregnancy, harming the developing fetus. There are also increasing numbers of Fetal Alcohol Syndrome (FAS) babies. Problems of ADHD/ADD and learning disabilities (LD) are especially acute in states where drug and alcohol abuse is widespread. In addition, premature infants as tiny as two and one-half pounds are routinely being saved with our advances in medical technology. These children are at much greater risk for learning disabilities, attention disorders and hyperactivity. The educational system must brace itself for a significant increase in the need for special education services for organically-caused attention disorders and learning disabilities over the next decades. (p. 53)

After reading the above information, it is obvious to understand how difficult it is to determine the cause of ADHD when so many professionals differ in their opinions of the causes of ADHD. Many of the causes are similar, yet some may have one difference that can change the whole idea of the cause of the disorder.

Identifying ADHD

Children may show signs of ADHD in early childhood, and even infancy. Early infancy signs may include excessive crying, uneven temperament, and over-all immaturity.

Problems with feeding and swallowing are also more noticeable with ADHD babies who often develop into fussy eaters. Sleep patterns are frequently inconsistent and these youngsters either do not sleep long hours, toss and turn during sleep or have other sleep abnormalities.

According to Barkley (1981) many children are not identified with ADHD until they enter school, because that is where impulsiveness and hyperactivity affect the learning process. In most cases, it is the teacher that refers the student to other sources in order to be diagnosed. The students who should be referred to specialists are those who persistently do not listen and those who give the impression of knowing what is happening in class. While some children occasionally may become bored with a topic and stop paying attention for a time, children with ADHD appear distracted frequently and for long periods of time, regardless of the tasks assigned. They often move from one assignment to another without finishing any work. They are impulsive and don't think about the consequences to their actions. In general, a child with ADHD seems immature, and his or her behavior resembles that of younger child.

Diagnosing ADHD can be confusing and complicated. According to Fowler (1991):

> an accurate diagnosis requires an assessment conducted by a well-trained professional, usually a developmental pediatricial, child psychologist, child psychiatrist, or pediatric neurologist. The assessment should also include a thorough medical and family history, physical examination, interviews with the parents, child, and child's teacher, behavior rating scales, observation of the child, and psychological tests which measure IQ and social and emotional adjustment, as well as screen for learning disabilities. (p. 2)

As of now, there is no standardized diagnostic test available to identify the ADHD disorder.

Silver (1993) has some additional thoughts on identifying a child with ADHD. He claims that it is best if the diagnostic efforts are done by a team of professionals. This team might be in a medical setting or in an educational, mental health, or other facility. A special educator trained in the field of learning disabilities will evaluate the child and find if he or she has learning disabilities; and if so, the types of disabilities. A psychologist should test to find out his or her level of intellectual functioning. A social worker or nurse may meet with the parents to teach more about the child's development as well as parental areas of concern. A speech therapist might evaluate the child if speech, language or hearing problems are of concern. A physician should do a complete physical examination. In some instances a developmental neurologist may examine the child to note the functioning of his or her nervous system. A child psychiatrist, general psychiatrist, or other mental health professional might see the child to assess his or her level of psychological and social functioning and to explore if there are any emotional conflicts or stresses. Ideally, the full team should meet to discuss the child's diagnosis and to develop a treatment plan.

Diagnosing adolescents requires a different set of requirements. According to DuPaul and Stoner (1994) "the overall functioning of the teenager with ADHD may be more impaired than during the childhood years, because of a higher risk for conduct disturbance or antisocial behavior, academic underachievement, and low self-esteem" (p. 47-48). Several other problems may exist with the ADHD adolescent, such as substance abuse, stealing and vandalism, and a variety of behavior problems. Because of these, "procedures designed to screen for these associated difficulties must be incorporated into the evaluation of adolescents

with ADHD" (DuPaul and Stoner, 1994, p. 48). One of the most important things to include in an adolescent evaluation is a student self-report. Adolescents are likely to be more involved in their diagnosis when given the chance to include their input. This is the only difference between identifying young children and adolescents.

Associated Conditions

Growing evidence indicates an overlap between ADHD and learning disabilities (LD). Although ADHD is not a learning disability, it is associated with learning disabilities (Silver, 1990). The relationship between the two is not clear, but both are deficits that are presumed to be stemmed from a neurological disorder. One study shows that children with untreated ADHD were difficult to differentiate from those who had forms of learning disabilities (Cherkes-Julkowski & Stolzengerg, 1991). According to Copeland (1991) "11% of ADHD-school-age children were also classified as learning disabled, while 33% of students classified as LD by the schools also had attention disorders" (p. 40). What is known is that ADHD primarily affects the behavior of the child - causing inattention and impulsivity - while learning disabilities primarily affect the child's ability to learn - mainly in processing information.

According to DuPaul and Stoner (1994) "children with both ADHD and learning disabilities have been found to differ from youngsters with only ADHD or learning disabilities along several dimensions. The most prominent finding is that children identified with both ADHD and learning disabilities are 'doubly handicapped'" (p. 79).

Several hypotheses have been formed in the relationship between ADHD and learning disabilities. According to DuPaul and Stoner (1994) one problem may be that academic skills deficits lead to inattention and impulsivity. Once a student has learning problems in the classroom and is lost in his/her academics, the impulsive behavior takes over as a coping mechanism.

A second problem may be that a student is so distracted that the problem prevents the child from learning. But this problem does not explain why some ADHD children have learning problems, while others do not.

DuPaul and Stoner's (1994) third hypothesis is the most common. It states that "it is possible that both problems are caused by a separate and distinct third variable. Some nonspecific neurological impairment may lead to both ADHD and learning difficulties, at least in some children" (p. 68).

Studies have shown that children with ADHD are often behind their peers academically. Anderson, Williams, McGee, & Silva (1987) reported that at least 80% of eleven year olds with ADHD were behind at least two years in math, spelling, reading and written language. Barkley (1990) reports that over half of the children with ADHD who are taught in regular classrooms will experience school failure or fail at least one grade by adolescence, and over one third will fail to finish high school. Howell and Huessy (1981) and Mannuzza, S., Klein, R. G., Bonagura, N., Konig, P. H., and Shenker, R. (1988) found that up to 26% of ADHD students repeated one or more grades, and up to 30% of adolescents did not finish high school and did not continue with any education after high school.

Because of impulsivity, ADHD students may have difficulty establishing routines and organizational skills. They may complete homework assignments, but not be able to find them to turn in on time. These students also do not have the ability to sit and work quietly when distractions are occurring in the classroom. They tend to pay more attention to what is going on around them, rather than on what they are supposed to be doing. Zentall (1993) reports that "impulsivity produces academic errors, primarily because an individual fails to wait long enough to consider alternative information, consequences, or responses" (p. 147).

According to DuPaul and Stoner (1994):

> even when children with ADHD do not demonstrate significant weaknesses in specific academic skills, they often have difficulty completing independent work in a timely fashion, obtaining accurate scores on classroom tests, studying for exams, taking notes on classroom lectures, and following through on homework assignments. (p. 81-82)

Students with ADHD commonly have difficulty with the transition from elementary to secondary settings. Elementary teachers tend to modify tasks and instructions for ADHD students. The secondary setting is not always implemented in the same way. The student is most often placed in the regular classrooms and the teachers are not always aware that a student may be diagnosed as having ADHD. Secondary teachers seem not to be as willing or do not have the time to implement adaptations that elementary teachers use.

Programs

Many years of documentation have been researched and verified on ADHD. It has been found that the disorder continues through the adult years, yet few school districts throughout the United States have implemented programs to specifically meet the needs of these students. Campbell and Cohen (1990) surveyed the special education directors in the United States to determine what programs were available to ADHD students. Out of the 51 departments that returned their surveys, only one included services for a child diagnosed with ADHD. Copeland (1991) also looked at programs developed for ADHD and found that:

> at the administrative and policy levels, there are no specific provisions for students with attention deficit disorders. Unlike learning disabilities, statistically defined by most states using various discrepancy criteria, there is no generally accepted educational definition of ADHD or ADD; there are no statistical criteria for ADHD/ADD the schools can utilize for the determination of services; there are no specific provisions for the training of teachers in attention disorders; and there is uncertainty regarding who should be responsible for these students (special education or regular education), what teaching methods are most appropriate, and what modifications should be implemented to assist them. (p. 294)

Attention Deficit Hyperactivity Disorder has not been recognized under PL 94-142 as a handicapping disorder. Under that law, ADHD fits in the "other health impaired" category. Educational services for diagnosed children also falls under section 504 of the Vocational

Rehabilitation Act of 1973. In 1991 in a Policy Memorandum issued by the US Department of Education, ADHD was recognized as a disability. Children diagnosed were eligible for special education under federal regulation only when the disorder impairs educational performance and learning (Learner and Learner, 1991). "This is determined through teacher rating scales, direct observations in classrooms and playgrounds, peer rating and sociometric measures, and academic performance" (Learner and Learner, 1991, p. 9). "The difficult decision is whether the child needs special education programming to address these difficulties and/or academic competencies or whether interventions in the general education classroom will be sufficient" (DuPaul and Stoner, 1994, p. 89). If the child's behavior did not change due to the general education classroom interventions, then special services would be warranted.

According to DuPaul and Stoner (1994):

> It has been argued that a recognizable disability, such as ADHD only becomes a handicap in a nonaccommodating environment. That is, if a school is providing instructional and social support such that a student with a recognized disability is not considered to be handicapped (i.e., his or her performance meets or exceeds expectations; is commensurate with the same age, typical peers), then that school should be recognized as providing exemplary services. Of course, given evidence that a student is not meeting the expectations of his or her current environment, reasonable attempts should be made to support the student (and teacher) toward meeting those expectations (i.e., matching instructional materials with current academic skills, providing

> more frequent positive and corrective feedback, enhancing motivation to engage in academic work, increasing opportunities to practice newly acquired skills and knowledge) and achieving academic success. (p. 204)

It is a public school's responsibility to provide appropriate educational services to ADHD children. Each teacher is accountable for accommodations and modifications to meet that child's educational needs.

Medication Therapy

One of the biggest controversial types of an ADHD modification, is the use of psychostimulant medication. It is the most frequent type of treatment for ADHD with over one million children being treated with drugs to curb their behavior. Psychostimulant medication has steadily grown throughout the last decade, especially among middle and high school students (DuPaul and Stoner, 1994).

The three most commonly used stimulants are methylphenidate (Ritalin), dextroamphetamine (Dexedrine), and pemoline (Cylert). Ritalin is the most frequently used of the three with over 90% of the children using it (DuPaul and Stoner, 1994).

> Based on the empirical literature, it is estimated that between 70-80% of children with ADHD treated with stimulant medications respond positively to one or more doses. The remainder either exhibit no change or their ADHD symptoms worsen with treatment, thus implicating the need for alternative medications or treatment approaches. (DuPaul and Stoner, 1994, p. 141)

Some of the positive side effects of the drugs for the children are improved classwork, ability to sustain attention, reduced disruptive movement, reduced aggression, improved persistence with frustrating tasks and compliance with authoritative adults. One of the most noted changes in younger children is an improvement in fine motor skills, especially the quality of the child's handwriting. Older students are able to pay attention to class lectures and score higher on tests and quizzes. They also turn in neater and more accurate assignments. Another important improvement is an enhanced self-esteem and an increase in positive social interaction with other children and adults. Along with the increased attention span, is improvement in sports and extra-curricular activities.

Medication alone does not necessarily improve the behavior of ADHD children. Behavior modification strategies along with stimulant medication are the two most common interventions used for ADHD. "The combination of these interventions has been found to be more effective than the use of either treatment in isolation and is now considered the optimal approach to treating ADHD for many children" (DuPaul and Stoner, 1994, p. 147). In using both types of treatment, the chances for minimizing each are greater than if using only one type of modification treatment.

Side effects do occur for many children while using stimulant medication. The two most common are lack of appetite and insomnia. Others include headaches, increased irritability, stomachaches, and in rare cases, motor and/or vocal tics. The long term effects can be suppressed height and weight gain, but in most cases a rebound in growth follows the discontinuation of the stimulant (DuPaul and Stoner, 1994). Copeland (1991) also states that children are sometimes described as "zombies" (p. 102) while on medication. This is not

an appropriate side effect, and the dosage and type of medication the child is on needs to be monitored closely by the child's pediatrician. "Those taking medication for a long time should be carefully monitored since sufficient data on long-term safety and efficacy are not available" (Copeland, 1991, p. 169).

According to Copeland (1991) "most do not understand the neurophysiology of ADHD/ADD and thus do not realize that medication is not doing anything to the child, but rather acting as a normalizer of brain functioning, so that the child, adolescent or adult can function normally" (p. 87). Medication alone does not teach a child how to compensate for his/her disability.

Summary

Although Attention Deficit Hyperactive Disorder has had numerous titles, the American Psychiatric Association has renamed it to fit its updated definition. The U.S. is one among many countries experiencing attention disorders. Causes of ADHD vary with a number of biological, genetical, chemical, and environmental factors being associated, with diagnosis occurring as early as infancy. The disorder can affect those who are identified well into adulthood. Assessment should include a thorough medical and family history performed by a team of professionals with the creation of a treatment plan to best meet the needs of the child. Learning disabilities are the most common academic condition analogous with ADHD. Many schools have a difficult time deciding where to place ADHD students to best meet their educational needs. Psychostimulant medication, along with behavior modification programs

seem to be the most effective interventions used to increase ADHD children's success in the classroom.

METHODOLOGY

Subjects

The subjects for this project were chosen from the Iowa Department of Education. A list of 400 randomly chosen teachers from the state of Iowa was sent to this researcher at her request. Secondary teachers from every discipline taught in the state of Iowa were chosen, because it is assumed that every teacher has at least one Attention Deficit Hyperactivity Disorder student in his or her classroom during the school day. Teachers were not asked to include their names or schools on the instrument. The Human Subjects Review Committee reviewed and certified the research plan for this study.

Procedure

The method of information collection was a questionnaire constructed by the researcher. The first part contains general questions regarding biographical information, teaching experience, and attendance at classes or workshops focused on ADHD. The second part includes the teacher's perception of specific aspects in the importance in the education of ADHD students and their own personal performance of their teaching ADHD students (see Appendix). The 400 questionnaires were mailed to the teachers in April, 1995. The return rate for this study was 56%.

Instrument Construct Validity

A pilot administration of the survey questionnaire was given to thirty secondary teachers to develop construct validity. These participants were asked to comment on the design and content of the instrument. Their comments resulted in modifications to the original instrument which are represented in the current form of the instrument which was used (see Appendix).

RESULTS

The independent variables included in the questionnaire were the following: years of teaching experience, age, male/female, university the teacher graduated from, years teachers have held their degree, type of degree, district size, class size, adequate ADHD training, willingness to be trained in ADHD, and number of ADHD students a teacher has had (see Appendix). The dependent variables were catorgarized into two groups; a teacher's perception of the importance ADHD students' education, and a teacher's perception of his or her own personal performance. The teacher rated himself or herself according to his/her own perceptions.

The statistics were calculated on each individual dependent variable. Means from the returned questionnaires were calculated for each independent variable. An independent t-test was used as a test of significance for the means of the following independent variables: male/female; Iowa public universities/Iowa private universities; and Iowa universities/non-Iowa universities. An analysis of variance (ANOVA) was used as a test for significance for the means of the following independent variables: teaching experience; age; Iowa Universities; years teachers have held their degrees; district size; class size; workshop hours; and estimated number of ADHD students a teacher has had in his or her classroom. A Tukey-HSD test was used on each ANOVA that was found to be statistically significant. This was done to determine any significant differences between the data included in each separate ANOVA. Also, frequencies were used as a count for the extent of willingness to be ADHD trained.

Twenty-five hypotheses were evaluated separately to determine teachers' perceptions of their needs when teaching ADHD students. Each hypothesis is presented. Titles for the tables reflect directly to the twelve different items in the questionnaire.

H(1) - There will be no significant differences in the mean scores of teachers' related to the years of teaching experience when rating their perception of the importance of ADHD students' education.

H(1) - Rejected The mean scores between teachers' perceptions of the importance of ADHD students' education related to the years of teaching experience when information on ADHD could help the teacher be more successful with ADHD students was significantly different (Table 1). Years of teaching experience was broken down into the following: 1) 1-3 years (m 4.0000); 2) 4-6 years (m 4.5833); 3) 7-10 years (m 4.0968); 4) 11-14 years (m 4.7368); and 5) 14 or more years (m 4.1920).

H(2) - There will be no significant differences in the mean scores of teachers' related to the years of teaching experience when rating their perceptions of their teaching performance of ADHD students.

H(2)- Failed to Reject There were no significant mean score differences of teachers' related to the years of teaching experience when rating their perceptions of their teaching performance of ADHD students.

Table 1. Teachers' Perception of Education Importance Related to the Years of Teaching Experience when Information on ADHD Could Help the Teacher be More Successful with ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Teacher Experience	8.378	4	2.095	2.442*
Explained	8.378	4	2.095	
Residual	176.703	206	.858	
Total	185.081	210	.881	

*p < .05 **p < .01

H(3) - There will be no significant differences in the mean scores of teachers related to the age of teachers when rating their perceptions of the importance of ADHD students' education.

H(3) - Rejected The mean scores between teachers' perceptions of education importance related to the age of the teacher was significantly different when rating the teacher's role in assessing ADHD (Table 2). There were four different age groups catorgarized : 22-29 (m 4.1250); 30-39 (m 4.4717); 40-49 (m 3.9535); and 50+ (m 3.8542).

Table 2. Teachers' Perception of Education Importance Related to the Age of Teachers in Needing to Know the Teacher's Role in Assessing ADHD

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects-Age	12.005	3	4.002	3.772*
Explained	12.005	3	4.002	
Residual	219.626	207	1.061	
Total	231.630	210	1.103	

*p < .05 **p < .01

H(4) - There will be no significant differences in the mean scores of teachers related to the age of teachers when rating their perceptions of their teaching performance of ADHD students.

H(4) - Rejected The mean scores between teachers' perceptions of their personal performances related to the age of the teacher was significantly different when rating the teacher's role in assessing ADHD students (Table 3). There were four different age groups catorgarized: 22-29 (m3.9130); 30-39 (m 3.9423); 40-49 (m 3.5294); and 50+ (m 3.0889). Also, the mean scores between teachers' perceptions of their personal performances related to the age of the teacher was significantly different when needing to know the methods and strategies to use with ADHD students (Table 4). The four age groups were categorized in the following way: 22-29 (m 4.1304); 30-39 (m 3.8846); 40-49 (m 3.7176); and 50+ (m 3.2826).

Table 3. Teachers' Perception of Their Personal Performance Related to the Age of Teachers in Needing to Know the Teacher's Role in Assessing ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects-Age	20.448	3	6.816	4.370**
Explained	20.448	3	6.816	
Residual	313.474	201	1.560	
Total	333.922	204	1.637	

*p < .05 **p < .01

Table 4. Teachers' Perception of Their Personal Performance Related to the Age of Teachers in Needing to Know the Methods and Strategies to Use with ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects-Age	14.058	3	4.686	2.991*
Explained	14.058	3	4.686	
Residual	316.466	202	1.567	
Total	330.524	205	1.612	

*p < .05 **p < .01

H(5) - There will be no significant differences in the mean scores between male and female teachers when rating their perceptions of the importance of ADHD students' education.

H(5) - Rejected The mean scores of the males and females' perceptions of needing to know methods and strategies to use with ADHD students was significantly different (Table 5), and the mean scores of the males and females' perceptions of additional time spent working with ADHD students in the importance of the students' education was significantly different (Table 6).

Table 5. Males and Females' Perceptions of Needing to Know Methods and Strategies to Use with ADHD Students

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Female	109	4.5046	.753	208	2.47*
Male	101	4.2178	.923		

*p < .05 **p < .01

Table 6. Males and Females' Perceptions of Additional Time Spent Working with ADHD Students in the Importance of ADHD Students' Education

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Female	103	4.0971	.975	197	2.95**
Male	96	3.6146	1.317		

*p < .05 **p < .01

H(6) - There will be no significant difference in the mean scores between male and female teachers when rating their perceptions of their teaching performance of ADHD students.

H(6) - Rejected The mean scores between male and female teachers when rating their perceptions of their teaching performance of ADHD students was significantly different (Table 7).

Table 7. Males and Females Perceptions of Additional Time Spent Working with ADHD Students in the Importance of Their Personal Performance

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Females	102	3.5784	1.346	195	2.19*
Males	95	3.1684	1.277		

*p < .05 **p < .01

H(7) - There will be no significant differences in the mean scores between teachers who graduated from different Iowa public universities when rating their perceptions of the importance of ADHD students' education.

H(7) - Reject There were significant differences in the mean scores between teachers who graduated from different Iowa public universities when rating their perceptions of the importance of ADHD students' education when needing to know the teacher's role in assessing ADHD (Table 8). Iowa public universities looked at were Iowa State University,

University of Northern Iowa and the University of Iowa. The means for the three public Iowa universities are as follows: Iowa State University (m 4.3846); University of Northern Iowa (m 4.1633); and the University of Iowa (m 3.4615).

H(8) - There will be no significant differences in the mean scores between teachers who graduated from different Iowa public universities when rating their perceptions of their teaching performance of ADHD students.

H(8) - Failed to Reject There were no significant differences in the mean scores between teachers who graduated from different Iowa public universities when rating their perceptions of their teaching performance of ADHD students.

Table 8. Teachers Who Graduated from Different Iowa Public Universities when Rating Their Perceptions of the Importance of ADHD Students' Education in Needing to Know the Teacher's Role in Assessing ADHD

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Iowa Universities	6.518	2	3.259	3.305*
Explained	6.518	2	3.259	
Residual	71.002	72	.986	
Total	77.520	74	1.048	

*p < .05 **p < .01

H(9) - There will be no significant differences in the mean scores between teachers who graduated from different Iowa public universities and those who graduated from different Iowa private universities when rating their perceptions of their teaching performance of ADHD students.

H(9) - Failed to Reject There were no significant differences in the mean scores between teachers who graduated from different Iowa public universities and those who graduated from different Iowa private universities when rating their perceptions of their teaching performance of ADHD students.

H(10) - There will be no significant differences in the mean scores between teachers who graduated from different Iowa public universities and those who graduated from different Iowa private universities when rating their perceptions of their teaching performance of ADHD students.

H(10) - Failed to Reject There were no significant differences in the mean scores between teachers who graduated from different Iowa public universities and those who graduated from different Iowa private universities when rating their perceptions of their teaching performance of ADHD students.

H(11) - There will be no significant differences in the mean scores between teachers who graduated from Iowa universities and those who graduated from non-Iowa

universities when rating their perceptions of the importance of ADHD students' education.

H(11) - Rejected The mean scores between teachers' perceptions of the importance of ADHD students' education related to whether they graduated from an Iowa or non-Iowa university was significantly different when information on ADHD could help the teacher become more successful with ADHD students (Table 9). Also, the mean scores between teachers' perceptions of the importance of ADHD students' education related to whether they graduated from an Iowa or non-Iowa university was significantly different when more education on ADHD students for educators was currently needed (Table 10). The mean scores between teachers' perceptions of the importance of ADHD students related to whether they graduated from an Iowa or non-Iowa university was significantly different when additional time was needed when working with ADHD students (Table 11).

H(12) - There will be no significant differences in the mean scores between teachers who graduated from Iowa universities and those who graduated from non-Iowa universities when rating their perceptions of their teaching performance of ADHD students.

Table 9. Teachers' Perception of Education Importance Related to Whether They Graduated from an Iowa or Non-Iowa University when Information on ADHD Could Help the Teacher Become More Successful with ADHD Students

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	146	4.3425	.783	209	2.71**
Non-Iowa	65	3.9692	1.185		

*p < .05 **p < .01

Table 10. Teachers' Perception of Education Importance Related to Whether They Graduated from an Iowa or Non-Iowa University when More Education on ADHD Students for Educators is Currently Needed

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	146	4.1507	.957	209	2.27*
Non-Iowa	65	3.8000	1.202		

*p < .05 **p < .01

Table 11. Teachers' Perception of Education Importance Related to Whether They Graduated from an Iowa or Non-Iowa University when Additional Time is Needed when Working with ADHD Students

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	139	4.0072	1.004	198	2.63**
Non-Iowa	61	3.5410	1.444		

*p < .05 **p < .01

H(12) - Rejected The mean scores between teachers' perceptions of their personal performance related to whether they graduated from an Iowa or non-Iowa university was significantly different in several areas: when rating early diagnosis of ADHD students (Table 12); when rating the teacher's role in assessing ADHD (Table 13); when rating whether information on ADHD could help the teacher become more successful with ADHD students (Table 14); when rating the current need for ADHD education for educators (Table 15); when rating the need for additional time when working with ADHD students (Table 16); rating their success when working with ADHD students (Table 17); rating their frustration level when working with ADHD students (Table 18); rating their level of comfort when talking with parents about ADHD students (Table 19); and when rating whether ADHD are less successful and less productive than their classmates (Table 20).

Table 12. Teacher's Perception of Their Personal Performance when Rating Early Diagnosis of ADHD Students in Relation to Graduating from an Iowa or Non-Iowa University

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	141	2.6667	1.382	203	2.60*
Non-Iowa	64	2.1094	1.513		

*p < .05 **p < .01

Table 13. Teachers' Perception of Their Personal Performance when Rating the Teacher's Role in Assessing ADHD in Relation to Graduating from an Iowa or Non-Iowa University

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	141	3.7447	1.174	203	2.77**
Non-Iowa	64	3.2188	1.431		

*p < .05 **p < .01

Table 14. Teachers' Perception of Their Personal Performance when Rating Whether Information on ADHD Could Help the Teacher Become More Successful with ADHD Students in Relation to Graduating from an Iowa or Non-Iowa University

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	142	3.8099	1.173	204	2.08*
Non-Iowa	64	3.4219	1.378		

*p < .05 **p < .01

Table 15. Teachers' Perception of Their Personal Performance when Rating the Current Need for ADHD Education for Educators in Relation to Graduating from an Iowa or Non-Iowa University

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	142	3.5634	1.223	204	2.94**
Non-Iowa	64	2.9844	1.475		

*p < .05 **p < .01

Table 16. Teachers' Perception of Their Personal Performance when Rating the Need for Additional Time when Working with ADHD Students in Relation to Graduating from an Iowa or Non-Iowa University

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	137	3.5401	1.213	196	2.61*
Non-Iowa	61	3.0164	1.489		

*p < .05 **p < .01

Table 17. Teachers' Perception of Their Personal Performance when Rating Their Success when Working with ADHD Students in Relation to Graduating from an Iowa or Non-Iowa University

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	135	3.0741	1.111	193	1.97*
Non-Iowa	60	2.7167	1.290		

*p < .05 **p < .01

Table 18. Teachers' Perception of Their personal Performance when Rating Their Frustration Level when Working with ADHD Students in Relation to Graduating from an Iowa or Non-Iowa University

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	136	3.1838	1.206	195	2.01*
Non-Iowa	61	2.8033	1.276		

*p < .05 **p < .01

Table 19. Teachers' Perception of Their Personal Performance when Rating Their Level of Comfort when Talking with Parents About ADHD Students in Relation to Graduating from an Iowa or Non-Iowa University

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	136	2.9779	1.330	194	2.53*
Non-Iowa	60	2.4333	1.522		

*p < .05 **p < .01

Table 20. Teachers' Perception of Their Personal Performance when Rating Whether ADHD Students are Less Successful and Less Productive Than Their Classmates in Relation to Graduating from an Iowa or Non-Iowa University

Group	Number of cases	Mean	Standard Deviation	Degrees of Freedom	t Value
Iowa	129	3.2326	1.149	188	1.99*
Non-Iowa	61	2.8525	1.388		

*p < .05 **p < .01

H(13) - There will be no significant differences in the mean scores between teachers related to the years teachers have held their degrees when rating their perceptions of the importance of ADHD students' education.

H(13) - Failed to Reject There were no significant differences in the mean scores between teachers related to the years teachers have held their degrees when rating their perceptions of the importance of ADHD students' education.

H(14) - There will be no significant differences in the mean scores between teachers related to the years teachers have held their degrees when rating their perceptions of their teaching performance of ADHD students.

H(14) - Rejected The mean scores between teachers' perceptions of their personal performance related to the years teachers have held their degrees were significantly different when needing to know the teacher's role when assessing ADHD (Table 21); when information on ADHD could help the teacher become more successful with ADHD students (Table 22); and when there is a current need for ADHD education for educators (Table 23). In table 21, the years teachers have held their degree was broken down into the following six groups: grp. 1) 0-4 yrs (m 4.0000); grp. 2) 5-9 yrs. (m 3.7407); grp. 3) 10-14 yrs. (m 3.7500); grp. 4) 15-19 yrs. (m 4.1111); grp. 5) 20-24 yrs. (m 3.6471); and grp. 6) 25+ yrs. (m 3.1270). Table 22 and 23 showed no significant difference between the years teachers have held their degrees and their perceptions of their teaching

Table 21. The Years Teachers have Held Their Degrees when Rating Their Perceptions of Their Personal Performance when Needing to Know the Teacher's Role when Assessing ADHD

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Years of Degree	23.147	5	4.629	2.960*
Explained	23.147	5	4.629	
Residual	308.094	197	1.564	
Total	331.241	202	1.640	

*p < .05 **p < .01

performances when using the Tukey HSD test. Table 22 and 23 were also broken down into the following groups: Table 22 - grp. 1) 0-4 yrs (m 3.7500); grp. 2) 5-9 yrs. (m 3.4444); grp. 3) 10-14 yrs. (m 3.5833); grp. 4) 15-19 yrs. (m 3.8333); grp. 5) 20-24 yrs. (m 3.5098); and grp. 6) 25+ yrs. (m 2.9531); and Table 23 - grp. 1) 0-4 yrs (m 4.1000); grp. 2) 5-9 yrs. (m 3.7407); grp. 3) 10-14 yrs. (m 3.7083); grp. 4) 15-19 yrs. (m 4.1667); grp. 5) 20-24 yrs. (m 3.8431); and grp. 6) 25+ yrs. (m 3.2969).

H(15) - There will be no significant differences in the mean scores between teachers who have a master's degree or a bachelor's degree when teachers are rating their perception of the importance of ADHD students' education.

Table 22. The Years Teachers have Held Their Degrees when Rating Their Perceptions of Their Personal Performance when Information on ADHD Could Help the Teacher Become More Successful with ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Years of Degree	18.609	5	3.722	2.468*
Explained	18.609	5	3.722	
Residual	298.548	198	1.508	
Total	317.157	203	1.562	

*p < .05 **p < .01

Table 23. The Years Teachers have Held Their Degrees when Rating Their Perceptions of Their Personal Performance when There is a Current Need for ADHD Education for Educators

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Years of Degree	20.052	5	4.010	2.333*
Explained	20.052	5	4.010	
Residual	340.354	198	1.719	
Total	360.407	203	1.775	

*p < .05 **p < .01

H(15) - Failed to Reject There was no significant difference in the mean scores between teachers who have a master's degree or a bachelor's degree when teachers are rating their perception of the importance of ADHD students' education.

H(16) - There will be no significant differences in the mean scores between teachers who have a master's degree or a bachelor's degree when teachers are rating their perception of their teaching performance of ADHD students.

H(16) - Failed to Reject There was no significant difference in the mean scores between teachers who have a master's degree or a bachelor's degree when teachers are rating their perception of their teaching performance of ADHD students.

H(17) - There will be no significant differences in the mean scores between teachers related to the size of a school district a teacher teaches in when rating their perception of the importance of ADHD students' education.

H(17) - Rejected The mean scores between teachers' perceptions of the importance of ADHD students' education related to the size of a school district a teacher teaches in was significantly different when needing to know the strategies and methods to use with ADHD students (Table 24). The school district

sizes were broken down into the following groups: 1) 100-500 (m 2.3478), 2) 501-1000 (m 2.9434), 3) 1001-1500 (m 2.6000), 4) 1501-2000 (m 1.8000), 5) 2001-2500 (m 3.0000), 6) 2501-3000 (m 2.5000), and 7) 3001 or over (m 2.1250).

H(18) - There will be no significant differences in the mean scores between teachers related to the size of a school district a teacher teaches in when rating their perception of their teaching performance of ADHD students.

H(18) - Rejected The mean scores between teachers' perceptions of their personal performance related to the size of a school district a teacher teaches in was significantly different when needing to know the strategies and methods to

Table 24. Teachers' Perception of the Importance of ADHD Students' Education Related to the Size of the School District a Teacher Teaches in when Needing to Know the Strategies and Methods to Use with ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects	12.920	6	2.153	3.541**
Explained	12.920	6	2.153	
Residual	115.527	190	.608	
Total	128.447	196	.655	

*p < .05 **p < .01

use with ADHD students (Table 25). The school district sizes were broken down into the following groups: 1) 100-500 (m 4.4130); 2) 501-1000 (m 4.4727); 3) 1001-1500 (m 4.6190); 4) 1501-2000 (m 4.6667); 5) 2001-2500 (m 4.2000); 6) 2501-3000 (m 4.8750); and 7) 3001 or over (m 3.9524).

Table 25. Teachers' Perception of Their Personal Performance Related to the Size of the District the Teacher Teaches in when Needing to Know the Strategies and Methods to Use with ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects	26.877	6	4.480	2.297*
Explained	26.877	6	4.480	
Residual	358.840	184	1.950	
Total	385.717	190	2.030	

*p < .05 **p < .01

H(19) - There will be no significant differences in the mean scores between teachers related to the size of a class a teacher teaches when rating their perception of the importance of ADHD students' education.

H(19) - Rejected The mean scores between teachers' perceptions of the importance of ADHD students' education related to the class size a teacher teaches in was significantly different when needing to know the causes of ADHD (Table 26). The class size was broken down into the following four groups for

Table 26: 1) 1-10 (m 3.5000); 2) 11-20 (m 3.3125); 3) 21-30 (m 3.5619); and 4) 31 or more (m 9.1429). The mean scores between teachers' perceptions of the importance of ADHD students' education related to the class size a teacher teaches in was also significantly different when there is a current need for ADHD education for educators (Table 27); 1) 1-10 (m 4.3750); 2) 11-20 (m 3.9844); 3) 21-30 (m 4.0190); and 4) 31 or more (m 3.1429). There was also a significant difference when ADHD students are less productive academically than their classmates (Table 28); 1) 1-10 (m 3.4333); 2) 11-20 (m 3.1500); 3) 21-30 (m 3.3535); and 4) 31 or more (m 1.2000).

Table 26. Teachers' Perception of the Importance of ADHD Students' Education Related to the Class Size when Needing to Know the Causes of ADHD

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Class size	219.988	3	73.329	8.934**
Explained	219.988	3	79.329	
Residual	1674.455	204	8.208	
Total	1894.442	207	9.152	

*p < .05 **p < .01

Table 27. Teachers' Perception of the Importance of ADHD Students' Education Related to the Class Size when There is a Current Need for ADHD Education for Educators

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Class size	9.461	3	3.154	2.934*
Explained	9.461	3	3.154	
Residual	219.303	204	1.075	
Total	228.764	207	1.105	

*p < .05 **p < .01

Table 28. Teachers' Perception of the Importance of ADHD Students' Education Related to the Class Size when ADHD Students are Less Productive Academically than Their Classmates

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Class size	23.681	3	7.894	3.922*
Explained	23.681	3	7.894	
Residual	382.443	190	2.013	
Total	406.124	193	2.104	

*p < .05 **p < .01

H(20) - There will be no significant differences in the mean scores between teachers related to the size of a class a teacher teaches when rating their perception of their teaching performance of ADHD students.

H(20) - Rejected The mean scores between teachers' perceptions of their personal performance related to the class size a teacher teaches in were significantly different when ADHD students are less productive academically than their classmates (Table 29). Class size was broken down into the following four groups (Table 29): 1) 1-10 (m 2.7742); 2) 11-20 (m 3.0508); 3) 21-30 (m 3.3085); and 4) 31 or more (m 1.7500). No significant differences were found in a Tukey HSD test between teachers in Table 29. A significant mean score difference was also found when teachers do not understand the affect medication has on ADHD students (Table 30). The class size was broken down into the following four groups (Table 30): 1) 1-10 (m 2.5484); 2) 11-20 (m 2.8136); 3) 21-30 (m 3.3053); and 4) 31 or more (m 2.8333).

H(21) - There will be no significant difference in the mean scores between teachers related to the number of hours of classes teachers have had when rating their perception of the importance of ADHD students' education.

H(21) - Failed to Reject There was no significant differences in the mean score between teachers related to the number of hours of classes teachers have had when rating their perception of the importance of ADHD students' education.

Table 29. Teachers' Perception of Their Personal Performance Related to the Class Size when ADHD Students are Less Productive Academically than Their Classmates

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Class size	14.802	3	4.934	3.301*
Explained	14.802	3	4.934	
Residual	275.070	184	1.495	
Total	289.872	187	1.550	

*p < .05 **p < .01

Table 30. Teachers' Perception of Their Personal Performance Related to the Class Size when Teachers do not Understand the Affect Medication on ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Class size	17.346	3	5.782	3.321*
Explained	17.346	3	5.782	
Residual	325.607	187	1.741	
Total	342.953	190	1.805	

*p < .05 **p < .01

H(22) - There will be no significant differences in the mean scores between teachers related to the number of hours of classes teachers have had when rating their perception of their teaching performance of ADHD students.

H(22) - Rejected The mean scores between teachers' perception of their teaching performance of ADHD students related to the number of hours of ADHD classes a teacher has had was significantly different when rating their frustration level when working with ADHD students (Table 31). The number of hours of ADHD classes a teacher has had was broken down into the following 3 groups: 1) 1-5 (m 2.5333); 2) 6-9 (m 3.6000); and 3) 10 or more (m 3.5714); although no significant differences were found in a Tukey HSD test.

Table 31. Teachers' Perception of Their Personal Performance Related to the Number of Hours of Classes Teachers Have Had when Rating Their Frustration Level in Working with ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects ADHD Classes	12.079	2	6.039	3.819*
Explained	12.079	2	6.039	
Residual	69.581	44	1.581	
Total	81.660	46	1.775	

*p < .05 **p < .01

H(23) - There will be no differences in the percentage of teachers who are willing and those who are not willing to take classes for training on ADHD.

H(23) - Rejected There was a difference in the percentage of teachers willing to take a class for ADHD training compared to teachers not willing to take a class on ADHD training (Table 32).

Table 32. Percentage of Teachers Willing to Take Classes for ADHD Training Compared to Those not Willing

Willingness	Frequency	Percent
Yes	139	81.8
No	31	18.2

H(24) - There will be no significant differences in the mean scores between teachers related to the number of ADHD students teachers have had in their classes when rating their perception of the importance of ADHD students' education.

H(24) - Rejected The mean scores between the teachers' perception of the importance of ADHD students' education related to the number of ADHD students a teacher has had in class were significantly different when rating the teachers' role in assessing ADHD students (Table 33). The number of ADHD students that a teacher has had was broken down into 3 groups: 1) those having 1-5 ADHD students (m 4.2418); 2) those having 6-10 ADHD students (m 3.7500); and 3) those having 11 or more ADHD students (m 4.0741). The mean scores were also significantly different

when rating whether information on ADHD could help the teacher become more successful with ADHD students (Table 34). This group was also broken down into 3 groups: 1) those having 1-5 ADHD students (m 4.4835); 2) those having 6-10 ADHD students (m 4.0000); and 3) those having 11 or more ADHD students (m 4.0000). The mean scores were also significantly different when rating how medication affects ADHD students (Table 35). This group was also broken down into 3 groups: 1) those having 1-5 ADHD students (m 2.4419); 2) those having 6-10 ADHD students (m 2.7234); and 3) those having 11 or more ADHD students (m 3.3077).

Table 33. Teachers' Perception of the Importance of ADHD Students' Education Related to the Number of ADHD Students Teachers have had in Their Classes when Rating the Teachers' Role in Assessing ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Number of ADHD Students in Class	7.599	2	3.800	3.528*
Explained	7.599	2	3.800	
Residual	175.533	163	1.077	
Total	183.133	165	1.110	

*p < .05 **p < .01

Table 34. Teachers' Perception of the Importance of ADHD Students' Education Related to the Number of ADHD Students Teachers Have Had in Their Classes when Rating Whether Information on ADHD Could Help the Teacher Become More Successful With ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Number of ADHD Students in Class	9.612	2	4.806	5.730**
Explained	9.612	2	4.806	
Residual	136.725	163	.839	
Total	146.337	165	.887	

*p < .05 **p < .01

Table 35. Teachers' Perception of the Importance of ADHD Students' Education Related to the Number of ADHD Students Teachers have had in Their Classes when Rating how Medication Affects ADHD Students

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Main Effects Number of ADHD Students in Class	15.181	2	7.591	4.197*
Explained	15.181	2	7.591	
Residual	282.152	156	1.809	
Total	297.333	158	1.882	

*p < .05 **p < .01

H(25) - There will be no significant differences in the mean scores between teachers related to the number of ADHD students teachers have had in their classes when rating their perception of their teaching performance of ADHD students.

H(25) - Failed to Reject There was no significant differences in the mean scores between teachers related to the number of ADHD students teachers have had in their classes when rating their perception of their teaching performance of ADHD students.

Table 36 summarizes the eighteen ANOVA tests. Of the eighteen hypotheses, twelve rejected the null hypotheses and six failed to reject the null hypotheses. Table 37 summarizes the eight t-tests. Of the eight hypotheses, four rejected the null hypothses and four failed to reject the null hypotheses. Table 38 summarizes the one percentage; it was rejected.

The results section has summarized the statistical analyses performed for this study. Discussion and implications of these findings are presented in the next section.

Table 36. Summary of Tests of Hypotheses (Analysis of Variance)

Hypothesis	Rejected	Failed to Reject
H(1)	X	
H(2)		X
H(3)	X	
H(4)	X	
H(7)	X	
H(8)		X
H(13)		X
H(14)	X	
H(17)		X
H(18)	X	
H(19)	X	
H(20)	X	
H(21)	X	
H(22)		X
H(23)	X	
H(25)	X	
H(26)		X

Table 37. Summary of Tests of Hypotheses (t-Tests)

Hypothesis	Rejected	Failed to Reject
H(5)	X	
H(6)	X	
H(9)		X
H(10)		X
H(11)	X	
H(12)	X	
H(15)		X
H(16)		X

Table 38. Summary of Tests of Hypotheses (Percentage Frequency)

Hypothesis	Rejected	Failed to Reject
H(24)	X	

DISCUSSION AND CONCLUSIONS

The findings of this study will first be discussed in terms of the formulated null hypotheses. Next, general comments regarding possible explanations for findings will be offered which will then be followed by implications for further study.

The results of this study indicated that there were statistically significant differences of mean scores in several areas. The first area discussed is a significant difference in the mean scores of teachers related to the years of teaching experience when rating their perception of the importance of ADHD students' education (H1). Five different groups of years of teaching experience were compared, and no two groups were significantly different at the .05 level when using the Tukey HSD test. The ANOVA test is more sensitive to an overall cumulative difference, whereas the Tukey HSD was not sensitive enough to show a statistically significant difference between any two groups. Teachers with 11-14 years of experience had the highest mean (4.7368) and teachers with 1-3 years of experience had the lowest mean (4.0000). When teachers examined their perceptions of their personal performance related to their years of teaching experience (H2), there were no statistical differences in the mean scores. This may be reasoned by teachers feeling more confident with each added year of teaching experience, but not necessarily in growing disorder areas.

Statistically significant mean score differences in the age of teachers were found in teachers' perceptions of the importance of ADHD students' education (H3), as well as when rating their perception of their personal performance related to whether teachers need to know their role in assessing ADHD students and whether teachers need to know the methods and strategies to use with ADHD students (H4). Five different groups of teachers' ages were

compared using the Tukey HSD test. In hypothesis 3, significant differences were found between ages 30-39 (m 4.4717) and those that were 50+ (m 3.8542), and between ages 30-39 and ages 40-49 (m 3.9535). The first part of hypothesis 4 showed a significant difference between the age groups of 30-39 (m 3.9423) and those that were 50 and above (m 3.0889). The second part of hypothesis 4 showed a significant difference between the age groups of 22-29 and those that were 50 and above. It seems as if those that are aged 50 and above did not share the same views as those that were younger. This may be due to the fact that older teachers have not had the updated education opportunities that younger teachers have had. All ages of teachers seem to have a bearing on their perceptions in both education importance, as well as personal performance.

Mean scores between males' and females' perceptions of the importance of ADHD students' education were significantly different when needing to know methods and strategies to use with ADHD students, and when additional time was spent working with ADHD students (H5). When examining their perceptions of their personal performance there were significant differences in the mean scores between males and females when additional time was spent working with ADHD students (H6). Teachers lack additional time in their regular school day and many may find it difficult to find extra time to give to individual students, especially if classes are high in numbers.

When examining the mean scores between teachers who graduated from different Iowa public universities when rating their perceptions of the importance of ADHD students' education, there was a significant difference in the mean scores when teachers needed to know the teacher's role in assessing ADHD (H7). There were no significant differences between the

three Iowa universities when comparing them on a Tukey-HSD test of significance. The ANOVA test is more sensitive to an overall cumulative difference, whereas the Tukey HSD was not sensitive enough to show a statistically significant difference between any two groups. Teachers who graduated from Iowa State University had the highest mean (4.3846) and teachers from the University of Iowa had the lowest mean (3.4615). The mean (4.1633) for the University of Northern Iowa fell between Iowa State University and the University of Iowa. There were also no significant differences in the mean scores when teachers who graduated from different Iowa universities rated their perceptions of their teaching performance of ADHD students (H8). There were no significant differences in the mean scores between teachers who graduated from different Iowa public universities and those who graduated from different Iowa private universities when they rated their perceptions of the importance of ADHD students' education (H9) and their perception of their teaching performance of ADHD students (H10). This appears to show that both private and public universities in Iowa may be providing similar programs for ADHD students.

There were significant statistical differences in the area of the teachers' perceptions of the importance of ADHD students' education related to those who graduated from non-Iowa universities and those who graduated from Iowa universities. These included the following: when information on ADHD could help the teacher become more successful with ADHD students, when more education on ADHD students for educators was currently needed, and when additional time was needed when working with ADHD students (H11).

The mean scores between teachers who graduated from Iowa universities and those who graduated from non-Iowa universities when rating their perceptions of their teaching

performance of ADHD students was significantly different in several areas. This may indicate a difference in the training given at non-Iowa universities compared to the training teachers receive in Iowa. The differences were in the following areas: teacher's perception of their personal performance when rating early diagnosis of ADHD students; when rating the teachers' role in assessing ADHD; when rating whether information on ADHD could help the teacher become more successful with ADHD students; when rating the current need for ADHD education for educators; when rating the need for additional time when working with ADHD students; when rating the teachers' success when working with ADHD students; when rating their frustration level when working with ADHD students; when rating their level of comfort when talking with parents about ADHD students; and when rating whether ADHD students are less successful and less productive than their classmates H(12).

There were no significant differences in the mean scores between teachers related to the years teachers have held their degrees when rating their perceptions of the importance of ADHD students' education (H13). However, there were significant differences in the mean scores between teachers related to the years they have held their degrees when rating their perceptions of their personal performance when needing to know the teachers' role when assessing ADHD. Six different groups of years teachers have held their teaching degree were formed and a comparison between these six groups was done by using a Tukey HSD test. A significant difference was found (Table 21). Teachers who have held their degree for 15 to 19 years had the highest mean (4.1111) and were significantly different from teachers who have held their degrees for 25 or more years (m 3.1270). A significant difference in the mean scores between teachers related to the years teachers have held their degrees was found when

information on ADHD could help the teacher become more successful with ADHD students. Again, a Tukey HSD test was used to compare the six different groups found in Table 22 and no significant differences were found. A significant difference in the mean scores was also found when there is a current need for ADHD education for educators, but when applying the Tukey HSD test, no significant differences were found between any of the six groups in Table 23 (H14). The ANOVA test is more sensitive to an overall cumulative difference, whereas the Tukey was not sensitive enough to show a statistically significant difference between any two groups. The pattern for the means of the years teachers have held their degrees are similar. Teachers may feel a lack of training in special areas. This may indicate a lack in their training, especially for those who have held their degrees for extended years. Most of ADHD education has been taught in recent years.

When comparing the mean scores between teachers who have a master's degree or a bachelor's degree when teachers are rating their perception of the importance of ADHD students' education (H15) and rating their perception of their personal performance (H16) there were no significant differences. Master's degrees tend to be specifically specialized, and those teachers may feel at as much of a loss in dealing with ADHD students as those with only a bachelor's degree. Since this study included only two responses from teachers who had obtained a Ph.D., those responses were eliminated.

When comparing significant differences in the mean scores between teachers related to the size of a school district, the teachers' perception of the importance of ADHD students' education when needing to know the strategies and methods to use with ADHD students was significantly different (H17), as well as when teachers rated their perception of their personal

performance in the same area (H18). This may be attributed to the lack of ADHD education in many districts. Educators are taught strategies and methods for regular education students, but choosing the correct strategies to use with exceptional students may be taught in a more specialized program. Seven groups were formed according to the school district size. When using a Tukey HSD test for Table 24, no significant differences were found. The ANOVA test is more sensitive to an overall cumulative difference, whereas the Tukey was not sensitive enough to show a statistically significant difference between any two groups. Teachers that taught in a district of 2001-2500 student population had the highest mean (3.0000) and the lowest mean was (1.8000) from schools having a population from 1501-2000. However, there were significant differences between the district sizes teachers teach in for hypothesis 18. When making comparisons between the school districts on Table 25 using the Tukey HSD, a significant difference was found between several groups, including: those teaching in a district of 501-1000 (m 4.4727) and those teaching in a district of 3001 and over (m 3.9524); teachers teaching in a district of 1001-1500 (m 4.6190) and those teaching in a district of 3001 and over; those teaching in a district of 1501-2000 (m 4.6667) and those teaching in a district of 3001 and over; and teachers teaching in a district of 2501-3000 (m 4.8750) and those teaching in a district of 3001 and over. The district size a teacher teaches in made a difference in their perceptions of ADHD students' education.

The size of the class a teacher teaches had several significant differences in the mean scores between teachers related to the teachers' perception of the importance of ADHD students' education. The first difference was when teachers needed to know the causes of ADHD. When comparing the groups in Table 26 and using the Tukey HSD test, a significant

difference was shown between teachers teaching in class sizes of 1-10 (m 3.5000) and class sizes of 31 or more (m 9.1429); class sizes of 11-20 (m 3.3125) and 31 or more; and class sizes of 21-30 (m 3.5619) and 31 or more. The second significant difference was when there was a current need for ADHD education for educators. When comparing the groups in Table 27 and using the Tukey HSD test, a significant difference was shown between teachers teaching in class sizes of 1-10 (m 4.3750) and 31 or more (m 3.1429). The third significant difference was when ADHD students were less productive academically than their classmates. When comparing groups in Table 28 and using the Tukey HSD test, a significant difference was shown between the following groups: those teaching in class sizes of 1-10 (m 3.4333) and 31 or more (m 1.2000); those teaching in class sizes of 11-20 (m 3.1500) and 31 or more; and those teaching is class sizes of 21-30 (m 3.3535) and 31 or more (H19). There was a significant difference found between all grouped class sizes.

When teachers rated their perception of their personal performance related to the size of the class a teacher teaches, a significant differences was found when ADHD students were less productive academically than their classmates. When comparing the groups in Table 29 by using a Tukey HSD test, no two groups were found to be significantly different. The ANOVA test is more sensitive to an overall cumulative difference, whereas the Tukey was not sensitive enough to show a statistically significant difference between any two groups. The teachers having an average class size of 21-30 had the highest mean (3.3085) and the teachers having 31 or more students had the lowest mean (1.7500). A significant difference was found when teachers did not understand the affect medication had on ADHD students when rating his or her personal performance (H20). When comparing the groups in Table 30 by using a

Tukey HSD test, those teachers teaching a class size of 1-10 (m 2.5484) was significantly different from teachers teaching a class size of 21-30 (m 3.3053). The size of a classroom varies greatly in every setting. Many districts are short on finances, and as a result, more students are mainstreamed or included in regular classrooms where teachers are not thoroughly trained in the teaching of students with disorders.

When comparing the number of hours of classes teachers have had when rating their perception of the importance of ADHD students' education, there were no significant differences (H21). But, when examining the teachers' perception of their personal performance in the same area, there was a significant difference when rating their frustration level in working with ADHD students (H22). A lack of training may contribute to this frustration level. When comparing the number of classes teachers have had on ADHD, there were no significant differences between the three groups when using a Tukey HSD test. The ANOVA test is more sensitive to an overall cumulative difference, whereas the Tukey was not sensitive enough to show a statistically significant difference between any two groups. The group that had 6-9 hours of professional training had the highest mean (3.6000) and the group that had 1-5 hours of professional training had the lowest mean (2.5333).

A percentage frequency was completed to compare those teachers who were willing to take classes for ADHD training and those who were not (H23). The percentage of those willing to take a class was much greater than those not willing. In today's school system, the number of ADHD students has grown tremendously, and teachers may be feeling more frustration than ever before and are therefore willing to get the training they need in order to help those students become successful.

When comparing the number of ADHD students that teachers had in their classrooms in 1995, there was a significant difference in the mean scores when teachers rated their perception of the importance of ADHD students' education when rating the teachers' role in assessing ADHD students. When comparing the groups in Table 33 by using the Tukey HSD test, teachers having 1-5 ADHD students (m 4.2418) in their classrooms were significantly different from those having 6-10 ADHD students (m 3.7500) in their classrooms. There was also a significant difference in the mean scores when teachers rated whether information on ADHD could help the teacher become more successful with ADHD students (Table 34). Again, a Tukey HSD was done to compare the teachers within the three groups. A significant difference was found between teachers who had 1-5 ADHD students (m 4.4835) in their classrooms from those who had 6-10 ADHD students (m 4.0000) in their classrooms. A significant difference was also found between those who had 1-5 ADHD students in their classrooms and those who had 11 or more (m 4.0741). A significant difference was found in the mean scores when teachers rated how medication affects ADHD students (H24). A significant difference was found between teacher who had 1-5 ADHD students (m 2.4419) in their classrooms and those that had 11 or more ADHD students (m 3.3077) in their class Table 35). The number of ADHD students a teacher has in his or her classroom does not seem to make a difference when teachers are rating their responses. The data supports that the number of ADHD students can make a tremendous difference in a teacher's perception. However, when comparing the number of ADHD students that teachers had in their classrooms in 1995, there were no significant differences in the mean scores when teachers rated their perception of their personal performance (H25). Teachers do feel that all students'

education is important and when they are not trained or educated in how to best teach these students, a feeling of helplessness or lost control may be indicated.

In conclusion, the objective of this study was to determine if there were differences in teachers perceptions of education adequacy of ADHD students, or personal performance adequacy in teaching those same students. The results of the study indicated that there were statistically significant differences in both areas under several different categories. It was not a goal of this study to determine which factors and to what degree they contributed to the findings.

Factors that may have contributed to the findings are the following:

1. The questionnaire was sent at the end of the school year, which is a hectic time for all teachers.

2. The instructional styles and personalities of the teachers may have influenced the study's results.

3. The relationships between the teachers and students may have contributed to the results.

4. The physical environment of the different districts and the overall "school climate" may have greatly influenced the responses to the questionnaire.

Implications for Further Study

From this study, it appeared that differences between Iowa and non-Iowa university graduates was ample. However, to what degree remains unclear. Other variables may have

influenced the in state or out of state graduates. The following is a list of suggestions for further research:

1. Study each teaching discipline separately at the secondary level. A longitudinal study, assessing each discipline may provide more information on perceptions from every area.

2. Present the same questionnaire twice within the same school year. Examining the same teachers' results at the beginning and at the end of the year school may provide more information on whether the time of the year the teachers make their responses are important.

3. Present the same questionnaire to teachers from several states . By obtaining a larger sample size, more general predictive statements could be made about U.S. teachers and their teaching the ADHD students.

APPENDIX

LETTER TO TEACHER

SURVEY INSTRUMENT

May 2, 1995

Dear Teacher,

I am currently enrolled in the Master's Program in Special Education at Iowa State University. To fulfill the graduate requirements, I must prepare a master's thesis. The purpose of my thesis is to determine the degree of tolerance secondary teachers have for students who are diagnosed with Attention Deficit Hyperactivity Disorder (ADHD). Your name was selected for my sample using a random sampling technique of high school teachers in Iowa.

I have attached a questionnaire that I would like you to complete and return to me in the self-addressed, stamped envelope by May 16, 1995. Responding to the questions will take approximately 5 minutes of your time. Returning the completed questionnaire is vital to my research and completion of my thesis program. If you are interested in the results and would like a copy, please indicate your request on the bottom of your questionnaire and I will furnish a copy to you. If you feel any discomfort in answering the questionnaire, please state your reasons why and return it in the self-addressed, stamped envelope.

Your reply will remain anonymous. Thank you for your time and effort which is greatly appreciated.

Sincerely yours,

Tamera J. Alphs

Major Professor:
Dr. Gary Downs
Iowa State University
N131E Lagomarcino
Ames, Iowa 50011
515-294-3616

Please respond to each question listed below

1. How many years of teaching experience do you have?

   1) 1-3 2) 4-6 3) 7-10 4) 11-14 5) 14+

2. What is your age?

   1) 22-29 2) 30-39 3) 40-49 4) 50+

3. Sex?

   1) Female 2) Male

4. What university did you graduate from?

   Name of University _____ Location _____

5. What year did you graduate from college?

   _____

6. What is your major and degree?

   Bachelor's _____ (major) Master's _____ (major) Doctorate _____ (major)

7. What grade level do you teach?

   1) K-6 2) 7-12

8. What disciplines do you teach? (e.g. social studies, math, special ed., PE, etc.)

   _____ _____ _____

9. What is the size of the district in which you teach (7-12) ?

   1) 100-500 2) 501-1000 3) 1001-1500 4) 1501-2000 5) 2001-2500
   6) 2501-3000 7) 3001 or over

10. What is the average size class you teach?

    1) 1-10 2) 11-20 3) 21-30 4) 31 or more

11. Do you perceive you have had adequate training regarding Attention Deficit Hyperactivity Disorder (ADHD)?

    Yes ____ No ____
    If Yes: 1) Classes: number of hours _____
    2) Workshops/seminars: number of hours _____

12. If you answered no to the above question, would you be willing to be trained in an ADHD class or inservice?

    1) Yes 2) No

13. What length of a training session would you be willing to attend?

    1) 1-3 hours 2) 4-6 hours 3) 7-9 hours 4) 10+ hours

According to the American Psychiatric Association, (1994), the following is a list of characteristics of Attention Deficit Hyperactivity Disorder (ADHD).

Inattention
- often fails to give close attention to or makes mistakes on schoolwork
- often has difficulty sustaining attention in tasks
- often does not seem to listen when spoken to directly
- often does not follow through on instructions and fails to finish schoolwork
- often has organizational difficulty
- often avoids, dislikes, or is reluctant to engage schoolwork or homework
- often loses things necessary for tasks (assignments, materials, etc.)
- is often easily distracted by extraneous stimuli
- is often forgetful in daily activities

Hyperactivity
- often fidgets or squirms
- often leaves seat in classroom
- often seems restless
- often has difficulty engaging in leisure activities quietly
- is often "on the go" or acts as if "driven by a motor"
- often talks excessively

Impulsivity
- often blurts out answers before questions have been completed
- often has difficulty awaiting turn
- often interrupts or intrudes on others (butts into conversations)

14. I have had one or more students who exhibit **at least 6** of the above characteristics during this school year. Yes _____ No _____

15. Please estimate the number of ADHD students you have had this year. _____

The first column below refers to how important the concept is to the ADHD student's success in the educational setting. The second column refers to how important the concept is to your personal performance in the classroom setting. Please respond to the following questions by circling your response in each column.

		Importance in Education	**Personal Performance**
		Strongly Agree.....5 Agree.....4 Neutral.....3 Disagree.....2 Strongly Disagree...1 No Opinion.....0	Very Adequate.....5 Adequate.....4 Neutral.....3 Inadequate.....2 Strongly Inadequate..1 Don't Know.....0
16.	I feel that children are diagnosed with ADHD early enough.	0 1 2 3 4 5	0 1 2 3 4 5
17.	I need to know the causes of ADHD.	0 1 2 3 4 5	0 1 2 3 4 5
18.	I need to know the teacher's role in assessing ADHD.	0 1 2 3 4 5	0 1 2 3 4 5
19.	I need to know the methods/strategies to use with ADD students.	0 1 2 3 4 5	0 1 2 3 4 5
20.	I think information on ADHD could help me become more successful with ADHD students.	0 1 2 3 4 5	0 1 2 3 4 5
21.	I think there is currently a need for ADHD education for educators.	0 1 2 3 4 5	0 1 2 3 4 5

The first column below refers to how important the concept is to the ADHD student's success in the educational setting. The second column refers to how important the concept is to your personal performance in the classroom setting.

Please respond to the following 6 items by circling your response only if you have worked with or perceive to have worked with one or more ADHD students this school year.

		Importance in Education	**Personal Performance**
		Strongly Agree.....5 Agree.....4 Neutral.....3 Disagree.....2 Strongly Disagree...1 No Opinion.....0	Very Adequate.....5 Adequate.....4 Neutral.....3 Inadequate.....2 Strongly Inadequate..1 Don't Know.....0
22.	I spend additional time working with ADHD students.	0 1 2 3 4 5	0 1 2 3 4 5
23.	I do not feel successful when working with ADHD students.	0 1 2 3 4 5	0 1 2 3 4 5
24.	I feel frustrated in my work with ADHD students.	0 1 2 3 4 5	0 1 2 3 4 5
25.	I feel uncomfortable when talking with parents about ADHD.	0 1 2 3 4 5	0 1 2 3 4 5
26.	I think ADHD students are less successful and less productive academically than their classmates.	0 1 2 3 4 5	0 1 2 3 4 5
27.	I do not understand how medication affects ADHD students.	0 1 2 3 4 5	0 1 2 3 4 5

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