

BEFORE CULTURALLY RESPONSIVE TEACHING...DO THEY EVEN  
KNOW CULTURE: EXPLORATION OF VIRTUAL MIDDLE  
SCHOOL TEACHER PERCEPTION OF ADHD AND CULTURE

A Record of Study

by

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## ABSTRACT

The purpose of the study was to understand the virtual teacher's knowledge and perception of Attention-Deficit Hyperactivity Disorder (ADHD) in their middle school students with regard to cultural difference and gender difference. ADHD is the most common behavioral disorder in students aged 3-17, with almost 10% of students in the United States having a diagnosis of ADHD (National Survey of Children's Health, NSCH, 2016). This case study was performed with a constructivist design. The participant interviews and surveys were coded for patterns and themes using Delve. The findings revealed participant's knowledge and perception about ADHD as a behavioral disorder, the understanding of the behavior disorder as it relates to gendered differences and participants' perceptions of race and ADHD in the classroom setting.

## DEDICATION

This record of study is dedicated to my husband, Jeremy, and our four children, Hayes, Rhys, Harmonie, and Eliza for their encouragement, love, and patience as we walked this journey together. This degree is wholly dedicated to them, as it would not have been completed without their support from the very first day. My amazing husband, Jeremy, who brought me iced coffee so I could continue my long days of writing after my days as a full-time teacher, is without a doubt, the most wonderful person. He kept the house going while I traveled to multiple conferences all over North America to present research and learn new ideas on how to keep moving the needle forward for racial justice in special education. I want to also thank Elizabeth and Janet for their challenging discussions and willingness to listen to my ideas on how we could push the envelope to improve education for students. Additionally, this effort was largely accomplished with the help of iced coffee and my friends at the coffee shops in College Station. Their encouragement was immeasurably positive on the long days of writing and editing.

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## CONTRIBUTORS AND FUNDING SOURCES

### **Contributors**

This work was supervised by a Record of Study committee consisting of Professor John A. Williams III, Professor Michelle Kwok, and Professor Andrew Kwok of the Department of Teaching, Learning, and Culture and Professor Erinn Whiteside of the Department of Educational Psychology.

The analyses depicted in Chapter 4 were reviewed in part by Professor John A. Williams of the Department of Teaching, Learning, and Culture and were published in 2023.

All other work conducted for the record of study was completed by the student independently.

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## NOMENCLATURE

ADHD	Attention-Deficit Hyperactivity Disorder
ED	Emotional Disturbance
ODD	Oppositional Defiance Disorder
EB	Emergent Bilingual
IEP	Individual Education Plan
SE	Special Education
CRT	Culturally Responsive Teaching
CRP	Culturally Responsive Pedagogy
UDL	Universal Design for Learning

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## CHAPTER I

### INTRODUCTION

#### **The Context**

Attention-Deficit Hyperactivity Disorder (ADHD) is the most common behavioral disorder in school-age students in the United States, with almost 10% of children and adolescents having been diagnosed with the disorder before the age of 18 (National Survey of Children's Health, 2016). With almost 10% of K-12 students with a diagnosis of ADHD in the United States, it is highly likely that a teacher, regardless of the type of school they instruct in (charter, public, virtual, private, elementary, middle, or high school), will have one or more students in their classroom with the behavioral disorder (NSCH, 2016). Teachers can benefit from understanding the symptoms of the disorder and how they can manifest differently in male and female students in both the in-person and virtual classroom setting. Additionally, teachers will benefit by developing their knowledge about how diverse students and families from a variety of racial and ethnic groups understand ADHD as a behavior disorder that affects their students' school experiences. Research suggests that a teacher's understanding of ADHD and other learning and emotional disorders and how their symptoms can externalize differently across genders and race, or ethnic groups can have a significant effect on the support that these students can receive at school (Hosterman et al., 2008). Therefore, teachers need to have access to easily accessible and on-going professional development opportunities about the disorder to be able to implement culturally responsive and proactive classroom strategies to successfully support the academic and behavioral success of the population of K-12 students with ADHD.

Notably, the traditional classroom is not the only classroom setting for students in K-12 anymore. The learning environment for K-12 students is changing and has become remarkably

highlighted with the COVID-19 pandemic in 2020. The virtual K-12 school option can be important for students with special learning and behavioral needs who have not had academic success in the traditional public school setting. Vawter and McMurtie (2021) wrote “in our new world, a middle level school or classroom may not necessarily be a school building” (p. 26). As a result, it is critical for teachers in both the in-person and virtual school settings to build capacity for classroom strategies for the growing population of culturally and linguistically diverse learners with ADHD in classrooms across the United States, teachers would benefit from being able to support students with ADHD with learning strategies that could work in both the traditional and virtual settings.

Teachers will benefit from having a toolkit with student-centered classroom management strategies that focus on culturally responsive strategies to support all students, not just those identified with ADHD. Dong et al. (2020) writes that the U.S. population is increasingly diverse, with “one in four students coming from immigrant households, with the Latinx and Asian Americans being two of the fastest growing ethnic minority groups” (p. 27). Classrooms in the United States are diverse and as a result, teachers will benefit from having culturally responsive opportunities for on-going professional development for all students with ADHD.

### **National Context**

Since the Diagnostic and Statistical Manual of Mental Disorders (DSM) III identified ADHD as a disorder in 1987, over 6.1 million students between the ages of 3-17 in the United States have been diagnosed with Attention-Deficit Hyperactivity Disorder (NSCH, 2016). ADHD is the most prevalent behavioral disorder in children and youth in the United States according to the DSM V (APA, 2011). 9.4% of students in grades K-12 in the United States have ADHD and many of these students have externalizing symptoms that require teacher support in the classroom

setting (NSCH, 2016). With the classroom setting not including just the traditional brick and mortar setting any longer, it is important to address the needs for teachers to recognize and support students with ADHD behaviors in their classrooms.

Children and youth with ADHD will encounter more difficulties in school on the road to success in the school setting than those without ADHD (CDC, 2021). Research suggests that little empirical evidence exists on the type of skills needed in teacher preparation programs to help educators in training learn evidence-based practices on how to work with students with disabilities like ADHD (Loreman et al., 2017). The 6.1 million students with ADHD in U.S. schools aged 2-17 should prompt a targeted response by university preparation programs and school leaders to improve the quantity and quality of professional development opportunities for K-12 teachers to help them build capacity for using culturally responsive teaching strategies when working with these students.

ADHD is a behavioral disorder that affects students across races, ethnicities, and genders, so it is necessary to consider both race and gender disparities in the identification and support that students in different populations will receive because of their externalizing symptoms both before and after diagnosis (Hosterman et al., 2008). The National Survey for Children's Health (2020) reports that Black children ages 3-17 are diagnosed with ADHD or a specific learning dis/ability at a significantly higher rate (16.9%) than White or Latinx children, who are diagnosed at 14.7% and 11.9%, respectively (Zablotsky et al., 2020). Additionally, boys are diagnosed with ADHD at a higher rate than girls (Coles et al., 2012). The consequences for children with ADHD who have negative academic experiences can be severe and long-lasting. Kent et al. (2011) reports that "male adolescents with ADHD are absent from school from three to ten percent of the time and are 2.7 to 8.1 times more likely to become high school dropouts" (p. 453). Male teens with ADHD

may fail up to 7.5% of their high school courses. Female teenagers with ADHD have more social problems inside and outside of the school setting than their female peers without ADHD (Holthe et al., 2017). Simply educating teachers on the symptoms of ADHD is not enough to support students and create successful classroom experiences. Teachers should understand that an accurate and informed perception of an increasingly diverse population of students with ADHD is critical to a student's success and therefore, professional development opportunities should include culturally responsive and evidence-based strategies that can be added to a teacher's tool kit for improving the academic, behavioral, and social outcomes for students with ADHD.

### **Situational Context**

This qualitative study was exploratory in nature around the beliefs and perceptions of middle school teachers who instruct students with ADHD in virtual classrooms and also have previous experience in the traditional classroom to provide context from working with them in the virtual setting. The teachers that participated in this research study work in Title 1 virtual public school in an urban city in the Southeastern United States. The school for the purposes of this study is named Site A. This virtual school serves over 8,000 students in grades 3-12. Site A is a choice public school where the many of the students come to this school to escape issues in their traditional public school setting like bullying, concerns with academic rigor, dissatisfaction with special education services, mental health concerns for the student, or a variety of other reasons that include dissatisfaction with the traditional public school setting. For some students who come to this school, they received frequent discipline placements such as in-school suspensions, out-of-school suspensions, or disciplinary alternative education placements (DAEP) in the traditional school settings and their caregivers decided that they could no longer deal with getting calls from the principal's office every day. Some students who come to this school do so

for a variety of other reasons like, but not limited to, professional sports, gymnastics, swimming, dance, or professional acting commitments. Sable et al., (2010) would classify this school as an alternative education program, because it provides an educational setting to students in a setting other than a traditional elementary or secondary public school. In 2018, the U.S. Department of Education, National Center for Education Statistics (NCES) reported 475,015 students were being served in alternative school settings in the United States (Ohrt et. al., 2021). Jeong Hee Kim (2011) writes about the three images of alternative school settings in the United States today: ideal haven, warehouse, or school/prison continuum. While this may not be the actual intention or mission of this virtual school, these images could interfere with teachers preconceived biases towards students as per literature on teacher dispositions (Kim, 2011).

Teachers in this context are caring, creative, and driven to support students' personalized learning by guiding them through a curriculum that is set by the state's education agency. There are different modalities in which the student engages with the teacher through personalized learning: synchronous whole group live lessons, small group intervention lessons, asynchronous messaging (emails), phone calls, required intervention live lessons, and scheduled one on one lessons. The curriculum follows a college-bound curriculum that is meant to prepare students for post-secondary options that align with their interests. Any student within the state can choose to enroll in this school, but they must adhere to public school attendance requirements by completing five to seven lessons per school day. Each lesson correlates to approximately one hour of attendance. The lesson structure and curriculum are built by the state education agency and are aligned to the state standards. Students at this school are required to take the state standardized tests in-person each year. This school functions as a public virtual campus within a larger urban school district and adheres to state's education agency guidelines for public virtual

schools through the state's virtual school network. This choice public school has specialized programs as well, such as, special education, gifted-talented, emergent bilingual, at-risk, and dyslexia. Students also have access to elective classes and social programming such as guidance counseling, career and technology surveys, virtual homecoming and proms, talent shows, and in-person regional field trips.

Site A serves a diverse group of students. Hispanic students make up 37% of this school's population. White students make up 34% of this school's population (South Independent School District [SISD], 2022). 16% of the student population is Black/African American, and less than 10% Asian, two or more races, Native Hawaiian/Pacific Islander, or American Indian/Native American. The student to teacher ratio at this school is 1:31 (NCES, 2021). This school is funded by a district that is situated in a large urban intensive city. Funding for resources such as mental health resources, social emotional curriculum, or behavioral support interventions can often be seen as extras that might not be critical to the day-to-day operations of a school, therefore overlooked in a school district that is historically underfunded by federal, state, and local resources (TEA, 2020).

According to Milner (2012), Site A is considered to be in an urban intensive location. Milner (2012) states that due to the "large population, there is great difficulty in providing necessary resources to the people who need them," (p. 559). This school is part of a large urban intensive district within a large city. and has many of the same issues that Milner (2012) describes as far as providing necessary resources to its residents. Milner (2012) describes urban intensive districts as those that have large numbers of people, housing issues and infrastructure and how these can make getting resources to people difficult.

## **The Problem**

### **Statement of the Problem**

The problem this study seeks to address is to understand what middle school teachers in a virtual setting know and perceive about students who have ADHD. Students with Attention-Deficit Hyperactivity Disorder often have externalizing symptoms of the disorder that results in disruptive and off-task behavior that often result in lower grades and incomplete work in the traditional setting. In the virtual setting, it is more challenging to identify these behaviors because the students are at home, but externalizing behaviors do appear in live virtual classroom settings and in small group or one on one settings during student/teacher intervention. A hallmark of the setting of this study is the student's required consistent connection and verification of learning meetings with a student's teacher on a consistent basis. Without support from Response to Intervention (RtI), Section 504, or an IEP, a student with ADHD can get significantly behind in their work in the virtual setting. This is similar to what happens without consistent and targeted support for students in the traditional in-person classroom setting. This research study will result in an artifact that will provide a culturally responsive dynamic one-page tool kit for virtual teachers that will include proactive and student-centered strategies for their students with ADHD. This professional development artifact will give them strategies to build relationships and prevent externalizing ADHD behaviors from disrupting student learning in their live lessons, small group, or one on one sessions. This artifact will also help teachers to build strategies to build restorative positive relationships with students with ADHD to support them as they work to complete their schoolwork responsibilities. It is important to define culturally responsive teaching and professional development as providing a tangible response to the student's dis/ability needs and socio-economic, linguistic and family unit characteristics

when developing strategies to support student needs (Chu & Garcia, 2018; Cloud, 1993; Gay, 2002, 2010; García & Malkin, 1993; García & Ortiz, 2013). The record of study from this artifact will help bridge a gap in the literature for virtual teachers in their response to serving culturally and linguistically diverse students with ADHD.

### **Responsive History of the Problem**

Almost 10% of all K-12 students in the United States have ever had a diagnosis of ADHD (NSCH, 2016). ADHD is diagnosed by a medical doctor, such as a pediatrician, general practitioner, or mental health professional, like a psychiatrist or psychologist in the United States using the American Psychiatric Association's Diagnostic and Statistical Manual, fifth edition (DSM-5) (CDC, 2021). These medical professionals will give rating scales to parents and educators of the child to fill out to determine the severity of externalizing symptoms and then the data is combined with the doctor's observations for a diagnosis of one of the three types of ADHD: inattentive type, combined type, or hyperactive-impulsive (APA, 2013). It is important to consider how many of the students in this district have ADHD and are either not formally diagnosed or are diagnosed but are unsupported in a school setting. The National Survey on Children's Health sent out the very first survey about ADHD diagnosis in 1997 to parents of 3–17-year-olds (CDC, 2021). At that time, six percent of the population of children in the United States had ever been diagnosed with ADHD (CDC, 2021). The NSCH has changed surveys over the years. Even with the changes in the surveys, the Center for Disease Control (CDC) reports that there has been an increase in the number of parents who report an ADHD diagnosis in children (CDC, 2021). The CDC also notes that future research will show if this increasing trend may level out over the next two decades (CDC, 2021). This highlights the need for a significant change in the type of professional development that teachers receive to support students with

ADHD in the virtual setting. The findings of this research will prove beneficial not only to teachers of students with ADHD, but also those without the diagnosis, but still display behavior because of other behavioral needs or as a trauma-response.

### **Significance of the Problem**

When considering how to support students with ADHD in K-12 virtual and traditional classrooms, it is important to understand how teachers and pre-service teacher candidates receive professional development. Current practicing teachers can receive their professional development through their campus, district, region education service center, or other outside sources. General and special education teacher candidates in university preparation programs around the United States receive their initial training in pedagogy, professional best practices, content-specific teaching strategies, and classroom management strategies. General education teacher preparation candidates typically receive training in these areas in addition to grade-level specific content areas as their specialties and special education teacher candidates often follow a different program that incorporates K-12 special education teaching strategies, writing Individual Education Plans (IEP), data collection, and accommodations and modifications across the continuum of service needs (Blanton & Pugach, 2011; Schoens et al., 2006). In a study about collaborative professional development experiences between general and special education teachers, several of the participants described feeling that they lacked knowledge of either content or strategy on working with student populations in inclusive settings with both general and special education students (DaFonte et al., 2017). Further, Freedman (2015) notes that ADHD is not its own eligibility category for a student to qualify for special education. In the United States, students with an ADHD diagnosis can sometimes qualify for support with an Individual Education Plan, or possibly a Section 504 plan (Office of Special Education and

Rehabilitative Services OSERS, 2016). In special education, an ADHD diagnosis could qualify a student with an eligibility of Other Health Impairment (OHI) (Freedman, 2015) in some, but not all instances. When general education students receive this type of special education overview for learning disabilities and behavior disorders in their course studies, there may not be specific attention given to ADHD as a disorder (DuPaul, et al., 2013).

There is a significant need for teachers in virtual settings, in all grades, but especially in middle school, to practice positive behavioral interventions for students with ADHD to promote culturally responsive learning opportunities that are unique and responsive to the student's needs. Teachers will often choose "behavioral modification strategies with the developmental level of their students in the mind and the knowledge of resources available rather than the individual needs of their students" (Nowacek et al., 2007, p. 27). This highlights the need for teachers to consider the culturally responsive academic and behavioral challenges that students with ADHD may have. Students with ADHD often have trouble staying on task for long periods of time and their work might not be as organized and consistent as other students (Wood et al., 2004). Similarly, Langberg et al. (2017) offer that "disorganization is a critical area of impairment that negatively impacts the academic functioning of youth with ADHD" (p. 47). Harrison et al. (2020) discussed that students who received interventions directly related to the ADHD symptom they were experiencing, such as disorganization or a poor rate of on-task behavior, were more likely to be engaged academically, thus preventing disruptive behavior from occurring (p. 2).

### **Research Question**

How does teacher knowledge and perception of ADHD, race, and gender influence how they interact with middle school students in the virtual school setting?

## **Personal Context**

My interest in studying teacher knowledge and perception of Attention-Deficit Hyperactivity Disorder and the application of that knowledge in the classroom has both personal and professional context. In 2003, I received my bachelor's degree in music education from Sam Houston State University (SHSU). Immediately after graduating from SHSU, I continued teaching band to fifth and sixth graders at the school where I completed my student teaching assignment. As I honed my skills as a music educator, I began to see the impact of ADHD and other behavioral disabilities on my students. My students with ADHD began to receive in-school suspensions (ISS), after-school detentions, and lunch detentions because of their disruptive behavior in the classroom. Soon after starting that first teaching position, I was given the opportunity to participate in IEP and Section 504 meetings for my students as the general education teacher. I noticed that their confidence, self-perception, and desire to learn was both positively and negatively impacted because of how teachers responded to their IEP or 504 accommodations for the disorder. As the school year ended, I moved to Austin to pursue a fully funded M.Ed. in multicultural special education in learning disabilities and behavior disorders at the University of Texas at Austin. In 2005, equipped with a M.Ed. in multicultural special education for diverse student populations, I began teaching in a small elementary school in Florida as the only special educator on campus. I quickly found myself puzzled with how little preparation my colleagues and I had received on how to effectively support students with ADHD and other behavioral disabilities in the general education classroom.

My career in education has allowed me to have a variety of teaching roles in both special education and general education classrooms in grades K-8. Since 2003, I have served in several schools in Kentucky, Florida, and Texas as a special educator, band director, and dyslexia

specialist before moving into the educational support roles as a grant director, IEP facilitator, and teacher trainer. Most of my career has been serving in Title 1 schools who have diverse student populations with a variety of socio-economic, cultural, racial, and ethnic differences. I have served students in a resource setting, inclusion setting, intervention small groups, virtual settings, and in self-contained classrooms. The teaching roles I have had have allowed me to become acutely aware of how students with ADHD are supported in the classroom and across a variety of brick and mortar and virtual school settings.

At the beginning of year 16 of my career, I left the traditional classroom to serve as a teacher trainer and special educator/IEP facilitator in a virtual setting to support teachers, students, and families by working with them to develop best practices for working with their students with disabilities such as ADHD, dyslexia, and a variety of learning disabilities. The work outside of the traditional classroom has shown me that many educators may not have adequate opportunities for professional learning to learn about how disabilities like ADHD affect students across settings, from home to school and back again. There is a great need for educators to have access to ongoing, culturally responsive evidence-based professional development to improve their knowledge and practice of how to support the learning and behavioral needs of students with ADHD. These students can be successful in school when they are given opportunities to support their learning and behavioral needs with culturally responsive and evidence-based practices that create a positive learning environment. A positive learning environment results in more academic success and less discipline issues because students with ADHD can thrive when they are supported effectively.

This problem of practice has a personal context as well because I have a child with ADHD and have seen the devastatingly negative consequences of the lack of knowledge and

understanding that teachers have about the behavioral disorder. When my child was in third grade, he was not allowed to go to recess for his entire third grade year because he consistently had disruptive behavior and missing work. The disruptive and off-task behavior was not egregious and could be described as consistent moving about the room or talking out while not completing his work tasks because they were boring. As a result, he was made to stay inside while his friends played during recess. This experience has negatively affected him as a learner, as it stole his curiosity for learning new things. It has taken years of advocacy on the part of my husband and I working with his teachers who sought to understand ADHD to repair his confidence.

Students with ADHD require accommodations to allow them to access academic and behavioral success. Without an accurate perception and knowledge of how ADHD can affect students in the classroom, there is a great risk of students losing confidence in themselves as curious learners. When students are consistently punished for having disruptive or off-task behavior, missing assignments, fidgeting, or talking in the classroom, students lose their motivation for learning. The consequences of a teacher's lack of knowledge and understanding of ADHD symptoms and how to proactively support diverse learners can be monumentally devastating and will likely carry with them for the rest of their lives.

For many of my students throughout the years, the challenges of ADHD compounded with reading and behavioral issues created a myriad of discipline problems at school. My colleagues and I would note that the problems that held students back the most were how we responded to their impulsivity and lack of focus. Elementary students were sent to the office or lost recess because of their impulsivity or non-completion of academic tasks. Middle school students who received behavioral consequences because of poor choices in the classroom were

sent to In-School Suspension (ISS) or detention. More severe consequences included Out of School Suspensions (OSS) or Disciplinary Alternative Education Programs (DAEP). All these placements meant the student was out of the classroom and not learning. As I watched my students with ADHD receive consequences for not following the classroom or school rules, I became more interested in the reasons why the behavior was occurring and how the learning environment around the child may be affecting the behavior itself. The longer I taught, the more accurately I understood that teachers have an extraordinary influence on their students, not only through the delivery of curriculum, but also through the way they responded to the learning and behavioral difficulties that were occurring. Overwhelmingly, my students who received behavioral consequences because of poor choices due to their ADHD were male. Additionally, I noticed that males and females with ADHD may display very different externalizing symptoms, with the males catching the negative attention of the teacher or administrator more often.

When I was in the classroom setting as an interventionist/special educator, I met with students and families regularly to write IEP goals or 504 accommodations. In these meetings, I noticed that cultural, racial, and ethnic differences can play a significant role in how both educators and families understand ADHD as a dis/ability that affects learning and behavior across settings. In my work as a teacher trainer, I found that teachers can improve and build their capacity more effectively when they are given on-demand opportunities for ongoing professional development instead of the prescribed lengthy days of professional development that are sprinkled throughout the academic calendar. As a result, I have become interested in how I could more effectively support the teacher's access to culturally responsive and evidence based professional development with the goal to create interventions and learning environments for

students with ADHD that will increase classroom learning success while preventing discipline issues.

### **Significant Stakeholders**

This research study has several stakeholders that are involved in this study with the goal of building teacher capacity to improve student outcomes. The stakeholders who are most directly involved were the teachers who participated in this study by sharing their knowledge and perception of Attention-Deficit Hyperactivity Disorder and how it affects their students in the K-12 classroom. They were willing to participate in the demographic survey and semi-structured interview to allow me to gain understanding about their knowledge and perception of ADHD as a behavioral disorder that affects some of their students. Additional stakeholders who benefitted from the data obtained in the study are school and district administrators, general and special education teachers, and paraprofessionals who work with students daily. The most significant stakeholders in this study are the students who will have improved learning experiences because of the proactive, student-centered, and culturally responsive learning strategies their teachers will use to support their diverse learning and behavioral needs.

The campus-based teacher-leaders and classroom teachers who participated will have continued access to the artifact to offer the one-page online dynamic professional development one pager for teachers to build their knowledge and improve their perception of working with students with ADHD. Campus leaders can learn from the experiences of the teacher participants to understand the professional development needs of their teachers more effectively when it relates to building their capacity for working with culturally and linguistically diverse students with ADHD.

## **Important Terms**

ARD -Admission, Review, and Dismissal - the IEP (Individualized Education Plan) process in Texas which includes the admission, review, and dismissal processes for students in special education.

Attention Deficit-Hyperactivity Disorder - “ADHD is one of the most common *neurodevelopmental* disorders of childhood. It is usually first diagnosed in childhood and often lasts into adulthood. Children with ADHD may have trouble paying attention, controlling impulsive behaviors (may act without thinking about what the result will be), or be overly active.” (CDC, 2021).

DisCrit- Dis/ability critical race theory.

Reactive disciplinary measures - discipline that is based on a student’s behavior without regard to the antecedent of the behavior or root of the problem for the student.

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR) was updated in October 2021 and the “most current text updates based on scientific literature with contributions from more than 200 subject matter experts” according to American Psychiatry Association.

Virtual school - a school that serves students with curriculum with both synchronous and asynchronous learning opportunities.

Traditional/In-Person- a traditional physical school campus

## **Closing Thoughts on Chapter I**

Teachers must have access to professional development opportunities that are based on the unique needs of what is happening in their classrooms each day. The teacher's professional development needs go beyond state required training and pedagogical and content approaches. Professional development must include proactive classroom management strategies that adapt with the growing number of students with ADHD in traditional and virtual classrooms across the country. District and campus leaders cannot dismiss the need for classroom teachers to know and understand ADHD symptoms among their students with the disorder. It is critical for teachers at all levels to have an accurate perception of ADHD and how it affects a diverse population of students. The alternative would have devastating and life-long consequences for the student as they lose confidence in themselves as learners. Improving access to culturally responsive and on-going professional development for classroom teachers is not only going to improve student academic and behavioral outcomes but will also improve teacher efficacy and agency as virtual classroom processes become more student-centered and culturally responsive.

CHAPTER II  
REVIEW OF SUPPORTING SCHOLARSHIP

**Introduction**

Teachers regularly face challenges with working with students with Attention-Deficit Hyperactivity Disorder. Teacher perception and understanding of ADHD as a disorder that affects learning is a significant piece of a student's success in the classroom (Ohan et al., 2011). "Given its prevalence and impact in the classroom and on teachers, it would not be surprising if alerting a teacher that a child has been diagnosed with ADHD would influence their expectations, behaviors, and emotions towards that child" (Ohan et al. 2011, p. 84). K-12 schoolteachers would benefit from ongoing professional development across their career life cycle that would help them understand symptoms of ADHD and be able to build a toolkit with strategies that will help them create a successful learning environment for these students.

This literature review begins with a brief history of ADHD as the most-common mental-health disorder in school-age children. ADHD symptoms can manifest in both the virtual or the traditional classroom setting and can result in undesired student behavior. This review addresses research on the implications of race, ethnicity, and gender disparities in a teacher's perception of students with ADHD in addition to the cultural aspect of a family's perception of ADHD. Next, I discuss the current research on the type, depth, and breadth of professional development that teachers have available for to improve their capacity for working with students with ADHD in the traditional setting. Since there is not a significant amount of research on working with students with ADHD in the virtual school setting at the time of this study, there is a limitation of research on that subject that must be considered when reading this review. This review

concludes with a discussion of multidisciplinary instructional strategies that teachers can use to effectively support a diverse population of students with ADHD.

## **Responsive Historical Background**

### **ADHD in K-12 Schools**

Teachers can benefit from knowledge of the history of ADHD as they serve the growing number of students in middle school traditional and virtual schools in the United States who have the disorder. “Attention-Deficit Hyperactivity Disorder (ADHD) is the most common childhood neurodevelopmental disorder in childhood and highly prevalent in adults, as well” (Martinez-Badia et al., 2015, p. 380). Attention-Deficit Hyperactivity Disorder (ADHD) was called “an abnormal defect of moral control in children” by British physician, Sir George Fredric Still, in 1902 (Lange et al., 2006). In his early twentieth century research on this disorder, Sir George Fredric Still observed that children with the symptoms now associated with ADHD had difficulty concentrating and could not easily understand the consequences of their actions (Lange et al., 2006). The identification of ADHD as a disorder, formerly called hyperkinetic of childhood, came in the 1987 version of the Diagnostic and Statistical Manual of Mental Disorders (DSM) III (Rodden, 2021). In 2000, the DSM IV wrote guidelines for the three subtypes of ADHD that are currently used to diagnose children, adolescents, and adults with the disorder (NCBI, 2006). The National Survey of Children’s Health (NSCH, 2016) data showed that 9.4% of school-age youth, or 6.1 million children (about twice the population of Nevada), in the United States have been diagnosed with ADHD. Of the 6.1 million children, 388,000 children are aged 2-5 years, 2.4 million children are aged 6-11 years, and 3.3 million children are aged 12-17 (NSCH, 2016). Teachers should be equipped with knowledge of how to support their students with ADHD so

they can build their capacity for creating successful academic and behavioral outcomes with teaching strategies that honor their racial, ethnic, gender, dis/ability, and cultural diversities.

### **Theoretical Framework**

This qualitative study was done through a case study research method in a social constructivist/interpretivist paradigm within a dis/ability critical race theory framework. The researcher is seeking to understand what teachers know and perceive about ADHD as it affects their students through the dis/ability critical theory theoretical framework that involves race, ethnicity, dis/ability, and gender (Annamma et al., 2022). The participant's perspective of the research question and their related experiences will help me interpret the data to obtain meaning through that lens. As a teacher/researcher, using a social dis/ability critical theory theoretical framework will allow me to understand teacher perceptions and any disparities that may be present due to implicit bias due to dis/ability, race/ethnicity, or gender. Miglinarini (2018) defines dis/ability critical theory (Dis-Crit) as the intersection of racism and ableism. Dis-Crit as a theoretical framework in education acknowledges dis/ability justice as it involves the diminishing of populations as it relates to race, gender, ethnicity, sexual orientation, and national origin (Annamma, 2022). This study will focus on the first four tenets of the seven tenets of the DisCrit framework. The first tenet places focus on how the dual forces of racism and ableism circulate independent of each other and can do so often in unseen ways, as they uphold notions of normality. The second tenet of DisCrit places value on multidimensional identities as it challenges individual notions of identity such as race, dis/ability, gender, or sexuality (Connor et al., 2015). DisCrit's third tenet emphasizes the social construct of race and ability while it highlights the physical and psychological impacts of imposing labels such as race or dis/ability.

which can occur outside of western cultural norms. The fourth tenet of DisCrit calls attention to and privileges voices of marginalized populations, that are not typically acknowledged in educational or social science research (Connor et al., 2015).

This research study will explore how teachers understand ADHD within the framework of social constructivism through the lens of Dis-Crit with a case study research approach will allow me to explore the interview data and subsequent themes that will inform the artifact that will be used to support the significant stakeholders.

### **Significant Research and Practice Studies**

#### **Culturally Responsive Teaching**

Gay (2002) defined “culturally responsive teaching as using the cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively (p. 106). She expounds upon this idea in consideration of working with students with disabilities such as ADHD. Culturally responsive teaching (CRT) in special education has been defined by Gay (2000) as “teachers’ knowledge about and attitudes toward cultural diversity are powerful determinants of learning opportunities and outcomes for ethnically different students” (p. 613). Gay (2002) wrote that when teaching students with disabilities such as ADHD, it is equally important to consider teaching strategies that are “developmentally appropriate, which means using their cultural orientations, background experiences, and ethnic identities as conduits to facilitate their teaching and learning” (p. 614).

When teachers are given opportunities to synthesize their learning in and practice their specific grade-level and content area pedagogy combined with culturally responsive teaching practices that are derived from culturally relevant pedagogy, student-centered learning environments will allow the opportunity for all students to thrive. Teaching should always be a

reflective practice as we are consistently looking at data and observing how our practices in the classrooms are working or not working. It will take dedicated, well-informed, and reflective teacher educators to support the professional learning and practice of using CRT with solid research-based theories while developing classroom strategies that support culturally and ethnically diverse students in both general education and special education.

Working with students with disabilities such as ADHD within a framework of culturally responsive teaching practices can help teachers consider their own implicit bias while working to understand their students' cultural, racial, ethnic, gender, and dis/ability-specific differences. Geneva Gay discusses the importance of understanding cultural differences among students, which is more than just a student's race or ethnicity. Cultural competence for a teacher includes understanding how a student lives, learns, and thrives in addition to how their race, ethnicity and gender identifies them as a learner in a classroom. This study seeks to include the virtual classroom as a part of that cultural consideration because students have chosen to come to this school for a myriad of reasons that include their unsatisfactory experiences in the traditional public school in-person setting.

Culture encompasses many things, some of which are more important for teachers to know than others because they have direct implications for teaching and learning. Among these are ethnic groups' cultural values, traditions, communication, learning styles, contributions, and relational patterns. For example, teachers need to know (a) which ethnic groups give priority to communal living and cooperative problem solving and how these preferences affect educational motivation, aspiration, and task performance; (b) how different ethnic groups' protocols of appropriate ways for children to interact with adults are exhibited in instructional settings; and (c) the implications of gender role

socialization in different ethnic groups for implementing equity initiatives in classroom instruction (Gay, 2001, p 107).

When teachers practice reflective culturally responsive teaching practices with all students, the classroom becomes a more student-centered learning environment where racial, ethnic and gender disparities related to ADHD along with negative perceptions of the disorder will decrease and empathy, kindness, rigorous learning, and curiosity can flourish. Gay's definition of culture encompasses learning styles, and with the advent of the COVID-19 pandemic, thousands of students have chosen to continue to make a public school virtual learning option a part of their "culture" as it meets the needs of their mental health, physical health, and/or personal/social needs (Gay, 2001).

### **Gender Disparities and ADHD**

Teachers will often be the first source of information when it comes to a referral for ADHD diagnosis because physicians are seeking to understand whether ADHD externalizing behaviors are happening across all settings such as home and school. When a teacher suggests to a parent that a student might have ADHD, referrals often differ based on the gender of the student. Coles et al., (2012) found that girls are less likely to be referred for ADHD inattentive behaviors as were boys in the same population sample. School-age males are diagnosed with ADHD at much higher rates than females (Barkley, 2015). Previous research suggested that boys may be identified as disruptive or inattentive in the classroom as a symptom of ADHD at a greater rate because their symptoms are more external than that of girls the same age (Coles et al., 2012). Of considerable interest is whether the teacher's value and norm expectancies for a child's behavior affects their perception of how a male youth or a female youth with ADHD should behave in the classroom setting (Jackson & King, 2004). Further research is needed to

understand why teachers identify males with ADHD related disruptive behavior at a higher rate than girls.

ADHD related behaviors can manifest differently among male and females. Soffer et al., (2008) discussed that most researchers in this field have focused on male children and adolescents with ADHD in most of the population samples. Boys diagnosed with ADHD may exhibit up to triple the rate of disruptive externalizing behavior than girls with the same condition (Abikoff et al., 2002). Furthermore, girls are less likely to display “less severe externalizing behavior than boys with the disorder” (Abikoff et al., 2002, p. 217). The expectation of teachers of children and adolescents with ADHD or ODD Oppositional Defiance Disorder (ODD) “may vary substantially as a function of gender” (Jackson et al., 2002, p. 217).

### **Race and Ethnicity Disparities and ADHD**

Previous research has shown there are race-ethnic group disparities when considering teacher perception of students with ADHD in the classroom. “Children who are African American are diagnosed with ADHD at only two-thirds the rate of White children despite displaying greater ADHD symptomatology, and Latinx children have also been reported to be underdiagnosed” (Morgan et al., 2013, p. 2). Despite an underdiagnosis of Black and Latinx students (Morgan et al., 2013), Wexler et al. (2021) found “teachers endorsed more hyperactive/impulsive symptoms for Black children with ADHD of lower SES than for White children with these characteristics” (p. 1). Implicit bias around race, ethnicity, and gender can exacerbate “discriminatory behaviors” for teachers of students of color with behavioral disorders such as ADHD in the classroom (Carter et al., 2017, p. 217). Research suggests that a teacher’s race or ethnicity may consciously or unconsciously inform how they react to discipline and behavioral issues in the classroom (Deckman, 2017). Professional development opportunities

should allow educators to reflect on the possibility of implicit race, ethnicity, and/or gender bias related to identifying symptoms of ADHD when they are serving a diverse population of students.

### **Teacher Perception of ADHD Diagnosis**

Teacher perception and knowledge of ADHD behaviors is critical to consider when examining how to design professional development to help them work successfully with students with ADHD in their classroom. Ohan et al. (2011) discussed the idea of “labeling bias” when teachers are told that their students have ADHD or are being referred for symptoms of such (p. 83). “Knowledge about ADHD symptoms and their potential impact on students’ learning and social functioning is crucial for both teachers and peers of students with ADHD to avoid those students’ stigmatization, alienation and lowered self-perception” (Gwernan-Jones et al., 2016, p. 87). Students with ADHD have less relational closeness and more conflict with peers when they perceive that their teachers do not want them in their classroom (Ewe, 2019). These students will respond positively to praise from their teachers, but “after a consistent record of poor grades and overwhelming assignments, they often suffer from low self-esteem” (Wood & Beattie, 2004, p. 52). Students who do not feel an emotional closeness or belonging in their classroom due to teacher perception of their ADHD diagnosis can experience negative social-emotional, behavioral, and academic consequences.

The virtual classroom can be a challenging setting for students with ADHD, so teachers should be equipped with the knowledge and understanding of not only the symptoms of ADHD, but also the process of diagnosis and treatments for managing ADHD symptoms when they are working with their students. Soroa et al. (2014) discusses the importance of a teacher’s involvement in the diagnosis of a student with ADHD as they recognize the three main

symptoms of the disorder in the school setting: hyperactivity, impulsivity, and inattention. The teacher's understanding of symptoms and externalizing behaviors caused by ADHD is important because parent and teacher rating scales are the primary tool for ADHD diagnosis in children and adolescents (Bradshaw et al., 2013). A teacher's lack of knowledge of ADHD and externalizing behaviors in the traditional or virtual classroom could cause "more coercive teaching behavior, which can aggravate students' behavior problems" (Strelow et al., 2020, p. 103). A teacher's understanding of ADHD and its symptoms can influence their opinion and actions toward students with ADHD in the classroom (Bekel, 2004). Teachers often report negative interactions and significant stress related to working with students with ADHD, which could in turn cause a cycle of negative reactions toward the student in the classroom (Strelow et al., 2020). Research about the importance of a teacher's knowledge, perception, and understanding of ADHD symptoms and related behaviors affirms the need to develop ongoing professional development opportunities for middle school educators to strengthen their capacity for working with their students with the disorder in the school setting.

### **ADHD and Professional Development**

At the location of this research study, teachers must take and pass a series of virtual modules that culminate in a virtual teacher's certificate that is recognized by the school to show competency in online teaching strategies. A handful of these modules review how to work with students with specific learning differences such as those in special education, 504, emergent bilingual (EB), or gifted/talented, but none of them specifically address how to work with students with behavioral disorders like ADHD.

Most teachers in the United States state that they learned how to work with challenging behavior through their own experience in the traditional classroom, rather than through

professional development opportunities (Westling, 2010). A study using an ADHD curriculum and pre-intervention and post-intervention surveys by Barbaresi et al. (1998) showed that “teacher stress correlated with ADHD behavior in male students and decreased post-intervention” (p. 251). Effective and targeted professional development opportunities can increase teacher efficacy, decrease teacher stress from ADHD related behavior, and improve learning and behavioral outcomes for all students.

In a study by Westling (2010), special education and general education majors reported that they did not receive adequate preparation on how to deal with challenging behaviors in a classroom setting. “Most did not perceive their professional training to be adequate,” (Westling, 2010, p. 49). Monteiro et al., (2022) that teachers report that their pre-service training did not prepare them to manage ADHD related behavior and that students with ADHD can be more stressful to teach. Classroom management classes that focus on teaching strategies for both general and special education classrooms are not consistent class offerings in university teacher-preparation programs or alternative certification programs (Montague & Kwok, 2020). Children and adolescents with ADHD can struggle with impulsivity, hyperactivity, and inattention (APA, 2013) and all of these symptoms can externalize as disruptive behaviors in the classroom. Two studies, Reid et al. (1994) and Martinussen et al. (2011) have explored teacher preparation and training regarding working with students with ADHD and dealing with these disruptive behaviors in the classroom setting. These researchers agreed that the results were inconsistent and that more research is needed to determine the intersection of the role of general and special education teachers with their “effects of prior training on general and special educators’ use of recommended instructional and behavior management practices for students with behavior problems” (Martinussen et al., 2011, p. 195). The implication of this research is critical for K-12

virtual educators because instructional interventions paired with effective proactive behavioral strategies can improve learning outcomes for students with ADHD in the virtual classroom.

Practicing educators can continue to effectively hone the art and science of classroom management with on-going and on-demand professional development (Montague & Kwok, 2020). When teachers have access to professional development for working with students with ADHD, they can build their toolkit of instructional strategies as they grow across their career life cycle in service to students. If teachers do not feel confident in their classroom management skills after graduating from a teacher-preparation or alternative certification programs, they likely will not have a level of confidence in working with students with behavioral needs. Identifying individual student behavior needs and functions for behavior is a skill that takes targeted training and practice.

## **Review of Responsive Methods**

### **Implications for the Virtual Classroom Setting**

Most research studies on student behavior because of ADHD have focused on a single student or single teacher, rather than the group of students in the traditional classroom (Tegtmejer, 2019). Furthermore, there is little research on effective strategies that teachers can use with their students with ADHD that aligns with the current behavioral response to intervention (RtI) framework that is used in many middle schools across the country (Schnoes et al., 2006). There is also little research on how to work with culturally and linguistically diverse students in the virtual setting because the concept is fairly new. In the United States, there have been successful virtual learning programs available to parents for much of the past two decades. The setting for this study is a choice public virtual school that requires students to complete a curriculum that is authored by the state's education agency. Students in all grades must complete

the requirements for their courses each semester with a passing rate and achieve verified learning to remain enrolled. This school has RtI, special education, 504, gifted/talented, and emergent bilingual programs just like all state public schools and must adhere to all the same criteria for supporting students who have these needs. Herold (2019) states “the goal (of personalized learning) is to customize the learning experience for each student according to their unique skills, abilities, preferences, background, and experiences” (p. 1). This type of personalized learning becomes even more specific and nuanced when considering the needs of students with ADHD.

When teachers are implementing an intervention to support students with ADHD, it is critical to understand how teacher perceptions of implementing “prevention-focused interventions” affect the success of the learning environment in the classroom (Tillery et al., 2010, p. 88). Teachers will often choose “behavioral modification strategies with the developmental level of their students in the mind and the knowledge of resources available rather than the individual needs of their students” (Nowacek et al., 2007, p. 29). There is a need for virtual K-12 schoolteachers to practice positive culturally responsive behavioral interventions and rather than using reactive measures for students with ADHD to address any behavior needs that may arise as they are working with them in the virtual classroom setting.

Students with ADHD can become dysregulated in the learning environment and as a result, they can draw the class’s attention away from learning with their behavior. This can happen both in the traditional setting or in the virtual setting. Instructional settings that support students with ADHD and their academic and behavioral needs are essential for improving academic, behavioral, and social-emotional student outcomes and giving the students the tools to understand what is expected of them. Wood and Beattie (2004) noted that many students with ADHD know they have a problem with attending to tasks but are at a loss of how to help

themselves improve. The instructional context for students with ADHD made a difference in the success for student on-task behavior (Hart et al., 2011). For many students in the virtual setting who have identified 504 or IEP accommodations with ADHD, they are able to attend to task and work within the accommodations that allow them extra time, breaks on their own schedule, and one-on one support from teachers.

In recent decades, restorative practices adapted from the First Nation groups in Oceania and North have been adapted for United States criminal justice centers and schools (Hughley et al., 2020; Fronius et al., 2019). Restorative practice circles have been used at an increasing rate in schools in the United States to combat exclusionary discipline practices that affect historically marginalized student populations such as: LGBTQI+, special education, Black, and Latinx students. Hughley et al. (2020) states “by centering relationships as a fundamental value, restorative practice can catalyze empathy, communication, and belonging among students and teachers alike in ways that reduce conflict and misunderstandings on the front end” (p. 141). Using this type of work to restore positive relationships with students in the virtual setting can be beneficial, even if not physically in the same space.

Harrison et al. (2019) studied the effectiveness of classroom-based interventions with the role of the classroom teacher in differentiating effects with a functional behavior analysis as the “intervention selection” (p. 571). A study by Stahr et al. (2006) discusses the use of a functional behavior assessment to determine the root cause of a participant’s off-task and disruptive behavior. This function-based intervention system is multi-faceted and includes a self-monitoring component, a communication component, and a function of extinction for undesired behaviors (Stahr et al., 2006). The findings from these studies on classroom-based interventions also have implications for creating consistent, function-based school-wide strategies with reward

systems to support improved student outcomes for these students. Function-based interventions can also be used in the virtual classroom setting effectively with middle school students, because they are able to tell you why they behave the way they do, especially when relationships are built on trust.

Function-based school and classroom interventions should include culturally responsive care relations for students with ADHD because they often have difficulties with time management, impulsivity, decision making, and problem solving. Fulton et al. (2015) stated that children with ADHD could have life-long problems with academic achievement, social and emotional relationships, independence, and life skills. Nel Noddings' theory of care (1992) as it relates to teaching and learning could effectively be applied to serving students with ADHD as their academic and behavioral needs are complex and unique. Students with ADHD often have trouble staying on task for extended periods of time and their work might not be as "meticulous and consistent" as other students (Wood et al., 2004, p. 51). Similarly, Langberg et al. (2017) asserted that "disorganization is a critical area of impairment that negatively impacts the academic functioning of youth with ADHD" (p. 47). Students who received interventions directly related to the ADHD symptom they were experiencing, such as disorganization or a poor rate of on-task behavior, were more likely to be engaged academically, thus preventing disruptive behavior from occurring (Harrison et al., 2020). Teachers must have access to ongoing professional development opportunities to learn about the variety of symptoms that their students with ADHD might display in their classroom, so they are equipped to mitigate disruptive behavior related to ADHD symptoms.

## **Multidisciplinary Team Strategy**

Students with academic and behavioral ADHD symptoms can benefit from a team of school staff members who will support the effort of classroom token-economies, earned experiences and rewards, and a positive reinforcement plan that is unique to the student who receives it. In a study about school-based intervention for students with ADHD, DuPaul et al., (2021) discussed the importance of having a multi-faceted series of academic and behavioral interventions to include opportunities for these students to interact with counselors, social workers, administration, and other school staff members outside of the classroom setting. The findings from this study could be applied to the virtual public school setting because a multi-faceted Abramowitz and O'Leary (1991) noted that as a student's school environment changes over time as they age, school staff must adapt their approach to supporting students with behaviors that are considered disruptive in the classroom. Robinson et al. (2017) discussed the importance of including school counselors and school based social workers in play therapy sessions to support students with ADHD and their social-emotional needs to help them stay regulated in the classroom setting. Abramowitz and O'Leary's (1987) research found that the behavior management techniques such as token economies, home-school contingency tasks, and positive behavioral reinforcement from teachers were effective in supporting desired behavioral management for students with behavioral problems. A multi-disciplinary approach to support students with ADHD that includes all school staff will have positive effects on the entire school community. These multidisciplinary strategies can occur in the virtual setting as well and have been successfully implemented at this campus setting because of the dedicated people on this campus.

## **Closing Thoughts on Chapter II**

This literature review has focused on the need for professional development opportunities to allow teachers to build their capacity and increase their knowledge of the disorder to support students with ADHD. The purpose of this would be to provide culturally responsive and evidence-based professional development information for teachers who work with students with ADHD to prevent disruptive and off-task behavior and improve student outcomes in both the virtual and traditional school settings. Students with ADHD make up currently 9.4% of K-12 students in the United States (NSCH, 2016). Many teacher preparation programs do not adequately prepare educators for working with the growing number of students with ADHD (Loreman, 2007; Yellin, 2013; Westling, 2010). Teachers' negative perception of ADHD can cause poor academic and behavior outcomes in a student with the disorder (Bekel, 2004; Ewe, 2019; Gwernan-Jones et al., 2016; Strelow et al., 2020). Research has shown that a teacher's perception of ADHD can be influenced by a student's race, ethnic group, or gender (Jackson & King, 2004; Wexler et al., 2021). Additionally, a student's cultural backgrounds shape much of how their families perceive their students' challenges related to ADHD (Alvarado et al., 2017, Dong et al., 2020). A family's "cultural construct of "disability" coupled with the stigma of attitudes toward mental health could present as barriers to a student's treatment or access to mental health services (Yeh et al., 2016). Teachers must have access to and know how to use a variety of function-based, culturally responsive, and evidence-based instructional strategies that support students with ADHD and their ever-changing needs (Abramowitz & O'Leary, 1991; Ladson-Billings, 2006; Stahr et al., 2006). Teaching positive behaviors by using evidence-based interventions with opportunities for repeated practice through a culturally responsive lens can effectively support student learners with ADHD.

In this record of study, I interacted with the previous literature on K-12 education and ADHD including data, participants, and the variety of instructional and behavioral issues surrounding ADHD and K-12 education. I also highlighted some effective strategies for working with students with ADHD while also showing the need for culturally responsive professional development opportunities for teachers in their work with students who often display the disruptive behaviors that students with ADHD often display in the classroom setting. Research recommends that educators reflect on their own perception and knowledge of ADHD symptoms while seeking to understand their student's cultural differences of ADHD as a disorder (Ladson-Billings, 2006; Ohan et al., 2011). I believed that I would uncover gaps in the types of professional development opportunities that are currently available for the stakeholders as I learned about teacher perceptions of the disorder in addition to the type and amount of access they have for learning about and implementing a variety of culturally responsive and evidence-based strategies for students with ADHD. This study focused on understanding the teacher's knowledge of ADHD and the type, depth, and breadth of professional development opportunities available for teachers in a variety of settings across grade bands to build their capacity for serving diverse student populations with ADHD in their classroom. The data that was obtained allowed me to understand the participant's stories at the study's locations for improving outcomes and decreasing disruptive behavior for students with ADHD. As a result of data analysis, I sought to create a dynamic one-pager of short, research-based, on-demand and topic-centered professional development information to present to teachers at the location of the research.

CHAPTER III  
SOLUTION AND METHOD

**Methodology**

**Case Study**

This case study sought to understand what teachers know about ADHD as a behavioral disorder that affects academic success in middle school students. Creswell et al. (2018) suggests that in qualitative research, a problem could possibly be understood the best by exploring a concept, hence qualifying exploratory research. Students with Attention-Deficit Hyperactivity Disorder can have externalizing symptoms of the disorder that results in off-task and disruptive behavior. The consequences for this type of behavior can result in disciplinary issues, where removal from the virtual or physical classroom can take place. Teachers have reported that they often do not know how to support students with ADHD in their classroom (Gwernan-Jones, 2016). Case study data analysis in this case is bound by the context of the location of the study. Miles and Huberman (1994) describe case study as “a phenomenon of some sort occurring in a bounded context” (Baxter & Jack, 2010, p. 545). In this study, the bounded context is the virtual alternative school setting where the participants work as middle school teachers. A case study approach is the most appropriate research design for this study because I believe that the demographic survey and semi-structured interview questions will help explore the unique virtual context in which the teachers work.

In previous research, Kim (2011) used a case study to explore the context of the participants’ location of an alternative school setting while understanding the story and experiences in an urban alternative school setting in the United States. The methods used in the Kim (2011) study were observation and participant observation as the researcher interacted with

the participants. This allowed the researcher to “become acceptable” to the participants which allowed him to gain trust and credibility with whom he is wanting to study (Cusick, 1973) (Kim, 2011, p. 78). The research question that guides this study is: How does teacher knowledge and perception of ADHD and race influence how they interact with middle school students in the virtual school setting?

### **Positionality**

My subjectivity as a researcher was informed through my experience as a special educator and ARD (Admission/Review/Dismissal) facilitator at this virtual school who works with general education students with ADHD and other disabilities. My positionality was important to disclose as I am a person living with ADHD, diagnosed as an adult. I am also a parent of a child with ADHD who has struggled in school because of teachers not knowing how to interpret or respond to their symptoms in the classroom. In the context where this research will take place, I have worked with students, teachers, and administrators in both the virtual and the in-person setting throughout my tenure at this school.

My role of my Whiteness, as a White, female educator-researcher studying at a predominately White institution (PWI), plays a significant role in my positionality and subjectivity in this study. I began this study to explore the deficit pedagogy and pervasiveness that permeates how teachers may work with students with ADHD in middle school. As I began my research, I reflected on how I participated in this deficit pedagogy and classroom management of working with White and culturally and linguistically diverse students with ADHD in co-teaching classrooms as well as inclusive general education classrooms throughout my career.

## **Outline of Proposed Solution**

The proposed solution was to develop a dynamic one-page tool with professional development strategies based on culturally responsive restorative practices for middle school teachers to use while they are working with students with ADHD to prevent disruptive and off-task behavior while building classroom settings that promote positive student outcomes. The one-page tool was presented to the school leadership team as we planned to coach our teaching staff as they build cohesive culturally responsive teaching spaces for their students while creating positive relationships with their students and families. The one-pager professional development tool would be accessible to teachers and administrators as they work with students with ADHD in the traditional and virtual settings. It would be consistently updated with new research and information as it becomes available.

## **Justification for Proposed Solution**

Students at this school with ADHD struggle with inattentiveness, off-task behavior, even in the virtual setting, and reported off-task and disruptive behavior in the virtual live classroom. Reported disruptive behavior from students who have been diagnosed with ADHD include inappropriate chats, expletives, and hand gestures, turning off the camera when the expectation is for it to be on, non-responsiveness in live sessions, and cyber disruption in the live classroom when they are supposed to be working with a group or teacher. Consequences for these actions include tiered levels of warning, removal from the classroom, meetings with the principal, suspensions, and expulsion. Other symptoms of ADHD that teachers report in the online setting include students forgetting to log on to their learning sessions, not turning their work in on time, or rushing (or clicking) through assignments too quickly, resulting in a failing grade on something that is not eligible for relearning. This qualitative study explored the beliefs and perceptions of teachers who have experienced working with students with ADHD in the online

classroom who have also worked with students in the brick-and-mortar classroom. The survey questions and interview questions data were combined for each participant to determine if there were themes regarding cultural, race, ethnic, or gender differences in how teachers perceive and understand ADHD to manifest in student behavior in their classroom.

### **Study Context and Participants**

This research study was conducted on a virtual middle school public school campus with the participation of six teachers of core content or special areas in 7th and 8th grades. This campus is a virtual campus that has students in grades 3-12 in the Southeastern United States. There are a total 256 teachers at this virtual public school, many of whom serve across grade bands or subject areas. Total enrollment during the school year 2021-2022 reached 10,126 students across grades 3-12 (ISD, 2022). The student population is 37% Hispanic, 34% White, 16% Black/African American, and less than 10% Asian, two or more races, Native Hawaiian/Pacific Islander, or American Indian/Native American. At the time of this study, there were over 2000 students in middle school, grades seven and eight (ISD, 2022). At the beginning of 2022, 6th grade was moved to elementary. As a result, middle school grades are seven and eight.

Campus-wide data from the 2021-2022 school year indicates that approximately 42% of students in grades 3-12 were identified as economically disadvantaged. Over 91% of student families note that English is their first language. 559 students were identified as needing special education services (ISD, 2022). 543 students were identified as ever emergent bilingual, and 412 students identified as current emergent bilingual (ISD, 2022). 81 students were identified as gifted and talented (ISD, 2022). Students could be twice or three times exceptional or identified in one or more of these descriptors. Of all the families and students who are served at this

campus, 56 families identified their students as needing the support of McKinney-Vento services due to experiencing homelessness, and two families identified themselves as recent immigrants to the United States (ISD, 2022).

With the support of the school administration, I obtained four voluntary participants who are full-time teachers with both brick-and-mortar teaching experience and virtual teaching experience. I was not concerned about their personal demographics specifically, regarding choosing participation but did ask for permission to include that information during the data collection to understand any possible themes that came out of the interview questions based on their own background and teacher preparation and professional experiences. The participants in this study were four White females between the ages of 30 and 55. I used purposeful sampling to get a range of middle school teachers for this study. Purposeful sampling gave the qualitative researcher a significant amount of information with a small, detailed number of participants (Yilmaz, 2013). I specifically sought participants who are current middle school teachers with a variety of content teaching experiences with at least two participants with zero to five years of experience teaching in the virtual setting, at least one with six to 10 years of teaching experience overall, and at least one with more than 10 years of teaching experience overall.

The four participants that volunteered for the study were four White females who had come to teach in this virtual setting after having four to eleven years of experience in the brick-and-mortar traditional school setting. All four teachers serve in a general education content position teaching 7th and 8<sup>th</sup> grade. Three of the four participants received their teaching licensure in an alternative certification program after working in a different career. One teacher, Shania, received her teaching certification in her graduate teacher preparation program. All four participants have Master of Education degrees in addition to an undergraduate degree in

something other than education. Shania has two Master of Education degrees. These teachers have from eight to 21 years of experience overall in public school teaching experience.

Half of the teachers reported in their surveys that they had received training in their teacher preparation programs (TPP) in working with students with ADHD. The other half reports that they had not received any training to support students with ADHD in their teacher preparation programming (TPP). Notably, the same two teachers who reported that they had received training in on working with students with ADHD in their TPP were alternatively certified. These two teachers also reported receiving training on students with ADHD during their career life cycle as well. Of the two teachers that reported not receiving training on working with students with ADHD in their TPP, one was alternatively certified and the other received their initial teaching licensure during their graduate degree TPP. Shania and Anna also reported not receiving ongoing training during their career life cycle on working with students with ADHD.

### **Participants**

Jackie serves as a middle school science teacher and shared that this was her second career, after working as a parole officer before going to get their alternative certification to teach. She has been teaching in public schools for 18 or 19 years. She was a probation officer for 10 years before she became a teacher. She has a master's degree in psychology and her original career plan was to work in criminal justice. She became a teacher through the alternative certification route. Her master's degree in psychology helped her get certified in special education due to the course work she had taken during her bachelor's degree. Upon the completion of her alternative certification, she was able to continue as a full-time special educator in that same position. Jackie has taught for 17 years. Before moving to this virtual

school setting at Site A, Jackie taught in a variety of special education classes. She is currently an 8<sup>th</sup> grade science teacher in Site A virtual school.

June stated that this was her second career, when initially they went to university to work in youth social programming, such as the YMCA. June said that she has 15-16 years of teaching experience total in both brick and mortar and virtual school settings. She has one year of experience in the virtual school setting. She shared in the interview that during COVID, in school year 2020-2021, she was charged with teaching her students from brick-and-mortar campus through Google classroom. June stated that she has primarily taught social studies, in 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grade. For about four years, she was a lead teacher/instructional coach for a reading program grant program. Afterwards, she opted to work in a brand-new elementary school where her principal hired her to help open the school and work as a fifth-grade social studies teacher in 2020.

Shania has the most teaching experience of the four participants, with over 21 years total, and with 13 in the virtual school setting. Shania serves the student population at this school as a reading and social studies specialist. She recently obtained her second master's degree. Shania described her teaching experience as unique compared to her colleagues, as before coming to this virtual school, she taught at a school where students had their own school supplied laptop and the assignments were submitted electronically. She has taught grades six through twelve language arts, public speaking, and reading. She has also taught honors classes, gifted and talented classes, and on-level classes. Shania has taught at this specific school for thirteen years. Prior to coming to this school, Shania shared that her last ten years of brick-and-mortar teaching experience was at a magnet career-based school where all of the students had laptops.

Anna is a middle school social studies teacher with eight years’ experience. She primarily taught at small, rural school districts prior to coming to this virtual school. She was alternatively certified after graduating early with the majority of the courses she needed to become a teacher. Anna is the youngest of the four teachers.

**Table 1**

*Descriptives of Experience, Content Area, and Highest Degree Obtained*

Participant	Highest Degree	Content/Grade	Years of teaching	Years of virtual teaching
June	M.Ed.	8 <sup>th</sup> science	13	5
Jackie	M.Ed.	8 <sup>th</sup> social studies	12	2
Shania	M.Ed, M.Ed.	8 <sup>th</sup> reading	21	13
Anna	M.Ed.	8 <sup>th</sup> social studies	8	2

**Data Collection**

To obtain access for this study, I inquired with the school leadership to conduct the study in this setting because of the interest and need for teacher support to bridge across general and special education classrooms in working with students with ADHD in the upper elementary/middle school setting.

In December 2022, once consent to participate in the study was obtained with purposeful sampling, participants who are current middle school (grade 7-8) virtual teachers were invited to complete both a demographic Google form survey. The semi-structured interviews were conducted with participants in January 2023. The timing was purposeful, to begin data collection during the beginning of the Spring semester prior to teachers returning to their full workloads. The form garnered participant’s educational experience, how they obtained their teacher license, what their highest degree is, whether they received training on working with students with

ADHD, and how they may define disruptive or off-task behavior (see Appendix B). This type of information helped me to describe the participants as a part of the data analysis to determine if any themes are derived from the years of experience or type of teacher licensure/ certification that the teachers may have. Other information that may be derived from this survey was compared to the responses participants provided during the semi-structured interviews.

Upon completing the demographic survey, the teachers participated in semi-structured interviews in January and February 2023. The semi-structured interviews were thirty to forty minutes interview in person or via Zoom. Interviews were recorded so that I could review them during data analysis, with permission from the participants. The semi-structured interview questions provided the researcher the ability to become a “researcher-as-instrument” (Miles et al., 2020) to draw objective answers from the participants to inform the research question. The researcher took notes during the interviews in the form of jottings so that notes and interview transcripts could be analyzed over two cycles with inductive coding. [Appendix C]

The answers from the interview were compared to the survey responses to determine any themes or patterns that may result out of them according to classroom management, teacher years of experience, teacher licensure options, or any other similar information. The findings were triangulated to provide a solution to inform an artifact of a dynamic culturally responsive one-page informational professional development resource that will be available on-demand for teachers.

### **Data Analysis**

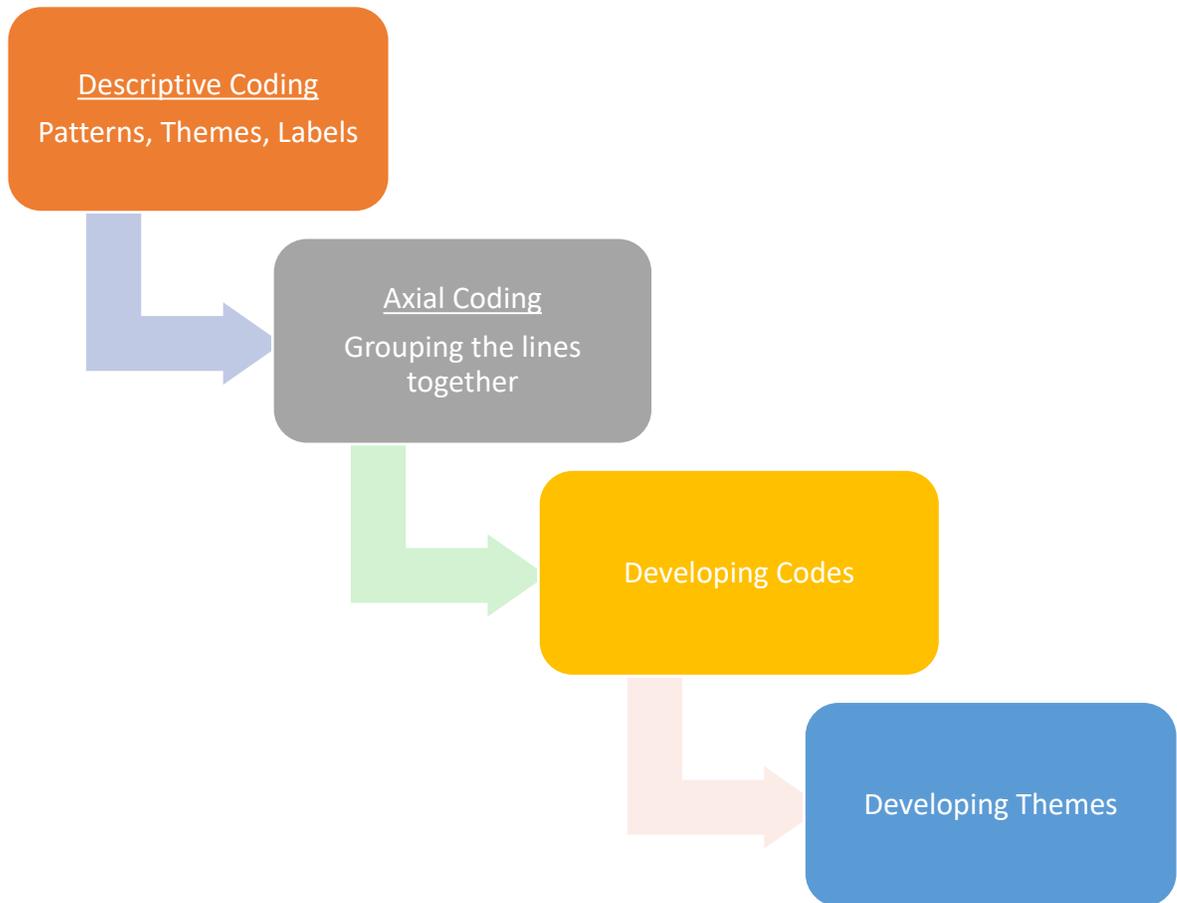
Descriptive analysis (frequency) was used on the survey data. The interviews were analyzed and coded for themes and patterns, after being transcribed from the recording. Each of the transcriptions were member checked for accuracy. Each interview was coded twice for

patterns using the computer program, Delve. As specific phrases and words emerged, they were categorized. Each participant's confidentiality was strictly kept, and pseudonyms were given to each participant. The participants did not collaborate with each other during the study. Since this study was exploratory, I did not use prior instrumentation as a part of the data collection (Miles et al., 2020).

The codes developed from multiple trials of coding, beginning with descriptive coding, and then using axial coding. The descriptive coding process allowed me to look for patterns, and themes in the interview data. During this process, I was able to create labels for the variety of codes to be able to assign them to the data line by line. During axial coding, I was able to start relating codes by groups and analyzing them through the lens of my theoretical and conceptual frameworks as I started to focus on two themes that were reoccurring in the data that will be discussed in chapter four. The majority of the codes fit into multiple categories after these three coding processes and the three major themes that occurred evolved from the codes what teachers want to know, ADHD behaviors, and girls/boys with ADHD. The codes regarding SEL (social/emotional learning), teacher's cultural inquiry, ADHD behaviors, ADHD strategies, and Gender and ADHD informed the two themes that emerged from the study. Considering these codes within the context of DisCrit helped to create the themes to develop in the case study as they emerged from the participant's interviews.

**Figure 1**

**Coding Process**



**Reliability and Validity Concerns or Equivalents**

I focused on ensuring trustworthiness and considered Guba and Lincoln's (1994) dependability, credibility, authenticity, confirmability, and transferability components of a qualitative study as I built integrity in the study's participant purposeful participant selection, demographic surveys, semi-structured interview process. To ensure credibility, I hoped that because I am a teacher in this setting, the teachers felt more willing to be honest and open with me about their experiences with their students with ADHD. I ensured confirmability by

providing a clear picture to the participants of the study's methods and activities before, during, and after the study (Miles et al., 2020). I addressed dependability by ensuring the research question, survey questions, and interview questions are clear to my committee and to my participants (Miles et al., 2020) and answer exactly the information I am trying to gather. Additionally, to show dependability of my study methods, my role as a researcher at the study location will be clearly explained. I informed the participants of my role as a researcher and how my subjectivity influences my position as a social constructivist researcher to construct meaning from the experiences that occur during the study. Throughout the study I was certain to convey my professionalism as to not influence or bias the answers to the questions.

The data in this study is descriptive and accurately describes the participants, interactions, interviews, virtual settings, and any applicable background information. The researcher provided credibility and trustworthiness by using truthful descriptive data to create the setting for which the participants are in as they are conveying their information as practicing educators. To ensure authenticity and credibility, I used member checking, purposeful sampling, triangulation of survey results, interview transcripts, and jottings, (Miles et al., 2020). The participants were invited to check the interview transcripts after interviews were completed as part of an auditing process. They were given access to my jottings to ensure my information was accurate and timely. This action promotes Guba & Lincoln's (1989) ideas of fairness as "the various perspectives of all participants should be given equal consideration" and *empowerment* as "the study promotes the participants' ability to make choices about their professional activity" (Yilmaz, 2013, p. 320).

### **Closing Thoughts on Chapter III**

Through a DisCrit lens, this case study seeks to answer the following question: How does teacher knowledge and perception of ADHD and race influence how they interact with middle school students in the virtual school setting? Results of the proposed study will help middle school educators and their administrators build their knowledge and capacity for working with a diverse population of students with ADHD. The classroom management strategies learned will benefit students with ADHD and the collective classroom population in both virtual and traditional school settings.

CHAPTER IV  
ANALYSIS AND FINDINGS

**Findings**

The case study as a single methodology offers context to the participants' responses which were provided through the interviews. This study sought to answer the research question: How does teacher knowledge and perception of ADHD and race influence how they interact with middle school students in the virtual school setting? What follows is the context surrounding the virtual school, the findings from the survey, and the codes and themes from the interviews.

**Case Study: Site A Virtual School**

Students at this school are participating in a general education curriculum and are eligible for special programming, per their individual learning needs. Students who have Individual Education Plans (IEPs), 504 plans, gifted and talented, or emergent bilingual documentation can receive these services at this virtual school. Students can also be evaluated for any of these special programs for initial placement at the request of a parent/guardian or teacher. Of the 8000 students, almost 10%, or approximately 700 students are in special education with IEPs. Additionally, almost 200 students have 504 plans at this school. Students with 504 plans, IEPs, or are classified as emergent bilingual have assigned case managers who keep their paperwork, data collection, progress monitoring current and compliant. These special populations case managers also serve as their homeroom teacher, in many cases.

According to Kim (2011), this virtual school would be described as an alternative school setting, as it is a non-traditional public school setting. Alternative schools were born out of a movement in the 1970s where stakeholders sought after a different choice for students who were not successful in traditional public school setting. (Barr 1973; Conley 2002; Kim, 2011). The

students that come to this virtual school (Site A) come because they are seeking a haven from bullying, more flexible curriculum due to professional dance, gymnastics, and sports, behavioral and emotional health needs, or a more challenging academic curriculum.

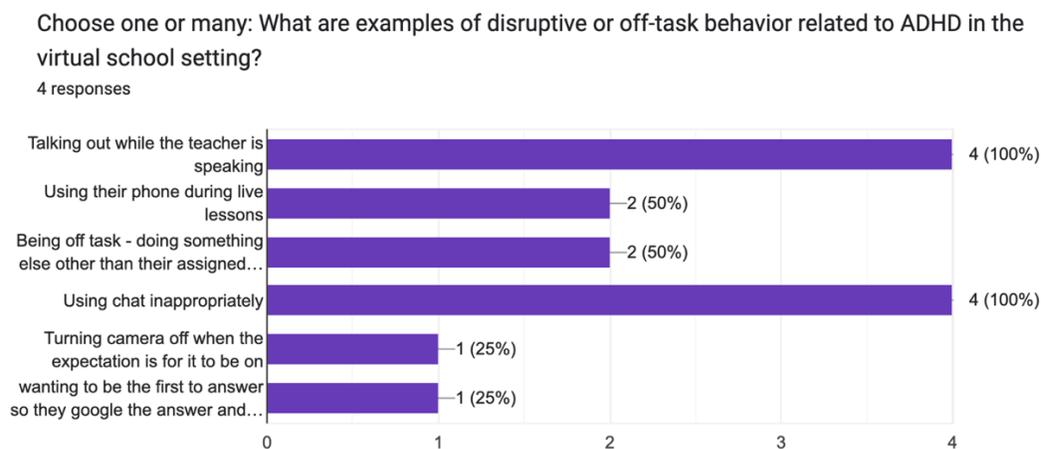
The middle school teachers in this study described similar ideas and perceptions about ADHD as a behavioral dis/ability, though their answers varied across the questions regarding culture and gender and how they saw ADHD symptoms manifest in the virtual school setting. All four of the teachers in this study discussed how they used specific teaching strategies that they had developed in their years at a brick-and-mortar school to work with their students with ADHD in this virtual setting, based on what they knew about the dis/ability.

### Survey Results

Prior to the interviews, the teacher participants had the opportunity to select behaviors that they deemed as disruptive related to ADHD as a part of their demographic survey. They were also asked about ADHD behaviors that they saw in their classroom during the interviews. Figure 2 shows these results.

**Figure 2**

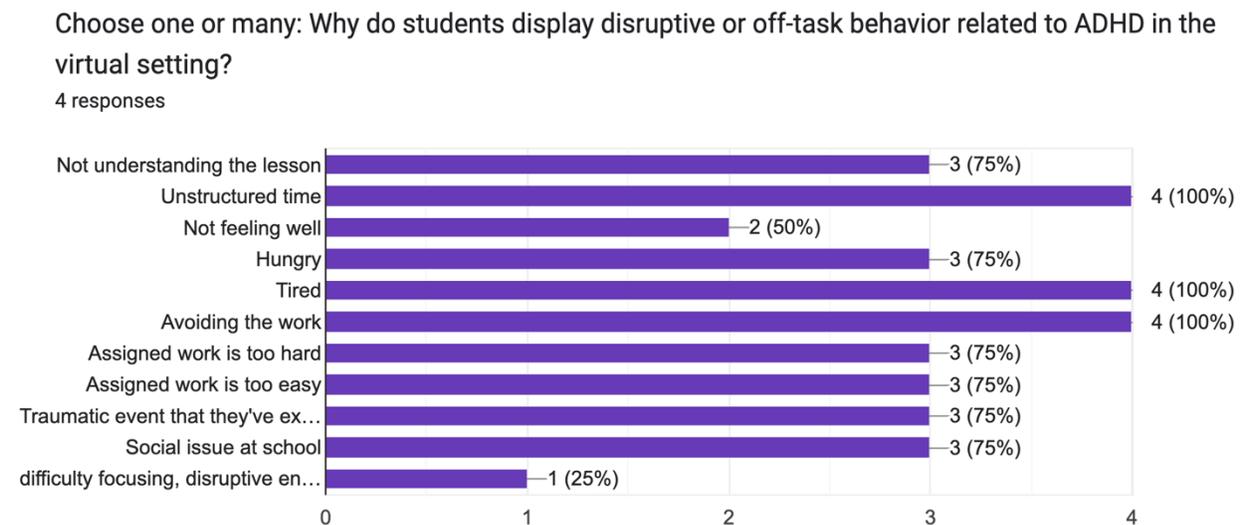
#### Survey Question 1



Of these, teachers chose that the behaviors they see most frequently related to ADHD in their virtual setting are talking out while the teacher is speaking and using the chat inappropriately. Two of the participants chose “using their phone during live lessons” with the camera on and “being off task – doing something else other than their assigned task.” One participant chose “turning camera off when the expectation is for it to be on.” One participant wrote in an answer: “Wanting to be the first to answer, so they google the answer – cheating.” These behaviors were identified again in the analysis of the interviews, Figure 3 highlights responses regarding participants’ perception why students display disruptive behavior.

**Figure 3**

**Survey Question 2**



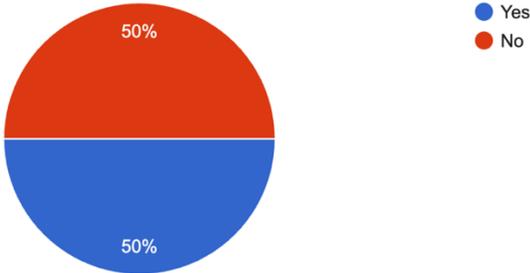
The consideration of what teachers deem as disruptive behavior related to ADHD and WHY students display this behavior gives context to their understanding of the disorder. Two of the survey questions asked whether the teacher had learned strategies in professional

development on how to work with students with ADHD. This data does not aggregate the behavior according to gender or race. See Figure 4.

**Figure 4**

**Survey Question 3**

In your teacher preparation program, do you recall learning about how to work with students with learning differences, such as ADHD?  
4 responses



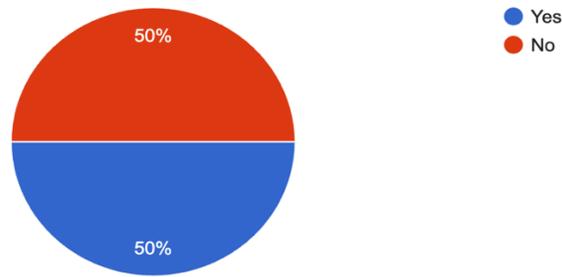
The patterns that emerged out of the finding of the demographic survey showed that only half of the teacher had ever received professional development specifically on how to work with students with ADHD, either in their professional career or in their teacher preparation program.

## Figure 5

### Survey Question 4

In your career as a classroom teacher, have you received professional development specifically on how to work with students who have ADHD and display disruptive behavior?

4 responses



Three of the four teachers reported that they had received their teaching certifications from an alternate certification program after they had obtained their bachelor's degree from a university. The fourth teacher reported that she was initially certified in her teaching area during her first graduate degree. This demographic data is important to consider when laying the foundation for the participant's discussion as part of the interview process.

Jackie and Anna were the two teachers who had reported that they had received professional development on ADHD. They were both alternatively certified and have spent the past two years teaching in this virtual setting. They have 12 and 8 years of teaching overall, respectively. The other two teachers, June and Shania, reported that they had not experienced a professional development on supporting students with ADHD in their career or during their teacher preparation experience. These two teachers have taught the longest of the four participants, with 13 and 21 years overall, respectively.

In the survey, each of the teacher participants described similar behaviors in how ADHD behavior in their students shows up in their virtual classroom. Two teachers, Shania and Jackie, further expounded upon this behavior description in their interviews as they drew upon their experiences with students with ADHD in their previous traditional classroom settings. All four participants described behaviors that were negatively impacting the student’s academic performance in the virtual classroom setting. After describing ADHD behaviors, each teacher followed up that topic of questioning with ADHD strategies and how they tried to support students with ADHD in their classroom. The interview and survey questions did not ask what type of professional development the teachers had received on working with students with ADHD, but only if they had recalled receiving any at all.

**Interview Findings**

The interviews were coded with inductive analysis and are displayed in Figure 6.

**Figure 6**

**Interview Codes**

Code	Definition	Exemplar
SEL/Culture	Quotes regarding social emotional learning and what teachers state as aspects of how culture related to ADHD appears in the teacher practice	What would be stereotypically White if that makes sense, and I don’t mean that ugly in any way, shape, or form.  So, finding the happy medium, not knowing my kids, like not being able to say in the classroom and know what triggers them or know what in their world is deemed okay or not, because I haven’t experienced them, I haven’t experienced their parents and so sometimes it is difficulty in that...
Teacher’s cultural inquiry	Participant describes what they would like to know about	Well, I guess I’d like to know more about your comment on cultural differences. That’s’

	ADHD with regard to cultural differences	<p>what I want to know, is, is there real differences?</p> <p>I feel like I don't have as deep and meaningful of conversations, simply because I don't want to make anybody feel uncomfortable or feel unsafe in my classroom.</p>
ADHD behaviors	Describes what teachers see as ADHD behaviors in their virtual classroom setting	<p>It's not about, the focus is an issue, it's a huge discrepancy, like I mean, I've it was worse with brick-and-mortar kids that were virtual, just submitting stuff.</p> <p>She brought it up, but, submitting blank work, is, it is a huge one.</p> <p>Spinning around in his chair, or pacing back and forth, but I knew he was understanding the lesson, because when I would ask a question, he could answer it.</p>
ADHD strategies	Participant describes strategies that they use for students with ADHD in their classroom	<p>Also, we hear, you know, chunk information. Here's, here's a really good, graphic organizer for taking notes with information text or whatever.</p> <p>I find the block schedule is a complete game changer for our ADHD kids. If they are only focusing on one thing for that day..</p>
Gender and ADHD	Participant describes how they see ADHD behaviors in female or male students in their classroom setting.	<p>I don't know why, but you know I don't know if it's just not acceptable for girls to be labeled with that. I also see that in different cultures, some cultures are not accepting of that.</p> <p>I don't know if differences, I think over the years the boys that I have had that have ADHD, like, it's it's a lot of</p>

		<p>excessive energy like they, you know...</p> <p>But even with boys and girls there's different levels and different needs.</p>
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The codes were derived from the data from each participant's interview and developed during descriptive coding. The code *SEL (social-emotional learning)/culture* developed from the teacher's descriptions of not wanting to "trigger" students or coming across as "stereotypically White" in the way they approached their students' needs related to ADHD. One teacher, Anna, had a perspective that seemed to be informed by her own Whiteness in this interview, as she answered questions about culture and gender related to how she understood ADHD in her students and context. The "*teacher's cultural inquiry*" code was derived using the following exemplar quotes: "Well, I guess I'd like to know more about your comment on cultural differences. That's what I want to know, is, is there real differences?" and "I feel like I don't have as deep and meaningful of conversations, simply because I don't want to make anybody feel uncomfortable or feel unsafe in my classroom" to inform teachers who wanted to learn more how cultural differences may affect how students with ADHD respond to them in their classroom. The code *ADHD behaviors* described what teachers reported as the behaviors they saw in their students in this virtual setting. Teachers described behaviors such as submitting blank work, spinning in their chairs, walking around their room during live lessons. A complimentary code is *ADHD strategies*, and this shows that teachers have some understanding of the disability but are informed with limited knowledge to support their students with strategies such as block scheduling, chunking information, scaffolding learning lessons, and allowing students to move, walk, or spin in their chairs while they are in live lessons or small groups. A

final code that appeared was *Gender and ADHD* where teacher participants described behaviors that they attributed to either male or female students with ADHD. One teacher described that it may not be acceptable for girls to be diagnosed with ADHD in some cultures and that their families may not be accepting of the label of the disability as it relates to their academic success. One teacher stated that even between boys and girls have different needs within ADHD as a disability.

### **Gendered and Cultural Differences**

Gleaning from the survey, an interview question addressed gender differences in how each participant perceived and/ or worked with students with ADHD. While the survey question did ask about ADHD behaviors and strategies, it did not specify which behaviors or strategies were seen most in girls versus boys. Participants were asked the following interview question, *based on your perception or experiences, how does ADHD appear with boys and girls?*

The interview took a natural turn in the participant's consideration of the questions regarding gender and culture and these data findings became the driving concept for the development of the themes. The answers to these questions and the codes derived from data analysis led me to the themes that came from the interviews. The codes that drove the themes arose from the interviews were SEL/culture, teacher cultural inquiry, and gender and ADHD.

Each teacher participant described similar ADHD behaviors that they had seen in their boys with ADHD vs. girls with ADHD. Jackie said, "I don't know why, but you know I don't know if it's just not acceptable for girls to be labeled with that, I also see that in different cultures some cultures are not accepting of that. June said, "I don't know if different differences, I think over the years the boys that I have had that have ADHD like, it's it's a lot of excessive energy like they, you know. When asked about cultural differences, Anna said "So finding the happy

medium, not knowing my kids, like not being able to say things in the classroom, and know what triggers them, or know what in their world is deemed okay or not, because I have an experience that, I haven't experienced their parents and so sometimes it is difficult."

### **Cultural/Racial Differences and ADHD**

With regard to culture/race only two of the four were comfortable enough to talk about the potential differences in how they approached strategy and experience in the context of gender, culture, race, or ethnicity of the students. Participants were asked the following question, how does your understanding of culture and diversity influence how you support students with ADHD? Anna was the most comfortable in answering this question as she freely described how she considered her student's culture, race, and backgrounds in how she taught them history or social studies. She described how she now has a student who is Muslim, and attends a religious school, and that makes connecting with this student difficult because of the hours that they are available. She also described the students who tend to speak up during lessons in her small group or live classroom time versus those who do not,

I will say very few African American students speak up in my class. I do have a handful, but, and I hope this does not sound inappropriate. They are more like what, they are more what would be stereotypically White if that makes sense, and I don't mean that ugly in any way, shape, or form.

One of the participants, Shania, did not directly answer the question "How does your understanding of culture and diversity influence how you support students with ADHD," but stated that she believed socio-economic status had more to do with how ADHD affected each student rather than race or culture. June was reticent to answer this question and rather stating that she would like to know more about how culture or race influenced what we should know

about ADHD. This question was seemingly an uncomfortable question in that the teachers were not forthcoming with their answers as they were with the other questions/answers. This development during the interviews struck me as critically important because historically, we have not used culturally responsive thinking in how we respond as teachers to students with disabilities.

From the findings, two overarching themes emerged: intersecting identities with regard to race, dis/ability, and gender, and professional development framing what teachers wanted to know about working with culturally and linguistically diverse students with ADHD. The themes are discussed through the lens of DisCrit and culturally responsive teaching and how they can be applicable to the experiences of the teacher participants.

### **Intersecting Identities: Race, Dis/ability, and Gender**

Disability critical race theory (DisCrit) has seven tenets that can be used in disability studies and special education research. For the analysis of this study, I am focusing on the first four tenets to help draw themes from the findings. The first tenet focuses in on how the dual forces of racism and ableism circulate interdependently and can do so often in invisible ways, as they uphold notions of normality. The second tenet of DisCrit values multidimensional identities as it challenges individual notions of identity such as race, dis/ability, gender, or sexuality. (Connor et al., 2015). DisCrit's third tenet places emphasis on the social construct of race and ability while it recognizes physical and psychological impacts of imposing labels such as race or dis/ability which occurs outside of western cultural norms (Connor et al., 2015). The fourth tenet of DisCrit emphasizes and privileges voices of marginalized populations, that are not traditionally acknowledged in educational or social science research (Connor et al., 2015).

DisCrit tenet number two acknowledges that it is impossible to separate a person into their race, dis/ability, class, gender, sexuality, etc.—all of these identities interact to shape an individual’s experience of the world and must be considered together (Annamma et al., 2015). This theme in the findings situates questions about how a teacher’s understanding of culture, gender, and ADHD symptoms interact with each other within the context of this tenet. None of the teachers were comfortable describing in particular how they experienced a student with ADHD of a particular race and/or gender together but were more willing to discuss how they perceived gender differences in how they understood ADHD symptoms in their classroom setting. Three of the participants seemed to avoid talking about culture or race with regard to how they understood how ADHD may manifest different in students of color in their classroom. I noticed during the questioning that each participant’s definition and understanding of culture was different from the others. One participant viewed culture as including gender and one participant viewed culture as referring to socio-economic status.

When I asked Jackie if she saw differences in ADHD symptoms between boys and girls, she stated that the ADHD symptoms seem to have a “psychological component” in girls versus boys. She also noted that in different cultures, it might have to do with ADHD not being “acceptable for girls to be labeled with that” because some families might say “ADHD is not an excuse for my child to not do well.” She described this as a “cultural bias.” Jackie continued with “For whatever reason, girl, girl, parents don't, don't seem to understand as much as boy parents.”

June shared about her experiences in how ADHD may look differently between boys and girls in the school setting. She said that she has seen similar symptoms in the virtual setting than she did in the brick-and-mortar setting, according to gender.

When it came to ADHD boy versus girl, I saw more hyperactivity out of boys like out of their seats, fidgeting with toys, playing a lot more than I did with girls, and then, if we fast forward to eighth grade still kind of see similar behaviors out of boys and might look more of like just horse play. But for my girls, sometimes it manifested more in like attitude I don't know if that's accurate to say or not, but I would see it. Maybe they felt like overwhelmed by everything that was going on.

She continued to describe that girls with ADHD had a sense of being overwhelmed by different situations and they couldn't focus on just one thing: "they're feeling lost, and it comes out as like, just non-compliance."

June described that some of her male students with ADHD were "like the opposite of hyperactive" and stated that those cases were harder for her manage, because she wasn't sure what to do. She stated that she would encourage them to take a 5-minute walk break in the back of the room while she was teaching. She described one case where a student would spin in his chair during the virtual live lessons "and you would think he's not listening, but I would ask him aa in a similar fashion as June when she said, I think over the years the boys that I have had that have had ADHD like, "It's, it's a lot of excessive energy like they, you know. It's more of the fidgeting and needing to get up, and whatever I've had, some girls like that is well, but it does tend to seem like more of the boys have some of that." When asked about a gender difference in how ADHD manifests in the school setting, she said of girls, "I think a confidence issue, or, you know, just I feel like a lot of the girls don't they just don't feel like they can do it."

Anna's answer to the question about gender differences and ADHD symptoms is somewhat different than the other participants. She said, "I definitely see a difference in boys

and girls and what they struggle with the boys tend to struggle like when I talk to them. It's like, well, I struggle with everything like getting them to narrow down and get them to see specifically what they're struggling with." She continued to talk about how boys with ADHD seem to have difficulty with understanding what they are needing to focus on when she is having phone or Zoom video conversations. She said that girls seem to struggle most with notetaking, because "they want to write everything down. Boys, they don't want to write half the time." This comment refers to the setting of the students taking notes during a live lesson when she is asking the students to fill out a set of notes that is based on her lecture or activity.

The observation that the teachers did not describe a particular gender when I asked the question "how does your understanding of cultural and diversity influence how you support students with ADHD?" also aligns with DisCrit tenet number two which states that it is impossible to separate race, dis/ability, gender, class, or sexuality when describing a person. I received four different answers to this question. June stated that she had not had any training on how cultural differences may have an effect on the way she worked with students with ADHD. June did say that she had trauma-informed training in her previous district, so she uses more of that lens when working with students with ADHD.

I guess you know I, I mean I understand that culture and cultural differences impact how we act in the classroom, how we act in society, etc. But I, I looked at I try to like, look at the whole child, and I look at I, I think about that piece, and then I think about what type of trauma are they coming into? And then I just honestly, a lot of times. I just talk to the kids, I'm just like, okay. But this is what's happening in class. This is what I'm seeing. This is how it affects you and others. What works for you what's worked for you in the past? What do you want to try? What can we do? It works for some, and it works for

most, some still, some kiddos, and that would be that we're crossing out of the ADHD and more into like the oppositional defiance phase where it maybe starts out feeling like it's not like, oh, no, there's some other things going on here. But I honestly, I feel like when you when you ask the kid, and you plan. And being consistent with it, is huge. Having, making sure that whatever you guys come up with, both people are on board with, it seems to help.

This question was answered differently by Anna, who stated,

I was used to my little corner of the world, and I learned a lot about like my students and their backgrounds and their needs, and how to handle, not to handle probably as the best way how to let go of some of my preconceived notions and be a lot more open minded especially to different cultures and I hope that doesn't sound bad, because, like in my mind, I thought I was very open minded. And I thought, you know, like nothing like I'm very accepting of things that I realized very quickly. I was like, oh, I had a lot of subconscious stuff that I had to let go, but I felt like my kids taught me a lot more than I was teaching them, and I felt like in teaching my students from all these different backgrounds that I almost got immersed into their world.

Anna's quote here answers this question uniquely, as it came before the question was actually asked and as the narrative evolved. Anna sought out the understanding of cultural diversity in her students as she taught, especially with regard to their dis/ability of ADHD.

As Shania answered this question, she stated, "I don't know if I would attribute, like cultural, but definitely on the economic, economic class issues definitely because I feel like on a whole, or as a whole, students that have any dis/ability or any struggle upper class families touch to have more education and more structure in their home or ability." Shania's perception of this

question allowed her to reach more into the topic of economic diversity that many of the students at this school experience and hinted at how that can attribute to the experience of a student with ADHD at this school. Shania's perception of this question lends itself to question as a researcher whether the definition of "cultural diversity" includes socio-economic status, or if it is inappropriately defined and combined in current K-12 professional development understanding.

Jackie's answer to this question was reflected also in how she perceived culture and gender to be equal considerations for working with students with ADHD.

I don't know why, but you know I don't know if it's just not acceptable for girls to be labeled with that I also see that in different cultures some cultures are not accepting of that. And ADHD is not an excuse for my child not to do well, so I do see that I see a cultural bias for sure, and also, like I said, girls definitely seem to. For whatever reason, girl, parents don't seem to understand as much as boy parents.

Jackie described the idea that possibly different cultures are not accepting of ADHD, because it's not an excuse for them to have academic difficulties.

### **Culturally Responsive Professional Development Opportunities**

Before ending the interviews, I asked each participant if there were any professional development needs around working with students with ADHD that she felt would be helpful for teachers in the virtual setting. Another theme that emerged was that these teachers felt that there was a lack of professional development to learn how a student's cultural, ethnic, racial, religion, or gender difference could be inform how they effectively support students with ADHD. Two of the participants, Shania and Jackie, stated that they did not have any experience around how race or culture might affect students with ADHD in different ways from White students with ADHD.

June and Anna wanted to receive more training about how cultural diversity could affect how ADHD affected students and families differently. As I coded the data, this theme emerged in the interviews as the participants answered the final few interview questions. Jackie stated that she would like to know more about being culturally responsive with students with ADHD by having a professional development for teachers to learn about culturally responsive teaching strategies on how to support their students.

Anna suggested that having a more interactive learning management system for online course work to make the experience more personalized for student. This could help keep students with ADHD more engaged in the work and could prevent them from submitting blank work, skipping lessons, turning in poor quality work, and having disruptive behavior during live lesson time. She also requested opportunities to learn more about her students' cultural diversity and how it might relate to their dis/ability.

I was used to my little corner of the world, and I learned a lot about like my students and their backgrounds and their needs, and how to handle, not to handle probably as the best way how to let go of some of my preconceived notions and be a lot more open minded especially to different cultures and I hope that doesn't sound bad, because, like in my mind, I thought I was very open minded. And I thought, you know, like nothing like I'm very accepting of things that I realized very quickly.

June answered this question similarly to Anna when June said she wanted to know more about cultural differences in students with ADHD. She stated, "are their different things to look for, or maybe is it a reaction to how you address things? Or is it a difference in how its handled at home?" June continued to describe idea on how to understand more about a student's cultural difference in how to support them academically.

I think makes a huge difference in how you can work together as partners on creating the behavior that helps them be successful. Always try to make my kids know that I'm not going to change your behavior, to change you. We're trying to help the behavior. So where you're able to learn like, I mean, who am I to tell you to stop bouncing around like that's the way your brain works? Let's do that. But we can't do it in a way that you're not learning, or it's for others aren't learning as well.

June would also like to know more “virtual tips and tricks” in how to keep lessons engaging and motivating for her students with ADHD and other disabilities.

As Shania answered this question, she stated that she did not receive any professional development in her graduate teacher certification process on how to work with kids in special education, specifically in the area of supporting literacy and phonemic awareness. Shania continued to answer this question, “I don't know that a lot of teachers have received training at all on, you know, special education students on how to work with kids with ADHD.”

We're all like the hodgepodge of information that we've learned. So, I feel like, honestly, just a general overview of these are the things that you might see. These are, you know what a student with, with ADHD. These are the things you might see. These are the things they struggle with, and then, you know. So, these are the struggles. These are some strategies to help combat these struggles, that's what I think.

Shania's narrative about teachers needing more support and professional development to support students with ADHD clearly aligns with this study's question about understanding what teachers know about working with students with ADHD. Shania describes her knowledge as a “hodgepodge.” She would like to receive targeted training on how to support students with

ADHD with specific strategies on making their learning culturally relevant and engaging for them.

At the end of the interviews, I asked each participant if there was anything else they'd like to share with me today that I had not asked about. Jackie had several suggestions on how to support students with ADHD instructionally through the virtual format in the virtual setting that would require adjustment to the flipped model of asynchronous learning and then meeting with their single core content a few times per week. The suggestions included opening up flexibility for the times and opportunities that students had to meet with content teachers that may not be their assigned teacher, but that teach the same grade and content. She described the PLC (professional learning community) training that she had been a part of, where students have access to multiple teachers that teach a particular content area each week in case their assigned teacher's live lesson time does not work for their schedule.

Shania shared that she learned in the coursework for her second master's degree that students with ADHD have a higher chance of having dyslexia. This suggestion for professional development for teachers could greatly improve a teacher's knowledge for supporting students with ADHD and other co-morbid disabilities. Several participants in this study stated that they feel that a block schedule for students with ADHD or other similar learning and behavioral needs could support a student's focus, regardless of their gender or cultural background. This type of schedule has to be carefully curated by the learning coach or supporting teacher in this virtual setting to help guide the student to learning activities in their online planner in the learning management system. While the conversational tone of the interview narratives were very helpful in understanding the participant's experience as a teacher and understanding of ADHD as a disorder that they have experience with in her classroom, the answers to their survey questions

about examples of disruptive or off-task behavior and why students display that behavior in the virtual setting were exceptionally helpful with the creation of the culturally responsive professional development one-pager to help teachers develop a tool kit as they work with students with ADHD in their virtual setting.

## **Results of Research**

I believe the context of this study influenced the results of this study as the participants volunteered because of their experience in working with students in both the brick-and-mortar school setting and now in the virtual/online school setting. This context/location of the study is an online and virtual public school in the Southeastern United States and the students are free to attend this school for no cost as an out of district transfer. Considering that, the students bring their IEPs or 504 plans to this setting and teachers implement any accommodations necessary for students with those documented needs. Students with ADHD can thrive and do very well in this virtual school setting. They can also do very poorly in this unique virtual setting, largely because they either have too much flexibility without the support of the at home learning coach, or they cannot set up and stick to a schedule that allows them to work around their own needs with the ADHD dis/ability. At the time of this study, I could not find any research in or around what teachers knew about ADHD and supporting students with ADHD in the online/virtual school setting. This study, to my knowledge, is the first of its kind.

There were no operational errors or issues that arose during the course of the study. The stakeholders (participants) were encouraged by the study's purpose and potential to help them support students with ADHD with more culturally responsive strategies in their setting. The participants were not reluctant to participate. The stakeholders in leadership are looking forward to using the data in their continuous improvement cycle to help bridge the gap in professional

development for working with the diverse population of students with ADHD in the general education setting. With the proliferation of virtual and online schooling options for K-12 students across the nation since COVID-19 pandemic, one can be certain that it may become necessary for students and teachers to quickly pivot to an online/virtual learning style due to weather or other related school closure. The artifact that has been developed from this research can effectively support students with ADHD and other academic or behavioral disabilities either in the virtual/online setting and in the traditional face to face school setting with culturally responsive techniques that honor the student's cultural diversity. The artifact can also effectively be used to support students with ADHD in the traditional school setting.

The results of the research have been shared with the stakeholders, including teachers and administration in an effort to shine a light on the area of supporting students with ADHD and other disabilities in the online/virtual setting more effectively. While each qualifying student has an IEP or 504 plan with accommodations, becoming more culturally responsive in how teachers work with students with ADHD can greatly benefit their academic and behavioral outcomes as well as their student agency in feeling confident and curious. When teachers become more culturally responsive as it comes to all of their students' needs, including their dis/ability, students can thrive in their educational setting. Teachers who use their tool kit to bring culturally responsive teaching techniques into their classroom setting can have a more positive and safe learning environment. The stakeholders and participants were grateful for this research, and it spurred many reflective questions as the faculty strive to support our diverse student population more effectively. The results will continue to inform changes that can be made within the learning management system and operations on how to support students with ADHD and other disabilities.

## CHAPTER V

### DISCUSSION

#### **Summary of findings from Chapter IV**

This qualitative case study was informed by the research question, how does teacher knowledge and perception of ADHD and race influence how they interact with middle school students in the virtual school setting? The study had four participants, within the context of the virtual school and each participant completed a demographic survey. After the demographic survey, each participant was interviewed with semi-structured interview questions. The data was analyzed through inductive reasoning and the themes were developed from codes from the descriptive and axial coding processes.

The demographic survey data showed that 50% of the teacher participants had not received training on ADHD as a disability in either their pre-service teacher training or during their career life cycle. This finding correlates well with the research that discusses that university and alternative teacher preparation programs may not adequately prepare educators for working with the growing number of students with ADHD (Loreman, 2007; Westling, 2010; Yellin, 2013). This could play into a deficit mindset that influences a teacher's potential negative perception of ADHD in students with the disorder (Bekel, 2004; Ewe, 2019; Gwernan-Jones et al., 2016; Strelow et al., 2020). As I discussed above in chapter one, previous research has shown that a teacher's perception and understanding of ADHD as a behavior disorder can be influenced by a student's race, ethnic group, or gender (Jackson & King, 2004; Wexler et al., 2021). A lack of opportunity for culturally responsive professional development can promote bias around culture race, ethnicity, and gender and can potentially increase discriminatory behaviors for teachers. The absence of training that is both accurate about the disorder and

culturally responsive as it considers cultural, ethnic, racial, and gender differences has the potential to create a significantly negative perception and deficit mindset for teachers working with a diverse population of students with ADHD. The interview data aligns with the literature in that boys have more externalizing behaviors related to their ADHD, such as the teacher's description of hyperactivity, spinning in chairs, or pacing in the virtual classroom (Mayes et al., 2020) (Abikoff et al., 2002). The literature also notes that girls may not have as many externalizing behaviors but may be misunderstood as dealing with less obvious behavioral issues when they are actually ADHD symptoms, such as submitting blank work, or withdrawing from the lesson discussion because they are not focused because of their ADHD.

As I analyzed the case study data, the first theme that emerged from the coding and interviews identified racism and ableism as an underlying structurally invisible theme aligned with DisCrit's first tenet of how racism and ableism can work interdependently in harmful, but often unseen ways in society with the idea that talking about culture and race in this context disrupts these notions (Annamma et al., 2022). I suggest that this first tenet and theme align with how the several of the participants answered the question indirectly because they may know or understand that ableism and racism is at work in this educational system. Teachers may not be able to confront it in real time for a myriad of reasons which upholds the normative roots of White privilege as a powerful systemic structure in education. Similarly, the reasons for not confronting this question could include a fear of retribution for discussing it in the school setting.

The second theme that emerged was the request for culturally responsive professional development to help teachers know more about how cultural differences could affect their perception or understanding of a student with ADHD. A part of this theme that emerged was that these teacher participants felt that there was a lack of professional development to know how

a student's cultural, ethnic, racial, religion, or gender difference could be inform how they effectively support students with ADHD. This aligns with the fourth tenet of DisCrit that discusses how these teachers could highlight the voices of those who are historically marginalized and not typically voiced within academic research (Annamma et al., 2022). Using information from this study, educational practitioners can continue to discover ways to provide action research opportunities to serve the students in the communities where they are.

The idea that these participants have been teaching for anywhere from 8 to 21 years with only two of them having specific knowledge or training about how to work with culturally and linguistically diverse students with ADHD is a symptom of programmatic issues that must be addressed in both teacher preparation programs and professional development programs available to teachers. The strategies and behaviors that the participants described in their interview of their students with ADHD relate to how current research states, "boys diagnosed with ADHD may exhibit up to triple the rate of disruptive externalizing behavior to that of girls with the same condition" (Abikoff et al., 2002, p. 222). Going forward, it will be important to help these teachers develop their capacity for working with students with ADHD by providing accurate and timely research from mental health professionals on ADHD as a disorder and how it can affect males and females differently in middle school and also how it is important to understand how cultural differences along with gender could affect how a student with ADHD is perceived in the classroom setting and how their family perceives it as an issue for their academic success. Using culturally responsive teaching includes learning about student and family multicultural competencies to increase teacher's knowledge of not only a student's cultural difference but how this difference informs how ADHD may influence how they perform in the classroom setting (Gay, 2015).

The artifact developed for this study responds to the call for culturally responsive professional development for teachers as they serve students with ADHD. Gay's work for culturally responsive teaching (CRT) extends Ladson-Billing's CRP framework as "using the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant and effective for them" (Gay, 2010, p. 31). Gay's CRT frameworks can be applied here to promote professional development opportunities for neurodiverse students, such as students with ADHD, because CRT work cannot be applied with significant success without targeted professional development opportunities for teachers. Culturally responsive teaching practices that are implemented in a virtual and/or traditional classroom can have a positive impact on the student population (Gay, 2000; Milner, 2010).

From the findings, two of the participants indicated they have no prior working knowledge or professional training on ADHD. Extant literature has shown that a teacher's perception of ADHD could be influenced by a student's cultural difference, including race, ethnic group, or gender (Jackson & King, 2004; Wexler et al., 2021). It is important for these teacher participants to consider a student's cultural and familial backgrounds and experience when developing the teacher student relationships as they work with students with the disorder (Alvarado et al., 2017, Dong et al., 2020). The teachers and student stakeholders in this study will benefit when they have on-going access to a toolkit of culturally responsive and evidence-based instructional strategies that support students with ADHD and their constantly changing needs (Abramowitz & O'Leary, 1991; Ladson-Billings, 2006; Stahr et al., 2006).

Notably, each of the teachers in this study identified as White. Research from Gay (2015) states that a predominately White teacher population in the United States has negative

perceptions resulting in poor relationship with students from underserved and historically underrepresented ethnic groups, including people of color who are immigrants and children in poverty. Building anti-racist, anti-ableist, and equitable classroom practices can occur when teachers explore the pedagogical and theoretical frameworks of Ladson-Billings (1995) and Gay (2000) within the context of their own personal learning journey. This work cannot be done effectively in a group initially but must be introduced as a conceptual framework for creating equitable classroom spaces. This work must start within the teacher's own cognitions and desire to create equitable learning spaces as they examine their own biases. Knowles' (1968) adult learning theory aligns well with CRT as it promotes why adults need to know why culturally responsive teaching practices are valuable for use in their classroom (Lakhwani, 2021).

Knowles' (1968, 2005) adult learning theory outlines five ways that adults prefer how to learn: self-concept, adult learner experience, readiness to learn, orientation of learning, and motivation to learn. These five concepts will be critical for the adult learner that is learning to overcome their own biases with relation to race and ability in how they work with students with ADHD. This work for the teachers at this site must begin with self-reflection in their understanding of biases that they hold around working with White and culturally diverse students with ADHD as it relates to anti-racist and anti-ableist work.

In considering the development of a culturally responsive professional development for teachers as they support racially and culturally diverse learners with ADHD, I relied on the tenet of DisCrit that states "DisCrit emphasizes the social constructions of race and ability and yet recognizes the material and psychological impacts of being labeled as raced or dis/abled, which sets one outside of the western cultural norms" (Connor, et al., 2015). ADHD is a disorder that affects over 9.1 million students across the country (NSCH, 2016). The National Survey for

Children's Health (2020) reports that Black children ages 3-17 are diagnosed with ADHD or a specific learning dis/ability at a significantly higher rate (16.9%) than White or Latinx children, who are diagnosed at 14.7% and 11.9%, respectively (Zablotsky et al., 2020). Additionally, boys are diagnosed with ADHD at a higher rate than girls (Coles et al., 2012). Ladson-Billings (2006) states, "culture is regularly used as a code word for difference and perhaps deviance in the world of teacher education" (p. 107). Providers of teacher education and professional development should work to define culture in a responsive sense to support the professional understanding and nuances of a student's cultural differences. Cultural responsiveness can include a student's dis/ability as well their race, ethnicity, gender, and/or linguistic difference. The combination of Gay's (2000) culturally responsive teaching and the Dis/Crit framework (Connor et al., 2015) when developing pre-service and current teacher training opportunities could significantly improve academic outcomes for diverse students with ADHD.

### **Discussion of Personal Lessons Learned**

There are many personal lessons that have come out of conducting this study. The first lesson that I affirmed is that teachers in this context are life-long learners and want to know more about how to support their students who are differently abled diverse learners. The second lesson learned is that reflection is a critical and often uncomfortable practice as it results to teaching and learning. I think of the saying "we don't know what we don't know." This study showed me that teachers are cautious when talking about dis/ability, race, ethnicity, and gender differences. I hypothesize that this comes from teaching in a politically conservative state, where teachers may feel uncomfortable with addressing these differences with their peers because of the political climate. The vulnerability of these teacher participants and their willingness to be open and honest with me as I asked potentially uncomfortable questions regarding their

understanding of ADHD as it relates to gender and/or cultural diversity was exceptionally valuable. Lastly, I have confirmed that there is so much more to uncover in this area of research, because a label such as ADHD could persuade the teacher to see the student from a deficit perspective rather than consider strengths outside the label of the dis/ability.

### **Implications for Practice**

In a quantitative study by Alsherhri et al. (2021), the authors found that teacher participants had a working knowledge of ADHD, “the teachers’ main sources of information about ADHD were the internet (67%), their friends (47%) and the television (34%). Books were the sources of information for only 23%” (p.7). Teachers should not rely on internet or T.V. sources, or friends when acquiring knowledge about a medical diagnosis such as ADHD that affects their students (Alsherhri et al., 2021). The research supports the idea that teacher knowledge of ADHD needs to come from evidence-based literature instead of perception from non-scientific places (Alsherhri et al., 2021). Professional development for teachers to support all students with ADHD should come from evidence-based studies that will help them understand the nuances of the disorder, externalizing symptoms, and how the symptoms could differ across gender, race, ethnicity, and culture, based on the family’s understanding and perception of the mental health issue that becomes an academic and behavioral issue in the classroom. The attitudes and perceptions that teachers have toward the diagnosis and treatment of ADHD could potentially create misconceptions around etiology and treatment, which could affect the teacher’s willingness to seek out behavior and academic supports for children with ADHD (Moldavsky & Sayal, 2013).

To create a culturally responsive framework for professional development, it will be important to present Geneva Gay’s (2000) research on culturally responsive teaching as a

foundation in teacher education. In middle school, where students are particularly concerned about how they look and are perceived by others in a social structure, it will be important to build a conscientious school culture of responsiveness to knowing students and their families. A benefit of this virtual alternative school context is that one requirement of sustained enrollment is student and family contact with the teachers. As teachers at this virtual alternative school, we are required to contact families on a regular basis by phone or email. These consistent communication lines help build a responsive learning environment where students feel safe and connected. Their learning and curiosity for knowing will improve as a result. Adding Gay's (2000) foundation of culturally responsive teaching by seeking to know and understand a student's personal cultural, racial, religious, and ethnic background can give families confidence that their student will be heard, understood, and potentially thrive in this virtual school environment.

The findings from this study will be applied to help school administrators and teacher-leaders in this context create culturally responsive targeted professional development that will give teachers the opportunity to build their tool kit. One strategy that was suggested by participants included the idea of block scheduling for students with ADHD to give them a focused plan to work on one subject at a time or day. This type of strategy could help them improve their executive function as it relates to planning out their tasks for the day. Another strategy included allowing students to move during their live lesson rather than sit still during the lesson. I would also like to continue the work of improving the practice of creating a positive relationship with a diverse student population, including those with ADHD and other disabilities to help build capacity using individual tools that might work specifically for that student. This strategy is culturally responsive as it places importance on the individual student in considering

what works to help the student stay engaged and focused. Shomlusky et al. (2021) reviews research from Waitoller and Thorius (2016) suggesting that CRT and CRP can be interwoven with universal design for learning (UDL) to promote inclusivity in the classroom for culturally and linguistically diverse students who have ADHD. Universal Design for Learning (UDL) can be applied to both the virtual and traditional classroom setting. UDL could be applied to the strategies suggested here: block scheduling, movement during a lesson, building relationships, and creating learning plans. UDL guides learning by planning with the end goal in mind. For students in either the virtual or traditional setting, the overall goal is learning and mastery of the state standards. The smaller goals include completing their daily or weekly work tasks without getting overwhelmed, advocating for any re-learning opportunities they might need, and using strategies that work for the student based on the relationship the teacher and student have development to personalize the student's learning plan. UDL can be applied to culturally responsive teaching within the DisCrit framework because the end goal would always to be more culturally responsive as we work with students with ADHD.

### **Recommendations**

Cultural responsiveness strategies that the teacher can control include learning about their students and their unique differences while also focusing on their personal biases and how those play into day-to-day instruction. One of the stories I carry with me as a teacher is when I worked with a student who lived in the southern United States and had never lived anywhere else. The targeted lesson for reading intervention included a story about the character in the snow. This lesson quickly became irrelevant to this student because he had no interest and couldn't see himself as a character in the story. As a child with ADHD and a reading disability, it was boring to him. He was not engaged and refused to work. This was my first experience with learning to

be culturally responsive. I reworked the lesson to be applicable to something the student was interested in as I examined my own biases as to why this lesson was problematic for the student. I chose cultural responsiveness over labeling the student as a behavioral problem. Instead of using the lessons, I adapted it to include a location with sand and a beach, with an iguana, which was much more relevant to the student. The student was much more willing to work with me on a subject that was difficult for him because I made the lesson more appealing to him, based on his background and cultural experiences. I was willing to build a positive rapport, ask questions about the student's interests and cultural background, and apply those to the lesson material.

Findings from this study show that while some of the participants were reticent to talk about what they knew about cultural and ADHD, they were more willing to talk about gender differences and ADHD. Using DisCrit's framework while talking about these intersecting identities of have a disability with a specific culture and gender identity can inform how teachers reframe how they work with students with ADHD in their classroom. Teachers in this setting and other traditional and/or virtual settings would benefit from access to professional developments with experts in the field of culturally responsive special education who can help them build and adapt their tool-kit for working with diverse student populations with ADHD. One strategy is not enough because all students will need a positive relationship-based experience to understand how their learning is relevant to them. Students with ADHD can lose interest in learning because of how the disability affects their executive functioning. "Executive functioning deficits impact students' ability to stay on-task, retain instruction, organize materials, regulate classroom behavior, and accurately remember information on tests" (Gerst et al., 2017, p. 49). If they are bored or disinterested, or having trouble focusing in the virtual setting, students will not engage with the learning process. When teachers are able to make the learning

relevant and responsive to the student's cultural background and experiences, the student will be more engaged with the learning process. The professional development opportunities need to be on-going and on-demand for teachers to reference when needed. This tool-kit should become a working practice that could not only benefit students with ADHD but can benefit all students in the virtual setting and in the traditional school setting. There are other strategies in cultural responsiveness that the teacher cannot control, such as organizational change and cultural responsiveness within an organization. This type of change must come through the multi-disciplinary team of administrators and school leaders at this campus as they work alongside the teachers to continue to create a school culture that thrives on culturally responsive teaching strategies for all students.

Going forward for future research, DisCrit as a theoretical framework for use in special education research will provide understanding and a foundation to dismantle the role of racism and/or ableism in how teachers serve their students with ADHD and other disabilities that manifest behaviors in the virtual classroom setting. This is important because there are an increasing number of virtual schools in the U.S. that serve students with behavior disorders. For teachers and researcher-practitioners who choose to seek equity and inclusion as they consider the first four tenets of DisCrit in their research and practice with students, they must start with their own introspection of potential biases toward students with ADHD based on the student's cultural, racial, ethnic, or linguistic difference.

This study provided the experiences of middle school educators in the context of an alternative virtual school. The teachers were asked questions to consider their own understanding of how culture, race, and gender influenced their understanding and perception of how they worked with students with ADHD in their virtual setting. In this regard, these teachers

will have to choose to be consistently reflective as they improve their practice for teaching students who are different from them and from other students. There is no one size fits all form to professional development. Consequently, the work of considering how to work with students with ADHD with cultural responsiveness must start with a self-reflection tool of the practices in a teacher's own classroom. This self-reflection aligns with Knowles' (2005) framework of adult learning theory's first idea: self-concept. Once that is achieved at a significant pace in a school or district, the culture of learning and professional development will allow teachers will benefit from collective targeted professional development opportunities that will give them real-life, tangible examples to put in their toolkit to use right away.

Strategies for working with students with ADHD can be developed through professional development opportunities that teachers can access easily and on an on-going basis. Harrison et al., (2022) writes "students with ADHD are challenged to initiate and maintain attention to task, wait for their turn to respond without interrupting, and avoid distracting self and others, all areas of impairment known to interfere with academic functioning" (p. 1507). These complicates the already difficult social and academic tasks that middle school students are trying to navigate. Strategies for working with students with ADHD are not one-size fits all, which is why having a toolkit of culturally responsive strategies alongside effective strategies for ADHD will benefit students and teachers. Harrison et al.'s, (2022) study suggested four strategies for improving outcomes for students with ADHD: sensory, breaks, self-management, and prompting. Interestingly, giving them fidget spinners or suggesting some type of sensory break increased distractibility for students in this study. It is worth noting that replicating Harrison's et al. (2022) randomized pilot trial may show different results in a different setting, so it is important to consider student needs when trying strategies to help improve outcomes.

Cultural responsiveness is important to consider when developing a tool-kit for teachers in this setting as they work with students with ADHD. Ginsberg et al., (2021) writes “many university-based courses are developed with the assumption that candidates will be teaching in classrooms that are primarily composed of White, middle-class, and English-language-dominant students” (p. 8). As a result, they may feel unprepared in working with students, especially students with disabilities that manifest in the classroom like ADHD. Ginsberg et al. (2021) suggests that student teachers and practicing teachers should use different pedagogical methods with students to learn what works for them and build that into a culturally responsive toolkit.

In a 2020 study, research from Harrison et al. suggested that that typical accommodations or strategies for a student with ADHD such as extended time or a copy of teacher notes resulted in an increase of disruptive behavior in the classroom setting. General education and special education teachers should work collaboratively with families as they are developing IEP or 504 accommodations and plans to use teaching strategies for their students. Strategies for working with students with ADHD could include some that the participants described in the study: giving them a copy of class notes, talking with them one on one to understand how they learn best, allowing them to move or walk during live lesson, and giving them extra time and specific feedback to submit lessons. I would also suggest that allowing students with ADHD to break up large assignments and projects with either digital or physical means (paper clips or post-its) can help build executive functioning and planning skills. Students with ADHD should also be allowed to redo and resubmit their work until mastery is achieved. Developing lessons and interventions with diverse student cultures in mind is critical, not only for students with ADHD,

but for all students. Create lessons that incorporate their interests, with people who look like them, so that the lessons become relevant and high interest to them.

Culturally responsive teaching (CRT) should be an integral part of training teachers throughout their career life cycle to work with students with ADHD and all other specific learning and behavioral needs. Analyzing the study findings through a DisCrit lens and CRT conceptual framework allowed me to create an artifact that will position culturally responsive teaching as the primary tool to use when working with students with ADHD and any other disability. In this setting, it may include a discussion of defining culture before we implement culturally responsive teaching methods for students with ADHD. As teachers in this virtual setting, we must seek to understand how ADHD symptoms that are associated with the academic and behavioral needs of each individual student can differ across gender, racial, ethnic, linguistic, and ability. There is not a one-size-fits all approach to working with students with ADHD in middle school, or any grade. Seeking to understand, building a relationship, and using CRT can be part of a toolkit that teachers can use to facilitate success in their students with ADHD. Culturally responsive teaching can be used along with anti-racism and anti-ableism training for teachers as they serve a diverse population of learners in their classroom setting.

### **Closing Thoughts on Chapter V**

Future research could evolve from this study as researchers apply the tenets of DisCrit to learning the narratives of students of diverse cultures, race, ethnicities, gender identity, or sexual orientation with ADHD and how their school experiences have been influenced by what their teachers perceive and understand about them. Dis/ability critical race theory can be an applicable theoretical framework for further studies as it places a critical lens on the role of how teachers and administrators should consider their role in enabling racism and ableism as visible

and invisible forces to permeate professional development for both current and pre-service teachers, which shows up in how teachers work with our students. Teaching is a career that requires life-long learning. Learning pedagogy and content is large part of becoming a teacher. Learning to become reflective about how our own culture and our student's culture can inform how we understand and perceive their academic and behavioral needs, such as ADHD. Applying culturally responsive teaching as a conceptual framework for our own learning as teachers will allow us to peel away the layers of misunderstanding to unlearn some of the things that we have practiced with our students that could create negative learning experiences. We should dismantle strongly held ideas of the status quo to begin teaching through the framework of culturally responsive teaching with the lens of race and ability to allow us to disrupt how things have always been done. This can cause self-reflection and improvement to support not only students with ADHD, but all students in a middle school classroom.

“I did what I knew how to do.

Now that I know better, I do better.” – Maya Angelou

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## APPENDIX A

### IRB LETTER OF DETERMINATION

DIVISION OF RESEARCH



#### NOT HUMAN RESEARCH DETERMINATION

February 08, 2022

Type of Review: Submission Response for Initial Review Submission Form

Title: A qualitative study on teacher knowledge of ADHD symptoms in students and the effect on classroom management strategies in grades 6-8.

Investigator: Radhika Viruru

IRB ID: IRB2022-0137

Reference Number: 137700

Funding:

Dear Radhika Viruru:

The Institution determined that the proposed activity is not research involving human subjects as defined by DHHS and FDA regulations.

Further IRB review and approval by this organization is not required because this is not human research. This determination applies only to the activities described in this IRB submission and does not apply should any changes be made. If changes are made you must immediately contact the IRB about whether these activities are research involving humans in which the organization is engaged. You will also be required to submit a new request to the IRB for a determination.

**Please be aware that receiving a 'Not Human Research Determination' is not the same as IRB review and approval of the activity. IRB consent forms or templates for the activities described in the determination are not to be used and references to TAMU IRB approval must be removed from study documents.**

**Of note, according to the application, data gathering efforts are intended only for the student's record of study and will not yield generalizable data.**

If you have any questions, please contact the IRB Administrative Office at 1-979-458-4067, toll free at 1-855-795-8636.

Sincerely,  
IRB Administration

Appendix: Reviewed Study Documents.

Type	Document Name	Version
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Type	Document Name	Version
Submission Response by Board:		
TAMU IRB	Review Response Form - IRB	Version 1.0
Submission Form:		
Submission Form	Initial Review Submission Form	Version 1.0
Submission Attachments:		
Application	IRB Application (Human Research)	Version 1.0

## APPENDIX B

### TEACHER INFORMATION SURVEY

1. Email \_\_\_\_\_
2. How many years have you worked in education?
  - a. 0-5
  - b. 6-10
  - c. 11-15
  - d. 16-20
  - e. 21-more
3. How many years have you worked in the virtual education setting?
  - a. 0-5
  - b. 6-10
  - c. 11-15
  - d. 16-20
  - e. 21-more
4. Which choice best describes your university preparation experience?
  - a. Undergraduate university preparation
  - b. Alternative certification preparation process
  - c. Graduate certification preparation process
5. What is your role in your school?
  - a. Content teacher: Math, Reading, Science, Social Studies
  - b. Elective teacher: Music, Art, Theatre, etc.
  - c. Language teacher: Spanish, German, French, Latin, etc.

- d. Career technology teacher
  - e. Content specialist: Reading, Math, Title 1, Dyslexia
6. What is the highest degree you hold?
- a. Bachelor's degree
  - b. Master's degree
  - c. Doctorate degree
  - d. Currently working on a graduate degree
7. In your teacher preparation program, do you recall learning how to work with students with learning differences such as Attention-Deficit Hyperactivity Disorder (ADHD)?
- a. Yes
  - b. No
8. In your career as a classroom teacher, have you received professional development specifically on how to work with students with ADHD and have disruptive behavior?
- a. Yes
  - b. No
9. Choose one or many: what are examples of disruptive or off-task behavior?
- a. Talking out
  - b. Using their phone during live lessons
  - c. Being off task: doing something other than what you've asked them to do
  - d. Using chat inappropriately
  - e. Turning off camera when the expectation is for it to be on
10. Choose one or many: Why do students display disruptive or off-task behavior in the virtual school setting?

- a. Hungry
- b. Tired
- c. Traumatic even
- d. Not feeling well
- e. Unstructured time
- f. Not understanding the lesson
- g. Assigned work is too hard
- h. Assigned work is too easy
- i. Avoiding the task
- j. Social issue

## APPENDIX C

### TEACHER INTERVIEW PROTOCOL

**Participants:** Middle School Teachers (no more than 6-7 participants) selected from volunteers. Study participants will be asked to reflect on their own teaching practice to incorporate a variety of student engagement strategies to decrease opportunities for disruptive behavior in the virtual setting. Participants will remain anonymous for the study's final data collection and presentation in the ROS. Participants will not interact with each other at any time. They will interact with me, the student researcher, only during the interview question portion of the data collection.

**Interview questions: Each participant will be asked these questions in an interview.**

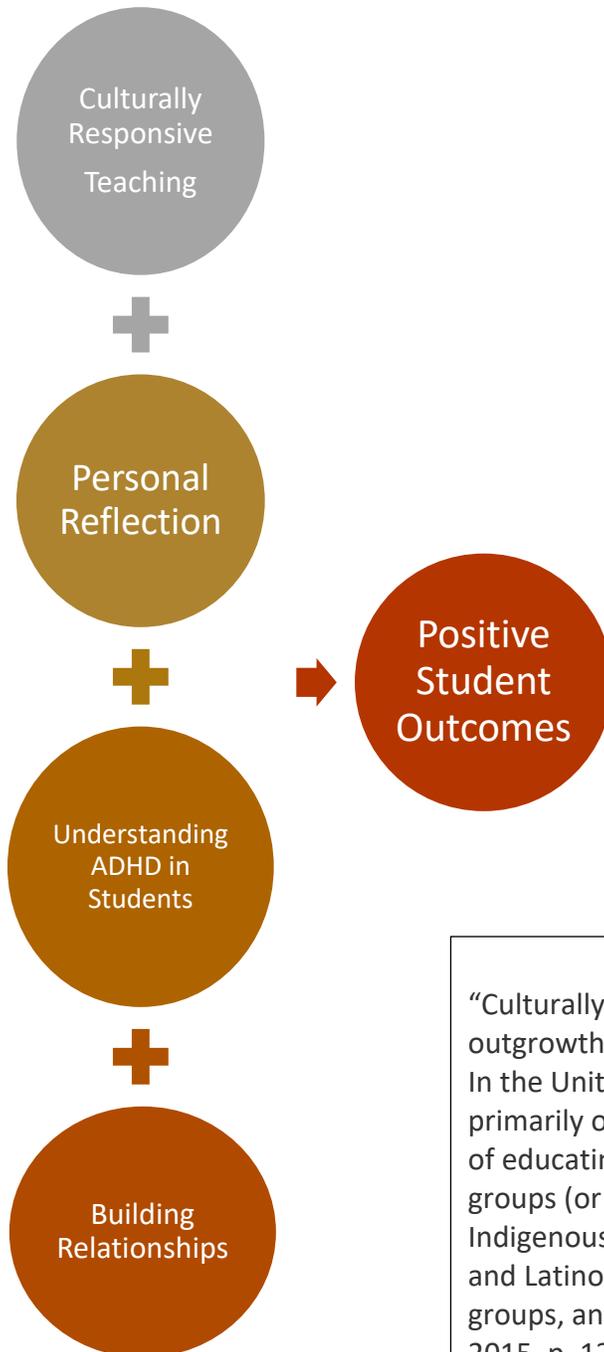
- a. Can you tell more about yourself and experience teaching?
- b. Can you tell me what it is like to teach in a virtual setting?
- c. What have your experiences been like as a teacher serving students with ADHD?
- d. Can you tell me about your experiences teaching students with ADHD in the virtual classroom you instruct in?
- e. How does ADHD appear in students in your classroom?
- f. What strategies in the classroom do you utilize to support students who have an ADHD diagnosis?
  - i. In the virtual classroom?
  - ii. In the face-to-face classroom?
- g. Based on your perception or experiences, how does ADHD appear with boys and girls?
- h. How does your understanding of culture and diversity influence how you support students with ADHD?

- i. What are disruptive behaviors that you would deem as related to ADHD in your virtual classroom?
- j. What do you wish you knew about how to work with students with ADHD?
- k. Is there anything else you wish to talk about that I did not ask?

APPENDIX D

ARTIFACT

# Culturally Responsive Teaching and ADHD



“Culturally responsive teaching is an outgrowth of multicultural education. In the United States, it focuses primarily on the instructional aspects of educating ethnic and racial minority groups (or groups of color) such as Indigenous (or Native), African, Asian, and Latino Americans, various biracial groups, and recent immigrants.” (Gay, 2015, p. 124)

## **A Tool-Kit for working with middle schoolers with ADHD.**

### ***Introspective work: Starting with me***

- Consider our own biases toward ADHD as a disorder that can manifest among White and culturally, ethnically, and linguistically diverse students in different ways.
- Considering culturally responsive pedagogy and culturally responsive teaching strategies (Ladson-Billings, 1995; Gay, 2000 & 2015)
  - What does academic success look like for students with ADHD?
  - How do I promote critical consciousness with regard to race and disability in my classroom?
  - Do my beliefs affect how I understand and respond to my students with ADHD?

### ***Building relationships with students and families***

Boulorian et al., 2021 writes “using student perspectives indicates that listening can be a powerful way for teachers to build high-quality relationships with students (Cefai & Cooper, 2010; Johnson, 2008)” p. 3986.

- Build relationships with families and students from the very beginning of the school year.
- Make a phone call/Zoom call to introduce yourself before the year begins.
- Maintain positive communication lines throughout the year. When things get difficult, this relationship will bolster the team you’re leading to support the student.

### ***Listening and seeking to understand***

- Remember, the parent is the expert on this child. Build a positive rapport from the very beginning of the year by seeking out information to promote a positive relationship with the student and family.

- Listen to what the parent tells you about their family’s culture, beliefs, home life, and the how they work with their student with ADHD at home.
- Ask about systems in place at home “What works when (student) succeeds?” “What motivates him/her to complete tasks or homework?” Take notes!
- Remember, you are the content expert and the strategy expert in the classroom, not the expert on the child. Building that positive relationship with the family will help foster a team effort when working with the student throughout the year.
- Collaborate and communicate what you learn from conversations with the family with the team of teachers who will work with the student this year. Do NOT violate FERPA.

***Multi-cultural competencies and culturally responsive teaching***

- “Culturally responsive teaching challenges many conventional teaching conceptions and practices, and assumptions about ethnically, racially, socially, and culturally diverse peoples” (Gay, 2015).
- After a time of personal reflection or racial and ableist biases, the entire school community needs to participate in learning about cultural differences to promote personal and social development and social transformation, beginning with the adults in the building.
- Multi-cultural awareness promotes culturally responsive teaching.
- Build rapport with parents by inviting them into the cultural events during the school year.
- A student’s culture can be defined by their race, gender, ethnicity, linguistic difference, religion, or identity. Culturally responsive teaching is validating, comprehensive, multidimensional, empowering, transformative, and emancipatory (Gay, 2018).

### *Changing the perception*

- Students who believe that their teachers do not have high expectations of them will perform poorly (Gay, 2015). This is especially true for students with ADHD, as teachers may be influenced by a student's cultural difference, including race, ethnic group, or gender (Jackson & King, 2004; Wexler et al., 2021).
- Students with ADHD will struggle to work for a teacher who has not purposefully built a positive relationship with them.
- Work against the deficit perspective that many of us hold of students with ADHD.
- Understand the symptoms you may see and create a learning space to help them succeed:
  - Disorganization
  - Not completing work
  - Submitting blank work
  - Lack of focus during lessons
  - Using chat inappropriately in the virtual setting
  - Talking out
  - Moving around the room/spinning in their chair (virtual setting)
- Understand the gifts that students with ADHD have:
  - Creativity
  - Artistic or musical
  - Seeing things with a different perspective
  - Hyperfocus on things that are of interest to them

- Allow students to work within their strengths and areas of growth. Create a learning environment that is safe for them to learn while expressing some of how ADHD affects them.
  - Let them move while learning:
    - Standing desk in a traditional setting
    - Allow them to walk the room in either the traditional or virtual setting while you are teaching.
    - Allow them frequent breaks.
- Understand how their culture, race, ethnicity, or gender may affect their how their behavior manifests within the context of having ADHD.
  - Ask questions of their family, if possible, to learn what helps the student thrive at home.
  - Be willing to try new strategies, document what works and what doesn't.
  - Stay current on best practices for working with students with ADHD.
    - Ask for more professional development for your campus on how to best support these students.
- Remember, ADHD behaviors and symptoms do not manifest the same across cultures, genders, races, or ethnicities. You must be willing to learn and understand to change the deficit narrative of how our education system has viewed students with ADHD.

*Ask questions. Build relationships. Seek to understand.*