THE UNEXPLORED ACHIEVMENT GAP: A PHENOMENOLOGICAL STUDY OF THE EXPERIENCES OF TEACHERS OF ELEMENTARY STUDENTS WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

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ABSTRACT

Diagnosis and treatment of students with Attention Deficit-Hyperactivity Disorder (ADHD) is increasing at a rapid rate. There are a number of problems associated with ADHD that students may face, including academic obstacles, issues with classroom engagement, and social concerns. The purpose of this phenomenological study was to describe the experiences and perceptions teachers who work with elementary students who have been diagnosed with ADHD and are receiving medication in regards to their classroom engagement, academic achievement, and non-instruction time at a large, suburban elementary school. Examining teacher perceptions added to the body of knowledge surrounding the academic and behavior status of medicated students and illuminated ways teachers may help these students close their academic and social gaps.

Data was collected through the use of teacher-created documents, interviews, and classroom observations. Phenomenological analysis was utilized for in-depth interviews, while an open coding technique was used for documents and observations. Two overarching themes were illuminated during analysis: medication affects how students with ADHD

perform academically and behaviorally; and the effects of ADHD and medicated students with ADHD impact a teacher's work in the classroom. The experiences of these teachers suggest that teachers need to have an increased knowledge of ADHD and should be provided with more training around the condition, in order to best meet the needs of these students. Also, employing the tenets of democratic education may assist teachers as they strive to meet the needs of all learners.

APPROVAL PAGE

The faculty listed below, appointed by the Dean of the School of Education, have examined a dissertation titled "The Unexplored Achievement Gap: A Phenomenological Study of the Experiences of Teachers of Elementary Students with Attention-Deficit/Hyperactivity Disorder," presented by M. Amanda Kain, candidate for the Doctor of Education degree, and certify that in their opinion it is worthy of acceptance.

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CHAPTER 1

INTRODUCTION

Attention-Deficit Hyperactivity Disorder (ADHD) is one of the most commonly diagnosed childhood medical conditions (American Academy of Pediatrics, 2011; American Psychiatric Association, 2000; Biederman & Faraone, 2005). ADHD diagnosis is on the rise, with an estimated three to five percent of children worldwide suffering from the condition; in the United States, the disorder is more commonly diagnosed with two to twelve percent of children currently identified as having ADHD (Stubbe, 2000). Prevalence of ADHD is consistent among class, culture and race (Barkley, 2006). According to the National Survey of Children's Health survey analysis, conducted by the Centers for Disease Control and Prevention, approximately eight percent of children ages seven to eighteen in the United States have been diagnosed with the disorder, with males being diagnosed approximately two and a half times more often than females (Visser & Lesesne, 2005). For females, the prevalence rate was found to be consistent for all socioeconomic classes; for males, however, the diagnoses increase in families below the poverty threshold (Visser & Lesesne, 2005). The prevalence of a positive ADHD diagnosis is highest among non-Hispanic, primarily English speaking, and insured children (Visser & Lesesne, 2005).

Medication is often the first line treatment with 56.3% of ADHD diagnoses being treated in this way (American Psychiatric Association, 2000; Visser & Lesesne, 2005). However, medication only addresses behavioral issues and not issues of academic achievement; there is very little research examining the effects of stimulants on classroom academic function (Evans et al., 2001; Loe & Feldman, 2006). There are a number of

negative consequences associated with the presence of ADHD in elementary students, including reduced academic achievement, making ADHD a fundamental variable in poor scholastic achievement in these students (American Academy of Pediatrics, 2011; American Psychiatric Association, 2000; Cleary et al., 2006).

As general education teacher for the past five years, I have had the opportunity to work with students who have been diagnosed with ADHD, both medicated and not. I have experienced this phenomenon first hand: one such situation occurred with a second grade student I taught, Jay (a pseudonym used to ensure anonymity). I taught Jay in my first year of teaching second grade. His previous teacher told me what a bad kid he was: that he was mean to the other students and unpleasant to have in the classroom. I prepared myself for the worst and developed many preconceived notions about Jay. When Jay came into my classroom, I immediately honed into these behaviors. Jay was impulsive and very emotional at times; he also could not control his movement, had poor social skills, and lacked focus. In short, Jay was a physical manifestation of many ADHD symptoms.

I simply could not understand this child, who was so different from myself as a student. I often punished Jay for his behavior, which I now know was out of his control. When I spoke to Jay's mother about the situation, she confirmed that he did indeed have ADHD and that he had a prescription for medication. However, she did not have the money to pay for his medication so he would not be taking it.

My patience with Jay grew a lot that year. After observing and working with him, I realized that Jay was not doing these things to be a "bad" kid. He really could not control himself. Jay and I began to work together to help him get control of his impulses, but since I had not received any sort of training on how to help students with ADHD, it was really the

blind leading the blind. His behavior did improve, though only marginally. During the spring of that year, Jay's mother scraped together the money to afford his medication. I remember feeling so relieved that all of Jay's problems would finally be solved!

However, something very interesting happened. When off of the medication, Jay was an average to low-average student. I wholeheartedly expected that he would make huge academic gains once he gained some self-control from the medication. It seemed intuitive that he would learn so much more now that he was able to fully pay attention and engage in classroom instruction. It did not happen. While Jay was now able to sit still in class, he still was not really engaged in what was going on in the classroom. He could focus on what was being said and try to practice independently, but was missing a skill set that other students, who had been engaged in school for the previous years, had already acquired.

Even though Jay was no longer a behavior problem, he still did not achieve the kind of academic success I wanted for him. I was not the kind of teacher he needed. I was not empathetic or compassionate to his particular needs. While I can blame it on my inexperience or whatever other excuse, I failed as a teacher with Jay. I did not understand the gap between what I expected of him and what he was actually capable of doing. If I had been a more effective teacher, I would have worked to plan, monitor, and assess Jay for both academic and behavioral goals in order to ensure growth in all areas (Stronge, 2007). Sadly, I do not believe I am the only teacher to have behaved this way. Because of Jay, I decided to research the perceptions that teachers have of students with ADHD after they are medicated. I believe that, had I better understood ADHD, the role of medication, and my perceptions, I would have been a more effective teacher. By illuminating the experiences of teachers of medicated students with ADHD, schools, teachers, and parents will have more clarity when

seeking to understand the current academic and behavioral outcomes of these students. This may lead to increased professional development, ADHD-specific academic and behavioral interventions, and more positive student-teacher relationships.

In my experience, medication does seem to be effective in treating the core symptoms of ADHD: impulsivity, body control, and distractedness. Students, parents, and teachers are often very pleased with the quick reactions students have to medication and the profound effects it has on classroom behavior (Havey, Olsen, McCormick, & Cates, 2005). Teachers and parents, myself included, assumed students who are medicated are going to achieve more because they are now well behaved (Havey, Olsen, McCormick, & Cates, 2005). However, in my experience, I have found these students to be severely lacking in the knowledge, skills, and mindsets necessary to be successful in the classroom, even after medication. While students are now able to pay attention and focus, they still do not necessarily know how to *engage* in a classroom and in their own learning. Many of these students may have gaps in necessary academic, behavioral, and social knowledge that are not addressed because they are now exhibiting functional behavior in the classroom and are no longer a behavior problem. As educators and parents, the emphasis is not on what students might have missed in the past before they were medicated; instead, the focus is on the future. While teachers may be using academic interventions to target the deficiencies in content and skills, I believe these students may be missing the foundational knowledge of *how* to be a student and how to engage in the educational setting; many of these lessons are learned early on in kindergarten when students are learning how to behave in school, what is expected of them, and what participation looks like in the classroom (Hale et al., 2011). In subsequent grades, these lessons are no longer explicit. After kindergarten, students are

expected to come into the classroom ready to learn and with some knowledge of school procedures and routines; when students do not have these skills, time must be allocated to teach students these behaviors. If previously unmedicated ADHD students have been disengaged in the classroom setting for these formative years, they may not only have gaps in academic knowledge, but also in the processes and behaviors necessary to acquire knowledge.

Teacher perceptions can have a powerful impact in the classroom, especially with these students (Archambault, Janosz, & Chouinard, 2012). These students may still fall victim to the ever-widening achievement gap. Teachers are the main academic caregivers at school; therefore, they have intimate knowledge of how students perform, including their strengths and weaknesses. Understanding teacher perceptions of medicated students with ADHD will allow for teachers and parents to more fully know the academic and behavioral status of these students.

Potentially, these students are always at risk to be lower performing. If they do not have the skills to be successful in learning and have gaps in foundational knowledge, they will always be playing a game of catch-up when compared to their peers. While teachers may be working to catch students up each year, this research serves to illuminate what the needs of these students may be as perceived by their teachers. As the incidence of ADHD diagnosis is increasing rapidly (Stubbe, 2000), these students are going to be increasingly present in classrooms.

The Problem Statement

The problem is that even with medication, students with ADHD are not engaged in the classroom; while they are well behaved, there are manifestations of their disengagement that are demonstrated through test scores, social functioning, and learning readiness. For the purpose of this study, engagement in the classroom is defined as whether or not a child partakes in the learning opportunities planned for him or her (Ponitz, Rimm-Kaufman, Grimm, & Curby, 2009). Loe and Feldman (2006) state:

> Psychopharmacological treatments, particularly with stimulant medications, reduce the core symptoms of ADHD at the level of body functions. In addition, psychopharmacological treatments have been shown to improve children's abilities to handle general tasks and demands; for example, medication has been shown to improve academic productivity as indicated by improvements in the quality of note-taking, scores on quizzes and worksheets, the amount of written-language output, and homework completion. However, stimulants are not associated with normalization of skills in the domain of learning and applying knowledge. For example, stimulant medications have not generally been associated with improvements in reading abilities. (p. 646-647)

A study conducted by Evans et al. (2001) explores the effects of stimulant medication on academic achievement, providing support for the problem. A group of 45 students (40 male and five female) took part in an eight-week summer treatment program; this double blind placebo study required that participants be older than 12, meet the criteria for a medical ADHD diagnosis, and have a verbal IQ greater than 80 (Evans et al., 2001). Participants were at camp for approximately 40 hours each week and were given direct instruction in

social skills, note taking, problem-solving, and study skills, as well as taking part in therapeutic activities (Evans et al., 2001). Students were explicitly taught how to be a student and teachers worked to show students how to be successful despite the manifestation of their ADHD symptoms; these interventions provided students with strategies for academic and social success. After two weeks, students were randomly assigned either a placebo or one of three dosage amounts of the ADHD stimulant medication, methylphenidate (MPH). Improvements in both academics and behaviors were measured, through teacher ratings using the IOWA Conners Rating Scale and daily assessments concerning content being taught. The results show a statistically significant improvement in all behavioral and academic areas, with 78-91% of participants showing improvement, depending on the MPH dosage. The researchers noted that participants using medication had grades change from 'F' to 'C,' began taking better notes, had improved handwriting, and increased correct written expression (Evans et al., 2001). While this study does demonstrate improved academic and behavioral achievement for medicated students with ADHD, improvement only occurred after significant interventions through an intensive eight-week summer camp. More research, which was done through this study, must be conducted in order to better understanding how students in general education classrooms, who may not have the benefit of specialized summer camps, are faring academically and behaviorally.

Educators and parents often consider students to be "cured" by medication and may not understand that further intervention could be necessary; the assumption is that students should be able to function normally in the classroom now that they are able to control their impulsiveness and hyperactivity (Evans et al., 2001). However, this is not an issue of lower intelligence or other cognitive deficiencies. This is supported by data gathered surrounding

the Intelligence Quotient (IQ) of students with ADHD; several studies confirm that students with this disorder do not have lower IQs than those of their peers. Table 1.1 summarizes the IQ of students in comparison with their non-ADHD peers.

Table 1

Studies Showing IQ Comparison in ADHD and Non-ADHD Children

Researchers	Full Scale IQ of students with ADHD	Standard Deviation	Sample Size
MTA Cooperative Group (1999)	100.9	14.8	n=579
Doyle et al. (2000)	107.1	16.7	n= 113
Schuck & Crinella (2005)	105.62	14.43	n= 123

Note: a score or IQ of 100 on the Wechsler Intelligence Scale for Children is representative of the standardized population mean.

When parents and teachers are shown that these students are at average or above-average intelligence, it may be assumed that they will be achieving more once the medication can help them focus. However, students with ADHD are not closing the achievement gap of previous years simply by taking medication.

A study conducted by McConaughy, Volpe, Antshel, Gordon, and Eiraldi (2011) examined the academic and social impairments of elementary students with ADHD. This study concluded that these students exhibited significantly lower academic functioning and social impairment (as compared to their peers) as rated by both parents and teachers; these students also scored significantly lower on standardized tests (McConaughy et al., 2011). An additional study by DuPaul et al. (2004) compared the skills of elementary students with ADHD to their non-ADHD peers and found ADHD students were indeed achieving less; the researchers concluded that targeting behaviors alone was not sufficient to close the achievement gap for students with ADHD (DuPaul et al., 2004).

The literature shows that the cause of the problem is the treatment of behavioral symptoms of students with ADHD by medication and no treatment of the academic problems students are facing. Currently, up to 80% of students with ADHD exhibit difficulties in academic performance and the classroom setting, which ultimately leads to long-term outcome of chronic academic underachievement (DiPerna et al., 2006). The study conducted by Hale et al. (2011) cites the causation of this issue may be the difference between the dosage of MPH needed for students to control themselves physically and the dosage of MPH needed to help students engage cognitively; since doctors and parents are solely focused on improving behaviors, they are not looking beyond the issue of behavior to that of academic achievement. This is the only study identified which spoke specifically to the cause of the problem and not simply reaffirming the problem exists; it is because of the lack of research in this area that I chose to research teachers' perceptions of students' academic and social functioning after they are medicated and not simply teachers' perceptions of students with ADHD.

Purpose of the Study

The purpose of this phenomenological study was to describe the experiences and perceptions teachers who work with elementary students who have been diagnosed with ADHD and are receiving medication in regards to their classroom engagement, academic achievement, and non-instruction time at a large, suburban elementary school. Examining teacher perceptions added to the body of knowledge surrounding the academic and behavior status of medicated students and illuminated ways teachers may help these students close their academic and social gaps. Phenomenology was defined as: describing the, "meaning for several individuals of their lived experiences of a concept or a phenomenon. Phenomenologists focus on describing what all participants have in common as they experience a phenomenon" (Creswell, 2013, p. 60). Phenomenology was utilized in the research design in order to understand and describe the classroom experiences of teachers with medicated students with ADHD.

Research Questions

In the interest of discovering more about this phenomenon, the following research questions and sub-questions were explored:

1. What themes are discovered through teacher engagement in classroom instruction of elementary students who have been diagnosed with ADHD and are receiving medication at a large, suburban elementary school?
    a. What practices are teachers using to engage these students?
    b. In what ways do teachers interact with students instructionally?

c. How do teachers perceive the academic achievement of these students as opposed to non-medicated students with ADHD and/or non-ADHD students?

2. What themes are discovered in attitudes of teachers toward elementary students who have been diagnosed with ADHD and are receiving medication during non-instruction time at a large, suburban elementary school?

    a. In what ways do teachers interact with students during non-instruction time?

    b. How do teachers perceive interactions with students during non-instruction time?

Theoretical Framework

According to Maxwell (2013), the term theoretical framework, which is synonymous with conceptual framework, is the organization of assumptions, concepts, beliefs, expectations and theories that support one's study (p. 33). Warmbrod (1986) stated, "I am assuming that we agree that a theoretical/conceptual framework can be defined as a systematic ordering of ideas about the phenomena being investigated or as a systematic account of the relations among a set of variables" (p. 2). Through the process of this theoretical framework, the phenomena is framed through the lens of my own personal experiences, beliefs and thoughts; current literature is also provided to support the existence of the problem and the impact among students in today's society. The structure of the frameworks incorporates Maxwell's (2013) modules for constructing the theoretical framework; they consist of experiential knowledge, prior and existing theory and research, and thought experiments of the study. Experiential knowledge includes, "identifying and

taking account of all perspective (one) brought to the study" (Maxwell, 2013, p. 46). Prior and existing theory and research addresses what is currently being said about the problem and provide a brief overview of the literature surrounding the problem. According to Maxwell (2013), thought experiments of the study, "challenge you to come up with plausible explanations for your and other's observations, and to think about how to support or disprove these" (p. 68).

The problem is that there is not enough knowledge concerning the academic and social improvements of elementary students who have been diagnosed with Attention-Deficit/Hyperactivity Disorder and are currently being treated with medication. The potential impact of this problem is the existence of an unidentified achievement gap between these students who are continuing to struggle and their higher functioning peers. By not addressing the gap that exists among students, a number of pupils may have educational deficits that are not being considered.

Four areas were examined as part of the existing theory and research: the history and background of ADHD; ADHD treatments; student engagement, student achievement, and ADHD; and teacher perceptions of students. Because of the increasing prevalence among children and controversy surrounding the disorder, a background and history of the topic were examined. It is imperative to discuss ADHD treatment to examine the wide variety of treatments available and to establish medication as the baseline treatment. Student engagement and student achievement, as well as academic achievement of students with ADHD, illuminate the gap that currently exists for these students. By understanding the potential impact of teacher perceptions, it may be better understood how these students are being perceived by teachers and how those perceptions affect student engagement and

achievement. Care ethics and deficit thinking are also addressed within this strand, as it is important to understand how teacher perceptions and thinking about students shape instruction and interactions; this conversation is also extended and applied not only to students with ADHD, but also students of color, non-native English speakers, and students from low-income homes.

I brought many assumptions to this study and about this topic. First and foremost, I believed the reason for this lack of achievement post-medication is that students have gaps in basic knowledge from previous years and have missed the explicit and implicit instruction given on how to be a successful student. By the time these students are able to focus and engage in the classroom setting, they either cannot comprehend the content being transmitted or do not know what a successful student does in the classroom. This is not at the fault of the teacher, however. Each year, students are provided with behavior plans and academic interventions designed to eliminate their deficits. However, depending on the severity of ADHD symptoms, the interventions provided either are not enough or are not appropriate to help students close the gap. I also believed that, because of the dramatic change in behavior after medication, teachers and parents assume students are learning. While students now seem to be paying attention and are compliant, they may not be able to learn if they do not have the skills necessary to do so.

I also recognized that I brought many assumptions to my own general education classroom, many of which were particularly evident through the story of Jay. Jay came to me with a reputation that I chose to believe; his previous teacher found him to be a challenging student and I chose to believe his previous teacher instead of suspending judgment. I believe that many times students with ADHD come into new classrooms with

this reputation, which is a manifestation of their disorder: they may be seen as noncompliant, disruptive, and hyperactive. While I did not necessarily blame Jay's mother for her financial inability to provide medication, I did assume that she was not doing everything she could to help Jay. I felt as though I was alone in my daily battle to help Jay grow both academically and socially; in all reality, however, I do not truly believe this was the case. I believe Jay's mother, like all parents, wanted what was best for him but circumstances at that time prevented her from being able to do what she thought was right.

In the next chapter, the literature review, issues of teachers' perceptions concerning race, gender, and socioeconomic status were examined. In Jay's situation, as a Caucasian male, I did assume his family had the means to afford his medication initially. I remember feeling surprised that this was not the case. However, this has less to do with Jay's race and more to do with his general appearance, in that he always appeared well dressed. The research does show teachers make more negative assumptions and have lower expectations for students of color (Parks & Kennedy, 2007; Sirota & Bailey, 2009); these same expectations are likely to extend to medicated ADHD students of color.

My last assumption was that eventually these students may disengage from classroom instruction again. When students are not successful in the classroom, it is common for them to act out or exhibit undesirable behaviors. Students are then taken back to the doctor and are prescribed a different type of treatment, usually either a different dosage or a different type of medicine. This cycle continues as long as the student continues to be a behavior problem; this can be when another solution, such as a behavior intervention, is introduced or when the student matures to the extent that he or she can successfully blend into an academic setting.

This research project served to highlight the current situation, examine the experiences of teachers and their perceptions of medicated ADHD students, and pave the way for future research to address the unique needs of these students.

ADHD History and Background

ADHD is increasingly common in schools and hinders students with many obstacles, including impulsivity, poor social skills, defiance, and skill deficits (Biederman & Faraone, 2005). The problems facing these students cannot be taken lightly; on the surface, students appear to be simply disobedient or out of control, however research shows that students with ADHD may suffer from long-term effects, such as being three times more likely to have poor peer relationships than non-ADHD peers, less likely to graduate from high school, and at higher risk for substance abuse (American Psychiatric Association, 2000). This research did not probe issues such as etiology, preferred treatment methods, and diagnosis that are more appropriate for a quantitative inquiry. The study is designed as qualitative inquiry with the purpose of describing the experiences and perceptions teachers have about elementary students who have been diagnosed with ADHD and are receiving medication with specific focus on classroom engagement, academic achievement, and non-instruction time. While an overview of treatment options is provided, the discussion serves to establish medication as the baseline treatment for ADHD and will not make any sort of recommendations for treatment.

The roots of Attention-Deficit/Hyperactivity Disorder date back to 1902 with the work of George Still; this controlled study of 20 children who exhibited impulsivity and aggressiveness concluded the children had a medical problem that affected their regard for rules and morals (Barkley, DuPaul, & McMurray, 1990; Connors, 2000; Foy & Neufeld,

2006; Rafalovitch, 2001; Stubbe, 2000). The next studies occurred in the 1920's, after an encephalitis epidemic; researchers at this point concluded adolescents who had suffered from the illness underwent a change and had increased impulsivity and recklessness (Connors, 2000). The studies of this time concluded this disorder is a side effect of brain damage or injury as a result of the sickness. It was not until 1968 that the American Psychiatric Association included the disorder in the *Diagnostic and Statistical Manual of Mental Disorders.* Since that date, a plethora of research has been done concerning the disorder and still continues to be done. There are many studies, some of which conflict, concerning all aspects of the disorder. Much of the current research focuses on brain development of students with condition; researchers are looking for the cause of the condition in order to treat it effectively and efficiently (National Institute of Mental Health, 2011).

ADHD Treatments

Though this dissertation mainly focused on the experiences of teachers with students who are already medicated, it is necessary to provide an overview of the most commonly used treatments for depth. It is also important to situate the problem within the context of society; the problems explored in this study evolve from situations in which students are being medicated. By establishing medication as the most common treatment, it justifies the exploration of the situations of these students post-medication.

Pharmacological treatments are considered to be the first-line treatment for ADHD symptoms; the most common stimulant used is methylphenidate, which is more commonly known as Ritalin (Kilincaslan, Tutkunkardas, & Mukaddes, 2011; Purdie, Hattie & Carroll, 2002). There have been a multitude of studies showing methylphenidate (MPH) to be

effective; the largest landmark study, the Multimodal Treatment Study of Children with Attention-Deficit/Hyperactivity Disorder, was conducted in 1999 (Brown, 2005; Young & Armasinghe, 2010). This study was conducted long-term and showed improvement in behavioral symptoms when patients were continually taking medication (Brown, 2005; Young & Armasinghe, 2010). While medication is considered the preferred treatment for adolescents with the disorder, it can have adverse side effects; these can include social withdrawal, intense emotions, drowsiness, irritability, and nausea (Rowles & Findling, 2010).

Not every parent consents to medication and there are alternatives available. This review only serves to highlight some of the most popular alternative treatments. Electroencephalographic (EEG) Biofeedback is a brain wave therapy that is used to train the brain to produce more theta waves, which would in turn relax students and calm them down (Kilincaslan, Tutkunkardas, & Mukaddes, 2011). This type of treatment involves self-training and the child is expected to eventually produce more of the desired brain waves on command (Roman, 2010).

Diet is also considered to be an alternative treatment for children with ADHD; most of these diets are elimination diets and/or consider deficiencies within the body. These include polyunsaturated fatty acid deficiency, essential fatty acid deficiency, additive and salicylate-free (Feingold) diet, hypoallergenic/elimination diet, and the role of sugar/aspartame (Kilincaslan, Tutkunkardas, & Mukaddes, 2011; Millichap & Yee, 2011).

Classroom Engagement and Student Achievement

There is a logical connection between classroom engagement and student achievement; the more a student is engaged in the classroom, the more he or she will profit

academically. This is confirmed through the literature as well. In order to truly understand the problems inherit in the current ADHD situation, one must first understand the interdependency between classroom engagement and subsequent student achievement. There have been several studies confirming the strong relationship between these two concepts. The most significant study was conducted by DiPerna et al. (2006) and used a rating scale to identify levels of classroom engagement; this study worked to identify the positive relationship among student classroom engagement, report card grades, and standardized test scores. This study extended the previous knowledge around the topic and, by triangulating the data, provided validity and credibility to the study.

While there are many negative consequences associated with the presence of ADHD, academic achievement is one of the most prevalent (Cleary et al., 2006). It seems intuitive that, if students suffer from impulsivity and lack of self-control, they will not be as engaged in the classroom setting. While other studies are expanded upon in the review of the literature, a 2007 study conducted by Frazier, Youngstrom, Glutting, and Watkins confirmed the plight of these students. This study conducted a meta-analysis of 181 effect sizes from 72 empirical studies conducted since 1990 concerning this very topic; the synthesis of these studies included an aggregation of methodologies, such as standardized test scores, as well as parent and teacher rating scales. The results of this study related an overall effect size of 0.71, which is statistically significant and indicative of decreased levels of achievement for ADHD students as compared to their non-ADHD peers.

As previously stated, students with ADHD who are medicated do show improvement in behavior, self-control, and impulsivity; while it seems to be assumed these improvements extend to academics, research is beginning to show this simply is not always the case (Hale

et al., 2011). The previously discussed study conducted by Hale et al. (2011) not only confirms the existence of this problem, but also includes a theory as to why the problem exists. While the study confirms students are not achieving more after beginning the use of medication, the researchers make the assertion the dosage of medications needed for impulsivity and behavioral issues are different amounts than the dosage amounts that are optimal for academic achievement.

Logically, it seems these students are not achieving before medication based upon the coexisting symptoms of ADHD: impulsivity, inattention, and a lack of self-control. If students have trouble paying attention to what is happening in class and engaging in learning, they may not perform as well as their non-ADHD peers. However, students may not be achieving and engaged simply because they are medicated, meaning that while they are now quiet and well behaved, they may still not be engaged in academic content.

Teacher Perceptions

As human beings, we are prone to judgment; this includes holding biases and assumptions toward others. Teachers are no different. While this may not diminish the educational opportunities they provide all students, teachers may be unaware of how their perceptions can influence students academically. Teachers are often the first people to notice symptoms of ADHD and are consistently asked to rate student symptoms and improvements; it is logical to analyze their perceptions of students after medication in order to better understand how medication is influencing the school environment.

There is a clear link between teacher perceptions, expectations, and subsequent student achievement. Teacher support has an impact on how students engage in academic content, address challenging materials, and subsequently achieve (Levpuscek, Zupancic, &

Socan, 2013). A study published by Levpuscek, Zupancic, & Socan (2013) examined the influence of teacher academic support, mastery goal setting, and academic press upon student achievement. Though several hypotheses were tested, one is of particular interest: Levpuscek, Zupancic, & Socan state, "Hypothesis 8: Self-efficacy in mathematics was suggested to mediate the positive effect of student-reported academic support from their mathematics teachers, academic press, and mastery goal on mathematics achievement" (p. 533). The study included 416 randomly selected eighth graders in 13 different urban and rural schools in different regions of the United States. Data was collected during a two year period and various measures were employed that correlated with the hypotheses; the measures that correlate to Hypothesis 8 are student completion of the Mathematics Teacher's Academic Support Scale and Patterns of Adaptive Learning Scale. The scales were used to determine how students understood their teacher's perceptions of themselves and were then correlated, with other factors, to understand how this influences academic achievement in mathematics. The results show a positive correlation between student perceptions of teacher classroom behaviors and their mathematics achievement as shown on the end-of-course exam and final grade in the course.

Teacher perceptions and expectations can also create a self-fulfilling prophecy for student behavior and student achievement. For example, if teachers are more pleasant to students who they perceive in a positive manner, they may provide them with more effective instruction through the form of encouraging conversation, thus building a student's self-confidence and reinforcing good work habits. This phenomenon, known as the Pygmalion effect, was first demonstrated with the research of Rosenthal and Jacobson (1968). This landmark study, which is further discussed in the literature review, illuminates the academic

effects that teacher perceptions and beliefs can have on student achievement. In short, if teachers have positive perceptions and high expectations, students will meet those expectations. If teachers have low expectations or negative perceptions, students also internalize those beliefs and allow them to influence their academic performance.

The ethics of care (Noddings, 1988) helps to illuminate how caring helps shape teachers' instruction and interactions with students. When teachers truly care for students, they work to educate the whole child: socially, emotionally, and academically (Noddings, 1988). The interest is in developing human beings, not merely helping students master content standards. This is of particular interest for students with ADHD, who may have a unique set of needs that teachers need to address. Deficit thinking, in which educators believe student failure comes from an inherent deficiency within the student, is a problem that plagues many students of color and those from low income homes (Valencia, 1997). This notion places the blame for failure on the student, instead of what may be broken within the classroom, school, or district. Students with ADHD may exhibit a variety of symptoms that are a manifestation of their disorder; teachers who operate from a deficit model may believe these students are destined to fail because of those manifestations (Valencia, 1997). This problem is compounded when ADHD students are also students of color, from low-income homes, and/or are English Language Learners (ELL).

Overview of the Methodology

I chose to study the school experiences of teachers of elementary students with ADHD after medication, although I acknowledge this problem could exist for both older students and even adults. Because I was interested in uncovering the experiences of these teachers, I conducted a phenomenological research project. According to Patton (2002), the

foundational question behind phenomenology is, "What is the meaning, structure, and essence of this phenomenon for this person or group of people?" (p. 104). This study examined the phenomena of teachers in their natural school settings and endeavored to interpret the phenomena with respect to the meanings people bring to the situation (Denzin & Lincoln, 2005).

According to Coyne (1997), "In qualitative research sample selection has a profound impact on the ultimate quality of the research" (p. 623). Therefore, I used purposeful sampling to select participants for the study. According to Maxwell (2013), purposeful sampling is a sampling strategy, "in which particular settings, persons, or activities are selected deliberately in order to provide information that can't be gotten as well from other choices" (p. 88). Specifically, these teachers were selected using Criterion Sampling, meaning that I selected them because they met the criterion of being a teacher at this particular school site who has had experiences working with medicated students with ADHD. While quantitative research typically uses larger, randomly selected samples, my qualitative study utilized a small sample size of five teachers; this provided depth in my research and a comprehensive understanding of the teachers' experiences as opposed to empirical generalizations (Patton, 2002). The sample consisted of five white, female teachers, all who have experience in education, as well as with teaching students with ADHD; the setting of the study was at a large midwestern suburban elementary school.

During this study, I collected data through interviews, observations, and documents. In order to increase reliability and credibility, triangulation was utilized through the multiple data sources (Patton, 2002). Maxwell (2013) stated, "This strategy reduces the risk that your conclusions will reflect only the systematic biases or limitation of a specific source or

method, and allows you to gain a broader and more secure understanding of the issues you are investigating" (p. 93-94).

Concerning documents, Patton (2002) states, "documents prove valuable not only because of what can be learned directly from them but also as stimulus for paths of inquiry that can be pursued only through direct observation and interviewing" (p. 294). By examining documents such as teacher-generated narratives, themes and perceptions were discovered; this also served to provide the interview guide with additional questions.

Semi-structured, extensive interviews were used to allow teachers to describe their experiences in the classroom. DiCocco-Bloom and Crabtree (2006) stated the following about semi-structured interviews:

> They are generally organised around a set of predetermined open-ended questions, with other questions emerging from the dialogue between interviewer and interviewee/s. Semi-structured in-depth interviews are the most widely used interviewing format for qualitative research and can occur either with an individual or in groups. Most commonly they are only conducted once for an individual or group and take between 30 minutes to several hours to complete. (p. 315)

Finally, observations of teachers in the classroom were used to provide reliability and validity to my study. I collected field notes of my classroom observations for later reflection. In my observations, I investigated how teachers were interacting with students in the classroom, explored how they were *not* interacting with certain students or interacting in different ways with different students (Patton, 2002). In this study, interactions are defined as all of the verbal and nonverbal communications, relations, and exchanges that take place

between teachers and students. These observations were essential to capturing the whole experience of teachers in the classroom.

Data analysis procedures included the coding model outlined by Miles and Huberman (1994) for documents and observations, as well as the phenomenological data analysis methods outlined by Moustakas (1994) for analyzing in-depth interviews. When all data was collected, it was coded using codes that correspond to my research questions. This coding process for all documents and data allowed the themes of the study to emerge naturally, addressed validity when answering research questions, and reflected experiences and perceptions of the participants. Details of this process will be included in Chapter Three.

The Significance of the Study

In 2011, it was estimated that approximately 10.8% of adolescents in the United States have been identified as having Attention-Deficit/Hyperactivity Disorder (National Institute of Mental Health, 2011). Diagnosis and treatment of these students is increasing at a rapid rate. There are a number of problems associated with ADHD that students may face; besides the social skills and peer relationship issues, this group of students is also considered to be at-risk for academic failure and skill deficits (Biederman, 2005). One trend in education currently is to close the achievement gap- whether that is a gap between students of color or the global achievement gap that exists between the United States and other countries. As educators, we know we must work to close the gap in order to strengthen our economic standing and to empower our future leaders, which are currently our students.

While educators continue to focus on achievement gaps, students with ADHD belong to one gap that is being overlooked. The treatments for ADHD are varied and, at times, controversial; however, medication is the most common option for students who have

been diagnosed with the disorder (Kilincaslan, Tutkunkardas, & Mukaddes, 2011; Purdie, Hattie & Carroll, 2002). While there is much research concerning the diagnosis, causation, and treatment of children with ADHD, there is little research as to how students fair after the treatment, especially academically. This study contributed to current educational theory around teacher perceptions of how students engage in the classroom post-medication. While it should be assumed teachers and parents want what is best for students, the current gap in the literature highlights the lack of knowledge surrounding how teacher perceptions of medicated with students with ADHD are influencing teaching behaviors, such as student engagement and learning. In order to close the achievement gap for these students, parents and teachers must first be aware the gap exists; one way to illuminate what is truly occurring in the classroom is by examining the experiences and perceptions of teachers. Currently, the literature states medication is effective (Brown et al., 2005; Kilincaslan, Tutkunkardas, & Mukaddes, 2011; Purdie, Hattie & Carroll, 2002; Young & Armasinghe, 2010). However, medication is simply used to treat the behavioral symptoms of ADHD and is considered effective when students gain self-control and can regularly follow classroom routines and procedures. The exploration of this topic through the research design should be used to inform parents and teachers of the current status of medicated ADHD students in the classroom and their academic achievement.

In this chapter, I have introduced the project, including the problem, purpose, and theoretical framework. Chapter Two includes a review of the relevant literature within the four strands of the theoretical framework. Chapter Three, methods and design, includes a more in-depth discussion of the project's design, including the rationale for qualitative research, the theoretical tradition of phenomenology, sampling technique, participants and

setting, data sources and analysis plan, and limitations including reliability, validity, and ethical considerations of this study. Chapter Four, the findings, describes the experiences of the students and give meaning to the phenomena from the perspective of the participants. Finally, Chapter Five, conclusion and recommendations, provides implications of the study and suggested future studies.

CHAPTER 2

LITERATURE REVIEW

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most pervasive disorders affecting children today. According to the American Psychological Association (2012), ADHD is a, "behavioral condition that makes focusing on everyday requests and routines challenging." The history, as well as the current reality, of this disorder is doused with controversy. Experts, scholars, physicians, educators and parents all have different views and opinions on this topic, some of which are in direct conflict with one another. Ultimately, no matter how we describe the disorder or its treatments, children who have ADHD are the ones who suffer. This disorder affects them socially, physically, and academically. The following areas are examined within this literature review: background of ADHD and historical context of ADHD, treatments for the disorder, classroom engagement, student achievement, and the academic achievement of students with ADHD, and teacher perceptions. While there are a multitude of factors and variables within both the history and treatment ADHD, this literature review is insufficient to cover all topics. Specifically, recommendations for treatments of the disorders, the existence of comorbidities such as Oppositional Defiance Disorder (ODD), and the controversies surrounding the diagnosis of ADHD were not be covered. The theories of epidemiology of ADHD and the philosophies behind the increased diagnosis of ADHD in recent years were also not covered.

Background and History

Students with Attention-Deficit/Hyperactivity Disorder face many obstacles in life. ADHD affects academic achievement, social skills, peer relationships, and creates skill deficits (Biederman, 2005). Historically, this group of students is considered high-risk in a

number of categories: academic failure, low self-esteem, peer and parental conflicts, delinquency, tobacco use, and substance abuse (Biederman, 2005). ADHD in school-age children is often comorbid with defiance, aggression, and disobedience, thus compounding educational issues (Young & Amarasinghe, 2010). This disorder also creates social and financial strain on parents, schools, health insurance companies, and society (Biederman, 2005). While previously considered to be a childhood disorder with symptoms abstaining after adolescence, a growing body of research is highlighting the lasting effects of ADHD in the lives of adults (Biederman, 2005). Currently, two-thirds of teenagers and one-half of adults who were diagnosed with ADHD as children still experience symptoms (Kilincaslan, Tutkunkardas, & Mukaddes, 2011). ADHD diagnosis is also on the rise: it is the most commonly diagnosed psychiatric disorder of childhood, with an estimated three to five percent of children worldwide suffering from the condition; in the United States, the disorder is more commonly diagnosed with two to twelve percent of children currently identified as having ADHD (Stubbe, 2000). While there is a disparity among the rates of ADHD diagnosis among the different countries of the world, this may be due to a discrepancy among the criteria and definitions of ADHD in the United States and other countries (Foy & Neufeld, 2006; Stubbe, 2000). The inclusion of children with comorbidity and co-occurring behavioral difficulties increases the rate among children in the United States (Stubbe, 2000). There is also a disparity among gender, with boys being five to nine times more likely to be diagnosed with ADHD (Purdie, Hattie & Carroll, 2002).

Though history will be discussed later, a general background of Attention-Deficit/Hyperactivity disorder is necessary. Academic fields have struggled with defining ADHD; there have been discrepancies in whether ADHD is one disorder, a disorder with

several subtypes, or several different disorders (Barkley, DuPaul, & McMurray, 1990). In 1994, the American Psychiatric Association described ADHD as it is currently known: a disorder that is known for both inattention and hyperactivity (Barkley, 2006). Though it has had many names and descriptions, people with ADHD now fall into two categories: inattention or hyperactivity (Barkley, 2006; Biederman, 2005). People with inattention symptoms of ADHD may experience increased amounts of daydreaming, distractibility, and difficultly focusing; people with hyperactivity, on the other hand, are characterized by excessive talking, fidgeting, and restlessness (Biederman, 2005). Currently, ADHD is often diagnosed and treated accordingly; it is well known by physicians, researchers, educators, and the lay public (Foy & Neufeld, 2006).

George Still conducted the first recognized medical research concerning ADHD in 1902 (Barkley, 2006; Connors, 2000; Foy & Neufeld, 2006; Rafalovitch, 2001; Stubbe, 2000). Still's study contained 20 children who were described as aggressive, lawless, passionate, and defective in their moral control (Barkley, 2006). These children were perceived as being hyperactive and unable to concentrate. Throughout his observations of these children, he commented on frequent minimal physical abnormalities that might be indicative of dysmorphogenesis (Connors, 2000). In the historical context of 1902, this was perceived to be a medical problem for the first time. Moral control in children was paralleled with moral control in adults; at that time, this was referred to as "imbecility" (Rafalovitch, 2001). The concept of imbecility had nothing to do with a lack of intelligence; rather, those suffering from imbecility were often perceived as very intelligent, but as having a flagrant disregard for the rules. The theorists of the time, including Still, suspected a pathological condition for the absence of moral control (Rafalovitch, 2001).

Still provided the modern framework for ADHD research. In his studies, he asserted there was no link between intelligence and hyperactivity, which differed from previous ideas that considered these children to have brain damage or mental defect (Connors, 2000; Foy & Neufeld, 2006). Many of Still's findings are relevant currently: in his study, he found a bias towards gender. His study contained a three-to-one ratio of boys to girls, which is still the norm today (Barkley, 2006; Connors, 2000). Also, while Still believed these children were not intellectually deficient, he did find learning problems that are consistent with those of present-day students with ADHD, such as difficulty with spelling and math calculations (Connors, 2000).

During the 1920's, after an encephalitis epidemic affecting many children, Hohman (1922), Ebaugh (1923), and Strecker & Ebaugh (1924), reported on a drastic change these children underwent after suffering from this condition (Connors, 2000). After being ill, these children shared some of the same characteristics of subjects in Still's study: hyperactivity, distractibility, irritability, antisocial tendencies, a propensity towards destruction, and disorderly behavior in school (Connors, 2000). These studies and researchers gave credence to the concept of ADHD being a brain damage or pathophysiological issue.

The next historical landmark in ADHD is Bradley's study in 1937. His work was conducted with 30 children in the Emma Pendleton Bradley Home for Children in Rhode Island (Connors, 2000). Many of the children in this institution were considered neurologically damaged and had suffered previously from encephalitis (Connors, 2000). Bradley's main contribution to the field was the introduction of Benzedrine, an amphetamine, used to stimulate the choroid plexus; while Bradley initially introduced the medicine to decrease headaches in patients, within the first week about half of the students

showed a large increase in school performance (Connors, 2000; Stubbe, 2000). It was also during this time the term "Minimal Brain Damage Syndrome" was used, as ADHD was seen as a brain damage issue (Barkley, 2006; Connors, 2000).

In 1947, Strauss & Lehtinen worked to distinguish the behavioral characteristics between children with brain injuries and those without, then inferring a connection between brain damage and hyperactivity; they described the conditions as a type of mental retardation that included hyperactivity and impulsivity rather than an intellectual deficiency (Stubbe, 2000). This link was considered public knowledge at the time and created an association among hyperactivity, impulsivity, and brain damage in the minds of educators, physicians, and the lay public (Connors, 2000).

In 1962, during a neurology conference, issue was taken with the term "Minimal Brain Damage Syndrome." The editors of the conference stated:

> …An intolerable, or at the very least confusing situation had arisen...It became clear that this term has, for most people, the anatomical and aetiological implications that there has been an episode of injury and that has produced an anatomical change. Yet closer examination makes it clear that evidence of anatomical damage is usually absent, that evidence or history of an injury process is often absent, and that disorder of function is the evidence used for applying the diagnostic label of "minimal brain damage". (Connors, 2000, p. 181)

It was during this conference the nomenclature of ADHD changed again; this time it not only changed names, but also now had criterion for diagnostic purposes. The researchers Clements and Peters, in their landmark paper, defined a standard clinical approach for diagnosis; their assessment included (a) qualitative descriptions by both parents and

educators, (b) quantitative measurement of learning, perceptual-motor, and coordination deficits, (c) observation and historical evidence of hyperactivity, emotional well-being, and distractibility, (d) ambiguous neurological signs or an abnormal EEG (Connors, 2000). This study was the first as well to use concrete quantitative data, including results from the Wechsler Intelligence Scale, the Bender Visual-Motor Gestalt Test, academic assessments, and a neurological examination (Connors, 2000). The credibility of their study led to wide public acceptance of both the diagnostic process and the new terminology, Minimal Brain Dysfunction Syndrome (Stubbe, 2000).

In 1968, the American Psychiatric Association (APA) included ADHD in the second edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-II) using the term "hyperkinetic reaction of childhood" (Barkley, 2006). The APA defined ADHD by stating, "This disorder is characterized by overactivity, restlessness, distractibility, and short attention span, especially in young children; the behavior usually diminishes in adolescence…" (1968, p. 50). An important note is the inclusion of problems with attention and distractibility, along with those of restlessness and hyperactivity. This was being emphasized in the current literature and marks an important change in the conceptual framework of ADHD and its previous inclusion of only children who exhibited overt hyperactivity. The APA also stated the disorder was not caused by brain damage or injury, which was a departure from previous literature written on the subject.

In 1978, Douglas and Peters began reviewing the existing literature around ADHD. They focused on the cognitive, rather than motor, deficits and theorized the disorder encompassed four key deficits: (1) inability to maintain attention; (2) capacity to prevent impulsive behaviors; (3) ability to adapt to new situations; (4) an intense need to seek instant

reinforcement (Barkley, 2006; Connors, 2000). These researchers highlighted previously unobserved aspects of the disorder; they called for a focus on ADHD rationale, rather than simply trying to get students to sit still. As a result of their research, the APA retitled the disorder as Attention Deficit Disorder (ADD) in 1980 in the third edition of the DSM (Barkley, 2006; Stubbe, 2000). Also of historical significance, the APA defined the disorder as having two types: with hyperactivity and without (Barkley, 2006; Stubbe, 2000). As research continued, concern arose that problems with hyperactivity and impulsivity were aspects that were essential to differentiating the disorder from other ailments, so it was renamed again (Barkley, 2006). In 1987, the APA omitted the Attention-Deficit Disorder (ADD) classification from its existing section; it was relocated to a section of the manual with the description that inadequate research was available to develop in the creation of diagnostic criteria (Barkley, 2006; Stubbe, 2000). Instead, the disorder was renamed Attention-Deficit/Hyperactivity Disorder (ADHD). By providing this standard nomenclature, the APA allowed this disorder to become a frequently used diagnosis (Connors, 2000).

According to Barkley, the focus of researchers at this point switched to motivational issues for students with ADHD (2006). Like Still and researchers from previous days, this was again seen as an issue of moral control. Research demonstrated children with ADHD did not react to punishment and rules in the same way as non-ADHD children (Barkley, 2006). While most people succumbed to the socialization of rules and societal norms, this seemed to be lacking in children with ADHD. Research from the time showed a positive correlation between performances of children with ADHD when offered a continuous

extrinsic reward; however, when the reward was decreased or terminated all together, children with ADHD exhibited substantial declines in performance (Barkley, 2006).

In 1992, a landmark study was conducted by the National Institute of Mental Health and the Department of Education concerning the multimodal treatment of children with ADHD (Barkley, 2006; Stubbe, 2000). This study consisted of six sites, with 579 children (aged seven to nine years) with ADHD; children were randomly assigned types of treatment and double blind titration was used to determine the child's ideal dose by consensus of researchers after 28 days of study (Stubbe, 2000). The treatment options included medication or a placebo, in addition to behavioral treatments such as parent training and school-based interventions (Stubbe, 2000). The results showed medication management as more effective than behavioral treatment alone; the combined treatment did not yield significantly larger results than medication alone for treatment of the core symptoms of ADHD (Stubbe, 2000). While treatments of ADHD are not being reviewed in this literature, this study is significant in that it lead to the National Institute of Health's statement on ADHD in 1998. In the NIH Consensus Statement, the conference not only reviewed the current literature but also did so out of the media spotlight and instead focused on science and empirical evidence (Stubbe, 2000). This conference validated the disorder and the effectiveness of medications to treat its symptoms (Stubbe, 2000).

Beginning in the 1990s, ADHD rates have increased at a significant rate. For example, from 1990 to 1995, the number of children diagnosed with ADHD more than doubled, increasing from approximately 950,000 to more than 2.3 million (Rafalovitch, 2001). In 2000, this number doubled again to more than 4.6 million adolescents diagnosed with the disorder (Foy & Neufeld, 2006). In 2007, the estimated number of adolescents

suffering from ADHD was 5.4 million children, comprising 9.5% of the total population of children in the United States; this equates to a 21.8% increase of diagnoses in the past 4 years (CDC, 2010). On average, there is a 5.5% increase in new cases of ADHD annually.

The current research focuses on a brain development delay in children with ADHD (National Institute of Mental Health, 2011). This delay is most prominent in the frontal lobe, which is the portion of the brain that controls attention to task, ability to control inappropriate behaviors and outbursts, organization, and immediate gratification (National Institute of Mental Health, 2011). While there is much debate among researchers as to the causes of this delay, more cases are being diagnosed at a rapid rate. In 2011, it was estimated that approximately 10.8% of adolescents in the United States have been identified as having Attention-Deficit/Hyperactivity Disorder.

Treatments

Though this study does not seek to compare treatments or make treatment recommendations, it is necessary to understand the background and available options of treatments for children with ADHD. Doing this establishes medication, a key factor in this research project, as the most popular treatment prescribed by doctors and taken by children. The treatment of ADHD can be a controversial issue; because of the unclear etiology of the disorder, the most effective treatment is still being established. However, poorer outcomes are expected for students with ADHD who receive no treatment at all (Shaw et al., 2012). Results show increased long-term outcomes with ADHD treatment, when compared to non-treatment participants, even though it did not result in symptom eradication or to the point of normalization (Shaw et al., 2012). While complementary and alternative treatments will be briefly explored, this study concerns teachers' perceptions of students who are being treated

using pharmacological methods; therefore, the bulk of the discussion will center on these methods. Regulated medication of ADHD and its symptoms began in 1960; since that time, the main treatments for the disorder have been methylphenidate and amphetamine, such as the prescription drugs Ritalin and Adderall (Biederman and Faraone, 2005). The following discussion provides an overview of stimulant and non-stimulant medications, as well as popular alternative and complementary treatments, in order to provide a well-rounded discussion of the treatments and interventions being utilized by physicians and parents to treat children.

Pharmacological Treatments

Psychostimulants are considered the most popular treatment for ADHD, especially if no comorbidity is present (Kilincaslan, Tutkunkardas, & Mukaddes, 2011; Purdie, Hattie & Carroll, 2002). It is also postulated that they should be the first treatment for students with the disorder (Biederman & Faraone, 2005). Stimulants are good for immediate improvement, which may be seen in the areas of attention, concentration, and motivation; however, stimulants have not been proven to have an impact on academics or learning (Purdie, Hattie & Carroll, 2002; Roman, 2010). They have also shown short-term improvements in the areas of depression, anxiety, tics, academic productivity and social interactions (Döpfner, Breuer, Walter, & Rothenberger, 2011). The issue of academic productivity, how much work a student accomplishes or produces, versus academic achievement, the success or accuracy of that work, will be discussed later.

One of the most popular stimulants used to treat ADHD symptoms is methylphenidate (MPH), more commonly known as Ritalin, and is approved by the Food and Drug Administration for safe use by people over the age of six (Kilincaslan,

Tutkunkardas, & Mukaddes, 2011). Between 1990 and 2009, the number of MPH prescriptions for ADHD has been multiplied by a factor of 184 (Kraut et al., 2013). Several studies and meta-analyses have shown MPH to be effective. A 1995 study examined a group of six to twelve year olds (N=22), all of which had been diagnosed with ADHD (Rowles & Findling, 2010). This research assessed the effects of MPH on independent play and academic functioning; the results revealed decreased physical motion and increased on-task behavior (Rowles & Findling, 2010). MPH was also associated with improvements on the Inattention Subscale of the Connors Teacher Rating Scale, especially in the areas of conduct, hyperactivity, and irritability (Rowles & Findling, 2010).

One landmark study in the use of methylphenidate was the 1999 Multimodal Treatment Study of Children with Attention-Deficit/Hyperactivity Disorder (Brown et al., 2005; Young & Armasinghe, 2010). This study is the largest randomized controlled study of MPH; 579 children (aged seven-ten years) were included in the study, all with combined-type ADHD (Brown, 2005; Young & Armasinghe, 2010). Children were assigned to one of four treatment arms: medication only (methylphenidate), behavioral interventions, a combination of medication and behavioral management, or standard community care; they were subsequently assessed in a multitude of settings (Brown et al., 2005; Young & Armasinghe, 2010). The significance of this study, besides adding to the body of research concerning MPH as a valid treatment for ADHD, is the length of the study; many ADHD studies are not conducted long-term, while this study reevaluated patient status again after 3, 9, 14 and 24 months of continuous treatment (Brown et al., 2005; MTA Cooperative Group, 1999; Young & Armasinghe, 2010). All four treatment groups of this study showed reduction in the core symptoms of ADHD; however, the combined treatment of both

medication and behavioral interventions yielded the best results (Brown et al, 2005; MTA Cooperative Group, 1999; Young & Armasinghe, 2010). The combined treatment also allowed for a lower dosage of medication, as opposed to the higher dosage required with medication alone (Brown et al., 2005; MTA Cooperative Group, 1999; Young & Armasinghe, 2010).

The McMaster University Evidence-Based Practice Center Group conducted an evidenced-based review of 92 empirical articles, all of which were randomized, controlled studies published in peer-reviewed publications; studies including research on comorbidities were only included if a separate analysis of ADHD variables and symptoms were included (Brown et al., 2005). This review served to examine the following areas of ADHD research: efficacy of nonstimulant medications, nonpharmacological treatment, and combined versus individual treatment (Brown et al., 2005). The technical examination included drug-to-drug comparisons of stimulant medications, stimulants compared to antidepressant medications, and comparisons of different forms of the same medication (McMaster University Evidence-Based Practice Center, 1999). While there were limitations in the studies that were examined, such as diversity in improvement areas (at school, at home, in core ADHD symptoms), research was synthesized nonetheless. Twenty-three studies were analyzed concerning drug-to-drug comparisons; the stimulant comparisons found little difference among popular medications (including methylphenidate) in terms of efficacy and side effects (McMaster University Evidence-Based Practice Center, 1999). Of the studies that compared specifically MPH and antidepressants, even when treating students with depression symptoms, MPH was found to be more effective (McMaster University Evidence-Based Practice Center, 1999).

Singh et al. (2010) conducted a qualitative study to illuminate the experiences ADHD adolescents were having when taking stimulant medication. This study used focus groups and individual interviews to accurately describe the experiences of 16 children, aged 9-14. Each data collection session utilized an open-ended, conversational style that focused on how medication did or did not help behavior, experiences with stigma, and their own thoughts about medication. The results showed that adolescents viewed medication as helpful in many ways, including positive effects on behavior, maintaining friendships, and the ability to focus and concentrate. Negative feelings were also expressed, however. Participants felt that medication was 'annoying' (p. 188) because of the actual action of taking the pills and that, for some, their friends thought they were less fun. Experiences with bullying were also communicated.

A 2005 study conducted by Faraone, Biederman, and Zimmerman sought to understand the optimal dosage of MPH by comparing teacher and parent ratings on the IOWA Conners Rating Scale. This study analyzed and synthesized two studies: a 2001 study conducted by Wolraich et al. and a 2003 study conducted by Wilens et al. The Wolraich et al. (2001) study used 282 participants aged 6-12 years old with a confirmed diagnosis of ADHD who were taking MPH for treatment. The researchers in this four-week double blind study randomly selected 97 participants to receive Immediate Release MPH, 95 participants to receive Once Daily MPH, and 90 participants taking a placebo; at the end of each week, parents and teachers both rated students in the areas of behavior and academics. The 2003 study conducted by Wilen et al. used 407 participants, 338 boys and 69 girls; the students were aged 6-13 years, with a mean age of 9.2. This long-term, 24-month study had students receiving three dosing levels of MPH, with parents and teachers responding monthly using

the same rating scale. Faraone, Biederman, and Zimmerman (2005) used the data from both studies to examine parent-teacher agreement on medication response; it was found the extended-release (OROS) MPH was rated most effective as compared to the placebo and other MPH options, with an effect size of 1.0, with $p<0.0001$ in the areas of inattention and overactivity. MPH reaches its maximum efficacy around 1.5-2 hours after dosing, requiring a repeated dosage during the day to remain effective; a newer version of the stimulant, which is being given to children currently, combines the immediate release MPH and modified release MPH so that the medication has a immediate effect that is long-lasting (Döpfner, Breuer, Walter, & Rothenberger, 2011).

A study conducted by Prasad, Brogan, Mulvaney, Grainge, Stanton, & Sayal (2013) reviewed studies of four pharmacological treatments in order to compare efficacy on engagement and academic achievement; the four medications reviewed were MPH, dexamphetamine, mixed amphetamine salts, and atomoxetine. This meta-analysis consisted of 43 studies from 1980-2010 in ADHD research. The results are summarized in Table 2 below.

Table 2

A Meta-Analysis of Four ADHD Treatments

	MPH	Mixed Amphetamine Salts	Dexamphetamine	Atomoxetine
Seat Work and Productivity	33 studies, in which all but one demonstrated a significant increase on behavior. There was a 9.72% mean increase in observational on-task behavior. 14 studies also found a significant difference in the amount of seatwork completed, with 11.76% more being completed by students after being treated with MPH.	2 studies were analyzed, which found a 9.19% mean increase in on-task behavior, while 6 additional studies found a significant increase of 15.39% more seatwork completed.	5 studies demonstrate a significant increase for seatwork completion.	No studies were included.
Academic Performance	13 studies analyzed the accuracy of the work students completed. While 5 studies found a minor increase in accuracy, 8 studies found that MPH had no result on student accuracy.	No studies addressed accurate completion of work.	The same 5 studies referenced above did not find similar results for accuracy.	2 studies were included, one showing improvement and one that did not. Some statistically significant improvement seemed to be found in the areas of written language and math; no increases were seen in English, science or social studies.

(Prasad, Brogan, Mulvaney, Grainge, Stanton, & Sayal, 2013)

This research shows that medications increase seatwork productivity and the quantity of work students produce, but not the accuracy or quality of the work. While students are quiet and able to sit at desks without disrupting, they are still not engaging in classrooms and closing the achievement gap. This study suggests that drugs affect the ways student process information, such as math computation, which leads to improvement in some areas. However, the results are somewhat inconsistent and inconclusive.

While medication is considered first-line treatment, it is not ideal for every situation. Common side effects include severe social withdrawal, increased crying, drowsiness, irritability, and nausea (Rowles & Findling, 2010). Stimulant drugs are controversial because of concerns they may cause tics, substance abuse, and delay growth; however, some studies have shown pharmacological treatments for ADHD reduces risk for substance abuse by as much as 50% (Biederman & Faraone, 2005). It can be very difficult for parents and physicians to make informed decisions concerning treatment when so many studies provide insubstantial evidence. Stimulants can result in appetite decrease and weight loss, with children still growing, but less than expected (Biederman & Faraone, 2005). Inadequate nutrition due to decrease in appetite, a side effect of stimulants, can negatively affect growth in ADHD children; a reduction of both height and weight can occur, with height reduction as significant as one centimeter per year (van de Loo-Neus, Rommelse, & Buitelaar, 2011). Each stimulant medication is also shown to cause small elevations in both blood pressure

and heart rate; though a minor risk, it is unknown if this is producing long-term effects on children's cardiovascular systems (van de Loo-Neus, Rommelse, & Buitelaar, 2011).

The incidence of comorbid disorders in participants who receive MPH is higher than with other treatments. A study conducted by Kraut et al. (2013) used German healthcare data from 2005 to analyze the effect of MPH on psychiatric comorbidities in children. At that time, 1.5% of all children in the country were treated using MPH; 83% of new users of MPH had psychiatric comorbidities as compared to 20% of participants in the control group. These concurrent disorders include, but are not limited to: bipolar affective disorder, depression, anxiety, conduct disorder, and Oppositional Defiant Disorder (ODD) (Kraut et al., 2013). These medications seem to be most effective at addressing the core symptoms of hyperactivity and inattention, with the drug efficacy not extending to the secondary effects of the disorder.

Considering these side effects and the assertions that medications merely treat the core symptoms of ADHD and do not result in academic achievement, some believe these drugs have a larger value for parents and teachers than inherent value for children (Purdie, Hattie, & Carroll, 2002). There are other reasons for choosing treatments other than medication: there are a limited number of drug options, some children are considered non-responders to these medicines, drug aversion, and financial cost. Medications are also seen as a short-term solution; while they treat the core symptoms of ADHD, they do not address the long-term implications of the disorder (Purdie, Hattie & Carroll, 2002). In examining long-term efficacy of medications in trials lasting between three and seven months, it was noted that few ADHD participants became symptom-free; there was minimal evidence that extending the stimulant treatment cognitive abilities or decreased the issues associated with

behavior disorders, academic underachievement, and poor peer-relationships (van de Loo-Neus, Rommelse, & Buitelaar, 2011). However, unfortunately, it seems the positive effects of medication disappear when the medication is discontinued (van de Loo-Neus, Rommelse, & Buitelaar, 2011).

The average effect size for stimulants (0.91 for immediate release and 0.95 for long-action versions) is greater than the average effect size for all non-stimulants (Biederman & Faraone, 2005). However, there are still a number of studies concerning non-stimulant medication, though they are not without concerns. Tricyclic antidepressants have been the most established non-stimulant medication, but have since been curtailed because of four unexplained deaths in children (Biederman & Faraone, 2005). A similar medication, atomoxetine, is now preferred because of its safe cardiovascular profile (Biederman & Faraone, 2005). However, in 2005 the FDA supplemented boxes of atomoxetine with a warning label concerning the presences of suicidal thoughts in participants who had used the product; a meta-analysis resulted in suicidal tendencies being more frequently observed in clinical trials with participants taking this medication (van de Loo-Neus, Rommelse, & Buitelaar, 2011). The medication also now carries a warning label about the potential for severe liver problems, after two patients demonstrated pronounced hepatoxic effects and recovered after discontinuing the medication (Biederman & Faraone, 2005).

Bupropion is an additional treatment shown to have modest positive effects on children's behavioral outcomes; these studies have been small and have shown the medication to be more effective at treating comorbidities such as depression, bipolar disorder, or substance abuse (Wilens, et al., 2003). While well tolerated in most people, it can induce seizures in some (Biederman & Faraone, 2005).

Biederman, Swanson, Boellner, & Lopez (2004) conducted a four-week, double blind, placebo-controlled study concerning the use of a medication called modafinil as a potential treatment option. For the 223 children participants, one 300 mg dosage each day showed a significant positive impact on ADHD behavioral symptoms such as impulsivity and inattention as rated by parents, physicians and teachers. In comparison to other medications, the treatment has minor side effects including insomnia, abdominal pain, anorexia, cough, and fever (Biederman & Faraone, 2005). However, the studies surrounding this treatment have been small in number; more research is needed to effectively establish this as a safe and effective treatment.

Complementary and Alternative Treatments

While medication is the most common intervention available, there are other options for children with ADHD; it is important to note, however, many of these treatments are not approved by the FDA or endorsed by professionals as being the most effective remedy (Kilincaslan, Tutkunkardas, & Mukaddes, 2011). Complementary and alternative medicines for ADHD are used worldwide in 12% to 68% of cases (Kilincaslan, Tutkunkardas, & Mukaddes, 2011). While there are a multitude of available ADHD treatments, all with different efficacies and side effects, this paper will only review some of the most common.

Electroencephalographic (EEG) Biofeedback examines the four brain wave frequencies: delta, beta, alpha and theta; these brain waves are all present throughout the day in everyone, however some researchers believe children with ADHD exhibit EEG differences when compared to normal peers (Kilincaslan, Tutkunkardas, & Mukaddes, 2011). The assertion is students with ADHD produce less theta waves, which are the brain waves associated with relaxation; if ADHD students exhibit less of these waves, it may

suggest under arousal and account of the restlessness of the disorder (Kilincaslan, Tutkunkardas, & Mukaddes, 2011).

Biofeedback (BF) is the process of making people aware of their own brain waves (Kilincaslan, Tutkunkardas, & Mukaddes, 2011). It is used to help people increase self-control over brain pattern behaviors and adapt these patterns to everyday settings. The belief is, with repeated trials, a child learns to train his brain with BF in order to make it more responsive (Roman, 2010). The process, which has been used since 1976, consists of placing electrodes on the head; the electrodes are attached to a computer, which detects EEG info and provides visual and audio feedback (Kilincaslan, Tutkunkardas, & Mukaddes, 2011).

While many studies have been conducted in this area with results showing EEG BF to be effective, there are methodological weaknesses attached to these analyses. Many of the studies suffered from one or more of the following weaknesses: lack of randomized assignments of patients to treatment and control groups, implementation by physicians who are paid for the intervention, publication in journals which are not peer-reviewed, evaluators who are not blind, and the contributing elements of EEG affecting results, such as patient/therapist time, parental support, and relaxation due to muscular feedback (Kilincaslan, Tutkunkardas, & Mukaddes, 2011).

The first published controlled study was conducted by Linden, Habib, and Radojevic (1996); in this study, 18 children were randomly assigned to 40 periods of biofeedback or to wait-list non-treatment groups (Linden, Habib, & Radojevic, 1996). The evaluators recounted significant increases in IQ scores, a decline in parent ratings concerning inattention, but not hyperactivity or impulsivity (Linden, Habib, & Radojevic, 1996). While this study is strengthened by random assignment, lack of blindness in parents and evaluators

must be considered as a methodological weakness. It also suffers from a small sample size, making it impossible to extrapolate results for an entire population (Roman, 2010).

While EEG biofeedback shows promise as a treatment, there is a need for more controlled studies in the area. However, it may be impossible to design a truly double-blind study using EEG, as the evaluator would always be privy to the brain waves being produced by the child. There are other problems with biofeedback as well. This treatment requires children to sit still for 30-45 minutes per session, something that may prove to be very difficult for someone with ADHD; it also takes between four and six months for measureable improvement and is very costly to families (Kilincaslan, Tutkunkardas, & Mukaddes, 2011). There are also many side effects: children may suffer from seizures, manic behavior, anxiety, depression, Obsessive-Compulsive Disorder (OCD), anger, tics, and a decline in cognitive function (Kilincaslan, Tutkunkardas, & Mukaddes, 2011).

While the prescription of stimulants to treat ADHD has steadily risen since the 1960's, the population of various diets to treat the disorder have also risen and fallen (Millichap & Yee, 2011). Studies have considered various aspects of diet and ADHD: polyunsaturated fatty acid deficiency, essential fatty acid deficiency, additive and salicylate-free (Feingold) diet, hypoallergenic/elimination diet, and the role of sugar/aspartame (Kilincaslan, Tutkunkardas, & Mukaddes, 2011; Millichap & Yee, 2011). Each of these diets, in various studies, has produced positive results in the improvement of ADHD symptoms (Millichap & Yee, 2011). However, these studies can be hard to replicate; they can be expensive and cause strain on families when trying to accommodate the specific dietary needs of each regimen. Sonuga-Barke et al. (2013) conducted an analysis of 54 nonpharmacological treatment studies in six different areas: restricted elimination diet,

artificial food color exclusions, free fatty acid supplementation, cognitive training, neurofeedback, and behavioral interventions. Each study analyzed was published in a peer-reviewed journal and had participants between three and eighteen years old; studies with comorbidities were not included so ADHD symptoms could be solely focused upon. The researchers blindly double coded the studies in order to generate comparable data for pre- and post-values of ADHD symptoms and severity. Additionally, seven studies were analyzed where participants had a restricted elimination diet; while there were similar positive results between all of the studies, there was not a statistically significant effect on ADHD symptoms. Also, eight studies eliminated artificial food coloring, such as Blue No. 1 and 2, Green No. 3 and Red No. 40, from the diets of children with ADHD; this approach did result in significant positive treatment effects, but the results were rendered non-significant if combined with lower or no medication. The last dietary intervention studied, free fatty acid supplementation, included 11 trials that all resulted in positive significant results, even in conjunction with low or no medication (Sonuga-Barke et al., 2013).

The meta-analysis also included non-dietary treatments. There were 9 studies included in which participants partook in cognitive training; this is a type of training in which working memory or attention deficits are addressed, with students receiving interventions in order to increase their self-control and limit impulsivity (Sonuga-Barke et al., 2013). These studies were each shown to have a significant impact, though not if utilized without medication. There were eight trials that used neurofeedback to treat participants; neurofeedback, which has been previously discussed, uses visual and audio stimulation to retrain the participant's impulses and brain activity; neither cognitive training nor neurofeedback has been shown to be superior (Sonuga-Barke et al., 2013). The trials with

neurofeedback were shown to have significant treatment effects, though there have been a small number of no-medication trials so the impact of this treatment on its own is unknown. Fifteen studies utilized behavioral interventions and focused on the following areas: parent behavioral interventions, parent/child interventions, child-only interventions, and teacher-related interventions (Sonuga-Barke, 2013). These studies resulted in a significant positive correlation, but the results fell short of significance when not in conjunction with medication.

Pharmacological treatments have limitations, such as long-term efficacy, effects on sleep, appetite, growth, and parent reservations. However, nonpharmacological treatments are not without critique. The standardized mean difference for all nonpharmacological treatments was substantially lower than those for ADHD medications; dietary interventions were also shown to provide little benefit for children with ADHD (Sonuga-Barke et al., 2013). There is also the issue of bias on the part of the researcher and reporter for psychological and behavioral interventions. Bias for both may occur because of the individuals supplying the data (parents, teachers, and researchers) are directly involved in the treatment or the effects may not be generalizing to settings outside of therapy (Sonuga-Barke et al., 2013). In fact, for this meta-analysis, the standardized mean differences for all psychological interventions dropped to non-significance when the analysis was limited to probably blind assessments or studies that included both placebo and non-placebo controlled trials with an ADHD assessment made by an individual like to be blind to treatment (Sonuga-Barke et al., 2013). In conclusion, though the researchers were examining treatments alternative to medication, they now recommend multimodal treatment (Sonuga-Barke et al., 2013).

An additional treatment, though less popular in the United States, is chelation therapy to treat metal poisoning, which is considered by some to be an etiological factor in the disorder. While some studies have found higher levels of lead and mercury in children with ADHD (Ha, Kwon & Lim, 2009; Wang, Chen, & Yang, 2008), there are severe concerns with chelation therapy; it has been shown to produce serious side-effects, such as Stevens-Johnson syndrome and also death (Kilincaslan, Tutkunkardas, & Mukaddes, 2011). The agents used to treat heavy metal poisoning are toxic and create permanent damage to cells; because the potential risk outweighs the benefit, clinical chelation trials are currently suspended (Kilincaslan, Tutkunkardas, & Mukaddes, 2011).

A study conducted by Zivkovic, Zivanovic, Zivkovic, Milojkovic, & Djordejevic, (2012) examined the effects of physical activity on ADHD symptoms; the purpose of this study was to determine if physical exercise could help children with ADHD in order to reduce or discontinue the use of medications. Twenty-six children, 19 boys and 7 girls, ages from seven to ten years with a confirmed ADHD diagnosis for at least two years participated in the study; there was also a control group of ten students who were not treated with exercise. Teachers rated the students using the IOWA Conners Rating Scale once a month for three months; this provided a comparative score for students before, during and after treatment. Researchers found a statistically significant positive correlation for exercise and improved ADHD symptoms; the mean values for all ADHD indicators were found for $p<0.001$. At the end of the treatment, students who participated in the 30-minute exercise sessions were found to have better cooperation, less arguing, less restlessness, more focus, and more attention (Zivkovic, Zivanovic, Zivkovic, Milojkovic, & Djordejevic, 2012).

Because of the murky knowledge surrounding the etiology and pathophysiology of ADHD, the most efficacious treatment has not been identified. There are a number of potential treatments that have shown positive results; however, the most promising, such as medication, often come with significant side effects. Most researchers now recommend a multimodal treatment, with children receiving the lowest dose of medication possible in conjunction with some type of behavioral and/or psychological intervention.

Classroom Engagement and Student Achievement

The purpose of this research project was to examine the experiences of teachers working with medicated ADHD students; specifically, it looked to highlight how teachers were interacting with students academically and how they perceived students' academic, behavioral, and social achievement post-medication. Medications help with the basic symptoms of ADHD: impulsivity, inattention, and hyperactivity (Scheffler et al., 2009). Therefore, it was important to understand what the literature stated concerning classroom engagement, subsequent student achievement, and, specifically, what this means for students with ADHD, both before and after medication. While it stands to reason there is a positive correlation between student outcomes and classroom engagement, a review of the literature in this area confirmed the assumption of the researcher. When children are engaged in the classroom, their learning increases (Ponitz, Rimm-Kaufman, Grimm, & Curby, 2009). Students who are cognitively engaged and invest time and effort in their studies achieve more than peers who do not (Archambault, Janosz, & Chouinard, 2012). These effects are also long-term: students who are engaged in school become adults with a better employment rate and a higher socioeconomic status (Archambault, Janosz, & Chouinard, 2012). Students who have difficulty engaging in the classroom or completing homework because of

attention problems are less likely to be competent learners when compared to their peers (Ek, U., Westerlund, J., Holmberg, K., & Fernell, E., 2011). In order to understand the vital importance of engagement, it must first be defined: engagement in the classroom can be seen as an internal motivation or state; it is the involvement in one's learning (Harcourt & Keen, 2012). Engagement in the classroom is whether or not a child partakes in the learning opportunities planned for him or her (Ponitz, Rimm-Kaufman, Grimm, & Curby, 2009). Students who are engaged may exhibit curiosity about learning, enthusiasm for content, excitement, and satisfaction (Harcourt & Keen, 2012). When students are engaged, an observer may see students using learning materials in a purposeful or intentional way to increase their own knowledge or by exhibiting listening skills such as paying attention to someone when they are speaking; on the contrary, when a student is disengaged, he or she may be attending to something else beside the task at hand, may be out of their seat, or exhibit inappropriate behavior for the given situation (Harcourt & Keen, 2012).

There are three arms of student engagement: emotional, which is an interest in belonging and a positive attitude about learning; behavioral, consisting of positive conduct, effort, and participation; and cognitive, concerning learning goals, self-regulation, and investment in learning (Appleton, Christenson, & Furlong, 2008). Each strand of engagement, though related, is essential to student achievement. When students are either passively or actively engaged, they are exposed to increased opportunities to respond to academic undertakings; this engagement and the consequential opportunities substantially increase the rate at which students learn academic skills (Cleary, Junod, DuPaul, Jitendra, & Volpe, 2006). There is also a connection among engagement, achievement, and school behavior between socio-economic and social classes (Appleton, Christenson, & Furlong,

2008). While the achievement gap between races and socio-economic status is well documented, the achievement gap between the disengaged and the engaged is still emerging. In reality, the achievement gap between children with low attention and their engaged peers is larger than students with low socio-economic status or students of a different race/ethnicity (Georges, Brooks-Gunn, Malone, 2012).

A 1993 study by Wenzel used teachers' perceptions and rating of student academic behavior; while other factors of behavior were considered, researchers focused upon students' classroom engagement and subsequent impact on achievement outcomes. Researchers found classroom engagement to be a significant, independent factor of predicting grade point average (GPA) (DiPerna et al., 2006). Engagement is also considered to be a good predictor of a child's long-term academic achievement and eventual graduation (Harcourt & Keen, 2012).

A study conducted by DiPerna et al. (1996) used the Academic Competencies Evaluation Scales to examine the relationship between classroom engagement and student achievement. This study used a teacher rating scale to identify the levels of classroom engagement; it also corroborated the earlier results from Wentzel's (1993) study. This research found a significant correlation among student classroom engagement, report card grades, and standardized test scores (DiPerna et al., 2006)

Additional research led by Furrer and Skinner (2003) examined the relationship between student engagement and academic performance. This study analyzed the following relationships: association between classroom engagement and performance, the role of parents, teachers, and peers in engagement, and the influence of age and gender in engagement. This analysis involved 641 students in grades three to six who were from

suburban-rural communities. Data was collected through student-reported questionnaires, teacher reports of student engagement, and school records to confirm academic achievement. Analysis of the results demonstrated that student- and teacher-reported levels of student behavioral and emotional engagement each influenced the relationship with student performance and grades; correlations were shown to be both positive and significant ($p < 0.1$) in the areas of student engagement and student achievement (Furrer & Skinner, 2003).

A study conducted by Saudino and Plomin (2007) in the United Kingdom examined the link between hyperactivity and academic achievement. Their work consisted of a sample of 1,876 same-sex twin pairs with a mean age of 7.04 years. Student behavior was measured through the Hyperactivity-Inattention subscale of the Strengths and Difficulties Questionnaire developed by Goodman (1997); both parents and teachers completed the questionnaire to rate the students, with ratings being .76 and .85 for parent and teacher ratings, respectively (Saudino & Plomin, 2007). Academic achievement data was collected through local assessments and national exam materials for six academic areas. One important finding was the correlation between parent and teacher ratings of the same students, which was in moderate agreement ($r=. 39$, $p<0.001$). In this study, the problem of hyperactivity is more strongly correlated with academic achievement than actual cognitive ability. The results show children with higher hyperactivity typically have lower levels of academic achievement; this is shown through the hyperactivity rating (r) and achievement scores of males (-.29) and females (-.24) (Saudino & Plomin, 2007).

Research directed by Ponitz, Rimm- Kaufman, Grimm, and Curby (2009) examined the relationship between kindergarteners' behavioral engagement and their reading

achievement. The study consisted of 171 students enrolled in 36 classrooms, primarily from a low-income rural environment. Baseline reading achievement was recorded in fall and again in the spring for comparison. Data was also collected through parent questionnaires and teachers completed a rating scale at the end of the year. To rate engagement, researchers observed students in their classrooms three times per year and observed on-task versus off-task time. Observed engagement was measured during observations on a seven-point Likert scale, with higher scores indicating higher achievement; the mean rating was 3.7 on this scale. Observed off-task time was measured in ten-minute increments, with mean time off-task being 52.4 seconds per ten minutes. From the fall to the spring, significant reading gains were illustrated through the use of the Woodcock-Johnson III. On average, students increased scores from 106.2 points during the baseline to 114.4 points in the spring ($t(165)= -11.58$, $p<.01$). This study demonstrates a significant association between behavioral engagement and changes in reading achievement. Results found that children who can engage in the classroom adopt successful student behaviors. These early-learned behaviors allow for success throughout a student's school career.

Dotterer and Lowe (2011) have also confirmed the link between student engagement and academic achievement. Their study examined the behavioral and psychological engagement of 1,014 fifth graders in schools all over the United States. Data was collected through reading and math standardized assessments, observations, adolescent interviews, and self-report questionnaires completed by teachers. The results demonstrated, unsurprisingly, that student-teacher conflict was related to negative social/emotional climate, which in turn correlated with psychological, including behavioral, engagement among struggling learners. Because the results showed a significant positive correlation between

behavioral engagement and academic achievement, it can be inferred the opposite is true: the less engaged students are in the classroom, the less they are achieving academically.

An additional study conducted by Georges, Brooks-Gunn, & Malone (2012) also examined the relationship between student engagement and academic achievement. This longitudinal study followed 6,212 children in 508 public and private classrooms throughout the United States and sought to answer the following three research questions: to what extent are attention and aggressive behavior problems associated with mathematics and reading scores, are the associations stronger with socioeconomic status and race, and to what extent is the behavior of other children associated with a child's mathematics and reading scores? This study also examined the secondary effects of student behavior; specifically how an inattentive or off-task student may influence his or her peers. Baseline data was collected in kindergarten through one-on-one math and literacy assessments, teacher rated behavior scales, and family background and demographics. Initially, the students were categorized behaviorally in the following ways: 11% exhibited inattention and aggression problems, 26% demonstrated low attention, 23% exhibited high aggression, and 40% demonstrated no symptoms. In mathematics, the mean score for all students was 20.13; the mean score for attention problem students was 16.84 and the mean score for students with no attention or aggression issues was 22.55. In literacy, the mean score was 22.64 for all students, with a mean score of 19.31 for students with attention problems and mean score of 25.21 for students with no attention or aggression problems. At the end of kindergarten, when students were retested, students with attention problems were negatively correlated with mathematics and literacy scores, with effect sizes of -.12 and -.13, respectively (p, .05). Interestingly enough, the study did not show student scores being affected by the aggressiveness or

inattention of their peers. When answering the initial research questions, it was demonstrated that children with attention problems were making much slower progress than those students with only aggression issues or students who were not exhibiting either behavior. The achievement gap demonstrated in this study was found to be larger for students with attention issues than for students with aggressive behavior, low socioeconomic status, or students of color. Essentially, if a student is struggling with paying attention or engaging in the classroom, the child's background and other factors are of a limited importance.

Fortunately, the issue of student engagement is one that can be addressed. Student engagement is considered to be malleable (Dotterer & Lowe, 2011). When students are not engaged in content, teachers can use additional or alternative practices to address the issue. This is especially true for students with attention or behavior problems, who may struggle more than their peers to stay engaged in content. Teachers can engage students by persistently communicating directions, modeling, and reinforcing skills such as active listening, following directions, and asking questions; teachers can also frequently provide informal feedback on behavior in order to help students regulate their own behavior (Georges, Brooks-Gunn, & Malone, 2012).

While logic and research do support a relationship between classroom engagement and academic achievement, this particular area of literature does have weaknesses. Many studies use student grades or GPA as a determining factor as to whether students are achieving; however, grades can be a subjective measure. Grading systems and assessments greatly vary across classrooms, grade levels, states, and nations; this allows for variation among what students may truly know. Often, in elementary, middle and high school, grades

are also given for participation. This may allow for students to maintain relatively high grades within a course without expending significant effort; in other words, students earn good grades by showing up and contributing to class. While this may be one measure of student knowledge, grading and assessment vary too greatly among different classrooms to be considered the only measure of student achievement.

Academic Achievement of Students with ADHD

There are a number of negative consequences associated with the presence of Attention-Deficit/Hyperactivity Disorder in elementary students, including reduced academic achievement. ADHD, in fact, is a fundamental variable in poor scholastic achievement in these students (Cleary et al., 2006). Up to 80% of students with ADHD exhibit difficulties in academic performance and the classroom setting, which ultimately leads to long-term outcome of chronic academic underachievement (DiPerna et al., 2006). Estimates of 9%-80% of students with ADHD have significant learning problems (Saudino & Plomin, 2007). Compared to non-ADHD peers, students identified as having ADHD typically perform worse in reading, writing, and math; on average, they are two-thirds of a standard deviation below peers (Bussing et al., 2012). Hyperactivity, a main symptom of ADHD, is also associated with academic underachievement (Saudino & Plomin, 2007). Even when students are not identified as having ADHD, but are simply identified as being hyperactive or inattentive, they still perform more poorly in math, reading, language, and global measures of academic achievement when compared to their peers with no attention or hyperactivity issues (Saudino & Plomin, 2007). A 2006 study of elementary students scrutinized the behaviors associated with scholastic achievement by students with ADHD during classroom instruction in reading and math (Cleary et al., 2006). This study examined

155 students (92 with ADHD, 63 in the control group) in first through fourth grades; the study was used to validate previous research and assumptions, as well as to extend by identifying specific directions for behavioral interventions (Cleary et al., 2006). The findings reported students with ADHD achieved statistically significant lower rates of engagement and increased rates of off-task behavior (Cleary et al., 2006). Considering the correlation previously stated between student engagement and scholastic achievement, logic prevails in the assumption that students who exhibit inattentiveness and impulsivity, like those with ADHD, will struggle in the staying focused in the classroom and therefore achieve less than their peers. According to Rodriguez et al. (2007), there is a significant negative correlation between the core symptoms of ADHD and reading, writing, and math achievement.

A significant study conducted by Frazier, Youngstrom, Glutting and Watkins (2007) used meta-analysis to synthesize 181 effect sizes (ES) from 72 studies published since 1990 and aggregated the findings according to different assessment methodologies, such as parent and teacher rating scales, GPA, and standardized achievement tests. They related an overall ES of 0.71, which is indicative of decreased levels of achievement for ADHD students as compared to their non-ADHD peers. Through this synthesizing, Frazier et al. proved the positive correlation between incidents of ADHD and decreased levels of achievement using modern studies that utilized current DSM-IV diagnostic competencies.

An additional study conducted by Bussing et al. (2012) examined the relationship between ADHD and academic performance. This study compared ADHD students (n=87) to their non-ADHD peers (n=112) in academic measures such as GPA, reading and math scores on the Florida Comprehensive Assessment Test (FCAT), retention, and graduation; this unobtrusive study triangulated the data to examine the academic differences between

these two groups of students (Bussing et al., 2012). Through this data triangulation, researchers found lower FCAT scores and poorer academic performance for students with ADHD. Of the students in the ADHD research group, 28% (approximately 24) of students were retained after their third grade year based upon their FCAT scores, as compared to 9% (approximately 10 students) of the control group. According to Bussing et al., (2012):

> ADHD was associated with lower GPA scores (−0.4, $p < .01$) and lower FCAT reading (−14.5, $p < .05$) and math scores (−19.8, $p < .01$); it nearly tripled the odds of grade retention (OR = 2.8, 95% confidence interval [CI] = 1.3–5.8) and increased the odds of graduation failure nearly fivefold (OR = 4.9, 95% CI =1.3–18.7). (p. 138)

While students are given medication as first line treatment for improved behavior, this does not necessarily translate into increased achievement. A study by Hale et al. (2011) confirms the existence of this problem through the use of a double blind placebo study (n=56) of children ages 6-16 and varying dosages of methylphenidate (MPH), a common ADHD medication. This study used variable dosage to determine the relationship between working memory, self-regulation, and response to MPH. Children were included based upon evaluation by a licensed psychologist who determined *DMS-IV-TR* status and a parent behavior rating scale (Hale et al., 2011). The researchers conducted classroom observations, various behavioral and academic rating scales, and assessments in order to determine medication efficacy. The results demonstrated a statistically significant response to medication, but with different cognitive and behavioral patterns of MPH response; in fact, the researchers concluded the dose of MPH that is ideal for cognition is actually lower than the best dose for behavior (Hale et al., 2011; Langberg & Becker, 2012). Essentially, students are being medicated to the point of good behavior, but are not able to cognitively

engage in the classroom. If the higher dose for behavior is chosen, children will likely struggle with memory, learning, and achievement because the higher dosage limits executive attention control and working memory (Hale et al., 2011).

Massetti et al. (2008) conducted a study concerning the ADHD subtypes and student achievement. The study consisted of 125 children diagnosed with ADHD between the ages of four and six; research was conducted for eight years. Researchers measured academic achievement with standardized tests scores, assessing yearly; parent interviews were also using to corroborate findings. During the yearly parent interview, ADHD medication use was also assessed. The researchers concluded that ADHD medication use was not associated with academic achievement ($p > .10$).

Barbaresi et al. (2007) researched long-term school outcomes in a sample of 370 children with ADHD. School records were collected in order to establish data concerning reading achievement. Also, medical records were obtained; these provided data on the type of ADHD medication, dose, and medication dates. ADHD diagnosis was confirmed through the use of school and medical records to document ADHD symptoms.

Students participating in the study were placed on a daily medication regimen. Academic achievement, specifically reading, was measured every two years using the California Achievement Test (CAT). Data revealed that reading achievement scores were not statistically different when comparing participants treated with medication to those who were not (Barbaresi et al., 2007). Nevertheless, there proved to be a small significant correlation between the daily dose of stimulant medication and reading achievement ($r = .15$), and children on the highest stimulant doses tended to have higher reading scores, though this difference was not statistically significant (Barbaresi et al., 2007).

Students with ADHD are two and a half times more likely to be off-task than their peers, a key factor concerning student achievement; ADHD also results in increased rates of gross motor activity (fidgeting and restlessness), negative verbalizations, and aggression (Cleary et al., 2006). The lack of attentiveness among these students impacts working memory, which in turn impacts their achievement; if students cannot remember steps in a process or classroom routines, it is reasonable to expect them to struggle when transferring knowledge to independent tasks. In fact, 20-30% of students with ADHD have an associated learning disorder of reading, spelling, writing, and arithmetic (Daley & Birchwood, 2009).

However, the academic gap emerging between ADHD and non-ADHD students is not a matter of intelligence or cognitive ability. In fact, many deficits of ADHD are not caused by low IQ, but rather because of a lack of self-control and ability to adapt to new situations (Schuck & Crinella, 2005). A 2005 study conducted by Schuck and Crinella explored this very topic; this study consisted of 123 boys with ADHD and used a battery of tests to establish IQs and to examine the executive functioning (EF) of these students. According to the results of the WISC III, the mean IQ was 105.62 with a standard deviation of 14.43 points. Because of ADHD symptoms and comorbidities, ADHD students perform better on cognitive tests than in academic performance (Ek, U., Westerlund, J., Holmberg, K., & Fernell, E., 2011). Therefore, many ADHD students may be performing poorly for reasons other than IQ and cognitive abilities. Often, lower IQ scores for these students may be a result of low performance in one of the intelligence subtests, rather than the test as a whole (Shuck & Crinella, 2005).

Interestingly enough, ADHD problems are not necessarily confined to one content area, such as reading or math; it seems students with ADHD may struggle in any academic

area (Cleary et al., 2006). This may be due in part to current educational trends concerning the integration of reading and writing in all content areas; if a student suffers from reading and writing problems, and is expected to read and write in all content areas, students will struggle in all content areas. There is also no significant difference among ADHD subtypes (inattentive, impulsivity, or combined) in terms of student achievement, though all subtypes achieved considerably less than their non-ADHD peers (McConaughy, Volpe, Antshel, Gordon, & Eiraldi, 2011).

There are other academic consequences for those with ADHD. Contrary to previous knowledge, researchers now understand ADHD is not confined to adolescence, but has long lasting effects that permeate into adulthood; it should be considered a chronic, debilitating condition (Birchwood & Daley, 2012). According to Loe and Feldman (2007), students suffering from this disorder have increased incidents of retention, poor grades, and lower reading and math standardized test scores. These students are also more likely to be in special education, to receive remedial academic services, and be suspended or expelled (Daley & Birchwood, 2009). ADHD students also suffer from higher absenteeism, are three times more likely to be retained, and are at a higher risk for dropping out (DuPaul, Weyant, & Janusis, 2011). Currently, 30% of students diagnosed with ADHD repeat a grade and between 10% and 35% of these students drop out of school altogether (Barkley, 2006). Teachers are also more likely to perceive children with ADHD as less intelligent and badly behaved (DuPaul, Weyandt, & Janusis, 2011).

Teacher Perceptions

As teachers' perceptions were the unit of analysis in this study, it is imperative to understand how those perceptions influence student academic achievement and engagement

in academic content. Teacher perceptions of students, including the subsequent expectations formed from those perceptions, have a profound impact upon the success students experience academically; this is especially true for students with ADHD, who may suffer from behavioral symptoms that manifest negatively in the classroom. Because the bulk of the literature addresses student needs before medication, it is imperative to understand the relationship between teacher perceptions, expectations, and academic achievement to fully illuminate the experiences teachers are having with these students after they begin taking medication. While educators may be aware of how IQ, cognitive ability, and motivation impact success, they are less understanding of ADHD symptoms that may prevent students from working to their full potential (Birchwood & Daley, 2012). Although these students may be intelligent and eager to learn, a person with ADHD is often not capable of performing in accordance to his or her full capacity (Ek, U., Westerlund, J., Holmberg, K., & Fernell, E., 2011). Teachers may be unaware of their perceptions of students and how those very perceptions may be affecting students. Children who have negative relationships with their teachers are more likely to have engagement and achievement problems (Dotterer & Lowe, 2011).

The Power of Teacher Perceptions and Expectations

Teacher perceptions are a key factor in promoting cognitive engagement and student achievement (Archambault, Janosz, & Chouinard, 2012). When teachers have positive perceptions of their students, teachers give more positive feedback that can serve to help students engage and achieve more (Archambault, Janosz, & Chouinard, 2012). Teacher expectations and perceptions of students predict academic achievement for elementary, middle and secondary students (Tyler & Boeller, 2008). Students are not only aware of the

their teacher's expectations toward them, but student learning is also influenced in classrooms were children feel their teachers perceive them positively (Rubie-Davies, 2010). A 2009 study conducted by Hinnant, O'Brien, & Ghazarian confirms these findings. This study followed 966 first grade students to see how teacher expectations and perceptions predicted reading and math scores in grades three and five; data was collected through teacher questionnaires of social and academic skills, plus the Woodcock Johnson to establish academic data. This longitudinal study examined how teacher perceptions in first grade influenced subsequent grades, but also how the perceptions could compound yearly to produce the same expectations. Between first and third grades, teacher scores and expectations of students were found to have a significant association with child performance. Though the magnitude of the findings was small, they are shown to be long lasting. Interestingly, there was no link found in reading, except for students who are disadvantaged or marginalized, such as those students who would be diagnosed as having ADHD. There was also a significant relationship between preschool achievement and teacher expectations, as well as between social competence and teacher expectations (Hinnant, O'Brien, & Ghazarian, 2009). Therefore, the more socially competent the child is perceived as being, the higher he or she is expected to perform academically by his or her teacher. For students with ADHD who exhibit poor social behaviors such as impulsivity, restlessness, and lack of self-control, negative teacher perceptions can factor greatly into their academic performance.

An additional longitudinal study conducted by de Boer, Bosker, & van der Werf (2010) also examined the effects of teacher attitudes and perceptions on student academic achievement. The research consisted of 11,040 students in 112 schools, ages 12-17. The

academic achievement of these students was monitored yearly for five years; data collection included standardized test data, student and parent questionnaires, achievement scores, and IQ. Teacher bias was then calculated through teacher expectations, prior academic achievement of students, IQ, and academic motivation. Simply put, the researchers collected the existing data on student academic performance and compared that to teacher expectations; discrepancies between the actual performance and teacher expectations of academic achievement resulted in either positive or negative bias in teacher perceptions of student academic performance. The results found that a mere 33% of students experience no teacher bias; for these students, teachers accurately expected their level of academic performance. However, 32.68% of students experienced a negative bias and 33.85% experienced a positive bias (de Boer, Bosker, & van der Werf, 2010). There is a clear relationship between bias in teacher expectations and student performance; the student performance level is lowest for the group with the most severe negative bias (de Boer, Bosker, & van der Werf, 2010).

Archambault, Janosz, & Chouinard (2012) also explored the effects of teachers' beliefs on students' cognitive engagement and achievement in math. The research included 79 teachers, 1,364 students, and 33 schools; the mean age of the students was 14.66, with a standard deviation of 1.46 years. Data was collected through a student and teacher self-questionnaire, plus school academic data concerning student achievement. The analysis of the data revealed a positive significant correlation between teacher expectations, student achievement, and student engagement. In fact, teacher perceptions of students directly predicted student academic achievement in math (Archambault, Janosz, & Chouinard, 2012)

The primary years are considered to be the formative years in education; during this time, teacher expectations have a strong influence on later academic success (Hinnant, O'Brien, & Ghazarian, 2009). Teachers are often the first to recognize the symptoms of ADHD because they must deal with the behaviors in the classroom (Ghanizadeh, Fallahi, & Akhondzadeh, 2009). While teachers may overestimate the academic achievement of students they find likeable and easy to manage, the opposite is true for students who are perceived negatively (Hinnant, O'Brien, & Ghazarian, 2009). Students with ADHD-like symptoms are often considered to be "problem" students because of their outward behavior. Whether students have acquired the ADHD label or not, the actual symptoms that accompany the disorder are more important to teachers (Ghanizadeh, Fallahi, & Akhondzadeh, 2009). Teachers see these children as needing extra teaching time and effort (Kos, Richdale & Hay, 2006). Because of this, expectations for these students become lower at the cost of the student's academic achievement.

Teachers with high expectations create learning environments where all children can be successful; teachers with low expectations create the opposite (Rubie-Davies, 2010). Teachers interact differently with underperforming students, have fewer expectations for them, and have more negative perceptions of these students (Archambault, Janosz, & Chouinard, 2012). Teachers with low expectations do not challenge students and may create a less supportive learning environment (Tyler & Boeller, 2008). Consequentially, underperforming students are less sure of their abilities and may depend more on positive interactions with teachers (Archambault, Janosz, & Chouinard, 2012). Sadly, though, academic problems and underperforming students are linked to lower teacher expectations and subsequently a poorer teacher/student relationship (Tyler & Boeller, 2008). A circular

pattern develops in which students need more teacher support to be successful, yet teachers already perceive these students as being less successful, so they lower their expectations and unconsciously set students up for failure by not building in the necessary supports. Teachers with lower expectations give students less think time and give answers rather than clues or rephrased questions concerning academic content (Tyler & Boeller, 2008). Though probably not intentionally, teachers are giving these students less time to think, focus upon the topic at hand, and formulate a response. For students with significant attention issues, additional time is essential to allow these students to actively engage in academic content. Therefore, when these students are not being given time to think and form opinions, they are never truly learning.

A qualitative study conducted by Matzin, Piek, Bell & Barrett (2003) examined teacher perceptions and the impact upon students by conducting two interviews with 18 students aged 7 to 14 years old; these children had been previously identified as either high-achieving or as having learning difficulties. Both groups of students were interviewed in order to compare the ways teachers interacted with each group of students. The results show that equal numbers of high-achieving and low-achieving children perceived their teachers as treating groups differently; high-achieving children were reported, by students, as receiving more praise and good teaching, while low-achieving students were reported to have received more scolding and negative feedback.

The Self-Fulfilling Prophecy

Students will meet teacher expectations, whether they are high or low (Tyler & Boeller, 2008). Therefore, this cycle of underperformance falls into the category of a self-fulfilling prophecy: because the teachers perceive students negatively and expect students to

underperform, they do. The blame cannot be entirely placed upon teachers, however. Only half of ADHD children receive treatment and less than half receive specialty care; ADHD is currently being under diagnosed and undertreated, placing a significant burden on teachers and allowing for a continuation of the educational self-fulfilling prophecy of teacher expectations.

Research consistently indicates the existence of the phenomenon of the self-fulfilling prophecy, although effect sizes have been small to marginal (Hinnant, O'Brien, & Ghazarian, 2009). When teachers have positive perceptions of students, the students are more engaged, feel more competent, learn more, employ less avoidance strategies, and perform better; conversely, when teachers hold negative perceptions of students, a self-fulfilling prophecy is created which results in disengagement in the classroom, lower levels of academic achievement, and poorer confidence in learning abilities (Archambault, Janosz, & Chouinard, 2012). Initial research concerning the impact of teacher expectations began with the landmark work of Rosenthal and Jacobson in 1968. His study, the Pygmalion experiment, determined that when teachers expected their students to perform at high academic levels, the students rose to the challenge (Rosenthal & Jacobson, 1968). This was the first study validating the idea of the self-fulfilling prophecy. They administered the TOGA, a nonverbal intelligence test, to a selection of elementary students (kindergarten through fifth grade). Teachers were not informed it was an intelligence test, however; they were told it was test to see when students would "bloom" and to identify late bloomers. Late bloomers were randomly selected, teachers were informed who they were, and intelligence was again measured the following year. The teachers created a self-fulfilling prophecy: a year later, the late bloomer group had gained more IQ points than the control group. Another

landmark study conducted by Brophy and Good (1970) observed teacher behavior in order to identify teacher bias and subsequent behavior through high and low expectations. The research was conducted in four first grade classrooms and found that teacher behaviors were indicative of teacher expectations and resulted in self-fulfilling prophecies. Simply put, the behaviors of teachers and interactions they have with students are a somewhat transparent clue to the expectations they have for each student. Students internalize these perceptions and expectations, and they either rise or underperform to meet teacher expectations.

Rist (1970) worked to identify the teacher expectation of students and subsequent grouping of those students by ability. This observational study was conducted in inner-city classrooms from kindergarten through second grade. Rist (1970) found that, within three weeks of school, kindergarten teachers had divided her students into three groups: above average, average, and below average. In first grade, the teacher divided the group again in the same way; the only change, however, was the lowest group was comprised mostly of students who were repeating the grade. By second grade, however, none of the initial kindergarten students in the low group remained in the low group; they had all moved to the middle group and some of the middle group had moved to the high group. This was interpreted as a teacher-created caste system; however, it lent itself to both ideas of the constancy and dissolution of a self-fulfilling prophecy.

St. George (1983) also examined the self-fulfilling prophecy and the relationship between teacher perceptions of student characteristics and expectations of academic performance among Maori students in New Zealand. Through this work, it was proven that the teacher participants perceived the Maori students more negatively than their peers of European descent; this led to lower expectations and subsequent lower achievement.

Importantly, this study also examined teacher perceptions of student attributes; the Maori students were found to come from less desirable backgrounds, have less parental support, considered to be less interested in school and have less academic potential (St. George, 1983).

Weinstein (2002) continued to examine the relationship between teacher expectations and teacher behavior. This study utilized the Teacher Treatment Inventory, observations, and interviews with students, Weinstein identified specific behaviors that are associated with high and low differentiating teachers (2002). High differentiating teachers viewed ability as fixed and allowed for little variation among student grouping; student interaction was discouraged, public humiliation of students occurred, and student behavior was managed negatively (Weinstein, 2002). Conversely, low differentiating teachers stressed mastery teaching, took responsibility for student learning, used flexible student grouping, and fostered positive relationships with students (Weinstein, 2002). Results found that high differentiating teachers' expectations accounted for 14% of the variance in end of the year student achievement, while low differentiating teachers' expectations only accounted for three percent (Weinstein, 2002). This large difference underscores the importance teacher expectations, attitudes, and behaviors play in student achievement.

Teacher Perceptions and ADHD

Teacher perceptions and expectations are even more significant for students with ADHD and ADHD-like symptoms. The challenges inherent in teaching these students greatly influence the perceptions teachers have of them. Teachers believe acting out behaviors, which are common in these students, is more problematic than withdrawn behaviors (Kos, Richdale, & Hay, 2006). These teachers are required to alter classroom

settings for these students who require greater routine and greater detail; children with ADHD perform at the optimal level when the classroom is highly structured, routines are in place, there is minimal sensory distraction, and they have preferential seating (Kos, Richdale, & Hay, 2006). The extra time and energy exerted on these students may not bode well for teacher perceptions of them, however. There is a proven strong, positive correlation between teacher perceptions of student engagement, teacher expectations, and subsequent academic achievement (Rubie-Davies, 2010). For students with ADHD, however, teachers tend to hold negative beliefs about behavior problems, are pessimistic about teaching these children, and think these kids need extra time and extra teaching (Kos, Richdale, & Hay, 2006). The situation can become even more frustrating for teachers and students when students exhibit more or more severe symptoms, class sizes are large, and teachers have not received adequate training for how to manage the student behaviors and help students succeed (Kos, Richdale, & Hay, 2006). The daily frustrations began to compound for many teachers, resulting in a lowering of expectations for students with significant behavior problems and a history of underperforming, such as those with ADHD. Because children's social skills have shown to have a significant positive correlation with teacher expectations, many students with the outward symptoms of ADHD are considered by teachers to be low performing from the start (Rubie-Davies, 2010).

The work of Nel Noddings and the ethics of care may also serve to illuminate how teacher expectations drive their instruction and interactions with students. The role of education, and of the teacher, is to promote, "a constellation of encounters, both planned and unplanned, that promote growth through the acquisition of knowledge, skills, understanding and appreciation" (Noddings, 2002, p. 283). Teachers who act as ethical agents are acting

with the interests of others, particularly students, in mind; these teachers are not only mindful of what could happen to students physically, but also how they will feel and how they will respond to circumstances in the classroom (Noddings, 1988). This type of mindset produces what Nodding (1988) refers to as caring occasions (p. 222). When teachers promote caring occasions, they promote student talk, increase student autonomy, and emphasize relationships; when teachers avoid caring occasions, they may overuse lecture with no student discussion, provide feedback solely through quantitative grades, and respond to discipline issues with no consideration for the children involved (Noddings, 1988). By employing an ethics of caring mindset, teachers create an environment of positive expectations, responsible self-affirmation, and development of the whole, not just academic, person (Noddings, 1988). When teachers perceive their students as human beings worthy of value, trust, and investment, they shape their expectations in a way that promotes growth of the whole child. For teachers of ADHD students who exhibit symptoms of impulsivity and hyperactivity, applying the ethics of care could help to shape the instruction and interactions between teacher and student in such a way that the emotional, social, and academic needs of each child is being met

A 2007 study conducted by Haskell McBee explored the concept of caring among 124 teacher candidates, 13 teachers, and 7 faculty members associated with a mid-Atlantic university education program that serves a diverse area of urban, suburban, and rural low-income and affluent communities. The researcher utilized open-ended surveys to explore how teachers in diverse contexts and at various phases of their careers conceptualize and actualize caring; the study also considered the characteristics and actions associated with caring and the extent to which caring was intentionally taught. Two themes emerged during

the research: the intentionality of teachers to cultivate caring relationships with students and the subsequent actions of those teachers based upon the firsthand knowledge they have of their students (Haskell McBee, 2007). Teachers can also manifest a care ethic by offering to help students, giving time and respect, listening, showing compassion and caring about individuals; teachers must model and explicitly teach students how to care and develop respectful relationships (Haskell McBee, 2007). For students with ADHD, who often struggle with a variety of behavioral and academic needs, teachers with a care ethic are essential for the growth of the whole child; utilizing this mindset can inform teacher instruction and interactions with these students.

Ferreira and Bosworth (2001) examined middle-school students' perspectives regarding their teachers and caring; specifically, students were asked to describe a caring teacher. Researchers conducted 101 interviews, in conjunction with classroom observations and document analysis, in one urban and one suburban district. Through the qualitative analysis, two themes emerged: teacher behaviors associated with content and pedagogy and teacher behaviors implying a student/teacher relationship. Yet, all caring acts were unidirectional, from the teacher to the student. Students identified caring teachers in ways that related to pedagogy most often; caring teachers were seen as those who provided help, showed respect, took an interest in students, and treated each student as an individual. Even though caring acts were observed (from the teachers to the students), neither school exemplified the features of a caring community. Because the caring is unidirectional, a community of learners is never truly developed; students must have caring modeled, explicitly taught, and expected of them so that they may develop the care ethic as well. (Ferreira & Bosworth, 2001). Again, this is especially beneficial for students with ADHD

who may benefit from direct, explicit behavior instruction in how to care for others (Roman, 2010).

Students who are placed in classrooms with teachers who have positive perceptions make large academic gains and improve self-perceptions (Rubie-Davies, 2010). For children with ADHD who may exhibit a large range of challenging behavioral and emotional problems, sometimes the more a teacher experiences, the more negative they become toward these students (MacFarlane & Woolfson, 2013). Self-fulfilling prophecies may occur because of the different ways teachers behave toward students (Jussim & Harber, 2005). However, teachers who have taught ADHD students may feel more prepared to each another (Kos, Richdale, & Hay, 2006).

Students with ADHD may or may not be considered to be a special education student. All students in the United States, including those with disabilities, have the right to a free and appropriate education (Missouri Department of Elementary and Secondary Education, 2008). Students with ADHD can have a variety of symptoms that vary greatly in severity; some of these symptoms, especially when comorbidity is present, may include the need for an Individualized Education Plan (IEP) or a 504 accommodation plan. An IEP is an individual plan written to help students be successful; it specifies the child's disability, annual goals, accommodations/modifications needed and amount of time in the general education setting (Missouri Department of Elementary and Secondary Education, 2008). Not all students with ADHD qualify for an IEP, however. Children with significant emotional, social, and learning problems may qualify under the Other Health Impaired criteria for an IEP, but will need to be evaluated in order to qualify (Missouri Department of Elementary and Secondary Education, 2008). Students with ADHD who do not qualify for

an IEP may still be eligible for a 504 accommodation plan if they have a physical or mental impairment that limits major life activities or a history of impairment (Missouri Department of Elementary and Secondary Education, 1993). A 504 is considered to be broader than an IEP, covering a larger range of disabilities. Both plans seek to provide the necessary behavioral and/or academic accommodations needed to help students be successful.

Although both plans would label students with a disability, teachers are shown react to the symptoms of ADHD rather than the label provided (MacFarlane & Woolfson, 2013). Both plans still look to place students in the Least Restrictive Environment (LRE), meaning students should be in the general education setting the maximum amount of time possible (Stader, 2007). For some teachers, however, this is not ideal. General education teacher attitudes may be a barrier to successful inclusive practices of students in their classrooms (MacFarlane & Woolfson, 2013). Although teachers are generally positive toward the thought of inclusion, the actual implementation of inclusion in the general education classroom can be problematic (MacFarlane & Woolfson, 2013). A 2013 study conducted by MacFarlane and Woolfson examined the relationship between teacher attitudes toward inclusion of students with social, emotional and behavioral problems; though this study did not specifically focus upon students with ADHD, many of the behaviors described in the study would be typical of students with ADHD. The study consisted of 111 teachers in Scotland, with a mean class size of 21.7 students and mean teaching experience of 13.78 years. Teacher attitudes were examined through data collection using the following assessments: Multidimensional Attitude Toward Inclusive Education Scale (MATIES), Teacher Sense of Efficacy Scale (TSES), Teachers' Subjective Norm Scale, Teachers' Willingness to Work with Severe Disabilities Scale (TWSD), and the Adaptation Evaluation

Instrument (AEI) (MacFarlane & Woolfson, 2013). The assessments were used to analyze the following areas: teacher attitudes, beliefs, and feelings; teachers' perceived behavioral control toward inclusion of children; measurement of teacher's views about how their principal would react to inclusive behaviors; teachers' behavioral intention to promote children with special needs; and the evaluation of teacher views on feasibility and desirability of adaptations for inclusion (MacFarlane & Woolfson, 2013). The results demonstrate that a large proportion (49%) of the variability in teachers' behavioral intention toward the inclusion of students with emotional, behavioral, and social disabilities was predicted by beliefs, feelings, and perceived behavioral control. Teachers with more positive beliefs and more perceived control were more intentional in inclusion of students with these sorts of issues (MacFarlane & Woolfson, 2013). Children's social skills, including how they interact with teachers and peers, has been shown to have a significant positive correlation to teacher expectations for student academic achievement (Hinnant, O'Brien, & Ghazarian, 2009). When children, such as those with ADHD, have poor social skills and suffer from emotional or behavioral problems, teachers who do not already hold positive beliefs about these students become increasingly negative. They may not fully understand the condition and symptoms of ADHD, which then leads to negative perceptions, lower expectations, and underperformance of students.

There are other misconceptions on the part of teachers concerning students with ADHD. This area is of particular importance, as teacher attitudes and knowledge influence their resultant behavior and teaching practices (Kos, Richdale, & Hay, 2006). A 2010 study conducted by Nur and Kavakci examined teacher attitudes, perceptions, and beliefs concerning ADHD. 87 elementary school teachers completed a self-report questionnaire

concerning their own thoughts and beliefs about ADHD. Results are as follows: 32% of teachers believe ADHD is due to biologic and genetics, 65% believe ADHD is because of parent spoiling, 67% believe students with ADHD have difficulties with their classmates, 36.8% believe ADHD can be treated with medication, 16.1% believe ADHD can persist into adulthood, 93.1% believe students with ADHD should receive a special education setting, 82.8% believe these students should receive less homework and easier (oral) examinations, and 61.1% believe students with ADHD should be subject to the same disciplinary standards as their non-ADHD peers (Nur & Kavakci, 2010). Also, many teachers do not even believe ADHD is an actual illness (Nur & Kavakci, 2010). While all students who need the accommodations provided by a 504 or IEP should be given the opportunity, segregating students into groups like "special needs" and "mainstream" prevents equitable access to social and academic opportunities; it also labels children (MacFarlane & Woolfson, 2013). This study illustrates the deep need for professional development on the part of teachers; if teachers do not understand the disorder, they may believe the condition is due in part to poor discipline by parents. Lower expectations are demonstrated by the 82% of teachers who believe these students should have less homework and easier examinations; instead of changing teaching practices or implementing behavioral interventions, teachers are lowering the bar for students with ADHD. Misconceptions and perceptions of students with ADHD are leading to negative attitudes on the part of teachers. When students know their teachers feel negatively toward them, they disengage from the classroom and instruction; underperforming in academics and disruptive behavior quickly follows.

Perceptions of Color, Native Language, and Gender

Teacher perceptions of students may also be influenced by factors beyond students' control, such as by student race, gender, socioeconomic status, native language, and even physical attractiveness. By the year 2020, approximately half of all the public school population will be comprised of culturally and linguistically diverse students (Sirota & Bailey, 2009). It is therefore imperative to understand how these uncontrollable factors influence teacher perceptions and subsequent teacher expectations of students.

When considering issues of cultural diversity, teachers may operate from a deficit model, in which they believe that when students are not successful in school it is because of some internal failure or deficiency (Valencia, 1997). In short, the blame is placed upon the students and their shortcomings, rather than on what could be done differently by teachers, administrators, and schools. Both pre-service and current teachers may hold the preconceived notion that students of color are less capable than their Caucasian peers (Bryan & Atwater, 2002). Part of this may be attributed to the cultural mismatch, discussed later, which often occurs between teachers and students of color. When teachers encounter students who are culturally different in that their speech, behaviors or attitudes are not in compliance with the teacher's own expectations, the teacher may assume the child is lacking in competencies (Bryan & Atwater, 2002). The belief that these students are somehow deficient shapes the teacher's instruction, encourages the teacher to lower expectations for these students, and causes different, and often times more negative, student/teacher interactions than those that might take place between teachers and students from a similar cultural background (Bryan & Atwater, 2002). Consequently, these students are at risk to be put in lower track classes, be under-identified for gifted and talented classes, over-identified

for special needs classes, and subjected to more frequent and harsher discipline (Skrla & Skeurich, 2004). This may be true for students with ADHD as well, who are often seen to be hyperactive and impulsive, and may be seen as being culturally different from teachers; for some teachers, they may believe that the lack of academic and social success of these students come from the inherent manifestations of the disorder. Bryan and Atwater (2002) state, "given the increasing growth rate of the population of students of color, we need to seize opportunities to use new knowledge of teacher beliefs to tailor instruction to address the conceptions of those who are expected to meet the needs of a variety of learners" (p.825). Essentially, educators must understand what perceptions and notions teachers have surrounding students, particularly those of color and with conditions such as ADHD, in order to create a culturally responsive classroom that engages all learners.

A qualitative study conducted by Skrla and Skeurich (2004) examined the effects of accountability on deficit thinking in four Texas school districts of various sizes, serving from 8,000 to 50,000 students; the school districts were selected because of the recent improvements students of color and low-income students had made on state testing in comparison with their white, middle-class peers. Data collection included interviews with school board members, administrators, central office staff, teachers, parents, business partners and community members, as well as classroom observations, attending community functions, and shadowing district officials. The study sought to illuminate ways in which accountability, present in The No Child Left Behind Act of 2001, affected deficit thinking among superintendents and district leadership; researchers found deficit thinking affected in five ways: a) by providing irrefutable evidence that the district was not serving all students well, b) shifting the blame and responsibility associated with empowering marginalized

students from the district to the state officials, c) compelling superintendents to seek out model classrooms, implement those successful practices in their own districts, and refine their practices as instructional leaders, d) causing superintendents to evaluation their own beliefs around deficit thinking and create a culture of anti-deficit thinking in their districts, and e) continually increasing effectiveness and setting more ambitious goals as success is experienced (Skyrla & Skeurich, 2004). By addressing their own thinking, these educators were able to change the future for the students in their school district; through accountability measures, educators can become more mindful of how to increase the academic and social success of students who have been previously disenfranchised.

Students who are perceived as attractive are seen as more outgoing, better leaders, and as having higher self-esteem. They are also given lighter consequences when violating rules or regulations (Parks & Kennedy, 2007). A historical study conducted by Dion, Berscheid, & Walster (1972) identify this notion as the 'beautiful is good' phenomenon. The study concluded that participants tended to rate individuals who were perceived as attractive as being more competent, happier, and more likely to succeed.

Teachers are certainly not immune to this phenomenon. Parks and Kennedy (2007) investigated the relationship between students' race, physical attractiveness, gender, and perceived academic and social competence as judged by teachers. This study included 72 participants, 51 teachers and 21 undergraduate education majors, of whom 85% were White and 15% were black. The average age of the participants is 29.96 years, with a standard deviation of 8.37 years. Each participant considered eight scenarios in which a child's picture was displayed; they then rated the child's social and academic abilities based on an eight-question, five-point Likert scale. A four-way mixed factorial design was employed to

assess the hypothesis (Child gender x child race x child physical attractiveness x rater educational level). Parks and Kennedy (2007) investigated the following hypotheses:

> White children would be rated as more competent than black children, girls would be rated as more competent than boys, attractive children would be rate as more competent than unattractive children, and more experienced teachers would show greater bias for physical features exhibited by children than individuals currently being trained as teachers. (p. 938).

In order to obtain eight suitable photographs, 100 photographs were selected from a 10-year-old elementary school yearbook and rated by 10 graduate students and faculty on a 10-point Likert scale from *unattractive* to *attractive;* from these 100, 8 were selected: four boys, four girls, two white, two black, two high in attractiveness, two low in attractiveness. For each photo, a scenario was developed in which a mildly positive and mildly negative attribute of each child was discussed. Based upon the photograph and given information, participants rated each child based upon his or her perceived academic and social competence. Surprisingly, there were no differences found in the education levels of participants, suggesting a generalization of results from both education students and experienced teachers. Children considered being unattractive, especially boys, were perceived to be less competent than more attractive children. Overall, the lowest academic and social perceptions were given to unattractive, black boys. Given the previously discussed importance of teacher perceptions, expectations, and student achievement, the importance of identifying teacher biases and providing quality diversity training seems imperative.

Teachers have negative perceptions of low SES students and view their capacity to perform well academically as low (Sirota & Bailey, 2009). A study conducted by Auwarter

& Aruguete (2008) examined the assumption that student gender and socioeconomic status influence teacher perceptions and expectations. 106 teacher participants were included from a rural public school district in mid-Missouri. Participants included 91 women, 13 men, 44 elementary teachers, 19 middle school teachers, and 43 high school teachers; 97 participants were identified white, four identified as black, two identified as Hispanic, and three did not indicate race. Each participant read a paragraph concerning a student with academic and behavioral difficulties; each word of the text was kept consistent, except for factors that would identify gender and SES. Researchers varied these by altering student names, pronouns, and parent professions; however, the abilities and behaviors were consistent. After reading the scenario, participants filled out a questionnaire consisting of five measures: future expectations for the student need for academic support services, personal characteristics, believability, and SES of the student in the scenario (Auwarter & Aruguete, 2008). The results confirmed that participants viewed high-SES males more favorably than low-SES males; however, the opposite was true, with low-SES girls being perceived more favorably. There were no significant differences found in ratings according to gender. Lastly, it was found that participants perceived that students with higher-SES have more promising futures than those students with low-SES. Those educators who believe, consciously or unconsciously, that SES is a strong indicator of academic achievement may perceive that their efforts in the classroom will have little to no impact on poor children (Auwarter & Aruguete, 2008).

Students of higher SES status, as well as girls, have better academic outcomes than lower SES students and boys (Auwarter & Aruguete, 2008). Girls are considered to be more serious about school, more compliant in nature, and have better work habits than boys;

Boys, on the other hand, are expected to be more disruptive than girls and subsequently receive more direction and criticism than girls (Parks & Kennedy, 2007).

A study conducted by McGrady and Reynolds (2012) examined the consequences of racial mismatch of teachers and students in the classroom; the consequences are explored through teachers' perceptions of white, black, Hispanic, and Asian students. Data was collected using the Educational Longitudinal Study (ELS), a national study of 15, 362 high school sophomores; this data set includes parent, teacher, and student surveys about behavior, cognitive ability, peers, and school involvement. It also collects information about parent and teacher background. Through criterion sampling, a sample of 9,000 students was selected.

To measure racial mismatch, teachers were divided into white and non-white groups, and then the teachers' races was contrasted with the students' races. The control group was the white students who were being taught by white teachers; the perceptions by these teachers were considered to be the baseline. In comparison to white students, black students were rated significantly lowers in being attentive by both sets of teachers; this difference was around 17%. Hispanic students were perceived similarly by white teachers, but not by non-white teachers. Hispanic students also face stereotypes that place them as having lower academic potential and as less motivated than white students; this is even more pervasive for children of immigrants (McGrady & Reynolds, 2012). Also, educators hold more negative perceptions of ELL students than of native English speakers (Sirota & Bailey, 2009).

Conversely, white teachers assess Asian students more positively than white students in three of four areas: harder working, more attentive, and not disruptive (McGrady & Reynolds, 2012). White teachers rated all groups of students equally in how well they relate

to their classmates. In three of the four areas, white teachers rated black students as having less academic abilities and Asian students as having more than white students (McGrady & Reynolds, 2012). In assessing Asian students' abilities, white teachers postulate that these students have better grammar, better conceptual organization, and less prone to fall behind as compared to their white peers. Finally, nonwhite teachers do not rate any racial group as more or less able than white teachers rate white students.

Negative views of black students persist in elementary, middle and high schools (McGrady & Reynolds, 2012). Teachers rate black students lower in classroom behaviors and academic ability than white students, which becomes predictive of the lower grade point averages and reading test scores these students receive (McGrady & Reynolds, 2012). Surprisingly, both black and white teachers perceive black students more negatively than white students; these views have also been shown to be strongly correlated with children's own self-perceptions (Sirota & Bailey, 2009). Racial stereotyping is not simply limited to skin color, however; studies have shown teachers to have higher expectations and more positive perceptions of students based on the 'white'-ness of their name (Anderson-Clark, Green, & Henley, 2008).

All non-white races are not perceived as the uniform 'other,' however. Teachers actually seem to hold higher expectations and more positive perceptions of Asian children than for white students (Sirota & Bailey, 2009). Teachers tend to rate Asian and Asian American children as more emotionally independent and academically competent than other students, including white students (McGrady & Reynolds, 2012). Asian students are also seen to be more controllable, easier to teach, and more eager in the classroom (Nazaki, 2000). This may be a self-fulfilling prophecy: because Asian children are subjected to higher

teacher expectations, they rise to the occasion; the positive teacher perceptions for this particular race fuel their capacity to achieve higher academic outcomes (Goyette & Xie, 1999). These children, like all children, have self-perceptions that are influenced by their teacher's standards and expectations.

If teachers believe that academic or social competence is predetermined by factors beyond student control, such as SES or gender, teachers may not be motivated to reach these students (Auwarter & Aruguete, 2008). Teachers who feel that student outcomes are impacted by these uncontrollable factors may feel as though their efforts will make little difference; therefore, they may not make the additional effort needed to reach many students. If students internalize this attitude and their teacher's perceptions, a self-fulfilling prophecy may occur with students meeting their teacher's low expectations.

Critics of the relationship between teacher expectations and student achievement believe the relationship is either weak or small in power. One reason for believing this is that teachers are generally accurate in their expectations of students; accuracy of expectations would negate a self-fulfilling prophecy (Jussim & Harber, 2005). Also, through meta-analysis of 380 studies, it has been determined the average teacher expectation effect size falls in the range of r=.1 to.2 (Hemphill, 2003). This small effect size shows the limited effect teacher expectations may have on student achievement. When translated into student change, however, when r=.1 to .2, teacher expectations affect student achievement for 5%-10% of students (Jussim & Harber, 2005). While this does theoretically mean teacher expectations do not affect students 90%-95% of the time, teacher expectations are significant for the small number of students that may be affected by them.

Conclusion

Attention-Deficit/Hyperactivity Disorder is the most commonly diagnosed psychiatric disorder of childhood, with an estimated 2-12% of children in the United States currently identified as having ADHD (Stubbe, 2000). Considering the prevalence of the disorder, there is logically a considerable history concerning the topic. There has been significant evolution in research and increases in knowledge concerning the topic. From original work of George Still in 1902, the assertion of brain damage or injuries as causation, ADHD has been misunderstood for decades. Currently, the condition is still not entirely understood. While not considered in this literature review, researchers are still trying to identify causes with ADHD; while theories are great in number, empirical evidence is lacking.

The lack of cohesion concerning the etiology of ADHD has serious implications for treatment. While many treatments have been considered, studies are impacted by serious methodological flaws that allow for a looser interpretation of the results. For the future, studies must be replicated using a randomized, controlled design that utilizes a sufficient sample size. Once these results are obtained, a consensus may be formed on the best possible treatment path for students with ADHD.

Student engagement has a logical relationship with student achievement: the more students engage in content, the more they learn. For students with ADHD, however, they may not be capable of engaging in the classroom. They lack the behaviors and skills necessary to engage like their peers; therefore, they are consistently underperforming in math, reading, and graduation rates despite comparable IQ scores.

Teacher perceptions, behaviors, and expectations influence all students. When teachers have more positive perceptions of students and higher expectations, children rise to the challenge. When teachers have negative perceptions of students and lower expectations, children also meet that challenge. The achievement gap demonstrated between ADHD and non-ADHD students is only widening based upon the expectations being placed upon students with ADHD. The bar is being lowered for those students, especially those with the most or most severe symptoms. This is not necessarily done intentionally, however. Many teachers do not possess the necessary knowledge or skills to successfully interact with these students and help them be successful. There is a great need for professional development in this area so that teachers may begin to close the achievement gap that is rapidly growing between ADHD and non-ADHD students.

CHAPTER 3

METHODOLOGY

Attention-Deficit/Hyperactivity Disorder (ADHD) is a condition that can severely impact the lives of children, parents, and teachers. Children with the disorder suffer from a wide range of problems, including inattentiveness, impulsivity, and hyperactivity. The disorder is associated with significant risk of academic failure, mental illness, and interpersonal problems (Sonuga-Barke et al., 2013). This is also a disorder that is becoming more prevalent; the worldwide occurrence of the disorder is approximated to be 5.29% of all people aged 18 years and younger (Polanczyk, de Limar, Horta, Biederman & Rohde, 2007). To treat the symptoms of the disorder, medication is generally prescribed to help students engage in classrooms and to overcome the obstacles associated with ADHD. The problem, however, is that there is not enough known about how students are engaging academically, socially, and behaviorally in the classroom once medicated; while they may now be well behaved, they are not making academic gains consistent with their peers without educational interventions (Birchwood & Daley, 2012).

This study served to describe the experiences and perceptions of primary and intermediated teachers who work with elementary students who have been diagnosed with ADHD and are receiving medication in regards to their classroom engagement, academic achievement, and non-instruction time at a large, suburban elementary school serving grades kindergarten through five in a midsize, Midwestern community. Examining teacher perceptions contributed to the body of knowledge surrounding the academic and behavior status of medicated students and illuminated ways teachers may help these students close their academic and social gaps. Although much research has been conducted around the

classroom engagement and academic achievement of students with ADHD before they are medicated and while they are exhibiting the symptoms of the disorder, there is little research that examines how these students fare in the classroom after medication. Although achievement data such as test scores and grades were available for students, this quantitative data only serves to illuminate one piece of the academic and behavioral status of these students. This study was designed through the theoretical tradition of phenomenology. According to Grbich (2013), "phenomenology is an approach that attempts to understand the hidden meanings and the essence of an experience together with how participants make sense of these" (p. 92). This theoretical tradition was selected in order to understand the experiences and perceptions teachers have of students once they are medicated; based upon the number of students receiving medication for ADHD and hyperactivity, it is crucial we understand how they are performing after being medicated.

This study sought to answer the following research questions:

1. What themes are discovered through teacher engagement in classroom instruction of elementary students who have been diagnosed with ADHD and are receiving medication at a large, suburban elementary school?
    a. What practices are teachers using to engage these students?
    b. In what ways do teachers interact with students instructionally?
    c. How do teachers perceive the academic achievement of these students as opposed to non-medicated students with ADHD and/or non-ADHD students?

2. What themes are discovered in attitudes of teachers toward elementary students who have been diagnosed with ADHD and are receiving medication during non-instruction time at a large, suburban elementary school?
    a. In what ways do teachers interact with students during non-instruction time?
    b. How do teachers perceive interactions with students during non-instruction time?

When considering the significance of the study, both the prevalence of ADHD in combination with its symptoms must be considered. Half of all child mental health referrals result in an ADHD diagnosis (Biederman, Faraone, & Zimmerman, 2005). In 2011, it was estimated that approximately 10.8% of adolescents in the United States have been identified as having Attention-Deficit/Hyperactivity Disorder (National Institute of Mental Health, 2011). Most elementary classrooms have at least one student with ADHD (Barkley, 2006). Considering one-tenth of the student population suffers from the condition, it is imperative that teachers and parents understand more about student abilities after they begin the most common treatment: medication. Before medication, students may have symptoms that compound into larger issues, such as social skills and peer relationship concerns, academic failures and skill deficits (Biederman, 2005).

More research needed to be done to ensure medication is closing the achievement gap for these students and not simply helping them sit quietly in classrooms. The purpose of this qualitative phenomenological research project was to examine teachers' perceptions and experiences in regards to working with ADHD students post-medication; this served to provide thick description of how teachers perceive these students academically and not simply focus upon the behavioral aspects of ADHD medication.

In this chapter, the following subjects are covered: the rationale for qualitative research, the design of the study, data analysis procedures, and limitations and ethical considerations. Through a thorough examination of each topic, the design of the study created a credible and reliable qualitative study that accurately acquired appropriate data in order to sufficiently answer the research questions. Throughout this chapter, it is shown that each aspect of the study design has been carefully selected in order to produce the most fruitful data that allowed for in-depth analysis and thick, rich description of teachers' experiences

Rationale for Qualitative Research

Qualitative researchers seek to learn about a subject matter in a natural environment, as opposed to a lab or controlled setting; this allows the researcher to experience the phenomena first-hand and describe the experiences of the participants as closely as possible. The assignment of qualitative researchers is to provide a framework that allows people to openly and honestly express their perspectives of the world as they experience it (Patton, 2002). Denzin & Lincoln (1998) state:

> Qualitative research is multimethod in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them. (p. 3).

It is appropriate to utilize qualitative research in several situations. These include studying groups or populations to identify measureable variables, hear silenced voices, to obtain a complex understanding of an issue, and to understand the contexts and setting in which participants address an issue (Creswell, 2013). This type of research allows for depth

in study and a rich description of the findings. It does not merely seek to measure variables or prove hypotheses, but describe the experiences, perceptions, and beliefs of people within their particular context. Often, this includes giving voices to those that may be marginalized or disenfranchised from larger society.

There are several differences between qualitative and quantitative research. Qualitative research, for example, is seen as an inductive method using research questions to gather data, then forming conclusions; the research questions are often exploratory and data is presented in a narrative form. Qualitative research methods produce a vast amount of detailed data about a small number of participants (Patton, 2002). It explores reality only as it exists for a particular study and in a particular context; therefore, study reproduction is almost impossible, as the study could not be replicated exactly as it was before.

Qualitative research should be situated within the societal context under which the data was collected; as the experiences of participants are unique and personal, generalization of results is not a goal of this type of research. It is flexible and allows for processes to unfold naturally. Grbich (2013) states, "In contrast, quantitative is generally viewed as deductive, where the conclusions drawn follow logically from certain premises- usually rule based- which are themselves often viewed as proven, valid, or 'true'" (p. 26). The open-ended, unsystematic responses given by participants in qualitative research allow the researcher and audience to better understand the experiences, beliefs, and feelings of the participants (Patton, 2002). This allows for the qualitative researcher to understand the experiences or perspectives of others without trying confining them to predetermined categories. Qualitative data does not make judgments about whether what has occurred is good or bad; it simply recounts the circumstances and describes what has occurred (Patton,

2002). In this research project, I was not looking to prove any sort of hypothesis concerning teachers' experiences; however, I sought to illuminate the academic experiences these teachers are having with students once medication is utilized.

In contrast, quantitative research has a rigid, inflexible design that is considered to be reliable and valid based upon the very controlled methods; these studies can be replicated, using the same variables, controls, and hypotheses. Reality is regarded as static and measurable; unlike qualitative research, where the researcher is considered the instrument, objectivity and neutrality are paramount. This was not feasible for my particular project, as the experiences of each teacher with each student are unique, personal, and dynamic; these interactions differ throughout the school day and depend on many uncontrollable variables, such as personalities, attitudes, and moods. These factors can change from day to day, making replication an unreasonable expectation for this study. While objectivity is addressed specifically through the use of bracketing in phenomenology, research experiences are valued as well. While the biases, assumptions, and experiences of the researcher may influence the way the data is interpreted, this does not make the data or study any less valid; qualitative research is not about being right or wrong, but rather understanding the experiences of others and interpreting the findings in a consistent manner.

Qualitative research also utilizes a theoretical tradition or orientation, from which the researcher shapes research questions, study design, and methodological procedures. These traditions help clarify the diversity within qualitative research, as it cannot be lumped into one singular research method; it also helps to identify the goals of the study, as each tradition reveals the perspective and the lens through which the research is conducting research. For this particular study, the qualitative theoretical tradition of phenomenology

was utilized. The subsequent discussion will provide the history and background of the tradition, as well as the rationale for selecting this particular tradition.

Phenomenology

Because of the interest in the perspectives and experiences of teachers working with medicated students with ADHD, phenomenology was used as the sole theoretical tradition for the study. Phenomenological researchers try to understand the experiences and interactions of ordinary people in particular situations (Van Manen, 1990; Moustakas, 1994; Bogdan & Biklen, 2007). The term *phenomenology* comes from the Greek word *phenomenon,* meaning, "to show itself" or manifest something that can become visible in itself (Stapleton, 1983). According to Moustakas (1994), "Thus, the maxim of phenomenology, 'To the things themselves'" (p. 26). The experiences and current reality experience by others becomes the incentive for new experiences and for generating new knowledge; any phenomenon is a suitable starting point for further study. On phenomenology, Moustakas (1994) asserts:

> The challenge facing the human science researcher is to describe things in themselves, to permit what is before one to enter consciousness and be understood in its meaning and essences in the light of intuition and self-reflection. The process involves a blending of what is really present with what is imagined as present from the vantage point of possible meanings; thus a unity of the real and the ideal. (p. 27).

Phenomenology truly began with the work of the German philosopher Husserl in the 1960s (Van Manen, 1990; Moustakas, 1994; Ray, 1994). Husserl's goal was the development of a philosophical, descriptive approach aiming to capture the essence of consciousness (Stapleton, 1983). Husserl also concerned himself with the discovery of

meanings and essences in knowledge (Moustakas, 1994). He considered there to be a deep contrast between facts and essences and between the real and non-real (Moustakas, 1994). Phenomenology is the "systemic attempt to uncover and describe the internal meaning structures of lived experience" (Van Manen, 1990, p. 10).

Transcendental phenomenology, which is being utilized in this study, looks to understand the genuine and true form on things themselves (Ray, 1994). Moustakas (1994) defined transcendental phenomenology as the "scientific study of the appearance of things, of phenomena just as we see them and as they appear to us in consciousness" (p. 49). Ray (1994) states, "It is called transcendental because of its presuppositionless relationship to the world (bracketing or suspending one's presuppositions about the world) so as to come to know what makes a thing what it is, thus providing the basis for the world's existential status (p. 120). Phenomena can be observed in the everyday reality of the human experience; Moustakas (1994) asserts, "The very appearance of something makes it a phenomenon" (p. 49). Therefore, in education, phenomena may include things such as new educational standards, one-to-one technology programs, or medicated students with ADHD. Using this approach and bracketing assumptions from the beginning allows researchers to conduct research with minimal influence or ties to outside factors such as biases. Intentionality is one of the key components of transcendental phenomenology. Moustakas asserts, "Husserl's transcendental phenomenology is intimately bound up in the concept of intentionality…Intentionality refers to the consciousness, to the internal experience of being conscious of something; thus the act of consciousness and the object of consciousness are intentionally related" (p. 28). Therefore, there is recognition in this type of research that meaning is composed through both the self and the world; participants experience the

phenomenon through the lens of their own unique perspective, with meaning being derived from the essence of those experiences.

Intentionality is another key piece of transcendental phenomenology. Moustakas states, "Thus intuition is the beginning place in deriving knowledge of human experience, free of everyday sense impressions and the natural attitude" (p. 32). As human beings, meanings and essences become clear through an intuitive-reflective process; by considering phenomenon in isolation, outside the normal context of the world, true meaning may be developed through thoughts and analysis.

Design of the Study

The study was conducted in a large urban elementary school located inside the urban core of a large, midwestern city. The participants, school, and school district are kept confidential to protect the privacy of those involved. The fully accredited school district services approximately 21,000 students with in 30 elementary schools, 8 middle schools and 5 high schools. The district student population is approximately 45% Hispanic, 35% African America, 13% white, and 7% 'other.' The elementary school where the study took place includes approximately 670 students in grades kindergarten through grade five, with 96% of the students considered economically disadvantaged. The student population is 52% Latino, 36% African American, 5% white, and 6% other, with the population of the teachers consisting of approximately 78% white, 22% African American, and 2% other (Kansas State Department of Education, 2013).

Patton (2002) states, "qualitative inquiry typically focuses in depth on relatively small samples, selected purposefully" (p. 230). My aim was to select six elementary teachers who have worked with medicated students who have ADHD; however, because of

the type of sampling utilized, only five participants were identified who met the specified criteria. Purposeful sampling was used in order to identify teachers who currently have a student with ADHD who is taking medication in his or her classroom; random sampling, such as that used in quantitative research, is not appropriate for this study. It could have produced participants who did not have students with ADHD who are taking medication. Specifically, criterion sampling was used in order to identify teachers who all meet the requirements necessary for the study. Potential teachers were identified through the use of school documentation in order to determine eligibility based upon the criterion that they are full-time teachers, have at least one year of experience, have a student with a positive ADHD diagnosis, and the student was currently medicated. All of these criteria were established unobtrusively, through the use of existing school documentation. All teachers who met the required criterion were contacted via a letter, invited to participate in the study, and given the consent form (see Appendices A and F). Participants were ensured responses were treated with confidentiality and that participation was completely voluntary. Teachers were informed at this time that participation included a narrative, classroom observations and interviews, all of which were voluntary. Through no intention of the researcher, all participant volunteers were female and white; as suggested in future studies, it would be beneficial to replicate this study using more diverse participants.

Data Sources

Qualitative research typically incorporates three different data sources: in-depth, open-ended interviews, direct observations, and written documents (Patton, 2002). By using three separate methods for data collection, triangulation of the data occurred. Patton (2002) states, “A rich variety of methodological combinations can be employed to

illuminate an inquiry question" (p.248). By using multiple methods, the researcher is answering research questions to his or her fullest extent and corroborating the findings through what he or she sees in observations, hears in interviews, and reads in documents.

Documents. Documents are considered to be a rich source of information for many organizations and programs; documents include the study of excerpts, quotations, records, and open-ended written responses to questionnaires and surveys (Patton, 2002). While reflexivity can occur between the researcher and participants in both observations and interviews, documents allowed for objective analysis and validated the themes identified through the other methods. For this study, personal documents were used. Bogdan and Biklen (2007) state, "In most traditions of qualitative research, the phrase personal documents is used broadly to refer to any first-person narrative that describes and individual's actions, experiences, and beliefs (p. 133). Participants were asked to generate one narrative through an open-ended response; participants were asked to describe, in as much detail as possible, an experience working with a student who has ADHD and is currently being medicated (see Appendix D). This not only served to answer the research questions and provided thick description of participant's experiences, but also allowed the researcher time to follow-up with additional questions during interviews.

These participant-generated documents provided insight into the wider context of the lived experiences of the five teachers. This provided each participant with an opportunity to consider one experience working with a student in an in-depth way and served to offer true understanding of their perceptions and attitudes toward these students, a key component of the research questions. Following the document collection and analysis, in-depth interviews occurred. This served to corroborate findings in the documents, gather additional details

about the teacher's experience, and provide greater insight into the phenomenon each teacher is experiencing.

Phenomenological Interviews. Qualitative interviews are used when researchers want to acquire insight from participants concerning particular phenomenon or experiences (deMarrais, 2004). They are considered to be one of the most effective ways to understand people and their experiences (Al-Yateem, 2012). The inherent notion is that interviewing produces accurate information about participants and their experiences (Fontana & Frey, 2003). Interviews provide quotations from participants concerning their beliefs, feelings, attitudes, experiences, and knowledge (Patton, 2002). The open-ended, unsystematic responses given by participants in qualitative research allow the researcher and audience to better understand the experiences, beliefs, and feelings of the participants (Patton, 2002). The interviews should lead the conversation between the interviewer and the participant in the direction of the respondent's experiences (Grbich, 2013). This allowed me to understand the experiences or perspectives of others without trying to confine them to predetermined categories.

Using qualitative interviews and questions framed from a phenomenological perspective allowed me to get to the essence of my participants' experiences. Following the phenomenological interview model outline by deMarrais (2004), I began my interviews with an open-ended, phenomenological questions designed to elicit responses concerning my participants experiences, then used follow-up questions in conjunction with my interview guide to obtain information regarding the experiences and perceptions these particular teachers had concerning Attention Deficit/Hyperactivity Disorder (ADHD). According to Grbich (2013), by adhering to the process of phenomenological reduction, my interview

analysis should have, "enable(d) the essence of the phenomenon to become more visible, allowing you to build up a picture over time in terms of emerging patterns, relationships, and interconnections (p. 95).

All interviews were digitally recorded (with permission by participants), transcribed, and analyzed according to the phenomenological analysis process. Interviews were designed using a semi-structured model, with an interview guide to direct the interview; the interview guide consists of open-ended questions to ask, but also allowed for follow-up questions as needed (Patton, 2002). According to Patton (2002), with an interview guide, "… the interviewer remains free to build a conversation within a particular subject area, to word questions spontaneously, and to establish a conversational style but with the focus on a particular subject that has been predetermined" (p. 343).

The framework provided by Seidman (2006) was used to develop in-depth phenomenological interviews. According to Seidman (2006):

> The first interview establishes the context of the participants' experiences. The second allows participants to reconstruct the details of their experience within the context in which it occurs. And the third encourages the participants to reflect on the meaning their experience holds for them. (p. 17).

While I had planned on conducting three separate interviews for each participant, it was found that only one interview was needed with each participant. This may have been due in part to the familiarity between the participants and me, as I have done work in their school. Follow up interviews were conducted when necessary, to ensure I had fully captured the essence of the experiences. These one-on-one interviews were held in classrooms, in order to maximize convenience for teacher participants.

Examples of the preliminary questions for this research project are as follows; see Appendix B for the full interview guide.

Focused Life History:

1. Tell me about your own eductional experience, beginning with elementary school.

2. Describe yourself as a student. How do you believe your teachers perceived you?

Details of Experience:

1. Describe how students with ADHD achieve academically.

2. Tell me about how having students with ADHD who are receiving medication impact your work in the classroom.

3. Are your interactions with students who have ADHD different than your interactions with other students? If so, how?

4. Describe your experiences working with medicated students who have ADHD during non-instructional time. This could include transition periods, recess, et cetera.

5. Describe how students with ADHD interact with their peers during non-instructional time, such as at recess or at lunch.

Reflection on the Meaning:

1.Tell me about working with medicated students who have ADHD. What do you do to engage them in academic content? How do you ensure their academic success?

The final method used for data collection was direct observations. This third technique is used to substantiate the findings from interviews and documents, as well as to see first-hand what each participant is experiencing. A thorough discussion of this component follows.

Observations. The use of direct observations in qualitative research is an essential element used to provide triangulation among findings from interviews and documents, as well as to increase credibility of the study's findings. They also provide a holistic view and situate other findings within the existing context; it also provides a chance for the researcher to see things that a participant may be unwilling to speak about during interviews. Because this study utilizes the theoretical tradition of phenomenology, observations are essential; Patton (2002) states, "The only way for us to really know what another person experiences is to experience the phenomenon as directly as possible for ourselves" (p. 106). Observations are comprised of thick descriptions of people's activities, behaviors, and actions (Patton, 2002). On observations, Timseena (2005) speculates:

> Observation is the first step of behavioral research and acquisition of knowledge. Knowledge is generated through experience, learning and practice. The experience is the first stage of knowledge and learning is due to curiosity and practice which enhances learned knowledge and verifies the gaps and adds new things in knowledge. Observation, in other words, enhances the acquired knowledge through empirical test of facts, triangulation of data and participation with events, communities, and persons. (p. 75)

In this study, direct observation was used to fully answer the stated research questions, corroborate participant responses from interviews with their actions, and to better understand the context and experiences of those participants. There are limitations to what a person says (interviews) or what they write (documents); to fully understand the complexities of someone's experience, interviews and documents must be analyzed in conjunction with direct observations (Patton, 2002). Direct observation enabled me to

observe settings and see things that may be omitted by participants because they are deemed trivial or unimportant. I set out to comprehend and document the everyday reality of the participants in the program, not attempting to manipulate, restrict or eliminate situational variables or developments, but accepting the complexity of a changing program reality (Patton, 2002).

In my research, I was interested in teacher experiences with medicated students with ADHD; teachers experience and do so much during the day, they may not be conscious of all the small interactions, nonverbal cues, and redirections they do in a day. By observing teachers, I was able to see the way they truly interact with students and how perceptions might influence those interactions. Field notes were used during each observation in order to fully capture each experience. For each teacher participant, 1 one-hour observation was conducted; observations occurred after interviews were finished. This was done purposefully, in order to refine observation protocol based upon interview findings. A preliminary draft of the observation protocol can be located in Appendix C.

During observations, I utilized an observer-as-participant approach, meaning that I did not completely conceal my identity but rather tried to limit my interactions and participation as much as possible. Though teacher's perceptions were my unit of analysis, students were certainly interested in my being there. With the consent of the teacher, I introduced myself to the class, told them I was simply observing, and that they should act as if I am not even there. By doing this, I hoped to focus solely on the observation protocol and spend little time interacting with others.

Though each data source may not yield the same results, triangulation of methods as described in the next section served to illuminate the topic, fully answer the research

questions, and examine inconsistencies among interview, observation, and document analysis findings. Patton (2002) states, "Studies that use only one method are more vulnerable to errors linked to that particular method…than studies that use multiple methods in which different types of data provide cross-data validity checks" (p. 248). By using a triangulation of methods, the validity of the study findings is increased.

As previously noted, interviews were recorded digitally, with participants being notified prior to the session. Interviews and observations required transcription, along with field note corroboration. Along with the narrative documents, each data source was analyzed as soon as possible (ideally immediately) after collection so that the meanings and essences of the experiences were freshest in my mind. Analysis was conducted simultaneously with transcription. This approach permitted me to see themes emerge or determine if additional information is needed; this helped to drive follow-up data collection as well as future research. Research analysis, including enumerative and thematic coding, took place with Microsoft Excel. Myer and Avery (2009) state:

> Excel is often viewed as a number cruncher and is therefore associated with quantitative data analysis, but we have also found it useful as a qualitative tool. It can handle large amounts of data, provide multiple attributes, and allow for a variety of display techniques. (p. 91).

The functions and capabilities inherent in the Microsoft Excel program make it not only excellent for storing information, but also for sorting and categorizing data. All Excel files and digital data were stored on a personal laptop in a password protected document; all written documents and physical pieces of data were kept in a locked filing cabinet in the student researcher's office until data collection and analysis was complete.

Data Analysis Procedures

Qualitative data collection produces a large amount of data and this study was no exception; through documents, observations, and interviews, I generated a multitude of field notes, transcripts, and recordings that all had to be analyzed and synthesized so that the themes could be identified and research questions answered. As this is a phenomenological study, the van Kaam methodology of phenomenology outlined by Moustakas (1994) was used for analyzing in-depth interviews, the major data source for phenomenological studies, with a generic enumerative and thematic process (Grbich, 2013; Miles & Huberman, 1994)) used for analyzing the documents and observations. The van Kaam methodology of phenomenology involves four steps: epoche, transcendental-phenomenological reduction, imaginative variation and synthesis.

The German philosopher Husserl also is credited with the concept of Epoche. Moustakas (1994) states, “Epoche requires the elimination of suppositions and the raising of knowledge above every possible doubt. For Husserl, as for Kant and Descartes, knowledge based on intuition and essence precedes empirical knowledge” (p. 26). Epoche is a Greek word that means to abstain from judgment and to refrain from the ordinary way of perceiving the world (Moustakas, 1994). In this first stage of phenomenological analysis, I set aside my preconceptions and understandings of how the world works; instead, I observed and analyzed the phenomena from the perspective of a pure or transcendental ego (Moustakas, 1994).

The second process of phenomenological analysis, transcendental-phenomenological reduction, considers each experience in insolation and has its own meaning. In this step, Moustakas (1994) states:

> The task is that of describing in textural language just what one sees, not only in terms of the external object, but also the internal act of consciousness, the experience as such, the rhythm and relationship of the phenomenon and self. (p. 90).

By describing all angles of the experiences and including the findings from all data sources, the description becomes whole and adds to the knowledge surrounding the phenomenon. This is a reflective process, in which one suspends all previous judgments, focuses upon the specific phenomenon as it manifests itself in reality, and then leads back to our own experiences of the way things are (Moustakas, 1994).

It is during this phase that bracketing occurs as well. Qualitative research does not allow for complete subjectivity on the part of the researcher; instead, the researcher identifies his or her own biases, assumptions, and voice in order to achieve balance (Patton, 2002). During phenomenological reduction, the process of bracketing allowed for me to identify and suspend my biases, permitting the open interpretation of the participant's experiences. Moustakas (1994) stated, "Bracketing is when the focus of the research is placed in brackets; everything else is set aside so that the entire research process is rooted solely on the topic and question" (p. 97).

Next, the process of horizonalization occurs within the phenomenological reduction. Moustakas (1994) explains, "When we horizonalize, each phenomenon has equal value as we seek to disclose its nature and essence" (p. 95). This process includes listing and sorting all data that is relevant to the phenomenon. From the horizonalized statements derived from

the data analysis, meaning units were created (Moustakas, 1994). A delimitation process then occurred, where irrelevant, overlapping, or repetitive data are eliminated (Patton, 2002).

The next step of the analysis process is imaginative variation. The meaning units were then clustered to identify commonalities, which were used to develop the textural descriptions of the experience (Moustakas, 1994). Moustakas (1994) contended, "The task of Imaginative Variation is to seek possible meanings through the utilization of imagination, varying the frames of reference, employing polarities and reversals, and approaching the phenomenon from divergent perspectives, different positions, roles, or functions" (p. 97). Essentially, this step, which illuminated the experience, helped to answer the research questions by examining how experience of the phenomenon came to exist as it does (Moustakas, 1994).

Using the enhanced meaning units produced during the imaginative variation, textural portrayal of the experiences then occurred. The textural descriptions contain all of the components of the experience but do not actually contain the experience, such as feelings and perceptions of the participants (Patton, 2002). This process allowed me to develop structural descriptions composed of the textural descriptions obtained through phenomenological reduction; these descriptions examined the 'how' of the phenomenon, looking at the underlying factors that contribute to the experience of the phenomenon. The structural descriptions contain the "bones" of the experience for all of the participants.

The final stage of phenomenological analysis is the synthesis of the textural descriptions and structural descriptions into a cohesive account of the essence of the experiences of the phenomenon as a whole, called the composite textural-structural

description. Patton (2002) states, "In the structural synthesis, the phenomenologist looks beneath the affect inherent in the experience to deeper meanings for the individuals who, together, make up the group" (p. 486). Similarly, Moustakas (1994) asserts, "From the textural descriptions, structural descriptions and an integration of textures and structures into the meanings and essences of the phenomenon are constructed" (p. 118-119). It is important to note the essence of the phenomenon is unique to this study; replication of a study with consistent results is not an aim of qualitative research. Moustakas (1994) explains, "The fundamental textual-structural synthesis represents the essences at a particular time and place from the vantage point of an individual researcher following an exhaustive imaginative and reflective study of the phenomenon" (p. 100). The perspectives, perceptions and experiences of all researchers and participants are valid, even when contradictory.

Data analysis for documents and observations was conducted through the coding process described by Miles and Huberman (1994) and Grbich (2013). Miles and Huberman (1994) state:

> Codes are tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study. Codes usually are attached to "chunks" of varying size- words, phrases, sentences or whole paragraphs, connected or unconnected to a specific setting. (p. 56).

In this study, documents were interpreted as content analysis; Miller and Alvarado (2005) state:

> Researchers who use content analytic strategies attend to documents as independently adequate resources for understanding some aspect of social practice and meaning…Researchers use content analysis to elucidate key patterns, themes,

> and categories, drawing on any of several different philosophic approaches, included grounded theory and transcendental phenomenology. (p. 351).

By analyzing the words or phrases of my documents and observations I was able to further enhance the essences of my participant's experiences as apprehended through the in-depth interviews. I began this process by developing a preliminary code list for each data source prior to conducting the data collection; these codes were developed using my research questions, and theoretical framework (Miles & Huberman, 1994). While many of these codes were included in the final analysis, others were omitted or created based upon what was discovered in the data; definitions of codes were also developed, in order to provide clarity concerning how terms are being applied in the study.

Codes were divided into two categories during analysis: descriptive and interpretive. Miles and Huberman (1994) state, "Descriptive codes…entail little interpretation. Rather, you are attributing a class of phenomena to a segment of text" (p. 57). Interpretive codes provide deeper insight into the phenomena and data collected; they also allow for grouping to determine the third class of codes, pattern codes. Pattern codes are more inferential and illuminate the study results in even greater depth; they indicate an inferred theme or pattern, and are typically used in the latter part of a study, when patterns become clearer (Miles & Huberman, 1994).

Pattern coding, or developing themes, is a process of grouping segments of data and interpretive codes into a smaller number of sets (Miles & Huberman, 1994). This process involves grouping interpretive codes according to meanings and relevance to the studied phenomena; they contribute to the significance of the study and, through pattern codes,

research questions can be answered (Miles & Huberman, 1994). Themes are developed using the enumerative process, outline by Grbich (2013), who states:

> This involves the listing or classifying items by percentages, frequencies, ranked order, or whatever is useful to the research question. These approaches involve you in the production of 'objective' accounts of verbal, written, or visual texts, the development of codes or categories, and the definition and measurement of units of analysis. (p. 18)

Using this process to examine the frequency of the interpretive and descriptive codes allowed me to understand the larger themes at work within my participants' experiences. It further illuminated what is truly happening for each participant, including what is common about all of his or her collective experiences. This process was the bridge that took my research from description to actual interpretation (Grbich, 2013).

The process of coding and identifying themes is one of the essential elements of analysis. Though time-consuming, it is a critical piece used to accurately portray participants and answer the research questions effectively. After each data source was analyzed, I allowed the participants to view the findings; this ensured the accounts of the participants were rendered precisely and that their perspectives were honored. Next, a discussion follows concerning the limitations including validity and reliability of this study and the strategies employed to address the limitations; ethical considerations for working with human subjects will be reviewed.

Limitations Including Validity, Reliability, and Ethical Considerations

Qualitative researchers bring a different perspective to research than a traditional, quantitative researcher. In a quantitative study, researchers become familiar with a problem

and often identify a hypothesis to be tested; this places the emphasis on facts, behaviors, numbers and statistics that can be summarized, and mathematical norms for analyzing data (Golafshani, 2003). Qualitative research and phenomenology seek to describe the experiences of the participants in regards to the phenomena. While qualitative research includes descriptive statistics and reviews empirical studies, the true aim of this type of research is to clarify and understand phenomena. According to Merriam (1995), "qualitative researchers are not seeking to establish "laws" in which reliability of observation and measure are essential. Rather, qualitative researchers seek to understand the world from the perspectives of those in it (p. 52).

Because the researcher is considered to be the instrument in a qualitative study, issues of validity and reliability, as well as biases, must be considered differently. According to Merriam (1995), "more commonly, writers make the case that qualitative research is based on different assumptions regarding reality, thus demanding different conceptualizations of validity and reliability" (p.52). Through the use of researcher reflexivity, however, researchers report on their personal beliefs, assumptions and biases that may shape their inquiry (Creswell & Miller, 2000). As a qualitative researcher, I knew my voice would be present in my research. My story has been previously told so the reader knows why this is a personal issue for me; by highlighting my biases, I limited or suspended the influence they have upon my research.

In this research study, I identified three areas that are possible threats to reliability and validity and thus communicate the inquiry's limitations: (a) the validity of the data collected; (b) the relationship between the participants and the researcher (reactivity); and (c) the interpretation of the data collected through my lens as a researcher (bias). Joppe

(2000) states, "Validity determines whether the research truly measures that which it was intended to measure of how truthful the research results are. In other words, does the research instrument allow you to hit the "bull's eye" of your research object?" (p.1). Procedures such as writing thick description and triangulation of both data and collection methods, were used to increase validity; procedures for validity include those strategies used by researchers to establish the credibility of the study (Creswell & Miller, 2000). I also used a critical friend to review my interview questions, as well as transcripts and data analysis, in order to ensure my interpretation of the data is logical and appropriate.

Recordings and field notes were used to accurately describe participants' experiences. The recording utilized current technology, specifically an iPad, which allowed the researcher to record without some of the limitations that come with the bulk and intimidation of a regular video camera. However, a limitation does exist in the behavior of the participants when an iPad is present and recording; people often behave differently when being recorded, whether positively or negatively. This can result in reactivity, with teachers altering behavior simply by reacting to the technology. By recording, the researcher may not see a true experience of a teacher in that classroom. However, to limit this threat to validity, the iPad was be discretely used to record (although participants will know the iPad is present). Also, to support my data, I also used field notes to corroborate the experiences in observations. Participants were asked to check transcripts of recordings, as well as analysis, in order to ensure they are being portrayed accurately.

Another potential limitation was the reactivity that occurs between colleagues, specifically teachers. Many people like to please others and be perceived as doing a good job; teachers consider their jobs to be of the upmost importance and take their work very

seriously. The limitation exists in that teachers might not be completely honest about their experiences for fear of not wanting to say anything negative about their students or school. To limit this possibility, I designed interview questions that led to open-ended responses and triangulated this data with the documents and observations, as well as the field notes used during the data collection process. Triangulation strengthens a study by combining methods. Denzin (1978) states:

> No single method ever adequately solves the problem of rival causal factors. Because each method reveals different aspects of empirical reality, multiple methods of observation must be employed. This is termed triangulation. I now offer as a final methodological rule the principle that multiple methods should be used in every investigation (pg. 63).

I also kept a journal during the data collection process, which allowed for me to bracket my own thoughts, perceptions, and reactions so that they did not cloud the reality of the participants' experiences.

This study also used a homogeneous sample; on this topic, Patton (2002) states that homogenous sampling is, "information-rich, focus(ed), reduces variation, and simplifies analysis" (p. 235). The limitation in using this strategy is a reduced variety of viewpoints and perspectives (Tuckett, 2004). By using a homogeneous sample, participants may reveal perspectives that are not necessarily generalizable to a population; however, based upon the nature of qualitative research, generalizability is not a goal of this study (Miles & Huberman, 1994). Each participant in the study provided valuable perspectives, perceptions, and experiences to inform the themes of the study; each perspective is valid and reliable, as it is the experience of that participant (Patton, 2002).

Additionally, I brought biases of my own to the study. The first and most important is that I believed students with ADHD who were being medicated are not achieving academically and/or engaged in the classroom. I designed my study in a way that truly captured and described the teachers' experiences, not my own biases and beliefs. Because of this, I created interview questions that allow for open-ended responses and allow teachers to be honest; in order to do this, I incorporated peer examination of my interview questions. This means a colleague reviewed my questions for potential bias and influence upon participants before implementing the study (Merriam, 1995). While I planned to use semi-structured interviews to allow participants to truly describe their experiences, I abstained from asking leading questions that may support my own biases.

Typically, reliability, as defined in qualitative studies is the duplication of the research project that results in the same findings (Creswell, 2013). According to Joppe (2000):

> Reliability is the extent to which the results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. (p. 1).

It is not a reasonable expectation of my qualitative research project to produce the same findings if replicated elsewhere. After all, "studying people and human behavior is not the same as studying inanimate matter. Human behavior is never static. Classroom interaction is not the same, day after day, for example, nor are people's understanding of the world around them" (Merriam, 1995, p. 56). Because my project was describing the experiences of others, it cannot be replicated but that does not make it unreliable. The experiences and perceptions

of one teacher are just as reliable as another teacher, even if their experiences are completely opposite. According to Merriam (1995), “the real question for qualitative researchers is not whether the results of one study are the same as the results of a second or third study, but whether the results of a study are consistent with the data collected (p. 56). In qualitative research, there is an assumption that validity refers not to the data but to the inferences drawn from them (Hammersly & Atkinson, 1983). In other words, I needed to triangulate my data, identify emerging themes, and utilize colleague examination to ensure the findings are consistent with the data (Merriam, 1995).

As the Department of Health, Education, and Welfare (1979) state in The Belmont Report, there are three main basic ethical considerations that should be observed when conducting research with human participants. The Department of Health, Education and Welfare (1979) states:

> The expression "basic ethical principles" refers to those general judgments that serve as a basic justification for the many particular ethical prescriptions and evaluations of human actions. Three basic principles, among those generally accepted in our cultural tradition, are particularly relevant to the ethics of research involving human subjects: the principles of respect of persons, beneficence and justice.

Data security is also of the upmost importance. All digital recordings, such as interviews conducted with the use of the iPad, was only be accessible by the student researcher using a security code. Immediately after digital records, written transcription took place. At that time, all digital recordings were erased; while in the possession of the student researcher for analysis purposes, all data was kept in a locked filing cabinet in the student researcher’s

home office. Upon completion of the analysis, data was moved to a locked filing cabinet located in the office of the primary researcher for a period of seven years. Although no personal or identifying information of participants was on the student researcher's laptop used for data analysis, the documents pertaining to the research were also encrypted as a safeguard.

In conclusion, I designed and implemented a phenomenological study that employed in-depth interviews, documents, and observations as major data sources. This study sought to describe the experiences of teachers working with medicated students who have ADHD; a study that becomes even more significant considering that 50% of all mental health referrals for children result in an ADHD diagnosis for children (Biederman & Faraone, 2005). Because of the important role teacher perceptions and expectations have on student achievement, teacher perceptions of medicated students with ADHD must be explored and understood. By doing this, teachers and parents may begin to close the achievement gap that exists for these students in compared to their non-ADHD peers.

The study upheld all ethical considerations outlined in order to protect the safety, integrity, and confidentiality of all participants. Teachers participated voluntarily. All data was secured while not in use and all standards of confidentially were enacted. Chapter Four will outline the findings of this study and Chapter Five will discuss implications, including areas for future research.

CHAPTER 4

FINDINGS

Overview of the Study

This phenomenological study sought to describe the experiences and perceptions of teachers concerning students with ADHD who are currently receiving medication. ADHD is becoming more prevalent, with approximately 8-12% of all children being diagnosed with the disorder; the most common form of treatment for the disorder is medication (Biederman, 2005). While much research focuses on the etiology and pathophysiology of the disorder, as well as the efficacy of medication, little research has been conducted to describe how students are performing academically after receiving medication. The problem addressed in this study is that, even after medication, students are not engaged in classroom content and often still struggle academically; I chose to pursue this topic based upon my own experiences as a classroom teacher. When students began taking medication, the symptoms of ADHD often decreased; students were less impulsive, less hyperactive, and had more control of the behaviors. However, students often were still not engaging in the classroom or closing the gap that was created when they were not medicated.

In order to contribute to the body of knowledge concerning ADHD, medication, and achievement, the experiences of five teacher participants were analyzed, each of which was identified using purposeful and criterion sampling to ensure the development of rich, thick description. When describing the experiences of the participants, direct quotations were used whenever possible; this includes the vernacular of the participant, including any misspellings or errors in grammar. The following research questions were addressed during the study:

1. What themes are discovered through teacher engagement in classroom instruction of elementary students who have been diagnosed with ADHD and are receiving medication at a large, suburban elementary school?
    a. What practices are teachers using to engage these students?
    b. In what ways do teachers interact with students instructionally?
    c. How do teachers perceive the academic achievement of these students as opposed to non-medicated students with ADHD and/or non-ADHD students?
2. What themes are discovered in attitudes of teachers toward elementary students who have been diagnosed with ADHD and are receiving medication during non-instruction time at a large, suburban elementary school?
    a. In what ways do teachers interact with students during non-instruction time?
    b. How do teachers perceive interactions with students during non-instruction time?

In-depth interviews were used to answer the overarching questions, as well as each of the sub-questions. Observations were utilized to give meaning to overarching questions, in addition to sub-questions 1a, 1b, and 2a. Narrative documents addressed the first research question, as well as the three related sub-questions.

According to Bishop & Scudder (1991), "phenomenology attempts to disclose the essential meaning of human endeavors" (p. 5). By collecting data surrounding the experiences of the teacher participants, I looked to illuminate what is actually happening in the classroom with these particular students, from the perspective of the teacher. There is much research concerning the relationship between teacher attitudes, expectations, and

subsequent student achievement. When teachers have high expectations, students learn; the opposite is true when teachers have lower expectations of students (Weinstein, 2002; Rubie-Davies, 2010). Because of the increasing prevalence of the disorder, it is imperative that researchers, administrators, educators, physicians, and parents understand how teachers perceive these students and what kind of experiences they are having with these students after medication.

The study consisted of semi-structured interviews, document analysis, and classroom observations that took place over the course of four months and each data source is used in the following discussion surrounding the research questions. By using each of the data sources, known as triangulation, reliability and validity of the study are increased. This method allowed for the eventual corroboration of themes among data sources. The documents in this study were teacher/participant-created narratives discussing her experiences with medicated ADHD students; this narrative not only included the structural details of the interactions themselves, but also the reactions, perceptions, and beliefs of the teachers. Interviews were conducted next and also included participants discussing their experiences with ADHD students. Finally, direct observations were conducted in classrooms to describe how teachers interacted with students, how they are engaged students, and teacher/student interactions. Observations yield thick, rich details and descriptions that allow for readers to better understand situations and perspectives (Patton, 2002). Though invaluable information is provided through both document collection and interviews, observations allow for that information to be situated into the context of the participant's reality.

Observations and Documents

Documents are considered to be a rich source of information for many organizations and programs (Patton, 2002). While I initially sought to analyze policy documents, I redirected my research to a personal document that aligned more closely to my research questions and purpose. Bogdan and Biklen (2007) state, "Personal documents that the subjects write themselves are usually discovered rather than solicited by the researcher" (p.134). As previously mentioned, the document used as a data source in this study was a teacher-produced narrative of her experiences with ADHD students. As my research has evolved, I have had an increased interest in the way teachers view students with ADHD and the relationships between those perspectives and subsequent student achievement and engagement. By analyzing someone else's narrative or experiences, I was able to see things from an objective point of view and analyze the document accordingly.

For both documents and observations, data analysis was conducted through the coding process described by Miles and Huberman (1994), who state:

> Codes are tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study. Codes usually are attached to "chunks" of varying size- words, phrases, sentences or whole paragraphs, connected or unconnected to a specific setting. (p. 56).

By analyzing the words or phrases of my documents and observations, I was able to determine the essences of my participant's experiences. I began this process by creating a code list before data collection; these codes were developed using my research questions, and theoretical framework (Miles & Huberman, 1994). While many of these codes were included in the final analysis, others were omitted or created based upon what was

discovered in the data; definitions of codes were also developed, in order to provide clarity concerning how terms are being applied in the study.

Codes were divided into two categories during analysis: descriptive and interpretive. Miles and Huberman (1994) state, "Descriptive codes…entail little interpretation. Rather, you are attributing a class of phenomena to a segment of text" (p. 57). Interpretive codes provide deeper insight into the phenomena and data collected; they also allow for grouping to determine the third class of codes, pattern codes. Pattern codes are more inferential and illuminate the study results in even greater depth; they indicate an inferred theme or pattern, and are typically used in the latter part of a study, when patterns become clearer (Miles & Huberman, 1994).

The process of coding and identifying themes is one of the essential elements of analysis. The following discussion provides clarity into the identification of interpretive codes, subsequent themes, and rationale to allow the reader to follow the logic of the researcher. Each of the identified themes and the meanings derived from those themes are crucial to answering the research questions. Through qualitative analysis and ensuing discussion, the research questions will not only be answered, but be done so with reliability and credibility.

Document Findings

Patton (2002) states, "Learning to use, study, and understand documents and files is part of the repertoire of skills needed for qualitative inquiry" (p. 295). Documents are considered to be a rich source of information for many organizations and programs (Patton, 2002). While I initially sought to analyze policy documents, I redirected my research to a personal document that aligned more closely to my research questions and purpose. Bogdan

and Biklen (2007) state, "Personal documents that the subjects write themselves are usually discovered rather than solicited by the researcher" (p.134). My personal documents consisted of teacher-created narratives. In coding the documents, I found three main themes: effects of ADHD, medication, academics, and behavior, and attitudes and perception of teachers.

Effects of ADHD. The first theme, effects of ADHD, contains two interpretive codes; the first code is the frustration demonstrated in the classroom setting by either teachers or students. According to Martinussen, Tannock and Chaban (2011), "children who exhibit behavior problems in the classroom, particularly for those who display inattention and/or hyperactivity symptoms, are at high risk for poor scholastic achievement and school dropout" (p. 193). Inattention and hyperactivity, two common manifestations of ADHD, can often lead to frustration for both students and teachers. When discussing issues of student frustration, Cindy stated, "They are feeling overwhelmed. They need a break" and proceeds to describe the behavioral intervention she has put into place to allow those students to have a break from the general classroom environment. Tammy describes the frustration for both her and her student:

> As I am teaching class his eyes fixate on something I can't identify, his mouth falls open and he looks lost in his thoughts when I call out his name he jerks to attention. Soon, his attention drifts back to something else. He never seems upset when I call his name to redirect him. When I ask him a question, he is unable to answer. His response is silent. After a few moments I see his eyes begin to fill with tears…. He is unable to explain what he needs help with. I repeat the directions and ask him if he understands. He says yes but still does not do the work. When I pull him aside and

> get the entire class silent we are able to work through the 4 problems. I do the writing but he does all the thinking. He can do the computation but is unable to explain his process.

Frequently, teachers may experience greater stress when interacting with children with ADHD than when interacting with their non-ADHD peers (Greene, Beszterczey, Katzenstein, Park, & Goring**,** 2002). For administrators and school districts, it is important to understand the stresses that teachers face on a daily basis; this stress may be compounded when students who have ADHD are present in the classroom.

The second interpretive code under this theme is student engagement. In order to understand the vital importance of engagement, it must first be defined. Engagement in the classroom can be seen as an internal motivation or state; it is the involvement in one's learning (Harcourt & Keen, 2012). Therefore, as an alternative definition, disengagement will be defined as lack of involvement in one's learning. When students disengage, they are not active participants in the classroom or their own learning. ADHD, therefore, may be a fundamental variable in poor scholastic achievement in these students (Cleary et al., 2006). In fact, up to 80% of students with ADHD exhibit difficulties in academic performance and the classroom setting, which ultimately leads to long-term outcome of chronic academic underachievement (DiPerna et al., 2006). Estimates of 9%-80% of students with ADHD have significant learning problems (Saudino & Plomin, 2007). Compared to non-ADHD peers, students identified as having ADHD typically perform worse in reading, writing, and math; on average, they are two-thirds of a standard deviation below peers (Bussing et al., 2012). Hyperactivity, a main symptom of ADHD, is also associated with academic underachievement (Saudino & Plomin, 2007). Even when students are not identified as

having ADHD, but are simply identified as being hyperactive or inattentive, they still perform more poorly in math, reading, language, and global measures of academic achievement when compared to their peers with no attention or hyperactivity issues (Saudino & Plomin, 2007).

The issues with disengagement do not end for all students once they are medicated, unfortunately. Debbie recounts her work with a student who has ADHD and is currently medicated:

> She has from time to time struggled to stay focused on her task, whether it is reading or math. I've noticed that when the room is buzzing and very active she struggles a lot more; however, when the room is quiet and moves at a steady pace, she is on task.

Even with medication, this student still struggled to stay engaged in the classroom. Josie adds to the situation, talking about the improvements medication has made for her student:

> When not on medication, Brett was not able to focus on academic tasks without direct instruction from a teacher or peer. Brett was able to learn new skills, but struggled to retain them. [After medication,] due to Brett's diagnosis, he still performs grade levels behind his peers in all academic areas. Brett is currently learning math tasks that correlate with his own grade level, although the tasks are simplified. The change that was observed after being medicated was Brett's ability to focus and retain information. He is able to work in large and small group settings with less teacher assistance. Brett also shows a desire to learn. He frequently asks the teacher for more work and examples to complete. He does not give up when new tasks come up or he doesn't understand a new academic process. His stamina for

> completing academic tasks and his ability to focus on a given task has increased dramatically.

These two different perspectives on ADHD medication have implications for a teacher's work in the classroom. First, it seems that medication cannot be seen as a panacea for ADHD; while Debbie's student was medicated, it did not completely cure her of the inattention associated with ADHD. Secondly, medication alone is not enough. Even when Josie recounts how Brett improved after medication, she still states that he is still performing grade levels behind his peers. Therefore, even when medication is effective, it seems that students still need academic interventions to close the gap between themselves and their non-ADHD peers. If teachers are not aware of this, these students may continue to struggle even though they are now able to focus and pay attention in class.

Medication, Academics, and Behavior. The second theme, medication, academics, and behavior, contains two interpretive codes; the first code addresses the academic and behavioral interventions put into place by teachers for medicated students with ADHD. Dana describes the interventions she has put into place for her student, John, who has ADHD and is currently taking medication:

> [John] is a struggling student. He is reading several years below grade level and significantly behind in math also. He works really hard, but has trouble remembering and recalling information. He is well behaved for the most part. He does need reminders to calm down, but the behavior is typical of students his age. When working with John, I pull him into a small group for reading and math. During reading he works with me and two other teachers. In math he works with me and one other teacher.

Although Dana views her experiences with John to be positive, she still has to supplement his general education in order for him to be successful. This manifests through consistent reminders to calm down, as well as small group instruction in core subjects.

Cindy describes here experiences with putting behavioral plans in place for these students:

> I have found that when working with these students it is easiest on both of us if there is a consistent plan in place. Most of the time I have a reward system for them in place so they can work in smaller increments throughout the day. I have done sticker charts, Popsicle sticks, prizes, etc. The students seem to do well when they get to check in every thirty minutes or so with me to see if they have earned break time. I also like to have a specific spot in the room for these students so that when they are feeling overwhelmed or they need a break they have a spot away from our safe spot that they can to and take some time out.

Josie relates the changes in her behavior interventions after Brett begins medication, which has been a positive experience for her:

> After being medicated Brett's behavior improved. He no longer requires a behavior chart because he was able to follow teacher directions through the majority of his day. Brett still struggles in less structured activities such as specials classes (PE, music, library, etc.). A situation like that tends to get him over stimulated and he will run around and distract other students. When Brett does struggle behaviorally, he is able to ask for a break and process the situation. He is aware of the situation, as well as what it was that made him angry or frustrated. He lets go of negative situations sooner instead of holding onto it through the day and letting it affect the

> rest of his day. Brett's emotions are more regulated and he only requires breaks/help processing negative situations a few times a month.

The experiences of these teachers demonstrate a wide variety of behavioral and academic interventions put into place in order to ensure success for these students. Even though medication is frequently used to decrease ADHD symptoms, medication rarely is solely enough to address the numerous, chronic struggles encountered by students with ADHD (DuPaul & Stoner, 2003). DuPaul, Weyandt, and Janusis (2011) state:

> School-based interventions are a critical component to a comprehensive treatment plan for students with ADHD. These strategies are useful adjuncts to psychotropic medication and/or home-based behavioral interventions particularly in terms of directly addressing academic and behavioral functioning in classroom settings. In fact, the optimal treatment plan will include the combination of home- and school-based behavioral strategies, possibly in combination with psychotropic medication. (p. 42).

The interventions these teachers are using are critical to student success, even when medication is also present. Medication should be used in conjunction with these interventions, not instead of.

The second interpretive code is evidence of student/teacher interactions during instructional and noninstructional time. This piece serves as an analysis of the ways teachers are interacting with their students, during both instructional and noninstructional time.

Debbie highlights some interactions with her student within her narrative; she states, "I noticed this (her being more off task) more in the afternoon than in the morning. I have to give her more reminders to stay on task in the afternoon."

Josie describes Brett and her interactions with him, saying, “Brett requires prompts to initiate social interactions, but once he is comfortable and has been able to practice, he will talk to peers, ask for help, and shares personal objects/toys with them.”

Tammy sheds light on this topic through her narrative, using phrases like, “I repeat the question, he conquers his stage fright and is able to answer the question” and “He sits quietly and stares. When I walk by and ask him why he isn’t working, he looks afraid” and “I repeat the directions and ask him if he understands. He says yes but still does not do the work.”

Though these teachers have not written anything negative about these students, it is important to note that each of these examples serves as a redirection and a prompt for these students to perform like their peers; none of these interactions could be classified as praise or commendation. Underperforming students, such as those with ADHD, are less sure of their abilities and may depend more on positive interactions with teachers (Archambault, Janosz, & Chouinard, 2012).

The ethics of care (Noddings, 1988) helps to illuminate how caring helps shape teachers’ instruction and interactions with students. When teachers truly care for students, they work to educate the whole child: socially, emotionally, and academically (Noddings, 1988). The interest is in developing human beings, not merely helping students master content standards. This is of particular interest for students with ADHD, who may have a unique set of needs that teachers need to address. The teacher participants did exhibit an ethic of care; each teacher described holding students to their expectations, whether it was academically or behaviorally.

Attitudes and Perceptions. Teachers, like all other people, have beliefs and assumptions that influence their work. The teacher participants in this study are no exceptions. Demonstrating some of her beliefs about students with ADHD, Cindy states:

> I know these kids cannot always control it, so it is up to the teachers to find ways to help them be successful throughout the day. I don't see them any different that any other kids, they just take a littler more work, patience and intervention than other kids to be functional in the classroom.

This reveals much about Cindy's beliefs and assumptions for this specific population. First, there is an assumption that the behavior exhibited by students with ADHD, even after medication, is not a conscious choice. While this may be true to a degree, it is imperative for teachers to not subconsciously lower their behavioral expectations for these students simply because it is not a choice to misbehave. Rather, teachers must use behavioral interventions to help these students adhere to the same behavioral expectations as their non-ADHD peers. She also believes it is up to teachers to find a solution to this problem; this requires teachers to have an ethic of care and find out the best solution to a student's behavioral problems.

Debbie states, "As a teacher, I have to be vigilant in giving her reminders to stay on task and remind myself to give her a little leeway in her behavior." Debbie's statement reveals that she believes students with ADHD deserve more flexibility in the classroom than their non-ADHD peers. From an ethics of care perspective, which requires meeting the social, emotional and academic needs of the child, Debbie is working to be responsive to this student's specific behavioral needs.

The last interpretive code under this theme is the experiences of teachers and their perceptions of those experiences. Teacher perceptions of students, which is the unit of analysis for this study, was a prominent code of the narratives and can have a powerful impact in the classroom, especially with these students (Archambault, Janosz, & Chouinard, 2012).

On her experiences, Dana states:

> While working with John, he has [been] on medication for ADHD the whole time, with the exception of two weeks when he was injured and mom had to transport him to and from school. During this time, she forgot to give it to him. John is a wonderful student to work with and when on medication you would never know that he has ADHD.

Dana speaks to a few things regarding her experiences. First, she speaks to John not always receiving his medication. Nonadherence to medication is a common occurrence for children, with studies showing the nonadherence or discontinuation of medication to be somewhere between 13.2% and 64% (Adler & Nierenberg, 2010). She also perceives that, with medication, he performs just like his non-ADHD peers. This implies that she noticed a difference when he was not on medication, and that, when he was not medicated, he was not performing like his peers. This speaks to the importance of medical adherence, which is not always occurring with these students.

Tammy also describes her experiences, recounting:

> When I ask him how he found the answer, he freezes. Even with prompting the only answer I can get is "I don't know." He doesn't [answer] a single question of his own. When it is time to begin partner work, he sits still. His partner reminds him to get out

> his book and tells him the page number again. He does the work but does not talk to his partner unless the partner prompts him. I hear the partner encouraging him to explain what he did. They give up on communication and just compare papers. When it is time to work independently, he does nothing.

Tammy's perceptions of this experience indicate that, even with medication, this student is still not engaged or an active participant in his own learning. She is focused on what the student is not doing: answering questions, not talking to his partner, and doing nothing when he is to work independently. While there is nothing in this recounting to imply that Tammy does not believe this student is incapable of doing the work, this experience leads to a negative perception for Tammy and frustration that this student either cannot or is choosing not to participate in the classroom.

According to Hepperlen, Clay, Henly, and Barké (2002), "The attitudes, expectations, and behaviors of teachers toward children with Attention-Deficit/Hyperactivity Disorder (ADHD) may have a lasting impact on the academic self-efficacy and success of students with ADHD" (p. 133). As educators, we must become aware of our own beliefs, biases, and perceptions in order to help all students engage and achieve in the classroom. Potentially, students with ADHD, medicated or not, are always at risk to be lower performing. While teachers may be working to catch students up each year, this research serves to illuminate what the needs of these students may be as perceived by their teachers. As the incidence of ADHD diagnosis is increasing rapidly (Stubbe, 2000), these students are going to be increasingly present in classrooms.

Observations

The use of direct observations in qualitative research is an essential element used to provide triangulation among findings from interviews and documents, as well as to increase credibility of the study's findings. In this study, direct observation will be used to fully answer the stated research questions, corroborate participant responses from interviews with their actions, and to better understand the context and experiences of those participants. There are limitations to what a person says (interviews) or what they write (documents); to fully understand the complexities of someone's experience, interviews and documents must be analyzed in conjunction with direct observations (Patton, 2002). Direct observation allows for the researcher to observe settings and see things that may be omitted by participants because they are deemed trivial or unimportant In my research, I am interested in teacher experiences with students with ADHD; teachers experience and do so much during the day, they may not be conscious of all the small interactions, nonverbal cues, and redirections they do in a day. By observing teachers, I was able to see the way they truly interact with students and how perceptions might influence those interactions.

My observations were conducted as an observer who is also a participant. I limited my participation as much as possible, as I did not want to influence the way students interacted with the classroom teacher. However, I was not naïve enough to believe students would not address me or speak to me. My goal using this observation strategy was to observe the group naturally and to allow the group procedures, routines, and experiences to function as normal. After initially greeting students when I came into the room, I located myself in the corner of the room that moved me out of the student/teacher environment but also allowed me to see all interactions.

The observation data was categorized into three themes: medication, academics, and behavior, effects of ADHD, and student and teacher emotions; each theme consists of several interpretive codes to illustrate how the theme was developed.

Medication, Academics, and Behavior. The first theme, medication, academics, and behavior, contains one interpretive code: practices used to increase student achievement and behavioral success, as well as evidence of subsequent achievement. The teachers observed were utilizing many practices to increase student achievement, such as using small group instruction, monitoring students by proximity, allowing students to take breaks when necessary, promoting accountable talk, taking informal running records of student reading, and using sentence stems to support student writing. Evidence of student achievement was also present, with the teachers giving students verbal praise. Examples of this include Debbie saying, "thank you for making a good choice" and Tammy allowing students to choose their behavior goal for the day, then praising them on setting an appropriate goal. These teachers also prompted students to dig deeper into the content, using prompts such as "explain your thinking" and "show me how you found the answer," as well as allowing students to evaluate their own progress.

Effects of ADHD. The second theme, effects of ADHD, contains one interpretive code: evidence of teacher/student interactions, with students who do and do not have ADHD. The majority of the student/teacher interactions were very positive, with the teacher encouraging students with praise like, "exactly" and "good job" whenever students answered questions correctly. However, in each classroom observed, the medicated students with ADHD seemed to be more off-task, resulting in more teacher redirections than teacher

praise, which served, at times, to increase teacher frustration. An observation in Dana's class may be used as an example:

> The teacher gathers students at the guided reading table. Students whisper reading, while the teacher takes a record of one student's reading. The medicated student with ADHD, Frank, is at the guided reading table, but not reading and watching another student use the computer. He plays in his chair. The teacher prompts students, with Frank still not reading.
>
> The teacher says to Frank, "Put your reading bag under the table and open your book." However, Frank still does not read, but promptly goes back to watching the computer. The teacher redirects him again, saying, "Remember don't worry about anyone but yourself. " Frank continues not reading; instead, he's turned around in his chair, acting like he's cutting up the book. After a few minutes, the teacher says, "Close your books. What do you remember reading about yesterday?" Frank never did any reading. The teacher says, "Find page 6. We're going to practice reading it together because I want to show you what it sounds like. Frank, do you remember anything from yesterday?" Frank shakes his head no. The teacher continues to talk about the book and practices choral reading with the students.

Interactions with students who have ADHD and are taking medication were more frequent and more redirection than praise. ADHD is considered to be a fundamental variable in poor scholastic achievement in these students (Cleary et al., 2006). Numerous studies have also confirmed that children with high levels of hyperactivity often have lower levels of academic achievement (Saudino & Plomin, 2007; Dotterer & Lowe, 2011). Based upon

the frequency of redirection observed, teachers seem to spend a large amount of time simply trying to get these students on-task, with a secondary focus on academics.

Student and Teacher Emotions. The final theme, student and teacher emotions, contains two interpretive codes. The first code concerns frustration being demonstrated in the classroom setting by either teachers or students. When students and teachers are frustrated, they are not doing their best work; education is most beneficial when conducted in a calm, structured environment (Shukla-Mehta & Albin, 2003). Teacher frustration was most evident, especially in the following quote, "Do you have your paper out? I'll wait for you guys…I'm waiting on several people still. We don't need to be messing with anything." The following exchange was observed with a student known to have ADHD:

> "Adam, your paragraph? Why do you need scissors? You didn't finish it? Ugh. What did I say would happen if you didn't finish it? Why do you think I ask you to put your stuff in your binder?" The student shrugs. "You don't know? So you can find it." The teacher begins working with the student one-on-one. "Do you remember doing it? Did you do it in a notebook or on a loose piece of paper? This is really good of example of why we need to put papers in folders like I ask you to, right?"

Later, as students are presenting their work, Josie notices that Adam is struggling to focus. She states, "Adam, what can I do for you? It's fine that you didn't finish. I just need you to be with us, focus, and listen. Would it help to move those papers somewhere else? You don't know? Let me know if you think the papers need to move. "

The teachers seemed to be willing to accommodate medicated students with ADHD and do whatever it took to help students be successful; however, a certain amount of frustration seemed to mount as teachers had to continually redirect and support these

students. In Cindy's classroom, she began the day by setting a behavior goal with one of her medicated ADHD students. She stated, "What do you want to work for in the morning? Do you want to work for a prize? You need to be caring and do all of your work to earn that." Cindy tried to help the student be more self-aware and able to monitor his own progress. However, the student was not always able to do this. By the end of the hour, Mike was at computer, trying to convince a student that he should not be at the computer and should be at the table. The student in question had just left Cindy's guided reading table and had been directed to a rotation at the computer. Mike, however, wanted the students computer spot and took to trying to convince him to vacate the seat. Eventually, Cindy intervened and gave Mike an iPod in order to do her work. While she was never deprecating or derogatory in her exchanges with Mike, her tone conveyed some frustration with the student. She ended the encounter by saying, "I'm going to move you over here. That way you don't even have to try to be by him. "

The second interpretive code under this theme is student disengagement. Students were disengaged numerous times during these observations. Students were seen to be off-task, talking with friends, watching other students work, struggling to locate materials or get started in a timely manner, or even whistling. Engagement in the classroom is whether or not a child partakes in the learning opportunities planned for him or her (Ponitz, Rimm-Kaufman, Grimm, & Curby, 2009). Students who are engaged may exhibit curiosity about learning, enthusiasm for content, excitement, and satisfaction (Harcourt & Keen, 2012). In these instances, students were not either not fully or not at all partaking in the instructional activities provided by the teacher. There is a logical connection between student engagement

and subsequent student achievement; if students are not engaged in classroom instruction, they are not maximizing their learning time.

There are a number of problems associated with ADHD that students may face; besides the social skills and peer relationship issues, this group of students is also considered to be at-risk for academic failure and skill deficits (Biederman, 2005).

This study, in contrast to previous studies, is looking to contribute to the body of knowledge concerning teacher's perceptions and experiences with students *after* they begin medication, which is considered to be the accepted first line treatment for the disorder. The observations confirmed that many students, including those with ADHD, remain disengaged in the classroom. Teachers are frustrated with these students, redirecting them more often, and providing less direct instruction time to these students. For students with ADHD, the gap in behavior and academic performance seems to be widening. Teachers must use instructional techniques to engage all students and help them succeed; this will increase student achievement for all.

In-depth Interviews

Different purposes and different theoretical traditions influence qualitative interview methods (deMarrais, 2004). According to Moustakas (1994), phenomenology aims to:

> Determine what an experience means for the persons who have had the experience and are able to provide a comprehensive description of it. From the individual descriptions general or universal meanings are derived, in other words the essences or structures of the experience. (p. 13).

Using qualitative interviews and questions framed from a phenomenological perspective allowed for me to get to the essence of my participants' experiences. According to Grbich

(2013), by adhering to the process of phenomenological reduction, my interview analysis should, "enable the essence of the phenomenon to become more visible, allowing you to build up a picture over time in terms of emerging patterns, relationships, and interconnections (p. 95).

Interviews were conducted with five elementary teachers: Dana and Tammy, primary teachers, and Debbie, Cindy, and Josie, intermediate teachers. All participants work at the same urban elementary school; each female teacher was white and had at least one medicated student with ADHD in their classroom. Purposeful, criterion sampling was initiated in selection of teachers in order to ensure participants were currently teaching a medicated student with ADHD.

All interviews were digitally recorded, transcribed, and analyzed according the phenomenological process (Moustakas, 1994). Following the phenomenological interview model outline by deMarrais (2004), I began my interviews with an open-ended, phenomenological question designed to elicit responses concerning my participants experiences, then used follow-up questions in conjunction with my interview guide to obtain information regarding the experiences and perceptions these particular teachers had concerning Attention Deficit/Hyperactivity Disorder (ADHD). According to Patton (2002), with an interview guide, "… the interviewer remains free to build a conversation within a particular subject area, to word questions spontaneously, and to establish a conversational style but with the focus on a particular subject that has been predetermined" (p. 343). As a phenomenologist, I structured interview questions to reflect the participant's feelings, experiences, and perspectives, as well as to answer the research questions explored in the study (see Appendix B).

Interview analysis was conducted through the phenomenological process. The first step of this process is epoche. Epoche is a Greek word that means to abstain from judgment and to refrain from the ordinary way of perceiving the world (Moustakas, 1994). In this first stage of phenomenological analysis, I set aside my preconceptions and understandings of how the world works; instead, I observed and analyzed the phenomena from the perspective of a pure or transcendental ego (Moustakas, 1994). In order to do this, I kept a journal as I conducted interviews in order to eliminate my own biases and judgments.

Next, the process of horizonalization occurs within the phenomenological reduction. Moustakas (1994) explains, "When we horizonalize, each phenomenon has equal value as we seek to disclose its nature and essence" (p. 95). This process includes listing and sorting all data that is relevant to the phenomenon. For this step, I used Microsoft Excel to identify each of the horizons from the experiences; reduction occurred in order to eliminate irrelevant, overlapping, or repetitive data (Patton, 2002). From the horizonalized statements derived from the data analysis, meaning units were created (Moustakas, 1994).

The next step of the analysis process is imaginative variation. The meaning units were which were used to develop the textural descriptions of the experience (Moustakas, 1994). Essentially, this step, which illuminated the experience, helped to answer the research questions by examining how experience of the phenomenon came to exist as it does (Moustakas, 1994). Meaning units associated with the textural description included medication affecting students differently, teachers having high expectations for students, and medication not always creating positive changes for students.

Using the enhanced meaning clusters produced during the imaginative variation, textural portrayal of the experiences then occurred. The textural descriptions contain all of

the components of the experience but do not actually contain the experience, such as feelings and perceptions of the participants (Patton, 2002). For each participant, a textural description was written to describe what took place.

This process allowed me to develop structural descriptions derived from the textural descriptions obtained through phenomenological reduction. Structural descriptions describe how the phenomenon came to be; during this phase, I looked to uncover the underlying factors that contributed to the creation of the teacher experiences. The structural descriptions contain the "bones" of the experience for all of the participants; during this phase of the analysis, meaning units included underlying factors of the phenomenon, such as teachers exhibiting an ethic of care and negative educational experiences for participants resulting in teachers working to meet the needs of all students.

The final stage of phenomenological analysis is the synthesis of the textural descriptions and structural descriptions into a cohesive account of the essence of the experiences of the phenomenon as a whole. Patton (2002) states, "In the structural synthesis, the phenomenologist looks beneath the affect inherent in the experience to deeper meanings for the individuals who, together, make up the group" (p. 486). This included the creation of individual textural-structural descriptions for each participant, a composite textural description for all participants, a composite structural description for all participants, and, finally, a composite textural-structural description for all participants that describes the essences of their experiences. In this step, meaning units were also composed into themes; this allowed for creation of essence for all participants through all data sources and allowed for a corroboration of findings. A sampling of the analysis is included below, including the composite textural-structural description for all participants.

Dana: Individual Textural Description

Dana is a warm, affectionate teacher who works with primary elementary students; she has been teaching approximately five years. As a student, she remembers that she, "…loved elementary school but not after that." Middle and high school teachers "didn't seem as motivated and happy as elementary school teachers." Surprisingly, she describes herself as very shy, a quality that was not apparent in either her interview or within her classroom. "I'm a huge introvert, so I would never want to participate and it's not because I didn't want to answer, but because I'm so shy. And I think some of them thought maybe I just didn't want to learn."

She works hard to show all of her students that she cares. "I love my kids like they're my kids. It's a tough love. Like I don't believe in yelling and they know that I love them to death; I'm here to teach them and help them be better educationally."

Working with medicated students with ADHD can be complicated, however:

> It's a challenge. Just some kids, like you don't know that day, like, what's going to set them off. Sometimes they come in angry and I don't know if that's linked to the ADHD or something else, but sometimes they're just zoned out, or they can't focus, wiggly worms, but some of them are just like all over the place.

Even with medication, students may not be able to overcome all of their behavioral, academic, and/or social issues:

> Well… one of them feels like he doesn't have any friends at times and nobody likes him. I think it's just because of how he acts sometimes and so he sees, if I'm pushing chairs and I'm kicking and I'm throwing, then he realizes people may not want to play with me as much if I do this.

Because of this, Dana's work in the classroom becomes more involved than it might with other students. "…The challenge is you have to check in, sometimes every 10 minutes, sometimes they can go 30 minutes. So keeping myself on my toes to find new ways, sometimes weekly, sometimes daily, to help them stay engaged." As a teacher, Dana has to continually refine her practices and improve her instructional techniques to help these students be successful. Particularly with academics, these students may still struggle in the classroom. It is up to Dana to find ways to reach these pupils:

> We are moving a lot and it's a lot of like hands-on activities and reading is really the hardest time because with math and science, it's so…I've pretty much never really had a kid not like math or science. Reading is hard just because when they're reading to themselves sometimes…. you know, they don't read to themselves, so I just give them a little frog to read with, or maybe they could read with a buddy that day, or sit on top of their desk that day. Anything that will just keep them engaged.

She continually works to find new strategies to engage students. "Like, I talk but I don't talk a lot. They have a lot of accountable talk with each other and we move from place to place in the room so they're constantly moving." Otherwise, she knows these students may begin to disengage and exhibit further problems. "I think you have to very disciplined as a teacher and teach them to be very disciplined…" While Dana does seem to believe these students may have significant obstacles to overcome, she believes with commitment from her and effort from the student, these obstacles can be overcome. "Well once, I think a lot of the time, when you get the routine and schedule… they're pretty good at following it and it seems to help them stay more positive and more alert and on task." However, it is up to the

teacher to create a very structured classroom that is routine-heavy in order for these students to be successful.

Having medicated students with ADHD also affects the other students in Dana's classroom:

> I think just because the ability to sit down and focus hasn't always been there so it's hard for them to sit down to focus and do it. I generally buddy them up with someone just so they have that peer help but a lot of them take breaks throughout the day.

Medicated students with ADHD may be paired up with their non-ADHD peers for help during instructional times; depending on the scenario, this may put strain on the non-ADHD peer to help the student stay focused and complete the task at hand. Also, the behaviors exhibited may affect the other children:

> My other kids, like, have to learn how to ignore a lot of behaviors and I have one friend who if he can't do something or just comes and is just having a bad morning, like he'll push chairs around, he'll kick stuff, he'll throw stuff, and so I've had to train other kids to just ignore him, move out of his way.

The students in this classroom have learned to accommodate the behaviors of one student, who has the ability to interrupt the children's routines and instruction. Even with medication, this student still seems to be exhibiting considerable aggressiveness and anger at times.

All in all, Dana believes these students, "…Just need a little extra love and support." The students can be successful in the general education setting, with extra accommodations from the teacher, the administration, and, potentially, the student's classmates. "It's like a

big team effort." Everyone works together to help these students find behavioral, academic, and social success.

Tammy: Individual Textural Description

Tammy is a primary elementary teacher who is currently working toward a second Master's degree; she is an experienced educator who is very involved in the professional learning opportunities provided by her school district. In short, Tammy sees herself as a learner and is continually looking to increase her knowledge and refine her practices. Tammy works to engage students using many techniques. "I use a lot of cooperative groups and turning and talking. Having them explain things and lots of hands-on activities." She also works to build relationships with students and tries to take a personal interest in each child, to connect with them on an emotional level. "I try to be very personable and I go up to them and ask them how their days were. I really try to connect to the kids so that they feel like it's a safe place to be." Tammy is a teacher who cares about more than her students' academic growth; she also wants them to feel emotionally secure and safe when they are at school.

For medicated students with ADHD, she feels like she must make minor adjustments to help these students be successful. "I may give him extra visual reminders or cues to focus or calm down, but besides that, I don't think there's anything extra I have to do for him." She also does not see that having these students has made a significant impact on her work in the classroom. "I don't think it's made it any difference as long as their medication is what they need and not over or under. Most of the time, people would walk in and wouldn't know anything different about some of those kids." This is indicative of Tammy's personality: she has a very relaxed, mild demeanor and an aura of calmness when she

speaks. When these students present complications, Tammy takes the situation in stride and calmly works to find a solution for the situation. In her experience, there are some differences with ADHD students:

> I think that they learn how to control themselves a little bit better; sometimes those students are more self-aware of what's going on around them. I think sometimes impulse control (is a weakness). Especially when they're older, because they should have strategies to be able to help them.

From Tammy's perspective, these students must learn to become more self-aware and learn strategies to keep themselves focused and engaged; this places the burden on the student to learn strategies and to self-regulate. As students get older, they should learn to be in better control of their behavior and impulses.

In her work, however, she does outline several accommodations she uses to help these students be successful if they have not yet learned to self-monitor and self-regulate:

> Just taking a break in the room to like a break spot, or going to a pillow. I have a pillow in my room where kids can go when they're having an issue. Or if you're on the carpet, twirling your thumbs to help with the fidgeting or I have kids who can stand up to do their work or maybe they need some other thing, like sometimes we've used some yoga balls or something for them to help them engage in another way.

She also noted that medication does not always affect children in the same way. "I have one kid in my class who I don't have to interact with that much, but he's also medicated." In this statement, Tammy reveals that the medication helps this student perform on par with his non-ADHD peers, thus requiring less interaction with the teacher. However,

this is not true for all students:

> If the medications are right, they tend to be kids. They're on target and they're paying attention but if it's not the right dosage they need, sometimes they can be a little sleepy or they're still a little hyper. I've been around kids have been on medication and it made them more aggressive. He would knock over chairs, or push them, or throw things. It really escalated some behaviors that were already there but it just really escalated to be even worse. They were trying different medications. It would decrease and change. And then at one point they completely took him off of it just to see how because it was better for him to be antsy and impulsive than it was for him to be the dangerous and hurting other people.

Medication can have serious side effects and it can take time for doctors to find the right medication and the right dosage. In the meantime, like Tammy described, teachers and students are subjected to the vast number of side effects that may accompany all of these different medication regimens.

Behaviorally, Tammy has systems in place to ensure the behavioral success of all students. "I have a color system where kids can move clips but their clip up also for positive things… The kids earn bucks for making good choices and then once a month they get to cash those in." These systems stay with the students all day, including outside of the classroom. Bucks are an initiative of her school, so students can earn that behavioral reward during instructional and noninstructional times. If students struggle to be successful using those systems, Tammy will find another behavior plan to support those students. "If I have those kids who really have problems (where bucks) doesn't specifically work, (I will consider) doing some kind of behavior chart or something for them where they can get a

reward for making those good choices in those areas." For medicated students with ADHD, Tammy finds that she has to engage with these students in ways that non-ADHD students may not require:

> I still have to give him lots of reminders and he doesn't always fully understand the questions that I'm asking and struggles through that, so it takes a lot more like one-on-one or small group instruction to get him to really understand the concepts.

The accommodations for these students are not only in the classroom, however. During noninstructional times, such as in the hallways or during transitions, students may struggle to follow school rules or established routines. When referring to students with ADHD, Tammy said, "Sometimes transitions can be a little bit hard, just because they get a little bit antsy or whatever. But they usually… sometimes it's not any more than any other students in the class." Tammy recognizes that a certain amount of restlessness or impulsivity may be a natural part of being a child, which students will outgrow as they further develop.

In summing up her experiences, Tammy states, "I work with them pretty much the way that I would with another student." She views this students in the same way she views all of her students and works to find systems to help them be successful.

Josie: Individual Structural Description

Josie is a patient and compassionate teacher, who shows a great amount of empathy for students who struggle in the classroom. The underlying cause of this empathy may be Josie's own experiences as a struggling student:

> Elementary school was difficult for me. Just the teachers I had- a couple of teachers, the year that I remember, were retiring and they just didn't care. So, it was kind of a hard year for me. I struggled in math through my elementary years and I had teachers

> that just didn't care. They were never concerned about the struggling students, never took time to get down with you, actually work with you, or try to help you figure it out. I always told myself I was going to be a better teacher than they were.

As a student, Josie became a victim of low expectations. If teachers have low expectations or negative perceptions, students also internalize those beliefs and allow them to influence their academic performance. Teachers interact differently with underperforming students, have fewer expectations for them, and have more negative perceptions of these students (Archambault, Janosz, & Chouinard, 2012). Teachers with low expectations do not challenge students and may create a less supportive learning environment (Tyler & Boeller, 2008).

Josie continued to struggle with math throughout her elementary years because her teachers had low expectations and did not create a supportive learning environment; based on her description, her teachers did not differentiate instruction, hold all students to a standard of success, or support her as she struggled with difficult content. This has profoundly influenced Josie's own teaching, as she strives to guarantee all students can be successful and works to accommodate all learners.

Consequentially, underperforming students are less sure of their abilities and may depend more on positive interactions with teachers (Archambault, Janosz, & Chouinard, 2012). Sadly, though, academic problems and underperforming students are linked to lower teacher expectations and subsequently a poorer teacher/student relationship (Tyler & Boeller, 2008). Because of these poor relationships that Josie had with her own teachers, she works to ensure positive relationships with her own students:

> I think I have a really good relationship with all my kids. I told them at the beginning of the year that I don't play favorites, everybody's equal. I said some kids need more help than others, so we need to be equitable to everybody and to be kind.

When teachers promote caring occasions, they promote student talk, increase student autonomy, and emphasize relationships; when teachers avoid caring occasions, they may overuse lecture with no student discussion, provide feedback solely through quantitative grades, and respond to discipline issues with no consideration for the children involved (Noddings, 1988). By employing an ethics of caring mindset, teachers create an environment of positive expectations, responsible self-affirmation, and development of the whole, not just academic, person (Noddings, 1988).

Josie promotes caring occasions not only through relationships, but also through student talk and autonomy. During reading instruction, students are allowed choices concerning the types of activities they engage in during that time. "With my student…last year, he really liked (choice) because then he could choose what he wanted to do first, like if he wanted to read. So I guess giving them choices really for both of them has really helped." While student autonomy is not as prevalent during math instruction, student talk is emphasized. "I try to do quite a lot of hands on activities and group work and I think she likes that because she likes to talk. I think that gives her an outlet to kind of... more like a letdown." Josie uses caring occasions to meet the academic, social and behavioral needs of her students.

Debbie: Individual Structural Description

Debbie is a very committed teacher who works hard to keep her students engaged in the classroom. Her most engaging teacher, her 1st grade teacher, seems to have had a positive impact on her own classroom:

> She's great and she had a really good way of making learning fun but we didn't even know that because we were only in first grade. She… she just …she loved what she did and you could tell. She would try different things with us and there were a lot of moving around, playing games to learn things. But she was also very good at going around and being with individual kids and I still remember the things that she taught me, just easy little strategies from first grade.

The influence of Debbie's teacher has prompted her to be responsive to the needs of her students; while she utilizes various instructional strategies to help students engage in content, she also strives to differentiate instruction and meet the academic needs of all of her students. When children are engaged in the classroom, their learning increases (Ponitz, Rimm-Kaufman, Grimm, & Curby, 2009). Students who are cognitively engaged and invest time and effort in their studies achieve more than peers who do not (Archambault, Janosz, & Chouinard, 2012). Students who are engaged may exhibit curiosity about learning, enthusiasm for content, excitement, and satisfaction (Harcourt & Keen, 2012). In Debbie's classroom, she sees students engage in this way. "But if (the content) is something familiar, I've seen them be excited to get back. And I have one student who asks me for more all the time. He likes knowing he can focus and understand…" When students are engaged, an observer may see students using learning materials in a purposeful or intentional way to increase their own knowledge or by exhibiting listening skills such as paying attention to

someone when they are speaking; on the contrary, when a student is disengaged, they may be attending to something else beside the task at hand, out of their seat, or exhibiting inappropriate behavior for the given situation (Harcourt & Keen, 2012).

As a teacher, Debbie works to help her students have positive social relationships. "But I think once they have the coaching that…they need coaching to do the interactions appropriately, it's okay. We do a lot of teaching around that." Debbie has shown to inhabit the ethic of care and works to educate students socially, academically, and emotionally. The role of education, and of the teacher, is to promote, "a constellation of encounters, both planned and unplanned, that promote growth through the acquisition of knowledge, skills, understanding and appreciation" (Noddings, 2002, p. 283). Teachers who act as ethical agents are acting with the interests of others, particularly students, in mind; these teachers are not only mindful of what could happen to students physically, but also how they will feel and how they will respond to circumstances in the classroom (Noddings, 1988).

Because children's social skills have shown to have a significant positive correlation with teacher expectations, many students with the outward symptoms of ADHD are considered by teachers to be low performing from the start (Rubie-Davies, 2010). However, Debbie does not seem to view these students from a deficit model, in which they believe that when students are not successful in school it is because of some internal failure or deficiency (Valencia, 1997). She stated:

> Well, I wouldn't say it's a weakness in the kid, I just think the weakness is just the ability to tell their brains to push these things aside. It seems like it's really something that they cannot control when there's things going on. So I think that's the weakness: they just can't distinguish which things are important and which things

> aren't and how to tell of themselves just to turn off and… to use coping skills. I've noticed that as a weakness too and that if they're struggling with ADHD and we do give them these different ways to cope with things or ways to try to fight distractions, it's really difficult to do that.

The weaknesses Debbie names are all manifestations of ADHD, not weaknesses that are inherent within the child. The behaviors exhibited by these children are out of their control and not something the students do deliberately. She believes students can work to overcome these obstacles, through means such as medication, coping strategies, and behavior modifications.

Cindy: Individual Textural-Structural Description

Cindy is an intermediate elementary teacher, who has been teaching for approximately ten years. She has spent time in both suburban and urban districts. Cindy described herself as a student that loved school, but may not have exactly been a star pupil. As a child, she got into trouble quite often and frequently earned detentions. However, she also loved her teachers and would regularly stay after school simply to talk to her teachers. When reflecting on how her teachers perceived her, Cindy stated:

> I thought I was a good student. I paid attention and did my work but got in trouble a lot. I was probably that kid, that Chatty Cathy, they went home and talked about to their spouses. Then, in high school, I had stronger relationships with certain teachers. There were classes I wouldn't do very well in and classes I would do really well in.

There were three themes that were uncovered in Cindy's description of her experiences: medication, academics, and behavior, effects of ADHD, and beliefs about ADHD.

Medication, Academics, and Behavior. Medication changes the ways kids engage behaviorally and academically. When there continue to be issues for medicated students with ADHD, Cindy finds herself making accommodations. She encourages students to advocate for themselves and tries to praise students when they can self-monitor their own behavior:

> I think the first step is that they have a hard time even recognizing what is distracting them and once they know what's distracting them, it's a little easier for them to get rid of that thing or change that. Like I had a kid who started asking me to shut the curtain on the window. I thought it was amazing that he made that connection on his own.

She prompts students to monitor their own engagement as well. "Asking, are you paying attention? What is distracting you? How can I help you to focus? I'm trying to get them to tell me how I can help them instead of me telling them how I'm going to help them."

She explained the types of accommodations she might make for students, such as dividing up work, shortening assignments, or providing visual cues. She recounted one incident:

> Like I have one kid who you can ask him to write a response and he gets so hung up on the writing nothing comes out. Like you can't even tell what he was thinking because he barely got one word written down. When in reality he had this whole explanation in his head so half the time I will literally do the writing for him.
>
> Because the function of that assignment was not the writing, it was the thinking.

She prides herself on finding exactly what works for each student and works to help each student be successful. None of this is done from a position of negativity or deficit based

thinking, however; Cindy views this as a natural part of her job and believes one of her responsibilities as a teacher is to identify strategies and instructional practices that work for each student.

Medication does not always create solely positive behavioral or academic changes for students:

> I have one who... it's opposite, he's real introverted. He spends more time alone. When he is on his medication, he's doesn't want anything with anybody. And when he's off his medication, he's super social. Either way he doesn't focus and pay attention, and off medication, he just has this bubbly thing about him that he doesn't have when is on medication. And he focuses a little teeny tiny bit more on medication, but...

Educators and parents often consider students to be "cured" by medication and may not understand that further intervention may still be necessary; the assumption is then that students should be able to function normally in the classroom now that they are able to control their impulsiveness and hyperactivity (Evans et al., 2001). However, in Cindy's experience, it is evident that this student's medication may help him focus slightly better, but impedes his social development. While Cindy seems to be the type of teacher who will help all students be successful, she may find herself battling the effects of medication as she promotes the social development of this child.

Effects of ADHD. Having students with ADHD requires teachers to engage with students differently and more frequently. When examining the interactions and experiences Cindy has with her students, it is evident that she operates with the ethic of care in mind (Noddings, 1988). When teachers truly care for students, they work to educate the whole

child: socially, emotionally, and academically (Noddings, 1988). The interest is in developing human beings, not merely helping students master content standards. This is of particular interest for students with ADHD, who may have a unique set of needs that teachers need to address. Cindy holds high expectations for all of her students and strives to meet their academic and behavioral needs. When thinking of how she interacts with medicated students with ADHD, she recounts:

> From my perspective they (the interactions) are not (different), but I imagine from the kid's perspective, it might feel like I'm harder on them than other kids because I remind them more often to be on task and to do what they need to do. Everyone has to pay attention. We have to keep reminding kids…we've got to do it to keep you engaged. This kid might think, "Oh, she's on me again and again and again, she never talks to Anna," but to me it's not like that…

She works to ensure behavioral and academic success, recognizing that this could mean her redirecting certain students more often or more frequent interactions with some students than others.

High expectations are the norm for all students; an underlying culture of high expectations permeates Cindy's classroom. Teachers with high expectations create learning environments where all children can be successful; teachers with low expectations create the opposite (Rubie-Davies, 2010). Because of her high expectations, Cindy's classroom is a place where all students can find academic and behavioral success. "I struggle with… it's different with every kid. So I try… at the beginning we start with everyone's kind of doing the same thing and then we figure out what works and doesn't work, we change it." She works to be responsive to the needs of her students. Teacher expectations and perceptions

of students predict academic achievement for elementary, middle and secondary students (Tyler & Boeller, 2008). Students are not only aware of the their teacher's expectations toward them, but student learning is also influenced in classrooms were children feel their teachers perceive them positively (Rubie-Davies, 2010).

The importance of relationships plays a large role in Cindy's classroom, as well. When describing her relationships and interactions with her students, she said:

> I love them. A lot. And I didn't used to, so that was a change. My first two years, the school year would end and other teachers might cry about it and I was like…like legitimately, I didn't care. And then, this is so stupid, but I watched this episode of Oprah and this kid was just talking about like how nobody loved her. Like she lived this life and not a single person cared about her: not her mom, teachers, nobody. I was like, that could so easily be any one of these kids and even if don't love them, they don't need to know that. I just made a decision I was going to make every last one of them think I loved them even if I didn't. So I came back to school that year and started faking it and then it was true. Like I legitimately started to really care about them more than just their education. It transformed my class, their behavior, and my relationship with them. That's been about four years now and it's been like truly the best thing I ever did for them or me, I think.

Beliefs about ADHD. Behaviors are a manifestation of the ADHD condition and out of the child's control. For students with ADHD teachers tend to hold negative beliefs about behavior problems, are pessimistic about teaching these children, and think these kids need extra time and extra teaching (Kos, Richdale, & Hay, 2006). However, Cindy did not embody these assumptions. While she recognized that she interacted with these students

more frequently and they required more accommodations, this was viewed as a natural part of her job and as part of the obligation of helping students learn. She strives to find positive aspects in her work with these students. "Most of the time they are more outgoing, like more willing to take a risk to share out. They kind of don't feel embarrassed about…. they don't seem shy or embarrassed about most things."

She further negates the assertion of pessimism toward this group of students, "They're not lazy and that they do care. And I've even heard parents say, like, he just doesn't care and I don't find that to be the case almost ever. I think what they want is to please you." Cindy recognized that these students may want to be successful, but manifestations of their condition may prevent them from doing so:

> (I monitor students through) all the assessments that they do but a lot of those are not high performers anyway because the time it takes to take those assessments is too long for their attention spans. Some of those tests...the shortest ones, the computerized ones, take an hour and the longest ones take two hours.

ADHD permeates noninstructional times as well. "It's really tough, like, getting them to go stand in line without stopping to talk to this person or getting in their book bag or something." While these students, like most students, may want to be successful and seek teacher praise, they may be limited by the manifestations of their disorder.

Dana: Individual Textural-Structural Description

Dana is a warm, affectionate teacher who works with primary elementary students; she has been teaching approximately five years. As a student, she remembers that she, "…loved elementary school but not after that." Middle and high school teachers "didn't seem as motivated and happy as elementary school teachers." Surprisingly, she describes

herself as very shy, a quality that was not apparent in either her interview or within her classroom. "I'm a huge introvert, so I would never want to participate and it's not because I didn't want to answer, but because I'm so shy. And I think some of them thought maybe I just didn't want to learn."

Dana seems very receptive to the needs of her students; part of this may be due to the shyness she faced as a student. Concerning her teachers, she said, "I think some of them thought that maybe I just didn't want to learn." Although she wanted to learn and participate, Dana found herself a victim of her teachers' perceptions and expectations, since she did not verbally participate in class. This may have helped Dana respond to the needs of her medicated ADHD students better: she recognizes that students are being affected by something out of their control and, unlike her teachers, works to help these students be successful in all realms of the classroom.

As Dana recounted her experiences, three themes emerged: effects of ADHD, beliefs about ADHD, and medication, academics, and behavior.

Effects of ADHD. Having students with ADHD requires teachers to engage with students differently and more frequently. Even with medication, students may not be able to overcome all of their behavioral, academic, and/or social issues:

> Well… one of them feels like he doesn't have any friends at times and nobody likes him. I think it's just because of how he acts sometimes and so he sees, if I'm pushing chairs and I'm kicking and I'm throwing, then he realizes people may not want to play with me as much if I do this.

Because of this, Dana's work in the classroom becomes more involved than it might with other students. "…The challenge is you have to check in, sometimes every 10 minutes,

sometimes they can go 30 minutes. So keeping myself on my toes to find new ways, sometimes weekly, sometimes daily, to help them stay engaged." As a teacher, Dana has to continually refine her practices and improve her instructional techniques to help these students be successful. ADHD affects how students engage with content; therefore, particularly with academics, these students may still struggle in the classroom. It is up to Dana to find ways to reach these pupils:

> We are moving a lot and it's a lot of like hands-on activities and reading is really the hardest time because with math and science, it's so…I've pretty much never really had a kid not like math or science. Reading is hard just because when they're reading to themselves sometimes…. you know, they don't read to themselves, so I just give them a little frog to read with, or maybe they could read with a buddy that day, or sit on top of their desk that day. Anything that will just keep them engaged.

She continually works to find new strategies to engage students. "Like, I talk but I don't talk a lot. They have a lot of accountable talk with each other and we move from place to place in the room so they're constantly moving." Otherwise, she knows these students may begin to disengage and exhibit further problems. "I think you have to very disciplined as a teacher and teach them to be very disciplined…" While Dana does seem to believe these students may have significant obstacles to overcome, she believes with commitment from her and effort from the student, these obstacles can be overcome. "Well once, I think a lot of the time, when you get the routine and schedule… they're pretty good at following it and it seems to help them stay more positive and more alert and on task." However, it is up to the teacher to create a very structured classroom that is routine-heavy in order for these students to be successful.

Beliefs about ADHD. She also sees herself as a coach and cheerleader, rather than just a holder of knowledge. When medicated ADHD students encounter a difficult academic concept in Dana's classroom, they often, "Shut down. A lot of them just say, 'I can't do this.'" Instead of becoming frustrated with these students or passively letting them ignore the task, she supports the student. She will, "Kind of pep them back up, coach them up, say, 'You can do this, sit down, look at it, read it, what do you know about it …' so they kind of need a lot of one-on-one within the day." Because of her role, she purposely tries to help these students be successful, even when it requires more one-on-one work than with other students.

ADHD affects interactions with their peers. Having medicated students with ADHD also affects the other students in Dana's classroom:

> I think just because the ability to sit down and focus hasn't always been there so it's hard for them to sit down to focus and do it. I generally buddy them up with someone just so they have that peer help but a lot of them take breaks throughout the day.

Medicated students with ADHD may be paired up with their non-ADHD peers for help during instructional times; depending on the scenario, this may put strain on the non-ADHD peer to help the student stay focused and complete the task at hand. Also, the behaviors exhibited may affect the other children:

> My other kids, like, have to learn how to ignore a lot of behaviors and I have one friend who if he can't do something or just comes and is just having a bad morning, like he'll push chairs around, he'll kick stuff, he'll throw stuff, and so I've had to train other kids to just ignore him, move out of his way.

The students in this classroom have learned to accommodate the behaviors of one student, who has the ability to interrupt the children's routines and instruction. Even with medication, this student still seems to be exhibiting considerable aggressiveness and anger at times.

Medication, Academics, and Behavior. Medication doesn't always create positive behavioral changes. Working with medicated students with ADHD can be complicated:

> It's a challenge. Just some kids, like you don't know that day, like, what's going to set them off. Sometimes they come in angry and I don't know if that's linked to the ADHD or something else, but sometimes they're just zoned out, or they can't focus, wiggly worms, but some of them are just like all over the place.

She also believes the academic difficulties students may face are manifestations of their disorder. "I think it's harder for them, most definitely harder. It takes more focus but I don't think that they can't do it." Because of this belief in her students' academic abilities, Dana works to find accommodations that support students instead of looking for excuses as to why they are not achieving.

Teachers may be unaware of their perceptions of students and how those very perceptions may be affecting students. Children who have negative relationships with their teachers are more likely to have engagement and achievement problems (Dotterer & Lowe, 2011). However, for students in Dana classroom, she seems to perceive these students positively in spite of their diagnosis and the characteristics of the disorder. Because of her perceptions of these students and of her on role, she places the responsibility for engagement upon herself. She does not blame these students for disengaging or unrealistically insist they

pay strict attention, but rather looks for ways she can engage these students and help support them.

Composite Textural-Structural Description

This final step of the phenomenological analysis process involves, "the intuitive integration of the fundamental textural and structural descriptions into a unified statement of the essences of the experience of the phenomenon as a whole" (Moustakas, 1994, p. 100). The experiences of five teachers have been analyzed in order to understand their perceptions of working with medicated students who have ADHD. All of the participants were white females; other genders and races were not excluded as a part of the recruitment process. However, the teacher participants who met the specified criteria each happened to share the characteristics of being from the same race and of the same gender. By following this phenomenological process, three themes were illuminated in the descriptions provided by the participants: medication, academics, and behavior, effects of ADHD, and beliefs about ADHD and behavior; all of these themes were present in each participant's experience and are considered to be the essence of their experiences.

Medication, Academics, and Behavior. Each of the participants discussed experiences with medicated ADHD students and the effects medication had on their academic and behavioral performance. Once students are medicated, they may change the ways they engage behaviorally and academically. Although medication can remediate some of the impulsivity and hyperactivity known to be associated with the condition, it can present other challenges. At times, medicated students may become more subdued, have a loss of appetite, appear drowsy, and even become aggressive. While doctors are working to find the right medication and dosage, teachers and peers are subjected to the, at times,

negative side effects that may accompany a medication. However, when it works correctly, the participants each saw improvements in at least one student once they began medication. For these students, medication helped them focus, engage in academic content, develop social relationships, and reduced emotional outbursts. Larger academic gains were reported once medication was correctly administered; however, it seems that for many students there are still gaps in academic and social knowledge that they have missed when not medicated or medicated incorrectly.

Debbie has seen a lot of growth once medication is involved. "Thinking about when they weren't medicated, their academics have improved a lot… So I think, and I… again I've seen a lot of retention in the skills they've been learning this year, so academically I think they're doing really well." However, Debbie realizes as well that these students still have gaps in their academic and social knowledge. Tammy also believes medication changes the ways kids engage behaviorally and academically:

> If the medications are right, they tend to be kids. They're on target and they're paying attention, but if it's not the right dosage they need, sometimes they can be a little sleepy or they're still a little hyper.

For medicated students with ADHD, Tammy reported that she has to engage with these students in ways that non-ADHD students may not require:

> I still have to give him lots of reminders and he doesn't always fully understand the questions that I'm asking and struggles through that, so it takes a lot more like one-on-one or small group instruction to get him to really understand the concepts.

These teachers realize that medication is not a panacea for these students. While medication can help these students to focus and reduce the symptoms of hyperactivity and

impulsivity, not all of the side effects are positive. Students may continue to struggle with focus and impulsivity, as well as experience side effects that include, but are not limited to, aggressiveness, loss of appetite, personality changes, and drowsiness.

Each of the participants discussed their own school experiences. For four out of the five teachers, these included negative experiences based on teachers not being responsive to their needs, including ignoring a shy student, punishing talkative/questioning students, and not helping students who struggle academically. Tammy, for example, remembered being aware of being a struggling reader and being upset about that; because of this experience, she works to help all students feel emotionally secure in her classroom. For each of these teachers, these experiences have a lasting impact on their work in the classroom. The teachers work to meet the needs of all students in a way that their teachers never did; in short, these experiences provided the participants with a non-example and prompted them to teach in a different way.

Teachers work hard to engage all learners, including those medicated students with ADHD. These teachers seem to truly understand the relationship between student engagement and subsequent achievement; they each monitor engagement within their own classroom and use specific instructional practices to increase student engagement. In order to increase buy in, teachers will give students increased choice and autonomy in learning, use movement and talking to encourage participation, and use technology to engage students.

It is not acceptable for students to disengage and not participate; high expectations were commonly seen for all participants. If even one student was off-task, teachers might

redirect that student or individually conference with them in order to ensure all students knew engagement was expected at all times.

These teachers truly care about their students. They work to teach the whole child: academically, emotionally, and behaviorally. When students struggle, no matter what the content or situation might be, the teacher looks to find a solution that works for the child. This can be in the form of academic, behavioral, and/or social accommodations. Academically, teachers may differentiate work or modify assignments to help students be more successful; they may also use more one-on-one teaching, small group instruction, or peer coaching to ensure students have the academic supports they need. Behaviorally, teachers use positive behavior support systems, behavior charts, and goal sheets to help students be successful on the macro level; however, in the moment, teachers use strategies such as nonverbal redirections, specific cues, and opportunities for students to take a break in order for them to achieve behavioral success. Socially, teachers work to give these students structure when working with their peers. This includes strategies such as talking stems when using accountable talk, so that students learn how to talk appropriately with their peers. They also do specific teaching and coaching around social interactions, when required by students. In short, these teachers do not see their job as academics only; they are working to create fully developed citizens.

Effects of ADHD. Having students with ADHD requires teachers to engage with students differently and more frequently. For medicated students with ADHD, Tammy feels like she must make minor adjustments to help these students be successful. “I may give him extra visual reminders or cues to focus or calm down, but besides that, I don’t think there’s anything extra I have to do for him.” She also does not see that having these students has

made a significant impact on her work in the classroom.“ I don’t think it’s made it any difference as long as their medication is what they need and not over or under. Most of the time, people would walk in and wouldn’t know anything different about some of those kids.” This is indicative of Tammy’s personality: she has a very relaxed, mild demeanor and an aura of calmness when she speaks. When these students present complications, Tammy takes the situation in stride and calmly works to find a solution for the situation. In her experience, there are some differences with ADHD students:

> I think that they learn how to control themselves a little bit better; sometimes those students are more self-aware of what’s going on around them. I think sometimes impulse control (is a weakness). Especially when they’re older, because they should have strategies to be able to help them.

From Tammy’s perspective, these students must learn to become more self-aware and learn strategies to keep themselves focused and engaged; this places the burden on the student to learn strategies and to self-regulate. As students get older, they should learn to be in better control of their behavior and impulses.

Academically, Josie finds that she needs to interact with her medicated ADHD student more frequently than with her non-ADHD peers. “I kind of give her a little more reminders. I don't think the kids notice me giving her any more like redirections because I kind do it quietly because I know that’s what she needs.” When asked about the frequency of her interactions, Josie stated, “In the afternoon, yes, (I have to remind her more frequently). Mornings, she stays on task pretty well if we lined out our day, she can just kind of follow the program.” Josie highlights that her day must be structured for this student to stay on task and be successful; this requires forethought and planning on the part of the

teacher to ensure that a classroom environment is created where this student can find success.

Josie believes that part of this student's success comes from choice in her own learning. "Reading, we do the Daily 5, so it's kind of her choice what order she wants to do things and that really helps her. Most the time she'll want to do spelling words because she's really strong in that." By giving the student choices in her own learning, Josie feels as though the student is more engaged during reading, a subject in which she often struggles. "Letting having her have those choices is good for her." Josie still works to engage the student during math time, though the strategy is different:

> (In) math I try to do quite a lot of hands-on activities and group work and I think she likes that because she likes to talk. I think that gives her an outlet to kind of... more like a letdown. When she's not, she has all these other friends around her that are working on the same thing as her. She doesn't mind struggling if she can see it in an alternative way and she's picking up and having that conversation piece that maybe she wouldn't get one-on-one or as a whole group. So I try to do a lot of group work just because I have a lot of struggling students, a lot of ESL kids, but group work really works for them and I think really works for her too.

By strategically planning times for her student to have productive, academic conversations, Josie allows for the student's natural affinity for talking to become a positive asset in the classroom. Doing this allows the student to channel her energy into something productive and honors her need to verbally process.

When teachers promote caring occasions, they promote student talk, increase student autonomy, and emphasize relationships; when teachers avoid caring occasions, they may

overuse lecture with no student discussion, provide feedback solely through quantitative grades, and respond to discipline issues with no consideration for the children involved (Noddings, 1988). By employing an ethics of caring mindset, teachers create an environment of positive expectations, responsible self-affirmation, and development of the whole, not just academic, person (Noddings, 1988). The ethics of care, in conjunction with caring occasions, were beliefs that were present in each participant's classroom.

Josie promotes caring occasions not only through relationships, but also through student talk and autonomy. During reading instruction, students are allowed choices concerning the types of activities they engage in during that time. "With my student…last year, he really liked (choice) because then he could choose what he wanted to do first, like if he wanted to read. So I guess giving them choices really for both of them has really helped." While student autonomy is not as prevalent during math instruction, student talk is emphasized. Josie uses caring occasions to meet the academic, social and behavioral needs of her students.

Beliefs About ADHD and Behavior. With medicated students who have ADHD, Josie believes many of the behaviors they exhibit are simply out of their control and responds accordingly:

> I find myself… I had a kid last year and a kid this year, I find myself, when I work with that student, having to take a step back and say they learn differently and that I need... if they don't get it this way, then I just need to stop and think, well, we need to try a different way. And I understand that it's out of their control and I give them a little more leeway per se, more reminders to do things. Sometimes I can just shoot the child a look and they'll know that whatever they're doing is not okay and that

> they know to fix it. But I do give them a little extra because it is, again, out of their control.

She shows patience when working with these students and strives to be compassionate in her interactions with these students, since she believes their actions are subconscious.

The underlying cause of this empathy may be Josie's own experiences as a struggling student:

> Elementary school was difficult for me. Just the teachers I had- a couple of teachers, the year that I remember, were retiring and they just didn't care. So, it was kind of a hard year for me. I struggled in math through my elementary years and I had teachers that just didn't care. They were never concerned about the struggling students, never took time to get down with you, actually work with you, or try to help you figure it out. I always told myself I was going to be a better teacher than they were.

As a student, Josie became a victim of low expectations. If teachers have low expectations or negative perceptions, students also internalize those beliefs and allow them to influence their academic performance. Teachers interact differently with underperforming students, have fewer expectations for them, and have more negative perceptions of these students (Archambault, Janosz, & Chouinard, 2012). Teachers with low expectations do not challenge students and may create a less supportive learning environment (Tyler & Boeller, 2008).

Josie continued to struggle with math throughout her elementary years because her teachers had low expectations and did not create a supportive learning environment; based on her description, her teachers did not differentiate instruction, hold all students to a standard of success, or support her as she struggled with difficult content. This has

profoundly influenced Josie's own teaching, as she strives to guarantee all students can be successful and works to accommodate all learners.

Debbie believes that behaviors exhibited by students are a manifestation of the ADHD condition and out of the child's control. It can be more difficult for these students during non-instructional times, such as recess. "I think when there's less structure like that, they kind of don't know what to do with themselves." While these students work to have friendships, they may struggle socially to fit in with their peers:

> I see them trying to engage and be social but a lot of times it can be overbearing, I think, to other students… But I think initially they just kind of get really excited to be social and try really hard but I think sometimes it's overbearing on those kids. Or the other student doesn't know how to react.

As a teacher, Debbie works to help her students have positive social relationships. "But I think once they have the coaching that…they need coaching to do the interactions appropriately, it's okay. We do a lot of teaching around that." She also helps students learn to monitor their own behaviors and make self-corrections as necessary. "So try to make them more aware, especially at that age, of their own actions. Being self-aware and then, just kind of giving them those coping skills and hoping that it will make them be able to handle their own issues." Even when students are medicated, Debbie still finds that she has to teach them social skills and self-monitoring behaviors.

Because children's social skills have been shown to have a significant positive correlation with teacher expectations, many students with the outward symptoms of ADHD are considered by teachers to be low performing from the start (Rubie-Davies, 2010). However, Debbie does not seem to view these students from a deficit model, in which they

believe that when students are not successful in school it is because of some internal failure or deficiency (Valencia, 1997). She stated:

> Well, I wouldn't say it's a weakness in the kid, I just think the weakness is just the ability to tell their brains to push these things aside. It seems like it's really something that they cannot control when there's things going on. So I think that's the weakness: they just can't distinguish which things are important and which things aren't and how to tell of themselves just to turn off and… to use coping skills. I've noticed that as a weakness too and that if they're struggling with ADHD and we do give them these different ways to cope with things or ways to try to fight distractions, it's really difficult to do that.

The weaknesses Debbie named are all manifestations of ADHD, not weaknesses that are inherent within the child. The behaviors exhibited by these children are out of their control and not something the students do deliberately. She believes students can work to overcome these obstacles, through means such as medication, coping strategies, and behavior modifications.

One belief held by Tammy is that students with ADHD have to learn to control their impulses. In her experience, there are some differences with ADHD students:

> I think that they learn how to control themselves a little bit better; sometimes those students are more self-aware of what's going on around them. I think sometimes impulse control (is a weakness). Especially when they're older, because they should have strategies to be able to help them.

From Tammy's perspective, these students must learn to become more self-aware and learn strategies to keep themselves focused and engaged; this places the burden on the student to

learn strategies and to self-regulate. As students get older, they should learn to be in better control of their behavior and impulses.

Each participant recounted at least one teacher who made a positive impression upon her. The teachers were seen as engaging, were fun, and asked for student input. They showed students they cared about them and wanted them to be successful; being in these teachers' classes positively impacted the work of the participants. Each mentioned being influenced by these teachers and wanted to emulate some of the practices with their own students. Their positive relationships with at least one teacher have prompted these teachers to cultivate positive relationships with their own students and to help all students feel like they are an essential part of the classroom culture. Dana also sees herself as a coach and cheerleader, rather than simply a teacher of academics. When medicated ADHD students encounter a difficult concept in Dana's classroom, they often, "Shut down. A lot of them just say, 'I can't do this.'" Instead of becoming frustrated with these students or passively letting them ignore the task, she supports the student. She will, "Kind of pep them back up, coach them up, say you can do this, sit down, look at it, read it, what do you know about it." Because of her role, she looks to help these students be successful, even when it requires more one-on-one work than with other students.

Each teacher recounted both positive and negative experiences working with medicated students with ADHD; however, they never expressed a negative belief about working with these students as whole. While they recognized that working with these students could be a challenge at times, it was also expressed that challenges simply meant that the teacher had not yet found out exactly what would work for that student. Teachers

placed the responsibility on themselves to identify the correct academic and behavioral interventions needed to help these students find success.

These teachers do not focus on the shortcomings of students or view these students from a deficit model. They believe the symptoms exhibited by medicated students with ADHD are manifestations of the disorder, not flaws of the child. This view allows teachers to perceive these students as needing more assistance than their non-ADHD peers, but not view them as broken or incapable of success. All in all, they believe these students, "…Just need a little extra love and support." The students can be successful in the general education setting, with extra accommodations from the teacher, the administration, and, potentially, the student's classmates. "It's like a big team effort." Everyone works together to help these students find behavioral, academic, and social success.

Synthesis of the Findings

Two dominant themes were uncovered for all three data sources: first, medication affects how students with ADHD perform academically and behaviorally. Secondly, the effects of ADHD and medicated students with ADHD impact a teacher's work in the classroom. Additionally, the theme of teacher attitudes and perceptions were common to both documents and interviews. A further theme, beliefs about ADHD and behavior, was unique to interviews.

The following table summarizes the themes from all three data sources:

Table 3

Themes from All Three Data Sources

Interviews	Documents	Observations
Medication, Academics, and Behavior	Medication, Academics, and Behavior	Medication, Academics, and Behavior
Effects of ADHD	Effects of ADHD	Effects of ADHD
Beliefs about ADHD and Behavior		
	Attitudes and Perceptions	Attitudes and Perceptions

Five sub-questions were created to illuminate the two overarching research questions; the first question states: what themes are discovered through teacher engagement in classroom instruction of elementary students who have been diagnosed with ADHD and are receiving medication at a large, suburban elementary school? Secondly, what themes are discovered in attitudes of teachers toward elementary students who have been diagnosed with ADHD and are receiving medication during non-instruction time at a large, suburban elementary school?

The first sub-question under the first research question states: What practices are teachers using to engage these students? Answers to this question were found both in interviews and observations. The following quotes describe a few of the many practices teachers use to engage students: “I use a lot of cooperative groups and turning and talking. Having them explain things and lots of hands on activities.” “When I teach I use different

mechanisms: visuals, hands-on… I try to reach everybody in a different way, like I try to teach something so that all my kids can understand it." "I try to use a lot of different mediums. I try to use pencil/paper, videos, games… so just I try to engage all the different types of learning." The types of instructional practices these teachers strive to use with their students are in line with Gardner's ideas of multiple intelligences (1987), with a few notable absences in intelligences such as musical and spatial. The practices used by teachers generally coordinate with the interpersonal and bodily-kinesthetic intelligences, along with aspects of the logical-mathematical and linguistic intelligences. While teachers are engaging these students in the ways they know how, teacher definition of engagement must be expanded to include all of the intelligences. Gardner (1999) states:

> We are faced with a stark choice: either to continue with the traditional views of intelligence and how it should be measured, or to come up with a different, and better, way of conceptualizing the human intellect… I present evidence that human beings possess a range of capacities and potentials- multiple intelligences- that, both individually and in consort, can be put to many productive uses. (p.4)

Students with ADHD who are medicated can show improvement in behavior, self-control, and impulsivity; while it seems to be assumed these improvements extend to academics, this simply is not always the case (Hale et al., 2011). If schools and teachers are not engaging all students, including those students with ADHD, these students may not reach their full academic potential. More students may be engaged in classrooms if teachers are considering the notion of multiple intelligences when planning for, instructing, and assessing their students.

Teachers also spoke about the differences between engaging these students during reading versus math:

> Reading is hard just because when they're reading to themselves sometimes…. you know they don't read to themselves so I just give them a little frog to read with, or maybe they could read with a buddy that day, or sit on top of their desk that day. Anything that will just keep them engaged.

Another teacher described her experiences:

> It seems like the kids do a little better in math because it's more concrete. When there's not a lot of, I have to think about like my opinions and there's not a lot of inference… well, when it's simple math like solving facts and computation, they do better at it.

Teachers reported more success with math and science because of the, "hands-on activities," "group work," and the use of manipulatives to complete math and science tasks. When teachers use techniques such as tools that appeal to kinesthetic learners and collaboration that applies to interpersonal intelligence, which are being implemented during math and science, they feel as though their students are more successful with that content.

Teachers were also using student discussion to increase engagement, specifically using practices such as accountable talk to ensure all students were responsible for discussing with their peers and sharing their learning. With regard to democratic education, Dewey (1916) believed in the pedagogical discourse that occurs between students and teachers as a vehicle for the transmission of knowledge; in order for students to gain the knowledge and power, they must be actively involved in their own learning instead of passively listening to the lecturer in the front of the classroom. When students are allowed to

share their learning, ask questions, and explore their interests, they learn that they are respected members of the classroom and can make valuable contributions to classroom discussions.

The second sub-question asks: In what ways do teachers interact with students instructionally? Answers to this question were found in documents, interviews, and observations. In observations, the most frequent student teacher interactions were in the form of academic support or redirection of students. These included teachers prompting students to identify patterns during math class, working with small groups, and prompting students to return to task and follow classroom routines. Teachers also interact with students during behavioral accommodations, a commonly reported intervention for medicated students with ADHD. "They seems to do well when they get to check in every thirty minutes or so…" and "I have to be vigilant in giving her reminders to stay on task and reminding myself to give her a little leeway in behavior" demonstrate that teachers interact with these students more frequently and in different ways than their non-ADHD peers. Teachers feel, if they are going to meet all of the needs of these students, it takes more time and energy on their part. For these teachers, their notion of care extended beyond academics and involved having high expectations for behavior; the participants realized that, in order for students to find academic success, they needed to first find ways to help them become behaviorally successful. Examining the child's needs allowed for the teachers to prioritize and create a plan to help students be successful throughout the day not just when engaged in academic content. In a real sense, care involved caring for other people's children (Delpit, 2006; Nodding, 1988).

The last sub-question under this research question is: How do teachers perceive the academic achievement of these students as opposed to non-medicated students with ADHD and/or non-ADHD students? The answers to this question were illuminated during document and interview analysis. Interestingly, all five participants stated that their interactions with medicated ADHD students were no different than their interactions with their other students; however, through data collection, this was shown to not be the case. This provides insight into the perceptions of teachers, however; while teachers recognize that these students may require additional academic supports, they do not perceive that support as being any different than what the other students are receiving, but rather more frequent or more intense. These teachers view their interactions to support achievement with these students to be a natural part of their responsibilities and are willing to do whatever it takes to help the student be academically, behaviorally, and socially successful.

The participants recognized that academics are not always easy for these students. “I think it's harder for them, most definitely harder. It takes more focus but I don't think that they can't do it.” Although the content is harder for the students, based upon teacher perceptions, the teachers do believe these students have the ability to perform at grade level; however, it is essential for them to learn how to focus and engage with content first. At times, these students use coping mechanisms to avoid academic content:

> If she doesn't know how to do something, I’ll call it her little mini-vacations. She kind of just kind of checks out a little bit and day dreams. She’ll be like, “yeah, I don't understand” and I can just tell because she has this stare. So I’ll put my hand on her shoulder and ask her if she needs help.

Similarly, "Soon, his attention drifts back to something else. He never seems upset when I call his name to redirect him. When I ask him a question, he is unable to answer. His response is silent." While teachers do not seem to perceive that these students are less intelligent or less academically capable than their peers, teachers still have concerns that some students are not engaging in class even after they are medicated.

These findings were in line with the literature around the academic achievement of students diagnosed with ADHD. These students have increased incidents of retention, poor grades, and lower reading and math standardized test scores (Loe & Feldman, 2007). These students are also more likely to be in special education, receive remedial academic services, and be suspended or expelled (Daley & Birchwood, 2009). While each of the participants in this study believed in the academic potential of their students, they did express some concerns around their engagement and academic achievement in comparison to their non-ADHD peers.

However, there are instances as well where teachers feel as though medication is an asset for students:

> When not on medication Joe was not able to focus on academic tasks without direct instruction from a teacher or peer. Joe was able to learn new skills, but struggled to retain them. After medication, Joe is currently learning math tasks that correlate with his own grade level, although the tasks are simplified. The change that was observed after being medicated was Joe's ability to focus and retain information. He is able to work in large and small group settings with less teacher assistance.

For this student, the teacher saw an increase in academic performance once medication took effect. It seems as though medication can increase the focus and improve attention for

students with ADHD; however, this still may not put them on par with their non-ADHD peers.

The first sub-question under the second overarching questions asks: In what ways do teachers interact with students during non-instruction time? One aim of this study was to understand how teachers perceive the whole child, considering not only academics, but also their social interactions and behaviors. This is consistent with the notion of democratic education; Payzant (2011) stated, "A democracy cannot thrive unless all of its children are educated to a standard that enables them to reach their full potential, access opportunity, and become responsible citizens" (p.12). These teachers are working to ensure all students conduct themselves in accordance with full academic, behavioral, and social potential required to become responsible citizens within a democratic society. Interactions during non-instructional time are often indicators of teachers' efforts to demonstrate care throughout the day.

The following types of interactions were observed during noninstructional times: student redirection during breakfast in the classroom, helping students locate materials to get the day started, and students being reminded to line up quietly while using the restrooms. Overwhelmingly, these interactions focused on the reinforcement of procedures and redirection of students to follow the established procedures. Based upon the observations, there did not seem to be an increased frequency of interactions between ADHD students and non-ADHD students; if teachers had established routines for these non-classroom settings, students generally followed the routine. However, if clear routines had not been established, many students would require teacher interactions and redirections.

The last sub-question asks: How do teachers perceive interactions with students during non-instruction time? Cindy described noninstructional time in the following way:

> Yeah, that's the hardest time to keep structure and organization going, like, I think for any teacher. Coming back in from outside is like coming down from that, "Ahhhh, I'm playing." It's really tough, like, getting them to go stand in line without stopping to talk to this person or getting in their book bag or something.

Also, Josie recounts: "those times can be a little bit of a struggle. It's a little more take chaotic per se she can get… a little silly and goofy." Tammy states:

> I think when there's less structure like that, they kind of don't know what to do with themselves. I see a lot of like, I mean, if it's recess, they will just run out the door and be flailing and trying to go after a ball or…I see them trying to engage and be social but a lot of times it can be overbearing, I think, to other students.

The teachers interviewed consistently mentioned the need for structure and routine when working with medicated ADHD students. "(I have to) make sure their day is very structured, so they know what to expect and when to expect it." "Medicated, unmedicated, I think just that, that structure going away makes them…I don't know, you let them out of the fence and they're just going to go, run, and do what they do and forget everything they've been focusing on." The perceptions of these teachers are that these students need structure and routine at all times; it becomes more complicated for these students when they are in situations where the parameters might not be as clearly defined. As teachers, they must clearly plan and reinforce the routines and procedures within their classrooms in order to help their students be successful; these students can become less successful outside of the classroom, however, if the same routines and procedures are not in place.

Most notably of findings, all perceptions exhibited by teachers were in line with the idea of the ethics of care (Noddings, 1988; 2002). The participants perceived their jobs as helping students grow academically, socially, and behaviorally; although students with ADHD presented, at times, more significant obstacles, teachers placed responsibility upon themselves to find the right accommodations or interventions to help students be successful. Often times, this included non-academic interventions, such as teaching students how to behave socially or coaching them through interactions with their peers. For these teachers, academics are a major purpose of their careers, but do not overshadow the emotional and social needs of their students.

Conclusion

This study sought to examine the relationship between teacher perceptions, student engagement, and study achievement of students with ADHD who are currently taking medication. According to Hepperlen, Clay, Henly, and Barké (2002), "The attitudes, expectations, and behaviors of teachers toward children with Attention-Deficit/Hyperactivity Disorder (ADHD) may have a lasting impact on the academic self-efficacy and success of students with ADHD" (p. 133). There are a number of problems associated with ADHD that students may face; besides the social skills and peer relationship issues, this group of students is also considered to at-risk for academic failure and skill deficits (Biederman, 2005). As educators, we must become aware of our own beliefs, biases, and perceptions in order to help all students engage and achieve in the classroom.

This study, in contrast to previous studies, is looking contribute to the body of knowledge concerning teacher's perceptions and experiences with students *after* they begin medication, which is considered to be the accepted first line treatment for the disorder. This

analysis found that, while teachers do perceive students as being eager and enthusiastic for learning, those same teachers have also experienced obstacles in spite of the medication they are receiving.

The observations confirmed that many students, including those with ADHD, are disengaged in the classroom. Teachers can become frustrated with these students, redirecting them more often, and exerting more energy to keep these students on task. For students with ADHD, the achievement gap is, at times, only widening. Teachers must be using instructional techniques to engage all students and help them succeed; this will increase student achievement for all. Concerning students with ADHD, it is evident that more professional development is needed so that teachers can effectively and efficiently respond to the unique behavioral and academic needs of these students.

CHAPTER 5

RECOMMENDATIONS AND CONCLUSIONS

Implications of the Findings

The purpose of this phenomenological study was to describe the experiences and perceptions teachers who work with elementary students who have been diagnosed with ADHD and are receiving medication in regards to their classroom engagement, academic achievement, and non-instruction time at a large, suburban elementary school. The goal was to understand, from the teacher's perspective, what exactly was happening with these students after they began medication.

Just like every learning disability is different, so is every case of ADHD. Teachers who do not have adequate training to work with these students may not understand their own biases and perceptions of these students; while they may believe they are doing what is best for students, students must be treated as individuals with unique needs, wants, and desires. There is no "one size fits all" behavior plan or intervention for students with ADHD and, without adequate training, teachers may experience frustration when encountering students with ADHD symptoms.

All of the participants, who are experienced teachers, expressed the need for strategies and training for this population; if these teachers feel this way, beginning teachers, many who have never worked with students with ADHD, may quickly be at a loss for how to help these students. Without training, it may take several years for these teachers to figure out solutions to support these students; in the mean time, this population may continue to underachieve academically, behaviorally, and socially.

Recommendations

There are two recommendations that will be discussed in order to help classrooms become places where medicated students with ADHD can be successful. The first recommendation, increasing teacher knowledge of ADHD, is not only grounded in the literature, but also a specific recommendation of the participants of this study. The second recommendation, democratic education, describes the ideal type of classroom environment needed to help these students be successful.

Increasing Teacher Knowledge of ADHD

Little research has been done to offer insight into how teachers' knowledge of ADHD impacts their classroom practices. A 2008 study conducted by Ohan, Cormier, Hepp, Visser, & Strain explored the link between teachers' knowledge and their related behaviors toward and expectations of students with ADHD. The study consisted of 140 elementary teachers in grades kindergarten through six. These teachers had a mean age of 42.33 years and mean of 19.76 years of classroom experience. Teachers were given a 20-question self-assessment to test their knowledge of ADHD; each item on the assessment was constructed as a true/false question. Next, participants were given vignettes that described children who exhibited qualities of ADHD, as outlined by the *DSM–IV*. Teachers used a nine point Likert scale to rate their behaviors and attitudes toward these students. The results showed that, for the questionnaire, teachers scored 76.34% correct on all items. The information from this assessment was then partitioned into quartiles, forming groups of teachers with low, medium, and high knowledge of ADHD. Teachers with a high knowledge of ADHD were significantly more likely to recommend students seek professional assessment services and believe that this assessment would ultimately benefit the child. Ohan et al. (2008) state:

The greater reticence of teachers with low ADHD knowledge to perceive the need

> for or seek services for the child may ultimately be damaging to students who need these resources. For example, a child's teacher not seeing the potential use of services or failing to approach the parents may dissuade parents from seeking help for their child, incorrectly lead parents to think that there are no problems, and/or lead parents to dismiss future teachers' concerns because parents mistakenly believe that these behaviors are 'new.' (p. 444)

Teachers are often the first people to notice symptoms of ADHD and are consistently asked to rate student symptoms and improvements. If teachers do not have the necessary knowledge to understand the signs and symptoms of the condition, they may make inaccurate referrals or not fully understand the significance of the behaviors students are exhibiting.

In regards to treatment options, teachers with high knowledge believed changes within the classroom and changes within the home would be the most effective means to assist these students; medication was rated as the least favorable option. "Teachers with high knowledge perceived significantly greater benefits of making changes within their classroom relative to those with low knowledge" (Ohan et al., 2008, p. 445). This may imply that teachers with low knowledge of ADHD are not aware of what strategies and accommodations they may employ to best support this group of students. Logically, teachers cannot be expected to implement what they do not know; this makes a further case for specific professional development for teachers around ADHD, strategies, and accommodations. Ohan et al. (2008) provide a summation:

> Taken on the whole, the results found here suggest that high, and to some extent average, knowledge of ADHD may impact teachers' behaviors and perceptions in

> positive and important ways (e.g., willingness to seek help for children with ADHD, perceive the benefit of a range of treatments), and thus agree with and buttress experts' calls for teacher education about ADHD. (p. 447)

Teachers must have access to high quality professional development regarding the academic, social, and behavioral needs of these students. Research indicates that traditional one-stop workshops and single professional conferences are not highly effective in promoting teacher growth (Ball and Cohen, 1999). When teachers were given descriptions of instructional practices at one-shot professional development sessions, only 10 percent used that skill in their classroom. However, when coaching was added as a staff development tool, about 95 percent of the teachers implemented the newly learned material (Cornett and Knight, 2008). Therefore, this must be a sustained, committed effort from school districts and sites to ensure that teachers are receiving the support they need to successfully work with this population. Attention-Deficit Hyperactivity Disorder (ADHD) is one of the most commonly diagnosed childhood medical conditions and diagnoses increase every year (American Academy of Pediatrics, 2011; American Psychiatric Association, 2000; Biederman & Faraone, 2005). Consequently, this problem is not going away; this is not an example of "this too shall pass." These students are permeating classrooms and teachers must be equipped to meet the needs of these children.

Democratic Education

The second recommendation, democratic education, is necessary to creating classrooms that meet the needs of all learners. John Dewey was the first theorist to formally discuss the idea of democratic education. Dewey (1916) promoted democracy as a means of growth through the education of all and states that true democratic education, "forms the

citizen, not the man" (p. 93). The purpose of education is to create citizens that promote the ideas of democracy and education is used as an equalizer for all participants to develop their unique capacities (Dewey, 1916). Education is meant for the masses, not the elite few who can afford it and schools should be educating the whole child- social, emotional, physical, and intellectual. Schools should not simply have students master content, but rather help them develop the skills necessary to be successful in any situation. This is especially critical for medicated ADHD students, who may need additional instruction to fill academic, behavioral, and social gaps. Doing this creates an informed public that is equipped with the capacity to make sound decisions that are in the best interest of the nation as a whole; by promoting democratic education, teachers give all students access to the knowledge and power needed to pursue any college or career path they may choose.

Dewey recognized education as power; those with the acquired knowledge have the power to move themselves among the social ranks and the freedom to choose their own path. Those without the knowledge have limited power and limited autonomy. They are subjected to the constraints placed upon them by the educated society. Dewey promoted the pedagogical discourse that occurs between students and teachers as a vehicle for the transmission of knowledge; in order for students to gain the knowledge and power, they must be actively involved in their own learning instead of passively listening to the lecturer in the front of the classroom. In elementary school, this may include instructional practices such as giving student choice, increasing student talk, and placing an emphasis on collaboration; the participants in this study spoke of using these very strategies and finding success with medicated students with ADHD. Teachers must balance the need for the "necessary" knowledge to be given to children with the needs and interests of the children.

Ravitch (2010) states:

> [Schools] are a primary mechanism through which a democratic society gives its citizens the opportunity to attain literacy and social mobility. Opportunity leaves much to individuals; it is not a guarantee of certain success. The schools cannot solve all our social problems, nor are they perfect. But in a democratic society, they are necessary and valuable for individuals and the commonwealth. (p. 5)

Schools are not the panacea to all that ails American youth; they will not solve every problem facing these students. However, without democratic schools, many of these students and others have little chance to take charge of their own learning and become the conscientious citizens that are essential to American society.

A crucial first step for incorporating democratic education into schools is the acknowledgment of potential bias towards students; teachers, like all people, are products of their culture and experiences, as well as products of schools that were probably not overly democratic. All human beings have biases and negative perceptions; the goal for teachers is to become aware of those biases, work to break them down, and treat all students with equality. These biases can present themselves in very subtle ways and many teachers may not be aware they are treating their students in an antidemocratic way; awareness is the first step to correction. For the teacher participants in this study, an overwhelmingly positive perception of students with ADHD was exhibited. Therefore, increasing teacher knowledge of ADHD is an essential part of ensuring democratic education is successful for these students.

Democratic Classrooms. Currently, democratic education in the United States exists mostly in private schools, charter schools, or home schooling (Morrison, 2008). However, it

is possible for American public schools to modify their practices by adopting more democratic configurations and organizational structures (Reitzug, 2003). Creating subtle shifts in our more authoritarian, bureaucratic schools will serve as a positive step on the drastic switch to democratic classrooms.

McDermott (1999) outlines the following essentials for a democratic classroom: creation of trust, reflection, self-evaluation, building community, building consensus, authentic projects and an agreed upon curriculum that is covered (p. 138). Democratic education does not seek to do away with standards but rather looks at how the standards may be covered in a way that is mutually agreed upon and beneficial to both teachers and students. In contrast to traditional classrooms, these democratic classrooms may be noisier and seem, at a glance, more chaotic; in reality, however, these environments promote student talk, collaboration, and interactions. The goals of a democratic classroom are as follows: getting along, collaboration, thinking critically, engaging one's passion, using time wisely, being an active participant/citizen, and exploring the interwoveness and connectivity of the world (McDermott, 1999). Schools can initially begin this process by making shifts at just the classroom level. For teachers, this could include practices such as increasing student discussion, encouraging student choice in assignments and assessments, allowing students to co-construct their curriculum, helping to create rubrics, increasing student discussion and voice, and/or permitting students to have input on classroom rules and routines (Morrison, 2008).

This also requires a shift in the teacher's role: from the holder of knowledge to the facilitator of the classroom. Wood Ray (2006) states:

> The teacher has deliberately repositioned herself [themselves], giving up the power and status that comes from being the one who knows. [They do not] She doesn't hold the answer to this question; the students do. In fact, because the question probes their thinking, they're the only people who do hold the answer. (p. 59)

In a more democratic light, instructional leaders must help teachers empower student to take charge of their learning. However, teachers may not have had democratic educational experiences within their own schooling. Therefore, it may take time for teaches to understand why this change is important and how to make the change. Morrison (2008) explains that since most teachers are inexperienced in applying the principles of democratic schools, they lack the confidence to facilitate learning and view students as recalcitrant learners who must be pushed and cajoled into doing "what's best for them" (p. 56). Adding to this notion, Morrison (2008) elucidates:

> Many teachers, themselves schooled in conventional educational institutions, believe that their role is to fill students with curricular information. They might argue that students, who don't know what they don't know, cannot possibly exercise choice and freedom in curricular content to create real learning. (p.56)

Historically, many teachers have viewed increasing academic knowledge as their singular goal for students. They have considered grades above all else and held on to power with a tight fist, penalizing students for not completing assignments, talking out of turn, or being tardy. This will require a drastic shift in the role of the teacher, who will have to learn to trust the interests and curiosity of the students, as well as letting that guide the learning of the classroom. This also allows for teachers to make a deeper connection to an ethic of care (Noddings, 1988); when teachers work to trust their students, value their voice, and honor

their opinions, they show their students that they care deeply about them. Caring also promotes the social, academic, and behavioral needs of all students; using the instructional strategies of democratic education allow teachers to respond to the needs of all their students, regardless of their background or obstacles.

However, teachers may perceive this shift and release of power as a sign of weakness. "Teachers may feel that if they arrive without a preset syllabus and lesson plans, students and administrators will view them as weak, unprepared, or lacking in authority" (Morrison, 2008, p.56). This fear of chaos and anarchy, especially if viewed negatively by administrators, may lead teachers who try this style of teaching to fear for their positions.

These classrooms are not required to forgo structure, however; teachers can still have all of the necessary structures and routines in place for students to be successful. The focus is on student learning, however, rather than students sitting quietly and completing tasks; this environment reflects the demands of modern society, which call for adults to collaborate, provide opinions, and make justifications. For medicated students with ADHD, who need structure in place to find success, having a classroom that emulates the structure of the real world is the best possible preparation for their life outside of school.

Students with ADHD often have social and behavioral struggles; promoting the goals of a democratic classroom would address these obstacles and better prepare them for life outside the classroom. These goals are some of what every parent and teacher wants for students; sadly, these are not always things we see from adults, however. We must recognize that our current generations of adults, most of whom did not attend democratic schools, may be lacking in some of these qualities.

Therefore, classrooms that are working to become more democratic must be transparent with parents as well, many of whom have never been exposed to this type of education.

Leadership for democratic schools. In order for democratic schools to be a possibly for public schools, administrators need to possess the knowledge and skills around changing a school culture. Research finds that the attitudes of principals and teachers create a culture for learning that influences school effectiveness. Research also shows that cultures of trust, collaboration, and openness create positive school climate conditions (Price, 2012). Also, schools should focus on retaining teachers who do well and provide teachers with good working conditions that encourage professional development (Wilson, 2011). When there is low morale in a school, it affects everyone who is in the building, including the students. Principals must understand how to change the school culture, including aligning the school vision, creating good working conditions, and appreciating a job well done.

There is an essential need for a positive school culture; it is the starting point for all other work to be done in a building. After all, "subordinates do what they are supposed to, but little else. They rely on others to manage them, rather than acting as self-managers" (Sergiovanni, 1992, p. 79). If teachers are operating as simple subordinates, instead of engaged stakeholders, they will not have the necessary buy-in that is required for true change and reform. In order for teachers to begin initiating democratic practices in their own classrooms, administrators must also release power to teachers. Teachers must feel supported and appreciated in order for change to happen; if a principal simply dictates and issues decrees, most teachers will comply. However, compliance does not equal change. In order for morale to improve, all participants must be involved. Sergiovanni (1992) states:

> Every school has a culture. Some are hospitable, others toxic. A school's culture can work for or again improvement and reform…and all school cultures are incredibly resistant to change. This is precisely why school improvement- from within or from without- is usually so futile. Yet unless teachers and administrators act to change the culture of a school, all "innovations" will have to fit in around existing elements of the culture. That is, they will be superficial window dressing, incapable of making much difference. (p.159)

For administrators, a critical component of this change is understanding the change process outlined by Owens and Valesky (2011). Many teachers have taught the same way for many years; change will not happen overnight. It is recommended that no more than one large change be enacted at a time; the rationale for the change must also be provided for the stakeholders to truly engage. Leaders must engage staff, value their opinions, and involve them in the process of change. Teachers must be treated as professionals; while recommendations and ideas can come from the top, they can also come from teachers and other staff. It is important to utilize the creativity and passion of teachers to find creative, effective solutions to 21st century problems.

Fullan's (2007) statement concerning the oversimplification of change is also very powerful. At times, administrators can look at reforms from a very simple perspective and, in all reality, many of them are simple in theory. Democratic education is no exception: on a surface level, the changes seem to be very easy to make. After all, it requires no extra money, resources, or time. What administrators fail to realize is that each reform is just one piece of a classroom environment that is shaped by personal interaction and relationships. No reform is a one-size-fits-all for each school and each classroom. Too often, schools and

school districts focus on the next change that needs to happen or the next education trend, meaning that schools rarely fully implement the current change. In order for democratic education to be successful, it cannot be seen as the newest education trend. Instead, the change should be based in the abundance of available literature regarding the topic; it is a paradigm shift for educators, not a new fad.

For change to be meaningful, it must be done over time. Teachers should not be overwhelmed by administrators trying to fully implement democratic education at all once. Instead, democratic education should be implemented in digestible 'bites,' allowing for teachers to slowly transition their classrooms to a more democratic environment. Honoring the process of change represents a shift from an authoritarian perspective to a collaborative effort. Principals must address mindsets and inertia, all while providing rationale for why the change is happening and why it will be effective (Owens & Valesky, 2011). This requires all stakeholders to be engaged and in depth professional learning concerning the changes taking place.

Reflections

When beginning this research, I initially expected to find frustration on the part of the teacher and the student, much like I felt with Jay as a young teacher; in order to reflect upon my own expectations, I continually journaled during this experience to ensure my beliefs were separate from the reality of my participants. What I found was interesting: while there was evidence of frustration, teachers also demonstrated a determination that all students would find success academically, behaviorally, and socially. They viewed their students' struggles as their problem to solve, not something to be solved solely by parents or medication. While there were positive experiences when medication was involved,

participants still reported needing to use strategies to engage these students, such as proximity, small group instruction, and behavior contracts, even after medication.

I recognize that my own attitudes and beliefs changed as I became a more experienced teacher; I have come a long way from my time with Jay and have learned effective strategies for helping all students find behavioral, academic, and social success. Although the participants stated they received no formal training on how to best help students with ADHD, they have all eventually found effective interventions. Therefore, a key implication of the findings is that professional development must be implemented for all teachers, especially novice teachers, to ensure that these students are being helped in all classrooms. These teachers seemed to eventually figure it out on their own; however, one must assume they would have been more effective with ADHD students sooner if they had been given the opportunity to learn concrete ways to help these students be successful.

Future Research

This study sought to explore teachers' perceptions of students with ADHD after they were medicated. Recommendations for future studies include replicate the study in different settings and with different participants, as well as the treatment of ADHD.

Through the nature of criterion and purposeful sampling, this study consisted of solely female, white participants. This research should be expanded to include male teachers as well as participants of color. Including these participants may reveal additional themes that are inherent within their descriptions of experiences; for example, teachers who are non-native English speakers may have a different perspective on how they engage students in reading and language content. This could potentially influence the engagement of all

students in their classrooms, including those with ADHD. Including participants from diverse backgrounds will ensure a variety of voices can be heard on this important topic.

While this study was designed to add to the body of knowledge surrounding the academic and behavior status of medicated students and illuminate ways teachers may help these students close their academic and social gaps, it could also be expanded to examine teachers' perceptions of medicated students with ADHD based on race and gender. In comparison to white students, black students were rated significantly lower in attentiveness by both white teachers and teachers of color (McGrady & Reynolds, 2012) Hispanic students were perceived similarly by white teachers, but not by non-white teachers. Hispanic students also face stereotypes that place them as having lower academic potential and as less motivated than white students; this is even more pervasive for children of immigrants (McGrady & Reynolds, 2012).

Concerning gender, there is a three-to-one ratio of boys to girls who are diagnosed with ADHD (Barkley, 2006; Connors, 2000). Girls are considered to be more serious about school, more compliant in nature, and have better work habits than boys; Boys, on the other hand, are expected to be more disruptive than girls and subsequently receive more direction and criticism than girls (Parks & Kennedy, 2007). It would be interesting to explore how racial, cultural, or gender differences between teachers and students may affect a teacher's perceptions of medicated ADHD students. Many students are taught by teachers who are of a different race or culture than their own; this makes it necessary to understand how race, in conjunction with ADHD, may play a part in teacher's perceptions.

It would also be informative to have student participants in addition to teacher participants. Allowing students to speak about their teachers and experiences would allow

for a corroboration of teacher perceptions. As students are the actual sufferers of the disorder, it is imperative to understand the types of experiences they are having within elementary classrooms.

An additional expansion might explore middle school and/or high school teachers' perceptions of medicated students with ADHD. While previously considered to be a childhood disorder with symptoms abstaining after adolescence, a growing body of research highlights the lasting effects of ADHD in the lives of adults (Biederman, 2005). Currently, two-thirds of teenagers and one-half of adults who were diagnosed with ADHD as children still experience symptoms (Kilincaslan, Tutkunkardas, & Mukaddes, 2011). Exploring perceptions of their teachers is essential to understand how these students continue to perform academically, socially, and behaviorally once they leave the elementary classroom.

Finally, this study could be replicated in suburban, rural, and private schools to alter the setting. Prevalence of ADHD is consistent among class, culture and race (Barkley, 2006). Therefore, it would be informative to understand how teachers perceive this pervasive condition in these alternative settings. This would allow for the unique characteristics of going to school within each of those settings to be illuminated.

Conclusion

Attention-Deficit/Hyperactivity Disorder is the most commonly diagnosed psychiatric disorder of childhood, with an estimated 2-12% of children in the United States currently identified as having ADHD (Stubbe, 2000). Teacher perceptions, behaviors, and expectations influence all students. When teachers have more positive perceptions of students and higher expectations, children rise to the challenge. When teachers have negative perceptions of students and lower expectations, children also meet that challenge.

The achievement gap demonstrated between ADHD and non-ADHD students is only widening based upon the expectations being placed upon students with ADHD. Many teachers do not possess the necessary knowledge or skills to successfully interact with these students and help them be successful. Therefore, there is a great need for professional development in this area so that teachers may begin to close the academic, behavioral and social gaps that are rapidly growing between ADHD and non-ADHD students, as well as a need to increase democratic educational practices within classrooms to meet the needs of all learners. In order to understand more about this phenomenon, there is a need to replicate this study in a variety of settings with a variety of participants, in order to truly understand how students with ADHD are fairing academically, socially, and behaviorally after beginning medication. It is only after taking these steps that we will be ensuring an equitable classroom environment for our medicated ADHD students.

Appendix A:

Consent for Participation in a Research Study

The Unexplored Achievement Gap: A Phenomenological Study of the Experiences of the Teachers of Elementary Students with Attention-Deficit/Hyperactivity Disorder

M. Amanda Kain

B.A. University of Missouri-Columbia, 2007
M.ED. University of Missouri-Saint Louis, 2010

Request to Participate

You are being asked to take part in a research study. This study is being conducted at New Chelsea Elementary in the Kansas City Kansas School District.

The researcher in charge of this study is Amanda Kain.

The study team is asking you to take part in this research study because you are a teacher who works with students who have ADHD who are currently taking medication for the condition. Research studies only include people who choose to take part. This document is called a consent form. Please read this consent form carefully and take your time making your decision. The researcher will go over this consent form with you. Ask her to explain anything that you do not understand. Think about it and talk it over with your family and friends before you decide if you want to take part in this research study. This consent form explains what to expect: the risks, discomforts, and benefits, if any, if you consent to be in the study.

Background

You are being asked to participate in this study because you have identified yourself as a teacher who has had experience working with a student who has been ADHD and is currently taking medication. As a subject in this study, you have been asked to take part in this research study because of the experiences you have had in the classroom.

You will be one of about six subjects in the study.

Purpose

The purpose of this study is to describe the experiences of teachers working with medicated students who have ADHD. Teacher perceptions and expectations have been shown to have a huge effect on student academic performance, but little research has been done to show how students with ADHD fare after taking medication. By conducting this study, teacher

perceptions of students after medication will be explored which will highlight how students are performing academically.

Procedures

If you decide to participate in this study, you will be asked to respond to one writing prompt, consent to in-person interviews, and allow the researcher to observe your classroom at least one time. This study will last from approximately January-March 2014. While you will be considered a participant during this time, your actual involvement is outlined below.

The writing prompt will ask you to describe your experiences working with medicated students who have ADHD. You will have two weeks to complete the narrative. However, if you need additional time or have additional questions, you may contact the researcher at any time.

Interviews will take place after the document, over the course of January 2014. Each participant will have one interview. Each interview will be conducted in-person, at a convenient location for you, such as your classroom or another private location. All questions should be considered optional; you have the option at any time to not answer or skip any question.

The researcher will conduct one observation in your classroom for approximately 60-90 minutes, after the interviews have taken place. After this last observation, your time as a participant in the study will be finished.

If you are willing, interviews will be recorded; interviews can still take place even if you do not want them recorded. After the interviews and observations, the researcher will transcribe the recordings and email them to you so that you can review them and make sure you said things the way you meant them. Recordings will be used solely to make accurate transcripts and will be kept on the researcher's password-protected iPad that only she has access to; after the transcripts have been created and you have verified their accuracy, all recordings will be deleted.

Participation is voluntary. You may refuse to participate in certain activities or answer certain questions. If at any point you wish to withdraw from the study, you may do so by contacting the researcher, Amanda Kain.

Risks and Inconveniences

There are no known physical, social, or economic risks associated with this study; there is also no risk of criminal or civil liability. You may, however, feel uncomfortable describing the experiences you have had in your own education and in your experiences in educating others. In order to minimize these risks, all participation, including conversations, are voluntary and may be discontinued at any time for any reason. This research is considered to be minimal risk. That means that the risks of taking part in this research study are not

expected to be more than the risks in your daily life. There are no other known risks to you if you choose to take part in this study.]

Benefits

There are no direct benefits to you for participating in this research. Indirectly, however, talking about your experiences may lead to a better understanding of your own education and teaching practices. Other people may benefit in the future from the information about ADHD that comes from this study.

Fees and Expenses

There are no fees or expenses linked to being a participant in this study.

Compensation

All participants will receive a $25 Target gift card.

Alternatives to Study Participation

The alternative is not to take part in the study.

Confidentiality

While we will do our best to keep the information you share with us confidential, it cannot be totally guaranteed. Persons from the University of Missouri-Kansas City Institutional Review Board (a committee that reviews and approves research studies), Research Protections Program, and Federal regulatory agencies may look at records related to this study to make sure we are doing proper, safe research and protecting human subjects. The results of this research may be published or presented to others. You will not be named in any reports of the results, nor will the school or school district be identified. Although video recordings will be used for precise interviews and observations, no visual or audio images will be used in publications or presentations. If you decide to leave the study early, which you may do at any time, all data collected will be destroyed at that point.

During the research, the data collected will be kept in a locked filing cabinet in the researcher's office. All digital data will be stored on a password-protected laptop or iPad until it is transcribed; all digital copies will be destroyed at that time. After the study is over, all files will be kept in a locked filing cabinet in the researcher's advisor's office for 7 years.

Contacts for Questions about the Study

You should contact the Office of UMKC's Social Sciences Institutional Review Board at 816-235-5927 if you have any questions, concerns or complaints about your rights as a

research subject. You may call the researcher Amanda Kain at (186) 797-7660 if you have any questions about this study. You may also call her if any problems come up.

Voluntary Participation

Taking part in this research study is your choice. If you choose to be in the study, you are free to stop participating at any time and for any reason. If you choose not to be in the study or decide to stop participating, your decision will not affect any care or benefits you are entitled to. The researcher or sponsors may stop the study or take you out of the study at any time if they decide that it is in your best interest to do so. They may do this for medical or administrative reasons or if you no longer meet the study criteria. You will be told of any important findings developed during the course of this research.

You have read this Consent Form or it has been read to you. You have been told why this research is being done and what will happen if you take part in the study, including the risks and benefits. You have had the chance to ask questions, and you may ask questions at any time in the future by calling Dr. Loyce Caruthers. By signing this consent form, you volunteer and consent to take part in this research study. The researcher will give you a copy of this consent form.

_____ _____

Signature (Volunteer Subject) **Date**

_____

Printed Name (Volunteer Subject)

_____ _____

Signature (Authorized Consenting Party) **Date**

_____

Printed Name (Authorized Consenting Party)

Relationship of Authorized Consenting Party to Subject

Signature of Person Obtaining Consent **Date**

Printed Name of Person Obtaining Consent

Appendix B

Interview Guide

Focused Life History:

1. Tell me about your own eductional experience, beginning with elementary school.

2. Describe yourself as a student. How do you believe your teachers perceived you?

3. Describe the most engaging teacher you had.

4. Tell me why you decided to become a teacher.

Details of Experience:

1. What practices do you use to engage all students?

2 Tell me about the ways you interact with students in your own classroom.

3. Tell me what it is like to work with students who have ADHD and are medicated.

4. Describe how students with ADHD achieve academically.

5. Tell me about the behavior of students with ADHD when engaging in academic content.

6. Tell me about how having students with ADHD who are receiving medication impact your work in the classroom.

7. What strengths do you see in students who have ADHD?

8. What weaknesses do you see in students who have ADHD?

9. How are your interactions with students who have ADHD different than your interactions with other students?

10. Describe your experiences working with medicated students who have ADHD during non-instructional time. This could include transition periods, recess, et cetera.

11. Describe how students with ADHD interact with their peers during non-instructional time, such as at recess or at lunch.

12. How do you ensure their behavioral success? How do you ensure their success in all school settings, such as the hallways, restroom, or lunchroom?

Reflection on the Meaning:

1. Tell me about working with medicated students who have ADHD. What do you do to engage them in academic content? How do you ensure their academic success?

2. Tell me about what new or beginning teachers need to know to help medicated students with ADHD succeed academiclly. How can school districts prepare these teachers for this specific population?

3. This time will also be used to ask any follow-up questions that arose during the document analysis concenring teacher experiences working with medicated students with ADHD.

Appendix C

Observation Protocol

Research Questions	Related Observation Components
1. What themes are discovered through teacher engagement in classroom instruction of elementary students who have been diagnosed with ADHD and are receiving medication at a large, suburban elementary school? a. What practices are teachers using to engage these students? b. In what ways do teachers interact with students instructionally? c. How do teachers perceive the academic achievement of these students as opposed to non-medicated students with ADHD and/or non-ADHD students?	The following corresponding aspects will be looked for during observations: ☐ Teacher/Student Interactions ☐ Teacher/Student Interactions with students known to have ADHD and be receiving medication ☐ Teacher Frustration ☐ Student Frustration ☐ Praise by teachers ☐ Reprimand by teachers ☐ Teacher academic support ☐ Teacher behavioral support

2. What themes are discovered in attitudes of teachers toward elementary students who have been diagnosed with ADHD and are receiving medication during non-instruction time at a large, suburban elementary school? a. In what ways do teachers interact with students during non-instruction time? b. How do teachers perceive interactions with students during non-instruction time?	The following corresponding aspects will be looked for during observations: ☐ Teacher/Student Interactions ☐ Teacher/Student Interactions with students known to have ADHD and be receiving medication ☐ Teacher behavioral support ☐ Praise by teachers ☐ Reprimand by teachers

Appendix D

Narrative Document

Please describe, in as much detail as possible, an experience working with a student who has ADHD and is currently being medicated. Please omit any identifying information for the student, such as name, grade level when you taught the student, nicknames, and gender. For these purposes, please refer to the student using the masculine pronoun he and him. If you would like, you may provide your student with a pseudonym. Please place this document inside the sealed envelope provided by the researcher; the researcher will collect this during the first interview.

Appendix E

Letter to Superintendent or School Principal

Dear Superintendent,

My name is Amanda Kain and I am a doctoral student at the University of Missouri Kansas City conducting a qualitative study to gain insight into teacher‘s perceptions of elementary students with ADHD who are currently taking medication. As an educator, I have had a variety of experiences working with these students. It is my hope to use the data collected in this study to add to the body of knowledge surrounding teacher perceptions of how medicated ADHD students are performing academically, socially, and emotionally.

I will be using my own knowledge to select appropriate participants from the school building, in order to promote a relationship of trust between the researchers and participants. If additional participants are needed, I would like to work closely with the principal and assistant principals of the school who will initially help identify teachers who have had experience with medicated students with ADHD.

Once teachers have been identified, I will meet with them individually to explain the study, purpose, risks, and safeguards, and to have them sign a consent form agreeing to participate in the study. Participation is strictly voluntary and teachers may discontinue participation at any time. Strict confidentiality will be maintained and the completed study will not identify participants, schools, or school districts by name.

It is my sincere hope that you will agree to allow teachers to participate in this study. If you have any questions, comments, or suggestions, please feel free to contact me. I look forward to hearing from you soon.

M. Amanda Kain

UMKC Ed.D candidate

Appendix F

Letter to Teachers

Dear Teacher,

My name is Amanda Kain and I am a doctoral student at the University of Missouri Kansas City conducting a qualitative study to gain insight into teacher's perceptions of elementary students with ADHD who are currently taking medication. As an educator, I have had a variety of experiences working with these students. It is my hope to use the data collected in this study to add to the body of knowledge surrounding teacher perceptions of how medicated ADHD students are performing academically, socially, and emotionally.

This is a voluntary study; you elect to participate and you may withdraw from the study at any time. If you become a study participant, there are three types of data that will be collected: a narrative document in which you describe your experiences working with medicated students with ADHD, three ninety-minute interviews, and one classroom observation, conducted by the student researcher.

If you decide to participate, I will meet with you individually to explain the study, purpose, risks, and safeguards, and to provide you with a consent form agreeing to participate in the study. Participation is strictly voluntary and teachers may discontinue participation at any time. Strict confidentiality will be maintained and the completed study will not identify participants, schools, or school districts by name.

It is my sincere hope that you will elect to participate in this study. If you have any questions, comments, or suggestions, please feel free to contact me. I look forward to hearing from you soon.

M. Amanda Kain

UMKC Ed.D candidate

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VITA

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