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Identification of Gifted Characteristics Using the Behavioral Assessment Scale for Children—Third Edition

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Abstract

Children who are gifted are at-risk for being misidentified with emotional and behavioral disorders (Daniels & Piechowski, 2009; Mullet & Rinn, 2015; Webb, 2016). Challenges exist in conclusively defining giftedness, assessing giftedness, and understanding common behavioral patterns among gifted individuals (Bracken & Brown, 2006; McClain & Pfeiffer, 2012). Because gifted children typically exhibit common behavioral patterns, it is important for school psychologists to understand gifted behavioral characteristics, how to assess these characteristics, and how to differentiate between common gifted behavior and maladaptive behavior (Daniels & Piechowski, 2009; Webb, 2016). This study examined the value of the BASC-3 in identifying gifted behavioral characteristics. Assessment data was collected on gifted children and results did not show at-risk or clinically significant T-scores on the BASC-3 scales. The study limitations, strengths, and directions for future research are presented. Implications for school psychologists are provided for improving gifted identification and better understanding gifted behavioral characteristics.

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ABSTRACT

Children who are gifted are at-risk for being misidentified with emotional and behavioral disorders (Daniels & Piechowski, 2009; Mullet & Rinn, 2015; Webb, 2016). Challenges exist in conclusively defining giftedness, assessing giftedness, and understanding common behavioral patterns among gifted individuals (Bracken & Brown, 2006; McClain & Pfeiffer, 2012). Because gifted children typically exhibit common behavioral patterns, it is important for school psychologists to understand gifted behavioral characteristics, how to assess these characteristics, and how to differentiate between common gifted behavior and maladaptive behavior (Daniels & Piechowski, 2009; Webb, 2016). This study examined the value of the BASC-3 in identifying gifted behavioral characteristics. Assessment data was collected on gifted children and results did not show at-risk or clinically significant *T*-scores on the BASC-3 scales. The study limitations, strengths, and directions for future research are presented. Implications for school psychologists are provided for improving gifted identification and better understanding gifted behavioral characteristics.

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CHAPTER 1: INTRODUCTION

Children who are gifted are at-risk for being misidentified with emotional and behavioral disorders instead of identified as gifted (Daniels & Piechowski, 2009; Mullet & Rinn, 2015; Webb, 2016). Challenges exist in conclusively defining giftedness, assessing giftedness, and understanding common behavioral patterns among gifted individuals within the school system (Bracken & Brown, 2006; Carman, 2011; McClain & Pfeiffer, 2012; NAGC, 2010). Because gifted children typically exhibit common behavioral patterns, it is crucial for school psychologists to understand gifted behavioral characteristics, how to assess these characteristics, and how to differentiate between behaviors associated with being gifted and maladaptive behaviors (Daniels & Piechowski, 2009; Webb, 2016). This study examined the value of the Behavior Assessment Scale for Children- Third Edition (BASC-3) in identifying gifted behavioral characteristics. It is anticipated that the findings of this study will contribute to the improvement of school-based identification methods for giftedness, as they will help practitioners differentiate between behaviors associated with giftedness and maladaptive behaviors.

Using a behavioral assessment tool to help identify gifted characteristics may help school psychologists make accurate decisions in regards to eligibility determination, which will ensure that students are receiving appropriate educational services that fit their needs.

Several known behavior patterns associated with giftedness include perfectionism, asynchronous development, differences in peer relationships, social-emotional functioning, and overexcitability (Daniels & Piechowski, 2009; Francis, Hawes, & Abbott, 2016; Neihart, Pfeiffer, & Cross, 2015; Webb, 2016). These differences in behavior may be misdiagnosed as behavioral and emotional disorders, including Attention Deficit Hyperactivity Disorder or Oppositional Defiant Disorder (Webb, 2016). Given that a large amount of misdiagnosis among gifted individuals is attributed to behavioral misinterpretations, it is important to learn about specific behaviors that may be associated with giftedness (Webb, 2016).

In addition to understanding common behaviors of gifted individuals, it is important to recognize how giftedness is defined and identified in education. A universal definition of giftedness has not yet been adopted by school systems, however, a federal definition of giftedness was developed through the Marland Report in 1972. This report defines giftedness as having outstanding performance and capability through intellect, academics, creativity, art, leadership, or psychomotor skills (Marland, 1972). The 1993 updated version of the Marland Report places greater emphasis on culturally responsive practices, specifically addressing cultural and socioeconomic opportunity gaps as related to students' talent, potential, environment, and experience (Ford, 2013). The National

Association for Gifted Children defines giftedness as demonstrating exceptional levels of aptitude or competence in one or more areas such as mathematics, music, language, art, or sports (NAGC, 2017).

Some challenges in the identification and assessment of giftedness are reflected in the inconsistencies of assessment methods across each state in the U.S. In education, local control effects how public schools in different states or districts operate. Therefore, local control may explain why there is such variability in gifted identification methods. For example, many states rely heavily on cognitive assessments to identify gifted students whereas other states use multiple sources of data, or a body of evidence, to determine giftedness eligibility (McClain & Pfeiffer, 2012). Other sources of data used in the identification of giftedness may include teacher nomination, parent nomination, portfolios including students' work samples, achievement tests, and rating scales (McClain & Pfeiffer, 2012). Although variability exists in the assessment and identification of giftedness in education, psychologists and educational professionals advocate for the use of comprehensive assessment tools when identifying students for all services. It is suggested that a multi-method approach be used when evaluating for giftedness in order to capture all aspects of development (Almeida et al, 2016; CDE, 2017; Merrick & Targett, 2004; Pfeiffer, 2012).

Misdiagnosis

The misdiagnosis of emotional and behavioral disorders among children continues to be a significant problem recognized by mental health professionals and researchers in related fields (Daniels & Piechowski, 2009; Elder, 2010; Liang, Matheson,

& Douglas, 2016; Merten, Cwik, Margraf, & Schneider, 2017; Webb, 2016). Although the prevalence of misdiagnosis is unknown, many studies provide evidence that the prevalence of mental health disorders in children has been increasing across the years based on data from national healthcare services and special education programs (Merten, Cwik, Margraf, & Schneider, 2017). Some behavioral disorders have been researched more extensively than others in regards to misdiagnosis. For example, the overdiagnosis of Attention Deficit Hyperactivity Disorder has received the most attention among researchers, with studies estimating that about 20% of children labeled with ADHD are likely misdiagnosed with the disorder (Elder, 2010; Merten, Cwik, Margraf, & Schneider, 2017; Mullet & Rinn, 2015; Webb, 2016). Many professionals in healthcare related fields believe that the U.S. national rate of ADHD diagnoses in youth surpasses the true prevalence of the disorder (Frances, 2013; Watson, Arcona, Antonuccio, & Healy, 2014).

The consequences of misdiagnosing children's behavior are extremely concerning, with outcomes including inappropriate treatment that is likely counterproductive to a child's development and potential to thrive (Elder, 2010; Merten, Cwik, Margraf, & Schneider, 2017; Mullet & Rinn, 2015; Webb, 2016). For example, parents of children with ADHD diagnoses may choose medical interventions to help manage their child's behavior (Daniels & Piechowski, 2009; Webb, 2016). Although this behavior-modifying stimulant medication may be successful in helping the child better attend to daily tasks, it is important to consider the ramifications of providing unnecessary stimulant medication for those who are misdiagnosed with ADHD (Merten, Cwik, Margraf, & Schneider, 2017; Webb, 2016). In addition to providing incorrect medical treatment, misdiagnosis may lead to implementing inappropriate behavioral

interventions that do not meet the child's needs (Merten, Cwik, Margraf, & Schneider, 2017; Webb, 2016). For example, behavioral interventions for a child with autism are different from interventions targeting anxiety. Misidentifying one disorder for the other will likely lead to ineffective behavioral treatment, therefore potentially harming the child's psychological development and opportunity to be successful emotionally, behaviorally, socially, and academically (Daniels & Piechowski, 2009; Webb, 2016).

Misdiagnosis Among the Gifted Population

A widespread problem with limited research includes the misdiagnosis of gifted children (Daniels & Piechowski, 2009; Webb, 2016). Few practitioners and researchers have explored the issue of gifted individuals being misdiagnosed as having emotional or behavioral disorders (Daniels & Piechowski, 2009; Mullet & Rinn, 2015; Webb, 2016). Although the approximate prevalence of misdiagnosis among the gifted population cannot be determined, Webb (2016) shares that many professionals in psychology, education, and pediatrics have reported seeing clients who have been incorrectly diagnosed with mental health and behavioral disorders. The practitioners discovered that many of their misdiagnosed clients were exhibiting behavioral characteristics that were actually indicative of intellectual or creative giftedness (Webb, 2016).

An initiative that examines the misdiagnosis among gifted individuals, SENG (Supporting Emotional Needs of Gifted), conducted a nationwide survey of more than 3,000 parents of gifted children about their experiences with healthcare providers (Webb, 2016). Data from the survey indicate that 31% of gifted children were initially considered or treated for ADHD, which is more than the expected 11% of children to be diagnosed

with ADHD (SENG, 2011; Webb, 2016). About 17% of gifted children were considered as having Autism Spectrum Disorder, which is higher than the expected 2% of children to be diagnosed with the developmental disorder (SENG, 2011;Webb, 2016). Eighteen percent of gifted children were initially considered for Sensory Processing Disorder, with prevalence rates for the disorder estimated to only be 5 percent (SENG, 2011;Webb, 2016). About 13% of gifted children were thought to have Obsessive Compulsive Disorder, with only 2.7% of children expected to have the disorder (SENG, 2011;Webb, 2016). Gifted children were also considered more often for other diagnoses such as Anxiety and Depression, as compared to the general population of youth (SENG, 2011; Webb, 2016).

Behavioral characteristics unique to gifted individuals may be misinterpreted as behavioral or emotional problems (SENG, 2011; Webb, 2016). In his book about the misdiagnosis and dual diagnosis of gifted children and adults, Webb (2016) writes that misdiagnoses are typically rooted in the lack of training among healthcare and school professionals, cultural bias, and inadequate identification practices. Specifically, practitioners are unaware of the social-emotional traits exhibited by gifted individuals, which increases the likelihood of misinterpretation of gifted behavior (Webb, 2016). Because gifted children demonstrate particular behavioral characteristics, they are more likely to receive diagnoses that reflect mental health and behavioral disorders (Webb, 2016).

Consequences of Misdiagnosis in Gifted Children

Misdiagnosis leads to either the labeling of a disorder when the exhibited behaviors can be better explained by giftedness, or a true disorder that goes unnoticed (Webb, 2016). The consequences of misdiagnosis are quite significant, leading to inappropriate treatment that may be detrimental to one's development (Daniels & Piechowski, 2009; Webb, 2016). The unique social-emotional characteristics exhibited by gifted children make them at-risk for being misdiagnosed with social, emotional, and behavioral problems (Webb, 2016). Gifted children who receive labels of behavioral disorders will likely not receive services to encourage their high creative and intellectual potential (Daniels & Piechowski, 2009; Webb, 2016). When gifted children are not recognized as gifted and instead labeled with disorders, they are likely to experience more challenges in development and school performance (Webb, 2016).

Misdiagnosis is also a contributing factor to the disproportionality in gifted education. It has long been known that race and culture continues to be directly correlated with students' access to quality education beginning in early childhood (Skiba et al., 2008). Some of these educational inequities are reflected in the overrepresentation of students of color in special education (Skiba et al., 2008). Black students are more likely to be inappropriately identified with intellectual disabilities and emotional/behavioral disorders (Skiba et al., 2008). Gifted education reflects significant underrepresentation of students coming from culturally, linguistically, racially, and economically diverse backgrounds (Ford, Wright, Washington, & Henfield, 2016). Culturally inappropriate identification methods, such as the sole use of cognitive assessment or teacher referrals,

continue to be used to identify students as gifted (Ford, Wright, Washington, & Henfield, 2016). National data from the 2011-2012 school year indicate that gifted education programs included only 16% of Hispanic students and 10% of Black students (Ford, Wright, Washington, & Henfield, 2016; U.S. Department of Education, 2014).

Educational disproportionality in primary education serves as a precursor for continued disproportionality in secondary education, leads to limited opportunities for success, and increases the risk of entering the school-to-prison pipeline for students of color (Skiba et al., 2008).

Improvement of Gifted Identification in Schools

There are many inconsistencies and weaknesses in gifted identification practices across the United States. State departments of education vary in their assessment requirements for gifted identification, which contributes to misdiagnosis among gifted students. Several common identification methods for giftedness include cognitive assessments, achievement tests, gifted rating scales, teacher nomination, portfolios, or a combination of these methods (McClain & Pfeiffer, 2012). Each of these assessment methods have strengths and weaknesses in their accuracy of identifying giftedness, which is why a multi-method, multi-source approach has been suggested as the standard for some states (CDE, 2018).

Colorado, for example, emphasizes the inclusion of a "body of evidence" when identifying for giftedness, which means that gifted identification must include multiple formal and informal assessment measures to consider a student eligible to receive gifted education services (CDE, 2018).

The state's department of education additionally outlines alternative pathways for gifted identification to ensure that students' abilities are being assessed fairly (CDE, 2018).

Although states such as Colorado continue to make growth in gifted education identification, this is not true for many other states. They are far behind in their assessment approaches and do not have the resources to use numerous assessments in their identification of gifted students.

Because misdiagnosis among the gifted population is a widespread concern, it is crucial to examine efficient and realistic ways in which school-based identification can be improved for giftedness. Two of the major reasons for misdiagnosis among gifted students include the lack of training among school psychologists and inadequate identification practices (Steengergen-Hu & Olszewski-Kubilius, 2016; Webb, 2016). These inadequate identification practices are often attributed to the limited use of behavioral assessment tools in addition to the misinterpretation of behavioral characteristics when identifying giftedness (Steengergen-Hu & Olszewski-Kubilius, 2016; Webb, 2016).

Given that gifted children demonstrate unique social-emotional and behavioral functioning, incorporating assessment tools to measure these characteristics may improve the identification of giftedness and prevent misdiagnoses (Merrick & Targett, 2004; VanTassel-Baska, 2000; Willisch & Brown, 2012).

Although gifted rating scales such as the Gifted Evaluation Scale (McMarney & Arthaud, 2009) may serve as effective tools to measure gifted behavioral characteristics and support accurate identification decisions, the availability of these rating scales in school districts is unknown (McMarney & Arthaud, 2009).

One way that schools can include behavioral assessment within gifted identification is by using an existing and frequently used behavior rating scale in school-based evaluations. One broadband behavioral assessment, the Behavior Assessment Scale for Children—Third Edition (BASC-3) is designed to collect information on many aspects of behavioral functioning in childhood, adolescence and early adulthood (Reynolds & Kamphaus, 2015). School psychologists often include the BASC-3 within comprehensive psychoeducational evaluations to assess student's internalizing behaviors, externalizing behaviors, adaptive behaviors, and to determine areas of student strengths (Reynolds & Kamphaus, 2015).

Role of School Psychologists

School psychologists receive training to support all children academically, emotionally/behaviorally, and socially (NASP, 2010). They collaborate with teachers, school staff, and parents through a problem-solving process in order to determine the most appropriate services students need to succeed across various domains (King, Coleman, & Miller, 2011; NASP, 2010). They are responsible for completing psychoeducational evaluations, which influence whether students are eligible to receive specific services such as special education (King, Coleman, & Miller, 2011; NASP, 2010). Given that school psychologists play a large role in evaluation and identifying

students for school services, they are ideally positioned to understand the complexities associated with gifted characteristics.

Because most school psychologists do not receive training in giftedness through their graduate coursework, it is expected that incorporating the BASC-3 in gifted identification may teach practitioners more about gifted behavior (Robertson, Pfeiffer, & Taylor, 2011). By understanding this population of students, it is hoped that school psychologists will make informed and accurate decisions during eligibility team meetings. It is crucial for these practitioners to better understand gifted children in order to improve the school-based assessment of giftedness, prevent misdiagnosis, and provide appropriate and optimal support for gifted students.

All school psychologists receive training in conducting social-emotional assessments to support students with potential emotional and behavioral concerns (Friedrich, 2010). Given that social-emotional assessment is commonly included within school-based evaluations, it is important to examine how these types of assessments may contribute to identification methods for giftedness (Bracken & Brown, 2006; Wellisch & Brown, 2012). It is suggested that the BASC-3 may serve as a feasible way to examine behavioral characteristics when identifying for giftedness. By understanding the unique behavior typically associated with giftedness, school psychologists can make better identification decisions and help support gifted children in schools. Making improvements in gifted identification may help address misconceptions about gifted children, decrease cultural bias, and help ensure that gifted children are receiving services that fit their needs.

Rationale, Problem Statement, Purpose, and Research Questions

Several issues in the field of education contribute to the rationale of this study. Gifted children typically have unique social-emotional characteristics, however, there is a significant lack of knowledge and training in these characteristics among school psychologists and other educational professionals (Bracken & Brown, 2006; McClain & Pfeiffer, 2012; Webb, 2016). Researchers in the field suspect that there is a high frequency of misdiagnosis among the gifted population in addition to weaknesses in existing identification practices (Daniels & Piechowski, 2009; Mullet & Rinn, 2015, Webb, 2016). It is also important to address how these issues influence the significant cultural, racial, and socioeconomic disproportionality that exists in gifted education programs (Bracken & Brown, 2006; Ford, 2013).

The lack of assessment tools and knowledge in gifted characteristics contributes to the misidentification among gifted students in schools (Daniels & Piechowski, 2009; Webb, 2016). The purpose of this study is to examine the use of the BASC-3 teacher and parent rating scales in identifying gifted characteristics. By knowing how gifted children score on the BASC-3, it is anticipated that this social-emotional assessment will help school psychologists understand common behaviors associated with giftedness, allow school psychologists to use BASC-3 data as a way to differentiate between problem behaviors and behaviors indicative of giftedness, improve identification methods for giftedness, prevent misdiagnosis, and help guide school- based eligibility determination.

Research Questions:

1. How do gifted children score on the BASC-3 Rating Scales?
    a. What are the mean *T*-scores scores of gifted children on the clinical, adaptive, and content scales on the BASC-3 PRS?
    b. How do the scores of gifted children compare to normed scores on children with ADHD, as measured by the BASC-3 PRS clinical, adaptive, and content scale mean *T*-scores?
    c. What are the variances among *T*-scores of gifted children on the BASC-3 Parent Rating Scales?

CHAPTER 2: LITERATURE REVIEW

Introduction

This study will examine the value of the Behavior Assessment Scale for Children—Third Edition (BASC-3) in identifying gifted behavioral characteristics. It is anticipated that the findings of this study will contribute to the improvement of school-based gifted evaluations. Using a behavioral assessment tool to help identify gifted characteristics may help school psychologists make accurate decisions in regards to eligibility determination, which will ensure that students are receiving appropriate educational services that fit their needs.

This chapter reviews the literature on various definitions of giftedness, strengths and weaknesses of gifted assessment methods, reasons for the misdiagnosis among gifted individuals, behavioral characteristics of gifted children, common misdiagnoses among gifted children, and how school-based gifted identification methods may be improved through the use of a behavioral assessment tool.

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psychologists and other educational professionals (Bracken & Brown, 2006; McClain & Pfeiffer, 2012 Webb, 2016). Researchers in the field suspect that there is a high frequency of misdiagnosis among the gifted population in addition to weaknesses in existing identification practices (Daniels & Piechowski, 2009; Mullet & Rinn, 2015, Webb, 2016). It is also important to address how these issues influence the significant cultural, racial, and socioeconomic disproportionality that exists in gifted education programs (Bracken & Brown, 2006; Ford, 2013).

Defining Giftedness

Many theories and definitions about giftedness have been proposed across the years, which continue to influence perceptions about gifted individuals (McClain & Pfeiffer, 2012; Worrell & Erwin, 2011). Defining giftedness has proven to be one of the most prominent challenges in the field of education, with no consensus on a universal definition of the term (Bracken & Brown, 2006; Carman, 2011; McClain & Pfeiffer, 2012; NAGC, 2017). Professionals across education have failed to adopt a common definition of giftedness. Some definitions solely focus on intellectual ability or performance across different areas such as academics, creativity, or physical ability (Bracken & Brown, 2006; McClain & Pfeiffer, 2012; Carman, 2013; NAGC, 2010). Other definitions of giftedness also capture the idea of advanced abilities, however, they place strong emphasis on having unique behavioral characteristics such as asynchronous development or greater task-commitment for example. The variability in federal, state, and expert definitions of giftedness likely contributes to significant inconsistencies in the identification and support for gifted learners in the United States (Bracken and Brown, 2006; Carman, 2011; McClain & Pfeiffer, 2012; Worrell & Erwin, 2011). A sampling of

definitions and theories of giftedness from the literature will be presented. Federal definitions and the definition from the National Association for Gifted Children (NAGC) will be provided.

Giftedness was first understood through defining it as having advanced cognitive abilities. Early ideas about giftedness are often attributed to the work done by Lewis Terman in 1925, who used the Stanford-Binet intelligence scale to assess IQ levels of children demonstrating increased cognitive abilities compared to the norm. He believed that children with IQ scores greater than 135 were considered gifted (Terman, 1925; Worrell & Erwin, 2011). Ideas about giftedness have since evolved throughout the years, viewing it as more than an IQ score. In 1940, Dr. Paul Witty proposed that the definition of giftedness be elaborated to include any individual whose performance in a valuable area of human activity is consistently extraordinary. These areas of activity may include art, writing, or social leadership (Galbraith & Delisle, 2016). In 2002 Dr. Francis Gagne proposed that giftedness involve the possession and use of innate abilities or gifts (Galbraith & Delisle, 2016). More recently, Pfeiffer (2012), proposed a Tripartate Model of Giftedness, which views academic giftedness through high cognitive ability, outstanding achievements, and the potential to succeed if provided with a nurturing environment (Prus & Garcia-Vazquez, 2014).

The following definitions of giftedness capture traits of advanced abilities in addition to particular behavioral characteristics. In 1978 Dr. Joseph Renzulli proposed a Three-Ring Conception of Giftedness. This suggests that giftedness involve the interaction between three traits; above average general abilities, high levels of creativity, and high levels of task commitment (Renzulli, 2011). In 1982 Annemarie Roeper defined

giftedness as having a greater awareness, sensitivity, and ability to comprehend and change perceptions into emotional and intellectual experiences (Galbraith & Delisle, 2016). In 1991 The Columbus Group contributed to the conceptualization of giftedness by explaining it at asynchronous development that develops when cognitive abilities and increased intensity work together to create awareness and experiences that vary from the norm (Galbraith & Delisle, 2016). This definition captures the emotional intensity that many believe is associated with high intellectual ability (Galbraith & Delisle, 2016).

The National Association for Gifted Children defines giftedness as demonstrating exceptional levels of aptitude or competence in one or more areas such as mathematics, music, language, art, or sports (NAGC, 2017). According to the National Association for Gifted Children (2017), 37 states recognize students who have advanced intellectual abilities, 34 recognize academic achievement, 25 recognize creativity, 20 recognize abilities in visual arts, 15 recognize skills in performing arts, 14 recognize leadership abilities, and 4 states recognize students' motivation or task commitment. Four states emphasize the consideration of cultural diversity and two states reference socioeconomic levels in the identification of giftedness in schools. Vague definitions of giftedness continue to exist in some states. The NAGC also states that it is not mandatory to identify or provide programming for giftedness in 14 states (NAGC, 2017).

Although school-based services for gifted students are not federally mandated, the U.S. Department of Education provides a federal definition of giftedness first developed through the Marland Report in 1972. This report defines giftedness as having outstanding performance and capability through intellect, academics, creativity, art, leadership, or

psychomotor skills (Marland, 1972). Children meeting these criteria would require differentiated education with expectations beyond the general education curriculum (Marland, 1972). The report recommends that school districts identify about 3-5% of the student population as gifted, which involves the use of a cognitive assessment in the identification process (Marland, 1972). The report highlights the underrepresentation of culturally and linguistically diverse students in addition to students from low socioeconomic backgrounds in gifted programs (Marland, 1972). The Marland Report definition of giftedness was updated in the 1993 to place greater emphasis on culturally responsive practices, specifically addressing cultural and socioeconomic opportunity gaps as related to students' talent, potential, environment, and experience (Ford, 2013). In addition to separate state definitions, the Marland Report definition of giftedness is the most commonly referenced federal definition in education (NAGC, 2013).

Identification and Assessment of Giftedness

Similar to definitions of giftedness, identification and assessment methods for giftedness vary across school districts. McClain and Pfeiffer (2012) investigated state differences in gifted education. Their findings indicated that 16 states require the use of cognitive assessments when identifying for giftedness, however, cut-off scores for these tests are different depending on the state (McClain & Pfeiffer, 2012). Although 17 states mandate the use of achievement tests in the assessment of giftedness, 15 of those states outline specific test scores needed to meet identification criteria (McClain & Pfeiffer, 2012). Thirteen states require parent or teacher nomination for consideration of gifted identification, 9 states mandate a creativity test, and 8 states require the use of performance measures to identify giftedness (McClain & Pfeiffer, 2012). Information on

students' behavior is seldom used in the assessment of giftedness in schools, with only 9 states requiring the use of behavior rating scales and 7 utilizing a behavioral checklist in the identification process (McClain & Pfeiffer, 2012). Identifying giftedness and providing gifted and talented education services is also not mandated according to federal legislation (NAGC, 2017).

Due to the variability in gifted identification practices across each state, it is important to examine the strengths and weaknesses associated with the different types of assessments used in gifted identification. Explanations and research about cognitive assessments, achievement tests, teacher nomination, parent nomination, portfolios, and rating scales will be provided to better understand the efficacy of some assessment approaches used when identifying for giftedness in schools. The inclusion of a broadband behavioral assessment tool will be discussed as a practical way school-based gifted identification methods can be improved.

Cognitive Assessments

Cognitive assessments are individually administered standardized ways of measuring intelligence (Breaux, 2017). Two commonly used cognitive assessments measuring intellectual ability and that have recent research connected to giftedness, include the Wechsler Intelligence Scale for Children-Fifth Edition and the Kaufman Assessment Battery for Children—Second Edition (Breaux, 2017; Matthews & Kirsch, 2017; Pfeiffer, 2015). When cognitive assessments are used to evaluate for giftedness, practitioners typically observe whether students score up to three standard deviations above the mean or if students' IQ scores are above 130. (Colorado Department of Education, 2017; Matthews & Kirsch, 2017). Although these criteria are widely

recognized in school districts for gifted and talented education placement, some researchers provide evidence that children who are gifted demonstrate patterns in score profiles on cognitive assessments. Details about the WISC—V and the KABC—II will be provided.

On the Wechsler Intelligence Scale for Children-Fifth Edition (WISC-V), students' performance may be represented through a Full Scale IQ score, the General Ability Index, and Primary Index Scales (Wechsler, 2014). The Primary Index Scales include the Verbal Comprehension Index, Visual Spatial Index, Working Memory Index, Fluid Reasoning Index, and Processing Speed Index (Wechsler, 2014). The Full Scale IQ (FSIQ) score represents students' average performance on all Primary Index Scales measuring verbal comprehension, visual spatial abilities, working memory fluid reasoning abilities, and processing speed (Wechsler, 2014). The General Ability Index (GAI) represents an average of students' performance on the verbal comprehension, fluid reasoning, and visual spatial indexes (Wechsler, 2014).

On the WISC- V gifted children typically obtain cognitive ability scores that are significantly higher than average (Rowe, Dandridge, Pawlush, Thompson, & Ferrier, 2014). Specifically, children who are gifted usually demonstrate strengths in verbal comprehension, visual spatial skills, and fluid reasoning (Rowe, Dandridge, Pawlush, Thompson, & Ferrier, 2014). These three cognitive abilities are averaged through the General Ability Index (GAI) score (Wechsler, 2014). Although scores are still typically higher than average, gifted children may show relative weaknesses in the areas of working memory and processing speed (Rowe, Dandridge, Pawlush, Thompson, & Ferrier, 2014).

The WISC-V Technical and Interpretive Manual suggests using both the Full Scale IQ and the General Ability Index when determining intellectual giftedness (Wechsler, 2014).

The Kaufman Assessment Battery for Children—Second Edition includes 18 subtests and can be administered to children ages 3 to 18 (Pfeiffer, 2015). The KABC—II is different from most cognitive assessment in that it measures intelligence as one's method of solving problems and processing information (Pfeiffer, 2015). The assessment provides composite scores in the areas of Crystalized Intelligence, Fluid Intelligence, Long- Term Retrieval, Short- Term Memory, and Visual- Spatial Ability. Although little research exists on the KABC—II and its relation to identifying gifted children, educational professionals advocate for the use of this assessment because it is believed to fairly assess children with cultural and linguistic differences, has high test ceilings, above-level norms, and does not place a lot of weight on one's processing speed (Pfeiffer, 2015).

Making eligibility decisions based on intelligence scores alone results in the underrepresentation of children who may actually be gifted (Worrell & Erwin, 2011). By using IQ test performance as the only criterion for gifted identification, schools may fail to identify students who have gifts in nonacademic areas (Prus & Garcia-Vazquez, 2014). The National Association for Gifted Children (NAGC) explains that cognitive assessment may provide information for the intellectual domain within the federal definition of giftedness, however, these assessments are not valuable in identifying students in other abilities stated within the definition such as creativity and leadership (NAGC, 2010).

Research by Donovan and Cross (2002) indicates that relying on students' performance on cognitive assessments to identify gifted learners may contribute to the disproportionate number of white and high SES students receiving gifted services. This results in the underrepresentation of students of color and students from poverty receiving gifted services (Donovan & Cross, 2002; Ford, Wright, Washington, & Henfield, 2016). Research by Naglieri and Ford (2005) highlights potential language barriers that may exist in the administration of IQ tests. Regardless of intellectual ability, students learning English as a second language are less likely to perform well on verbal and quantitative ability measures (Naglieri & Ford, 2005). Using IQ tests with English language learners may undermine their intellectual abilities (Naglieri & Ford, 2005). Testing materials and items on cognitive assessments have been questioned in regards to the lack of diversity and negating the experiences and language of students from diverse backgrounds (Ford, Wright, Washington, & Henfield, 2016).

Although assessments used to measure cognitive ability are widely used in school-based evaluations, it is important to recognize the cultural and language bias associated with this measure and in making eligibility decisions for students (Naglieri & Ford, 2005; Winsler, Karkhanis, Kim, & Levitt, 2013). Because of these biases, students from diverse backgrounds are less likely to be included in gifted education and more likely to receive special education services (Ford, Wright, Washington, & Henfield, 2016).

Achievement Tests

Achievement tests are standardized, nationally-normed assessments of students' academic abilities in math, reading, and writing (Bracken & Brown, 2006). These

achievement test scores are typically generated through age or grade-based norm comparisons (Cao, Jung, & Lee, 2017). Examples of academic achievement assessments commonly used in schools and clinical practice include The Wechsler Individual Achievement Test (WIAT-Third Edition), the Woodcock-Johnson IV Tests of Achievement (WJ-IV-ACH), or the Kaufman Test of Educational Achievement (KTEA-III).

A strength of achievement tests includes their ability to measure students' academic knowledge in a standardized way. A weakness of achievement tests is that they lack local-norm comparisons, which could be helpful in decreasing the chance of bias and provide more accurate data about a student's academic performance (Cao, Jung, & Lee, 2017). Relying on achievement tests for gifted identification eligibility may also be problematic because they only provide a measure one's academic abilities. These assessments may not capture the gifts and talents exhibited by creatively gifted children, for example. Given that achievement tests have some strengths and weaknesses, it is suggested that they are included as part of comprehensive identification methods for giftedness (Worrell & Erwin, 2011).

Teacher Nomination

Teacher nomination involves teachers completing nomination forms, a checklist, or referral form as an informal way to help identify gifted students. These referrals are reviewed by the school multidisciplinary team, which may result in formal testing including cognitive assessments (Winsler et al., 2013). Worrell and Erwin (2011) believe that teachers are conveniently positioned to observe students across a variety of academic domains and can compare children to each other. They advocate for the use of

teacher nomination in the identification of gifted learners (Worrell and Erwin, 2011). Although this idea appears to make sense, additional research done on this topic suggests that a great deal of variability exists in the validity of teacher nomination for gifted referrals, which indicates the ineffectiveness of this method (Carman, 2011; Siegle, Moore, Mann, & Wilson, 2010).

In an article discussing risks faced by young gifted children in education, Gross (1999) reviews the issues associated with relying on teachers to identify students with advanced abilities. Gross explains that teachers prefer to identify giftedness through their own professional judgment, however, young highly gifted children may mimic the academic and social behavior similar to their peers in order to be accepted (Gross, 1999). This makes the teacher's identification of highly gifted children more difficult and less obvious. Gross (1999) also points out the cultural bias that may result in the use of teacher nomination when attempting to recognize gifted characteristics. The author explains that teacher nomination for identifying gifted students is ineffective since teachers receive little to no training on how to identify giftedness (Gross, 1999). McBee, Peters, and Miller (2016) evaluated the influence of teacher nomination on the efficacy of gifted identification in schools. Their review of literature indicates that the purpose of the nomination stage is to limit the number of students referred for gifted identification, thus making gifted identification cost and time efficient. Contrary to this belief, the results of this study revealed that a large amount of gifted students were missed or not referred for gifted identification when relying on teacher nomination prior to moving forward with formal testing (McBee, Peters, & Miller, 2016).

Relying on teacher nomination to identify students for gifted and talented services leads to greater risk for cultural bias. Teachers' evaluations of students of often impacted by their subjectivity, negative views, expectations, and poor teacher-student relationships particularly with students of color (Winsler, Karkhanis, Kim, & Levitt, 2013). These lower expectations and differential treatment of students from diverse cultural backgrounds contribute to a decreased likelihood for students of color being nominated by teachers for gifted services.

Although it might seem practical for teachers to nominate students for gifted services, this method poses several weaknesses. Teacher preparation programs and professional development trainings provide little or no information on identifying and serving gifted children in schools (Gross, 1999; National Association for Gifted Children, 2014) The lack of training, cultural bias, and general subjectivity of teacher nomination does not represent an effective way of accurately identifying giftedness, therefore leading to negative outcomes for many students, particularly students of color.

Parent Nomination

Similar to teacher nomination, parent nomination involves the completion of informal checklists or paperwork to refer a child for a gifted identification (GallagherCaterino, & Bisa- Kendrick, 2014). Gross (1999) explains that compared to teachers, parent nomination for giftedness is more effective. Parents are much more aware of their child's development across the years and it is suggested that they provide examples of their child's work through portfolios (Gross, 1999). This may help address any disbelief that schools may have in response to parent nomination of their child's abilities (Gross, 1999). Merrik and Targett (2004) have similar beliefs about the

helpfulness of parent nomination in gifted referrals, however, they also point out that parents may have a difficult time accurately identifying gifted characteristics if they have no comparison to their child. This may result in parents making subjective claims about their child's development (Merrik & Targett, 2004). Parent nomination may be a helpful start in identifying a gifted student, however, it does not appear that this method is strongly supported by research.

Portfolios

Portfolios include student work gathered over time to represent different abilities including creativity and academic success (NAGC, 2014). The use of portfolios, or samples of students' work, may serve as another method of measuring advanced abilities. McClain and Pfeiffer (2012) investigated gifted identification methods used by different states. It is believed that portfolios provide an alternative way for students to demonstrate their abilities without the pressure of test taking (McClain & Pfeiffer, 2012). It also seems that states that accept portfolios to identify giftedness may prevent cultural bias connected to the reliance on test scores for gifted education placement (McClain & Pfeiffer, 2012). In an article regarding ethical considerations in gifted assessment and identification for diverse students, the author explains the subjectivity that may be associated with the use of portfolios when identifying gifted students (Mitra- Itle, 2011). Specifically, this evidence may not be representative of students' usual work and may not portray abilities across all subject areas (Mitra-Itle, 2011). Portfolios may serve a supportive role within a comprehensive evaluation of giftedness, however, the literature on this topic does not conclude that portfolios have adequate reliability or validity to identify gifted students.

Rating Scales

The Scales for Rating the Behavioral Characteristics of Superior Students (Renzulli & Hartman, 2013), the Gifted Rating Scales (Pfeiffer & Jarosewich, 2003), and the Gifted Evaluation Scale (McCarney & Arthaud, 2009) are among some of the standardized norm- referenced rating scales that measure teachers' perceptions of gifted characteristics. These rating scales have stronger psychometric properties compared to other gifted rating scales (Cao, Jung, & Lee, 2017; CDE, 2017; Prus & Garcia-Vazquez, 2014). Although parent rating scales exist to measure gifted characteristics, scales with strong psychometric properties and written in English are not yet available (Cao, Jung, & Lee, 2017).

The Scales for Rating the Behavioral Characteristics of Superior Students, otherwise known as the Renzulli-Hartman Scales, is a rating scale completed by teachers measuring student learning, creativity, motivation, and leadership (Renzulli & Smith, 2013). Some optional areas of assessment within the scales include musical abilities, artistic abilities, communication, and planning (Renzulli & Smith, 2013). The Renzulli-Hartman scales are also intended to capture students' advanced vocabulary, comprehension of underlying principles, and ability to make generalizations from complex information (Renzulli & Smith, 2013). The developers of this rating scale explain that students who score high on this assessment are likely to be gifted (Renzulli & Smith, 2013).

The Gifted Rating Scales are norm-referenced rating scales aligned with the federal definition and current theories of giftedness (Pfeiffer & Jarosewich, 2003). The five domains covered within this rating scale include intellect, academic readiness,

motivation, creativity, and artistic talent (Pfeiffer & Jarosewich, 2003). The Gifted Rating Scales help identify student strengths and specific areas of giftedness through teacher observations (Pfeiffer & Jarosewich, 2003).

The Gifted Evaluation Scale-Third Edition is a rating scale designed to support the identification and program planning for gifted students (McCarney & Arthaud, 2009). The scale includes 49 items with 6 subscales; Intellectual, Creativity, Specific Academic Aptitude, Leadership Ability, Performing and Visual Arts, and Motivation as an optional subscale (McCarney & Arthaud, 2009). Each subscale represents gifted characteristics identified in federal and state regulations (McCarney & Arthaud, 2009). The GES-3 is nationally normed, has strong psychometric properties, and demonstrates sensitivity to English Language Learners and minority students (CDE, 2016; McCarney & Arthaud, 2009).

Overall, these rating scales assessing giftedness include questions related to students' academic ability, creativity, artistic ability, leadership qualities, motivation, and communication (CDE, 2017; Prus & Garcia-Vazquez, 2014). Using rating scales tomeasure gifted characteristics appears to be more cost and time efficient than other assessment methods, however, the availability of these specific gifted rating scales across all school districts may be scarce. Additionally, these rating scales do not have versions including parent perceptions of gifted characteristics.

The Behavior Assessment System for Children, Third Edition

The Behavior Assessment System for Children, Third Edition (BASC-3) is a commonly used rating scale that supports the differential diagnoses of emotional and behavioral problems in addition to eligibility determination in school-based evaluations

(Reynolds & Kamphaus, 2015). Although this rating scale is not designed to identify gifted characteristics, the assessment may have value in measuring common behaviors exhibited by gifted children. Typical behaviors among gifted children are often misinterpreted as problem behaviors, which are assessed by the BASC-3. Unlike gifted rating scales, the BASC-3 is available in both parent and teacher versions, assesses problem behaviors, and assesses areas of student strengths (Reynolds & Kamphaus, 2015). The BASC-3 has strong psychometric properties, with Cronbach's alpha values indicating good reliability on the primary scales of the teacher and parent forms (α = .84-.89) (Reynolds & Kamphaus, 2015).

The BASC-3 Parent Rating Scales (PRS) and Teacher Rating Scales (TRS) include scales measuring a child's internalizing problems, externalizing problems, adaptive skills or strengths, and behavior symptoms. The BASC-3 Teacher rating form includes a scale that measures school problems (Reynolds & Kamphaus, 2015). The BASC-3 rating scales yield scores in the areas of Hyperactivity, Aggression, Conduct Problems, Anxiety, Depression, Somatization, Attention Problems, Learning Problems, Atypicality, Withdrawal, Adaptability, Social Skills, Leadership, Study Skills, and Functional Communication (Reynolds & Kamphaus, 2015). These primary scales are combined into four different composite scale scores; Externalizing Problems, Internalizing Problems, School Problems, and Adaptive Skills. Additionally, these scores result in a broad composite, the Behavioral Symptoms Index (BSI), which assesses the overall level of problem behaviors (Reynolds & Kamphaus, 2015). The BASC-3 offers optional content scales that are more specific or syndrome oriented than the primary scales.

These content scales include Anger Control, Bullying, Developmental Social Disorders, Emotional Self-Control, Executive Functioning, Negative Emotionality, and Resiliency (Reynolds & Kamphaus, 2015).

Because the BASC-3 measures a variety of behavioral characteristics that can be measured through both parent and teacher perceptions, the assessment may be useful in identifying gifted behavioral characteristics. Specifically, the overexcitabilities among gifted children are already viewed as problem behaviors according to practitioners in clinical and school settings (Webb, 2016). The BASC-3 may serve as a practical assessment to identify overexcitabilities and other gifted behavioral characteristics.

Cognitive assessments, achievement tests, teacher nominations, parent nominations, portfolios, and rating scales are some of the ways school districts determine eligibility for gifted education services (Mcclain & Pfeiffer, 2012). These assessments methods have strengths and weaknesses, with some states relying on only cognitive assessments and other states using multiple criteria when identifying for giftedness (Mcclain & Pfeiffer, 2012; Mitra-Itle, 2011; McBee, Peters, & Miller, 2016; Naglieri & Ford, 2005).

Although a large amount of variability exists in the assessment and identification of giftedness in education, many professionals in psychology and education advocate for the use of comprehensive assessment tools prior to identifying students for services. It is suggested that a multi-method approach be used when evaluating for giftedness in order to capture all aspects of development, ensure that students of diverse backgrounds are not at a disadvantage through the identification process, and to allow students to showcase their competencies in a variety of ways (Acar et al., 2016; Almeida et al, 2016; Merrick

& Targett, 2004; Mitra-Itle, 2011; Preiffer, 2012). Both parent and teacher versions of gifted rating scales with strong psychometric properties are not yet available (Cao, Jung, & Lee, 2017). The BASC-3 includes parent and teacher rating scales, captures a variety of behaviors, and is used in many school-based evaluations (Reynolds & Kamphaus, 2015). Thus behavior rating scales may have value in identifying gifted characteristics, specifically overexcitabilities, that are not measured in other gifted rating scales.

Misdiagnosis/Misidentification of Giftedness

Individuals who are gifted continue to be inaccurately identified or misdiagnosed across clinical and school settings (Webb, 2016). Behavioral characteristics unique to gifted individuals may be mistaken as representing behavioral, mental, or emotional problems (Webb, 2016). Misdiagnoses are typically rooted in the lack of training among healthcare and school professionals, cultural bias, and inadequate identification practices (Webb, 2016).

Lack of Training

Webb (2016) explains that most psychologists, social workers, psychiatrists, pediatricians, and other healthcare professionals do not receive training or sufficient continuing education about the characteristics and social-emotional needs of gifted individuals. Robertson, Pfeiffer, and Taylor (2011) discovered that approximately 94% of school psychologists receive little or no training in evaluating for giftedness within their graduate school programs.

Psychologists and Psychiatrists with expertise in gifted assessment and intervention report working with many referred clients previously identified with diagnoses of Attention Deficit Hyperactivity Disorder, Obsessive-Compulsive Disorder,

Autism, or Oppositional Defiant Disorder (Webb, 2016). It was discovered that a majority of these clients should have been identified as gifted rather than labeled with behavioral disorders (Webb, 2016). Unusual behavioral traits that are typical for gifted individuals were misinterpreted and therefore misdiagnosed as disorders requiring serious treatment (Webb, 2016). The widespread lack of preparation and knowledge serves as one of the major reasons for the misidentification of gifted individuals (Webb, 2016). Classifying typical gifted behaviors as pathological disorders consequently leads to a significant disservice for those who are gifted (Daniels & Piechowski, 2009; Webb, 2016).

Given that many professionals in the fields of psychology and education receive limited training on giftedness, it is important to point out who is trained on the topic. James T. Webb, Tracy Cross, and Frank C. Worrell are among some of the researchers and psychologists in the field who conduct research or trainings on gifted education, the social-emotional characteristics of gifted individuals, and examine methods to prevent the misdiagnosis of gifted children (Cross, 2010; Henshon, 2007; Webb, 2013; Webb, 2016; Worrell, 2009; Worrell & Erwin, 2011). Their research and clinical experiences with gifted individuals are frequently cited in scholarly journals related to giftedness and education. Their contributions to the field have led to the advancement of understanding gifted children and how to best serve them by improving identification practices, understanding their social-emotional needs, and how practitioners and caregivers can best support gifted children.

Cultural Bias

Most identification practices for gifted and talented services result in the underrepresentation of students from Hispanic, African American, Native American, English language learning, and low-income families (Peters & Engerrand, 2016). Teachers are less likely to refer children from diverse racial, cultural, and socioeconomic backgrounds for gifted identification (Ford, Wright, Washington, & Henfield, 2016). Additionally, intellectual abilities and behaviors rooted in giftedness are commonly overlooked and interpreted as maladaptive more frequently among minority students (Webb, 2016).

Questions on cognitive assessments, which are commonly used as a single indicator of giftedness, encourage cultural biases and place children from diverse backgrounds at a disadvantage to perform well (Ford, Wright, Washington, & Henfield, 2016). These standardized cognitive assessments have been questioned due to their discrimination against race, culture, language, gender, income, and educational level (Ford, Wright, Washington, & Henfield, 2016).

Inadequate Identification Practices

Identification methods for giftedness in schools may not accurately capture students' advanced abilities across non-academic areas, may be culturally discriminatory, and may lack multi-method or comprehensive assessment approaches (Prus & Garcia-Vazquez, 2014). These inadequate identification practices contribute to the misidentification and misplacement of students with gifted abilities (Prus & Garcia-Vazquez, 2014; Webb, 2016).

Individuals who are gifted may exhibit unusual behavioral characteristics that may be misinterpreted as clinical symptoms of mental health problems (Daniels & Piechowski, 2009). In a book focusing on the misdiagnosis of gifted children and adults, Webb (2016) discusses the process of classifying symptoms as mental health diagnoses. He explains that conclusions of these diagnoses rely upon the existence of specific behavioral characteristics (Webb, 2016). Within these evaluations there is little consideration for the origin of behaviors or environmental factors that may help explain the presence of seemingly atypical behaviors (Webb, 2016).

Webb (2016) also discusses the level of impairment in individuals' behaviors when making diagnostic decisions. He defines impairment as the difference between observed behavior and expected behavior (Webb, 2016). Making decisions based on an individual's observed behavior without consideration for environmental or historical factors may lead to misdiagnosis (Webb, 2016). For example, having difficulty with concentration across all settings is different than having difficulty with concentration only in math class. Exhibiting hyperactive behavior across all situations is different than exhibiting hyperactive behavior only at home. It is important to differentiate between examples such as these before drawing extreme conclusions and perhaps labeling situational hyperactive behaviors as behavioral disorders (Webb, 2016).

Behavioral Characteristics of Gifted Students

Given that a large amount of misdiagnosis among gifted individuals is attributed to behavioral misinterpretations, it is important to learn about specific behaviors that may be associated with giftedness. Common behavior patterns associated with giftedness will be discussed, including perfectionism, asynchronous development, and overexcitability.

Perfectionism

Many research findings indicate a high correlation between perfectionism and giftedness (Daniels & Piechowski, 2009; Mofield & Parker, 2015; Neihart, Pfeiffer, & Cross, 2015; Renee; 2012; Silverman, 2007). Although inconsistency exists in research on perfectionism and its connection to giftedness, it is a trait that many believe to exist more often among gifted individuals (Daniels & Piechowski, 2009; Mofield & Parker, 2015; Neihart, Pfeiffer, & Cross, 2015; Renee; 2012; Silverman, 2007). Gifted children usually set idealistic standards for themselves so that they succeed at their first attempts of a task (Daniels & Piechowski, 2009; Mofield & Parker, 2015; Neihart, Pfeiffer, & Cross, 2015; Renee; 2012; Silverman, 2007). This mindset has allowed them to avoid failure and expect success when faced with future academic or social demands (Daniels & Piechowski, 2009). A large amount of research on perfectionism has been devoted to different types of perfectionism, specifically positive and negative manifestations of the characteristic in gifted individuals (Chan, 2007; Daniels & Piechowski, 2009; Guignard, Jacquet, and Lubary, 2012; Parker, 2002; Schuler, 2002; Shawn & Lovett, 1994).

Shawn and Lovett (1994) compared behavior among gifted and non-gifted middle school students. They found that gifted students had increased levels of physiological

stress and negative affect when provided with an experimentally induced failure condition. These findings support the idea that perfectionistic tendencies may be more common among gifted individuals.

Parker (2000) studied perfectionism in over 800 gifted elementary students through completion of rating scales and other measures. Results showed that most gifted students were either healthy perfectionists or "dysfunctional" perfectionists.

Research by Schuler (2002) investigated the connection between perfectionism and gifted adolescents through quantitative and qualitative methods. Results from surveys and interviews revealed that perfectionism is represented through a continuum of behaviors ranging from exhibiting a typical level of perfectionism to concerning levels of perfectionism (Schuler, 2002). Out of the 20 gifted adolescents, about 87% reported to be perfectionistic, 58% reported as having a healthy range of perfectionism, and about 29% reported as being in the "neurotic" range of perfectionism (Schuler, 2002). Chan (2007) studied over 300 gifted children from age 7 to 18 by administering a self-report measure on perfectionism. Results revealed that gifted children demonstrate positive or negative manifestations of perfectionism (Chan, 2007). These manifestations of perfectionism indicate that there are healthy and unhealthy expressions of the characteristic.

Daniels and Piechowski (2009) view perfectionism as a complex area of research because there may be positive and negative manifestations of the trait. They believe that when perfectionism is viewed positively, there is an association to giftedness (Daniels & Piechowski 2009). When behaviors within perfectionism present as negative or pathological, it is less likely that the behaviors are seen as signs of giftedness (Daniels &

Piechowski 2009). For example, Guignard, Jacquet, and Lubary (2012) found associations between giftedness, perfectionism, and anxiety. Because anxiety may result from a child's perfectionism, professionals evaluating children's behavior may misinterpret these symptoms as only anxiety without consideration for perfectionism or giftedness (Guignard, Jacquet, & Lubary, 2012).

Because perfectionism is common among most gifted children, it may be beneficial to assess this trait to help in identification methods for giftedness. Current tools that assess perfectionism include rating scales such as the Frost Multidimensional Perfectionism Scale (FMPS) (Frost et al., 1990). This scale has validation support from many studies, is based on a negative view of perfectionism, and measures different aspects of perfectionism (Daniels & Piechowski, 2009). The Almost Perfect Scale—Revised (APS-R) was developed about ten years later to provide a more balanced view of perfectionism. This scale includes questions to determine whether one's perfectionism is adaptive or maladaptive (Slaney et al., 2001). More recently, the Positive and Negative Perfectionism Scale (PNPS-12) was created with the conceptualization of perfectionism defined as positive and healthy or negative and unhealthy (Chan, 2007).

Asynchronous Development

Asynchronous development is characterized as having greater cognitive development than social, emotional, or physical development (Neihart, Pfeiffer, & Cross, 2015). Although asynchrony may occur among typically developing children and may be variable among those who are gifted, some professionals in the field believe it to be a major characteristic of giftedness (Neihart, Pfeiffer, & Cross, 2015; Silverman, 1997). A

child with asynchronous development may have advanced intellect but less-developed motor or social skills for example (Webb, 2016). Asynchrony is especially recognizable in those who are highly gifted. (Neihart, Pfeiffer, & Cross, 2015; Webb, 2016). Gifted children tend to be very self-aware of their asynchronous development, which could lead to frustration and even symptoms of depression (Webb, 2016).

Asynchronous development may contribute to errors in diagnosis. For example, a child with advanced cognition coupled with lack of judgment may appear as impulsive (Webb, 2016). When the discrepant development of gifted children is misunderstood, pathological misdiagnoses may occur (Webb, 2016). Validated assessments specifically measuring asynchrony do not exist.

Overexcitability

Overexcitability is a translation of the Polish word, "nadpodbudliwosc" or "superstimulability", and is characterized as having an intense physiological response to internal or external stimuli due to increased neuronal sensitivities (Daniels & Piechowski, 2009). Research on behavioral characteristics of giftedness is often influenced by the work and theory developed by Kazimierz Dabrowski, a psychiatrist, psychologist, and expert in education (Daniels & Piechowski, 2009). His work resulted in the Theory of Positive Disintegration, which explains the positive role that disintegration or conflict plays in one's development (Daniels & Piechowski, 2009).

He believed that an individual's growth depends on their hereditary developmental potential, which is expressed through the interaction with one's environment (Tillier, 2002). Dabrowski's idea of developmental potential includes several aspects, one of which is overexcitability (Daniels & Piechowski, 2009).

Dabrowski believed that overexcitabilities are essential for advanced personality development (Daniels & Piechowski, 2009; Tiller, 2002). Individuals who have overexcitability often experience life in a richer, more intense way (Daniels & Piechowski, 2009). Overexcitability may be represented in five different forms; intellectual, imaginational, emotional, psychomotor, and sensual overexcitability (Daniels & Piechowski, 2009). Individuals with advanced developmental potential could experience one, a few, or even all types of overexcitabilities throughout their life (Daniels & Piechowski, 2009; Webb, 2016).

Intellectual overexcitability is expressed through intense knowledge, inquisitive thinking, ability to think critically, and problem-solve (Ackerman, 2009; Daniels & Piechowski, 2009). Individuals exhibiting intellectual overexcitability have an incredible desire for knowledge and enjoy solving complex problems (Ackerman, 2009; Daniels & Piechowski, 2009). They may demonstrate a profound ability to concentrate on challenging tasks for a long period of time (Ackerman, 2009; Daniels & Piechowski, 2009). An individual with intellectual overexcitability may be passionate about morality and issues of fairness in the world (Ackerman, 2009; Daniels & Piechowski, 2009). These individuals are independent thinkers who demonstrate a unique excitement in gaining knowledge (Ackerman, 2009; Webb, 2005).

Psychomotor overexcitability may be expressed through intense physical activity, movement, impulsivity, and rapid speech (Ackerman, 2009; Daniels & Piechowski, 2009). Sensual overexcitability involves enhanced sensitivity to sensory experience such as sight, smell, taste, or feel (Ackerman, 2009; Daniels & Piechowski, 2009). Individuals with sensual overexcitability may experience increased awareness of sounds, music, or aesthetics (Ackerman, 2009; Daniels & Piechowski, 2009). Expressions of imaginational overexcitability may involve intense creativity, imagination, daydreaming, and use of metaphors (Daniels & Piechowski, 2009). Emotional overexcitability may be expressed through having intense emotions, compassion, concern for others, strong attachments, meaningful relationships, and somatic representations of emotion (Ackerman, 2009). Dabrowski indicated imaginational, intellectual, and emotional overexcitabilities as the more intense forms of overexcitabilities that promote increased levels of development (Rinn & Reynolds, 2012).

The concept of overexcitability has had a strong influence on understanding the gifted population (Mendaglio, 2002; Finlay, 2002; Tillier, 2002). Tiller (2002) discussed Dabrowski's investigations on Polish gifted youth in the 1960s, which initially revealed the connection between giftedness and overexcitabilities. The 80 children and adolescents participating in the research demonstrated advanced abilities across academics or the arts (Tillier, 2002). Dabrowski's results revealed that all 80 individuals exhibited overexcitability and that their outstanding achievement in learning could likely be attributed to having heightened sensitivity (Tillier, 2002).

Further research and discussion on this topic has continuously supported Dabrowski's theory in connection to giftedness. Many professionals in the field believe that this theory has contributed profoundly as a way to make sense of the emotionality observed among gifted individuals (Ackerman, 2002; Bouchet & Falk, 2001; Daniels & Piechowski, 2009; Finlay, 2002; Mendaglio, 2002).

Tucker and Hafenstein (1997) examined the use of Dabrowski's theory of overexcitability as a way to support identification of giftedness and to understand behavioral traits in gifted children. The researchers collected data on young gifted children through a qualitative case study and found that all children demonstrated behavior consistent with Dabrowski's overexcitabilities (Tucker and Hafenstein, 1997). Examples of imaginational overexcitability were observed among children participating in fantasy play, imaginative thinking, and daydreaming (Tucker and Hafenstein, 1997). Examples of emotional overexcitability included empathetic behaviors, anxiety, and intensity of feeling (Tucker and Hafenstein, 1997). Children demonstrated psychomotor overexcitability through rapid speech, high amounts of energy, and impulsivity (Tucker and Hafenstein, 1997). Sensual overexcitability was observed through children's enhanced sensitivity to sensory stimuli including food, clothing, and classroom materials (Tucker and Hafenstein, 1997). The results of this study support the use of Dabrowski's theory in understanding and identifying behavioral characteristics in young gifted children (Tucker and Hafenstein, 1997).

Ackerman (1997) examined the efficacy of overexcitability assessment as a way to identify gifted adolescents. The Overexcitability Questionnaire was used to

assess different domains of overexcitability among a total of 79 high school students (Ackerman, 1997). Results from a discriminant function analysis showed that psychomotor, intellectual, and emotional overexcitability profiles differentiated between gifted and nongifted students (Ackerman, 1997). About 35% of nonidentified students had a similar profile to gifted students (Ackerman, 1997). The researchers believe that the results demonstrate the potential of overexcitability profiles within the identification process of gifted students (Ackerman, 1997).

Bouchet and Falk (2001) examined the relationship among giftedness, gender, and overexcitability in a large sample of over 500 college students. The Overexcitability Questionnaire II, a self-report questionnaire, was used to measure different areas of overexcitability among gifted and nongifted students (Bouchet and Falk, 2001). The results of this study support previous research on the association between giftedness and overexcitability, specifically indicating that gifted students had higher scores on intellectual and emotional overexcitability than nongifted students (Bouchet and Falk, 2001).

Dabrowski believed that signs usually associated with mental health disorders are actually traits of developing personalities among individuals with enhanced developmental potential and overexcitability (Daniels & Piechowski, 2009). He believed that demonstrating signs resembling pathology is a necessary step toward optimal personality development (Daniels & Piechowski, 2009).

When overexcitability manifests within gifted individuals, the likelihood for misidentification increases. Behaviors coming from one's overexcitability may be misinterpreted as inattention, impulsivity, or anxiety to name a few (Daniels & Piechowski, 2009).

Patterns in Peer Relations and Social-Emotional Functioning

In addition to understanding behavioral patterns among gifted children, it is important to examine how this population differs from nongifted children in regards to peer relationships and social-emotional functioning. Practitioners and caregivers might not understand that giftedness itself may influence the way gifted children interact with others. Being gifted may also contribute to differences in a child's social-emotional functioning. School psychologists play a role in supporting healthy peer relationships and promoting growth in social-emotional functioning among students. By learning about how giftedness influences these areas, practitioners and caregivers may better understand behaviors of gifted children.

Peer Relationships

Variability exists on research examining giftedness and peer relations. Webb (2016) explains that gifted preschool children move through the stage of parallel play into interactive play more quickly than typically developing peers. They create complex games with particular rules that other children may find difficult to understand, which usually leads to frustration and problems cooperating with each other (Webb, 2016). Elementary gifted children may become impatient when their same age peers lack similar interests or abilities, making peer interactions more difficult on both ends. In late

childhood and adolescents academically gifted students may have a difficult time finding common interests with other peers who value non-academic abilities or activities (Francis, Skelton, & Read, 2010; Kiefer & Ryan; 2011).

In a study investigating over 1,500 gifted adolescents the researchers found that many of the students had high levels of social competence and satisfaction with peers (Lee, Olszewski-Kubilius, & Thomas, 2012). It also seems that the type of giftedness may influence peer interactions. Several researchers discovered that giftedness in verbal abilities is more often associated with peer difficulties. Verbally gifted children may feel pressured to mask their abilities in order to communicate on the same level as typically developing peers their age, which may result in identity conflict (Lee et al., 2012; Peairs, 2010). Gifted students may also have feelings of guilt or injustice when they outperform others or if they have access to other educational opportunities such as gifted programs (Hertzog, 2003; Grobman, 2009; Niehart, Pfeiffer, & Cross, 2015.)

Cultural differences may influence peer relations, specifically for gifted African American students who underachieve to avoid demonstrating countercultural behavior (Moore, Ford, & Milner, 2005; Niehart, Pfeiffer, & Cross, 2015). The “acting white” phenomenon by Fordham and Ogbu (1986) is a term that defines African American students who appear to reject the dominant culture’s norm of academic ability. Ford, Grantham, and Whiting (2008) discovered that many gifted and high-achieving African American students were teased for being academically successful.

African American gifted students may also face challenge with identity, peer relations, and sense of belonging in classrooms where their gifted peers are predominately white (Moore, Ford, & Milner, 2005).

Social-Emotional Functioning

Many research contributions have been made on the social-emotional characteristics in gifted individuals across the past few decades, with the research on this topic reflecting mixed conclusions.

Francis, Hawes, and Abbott (2016) conducted a systematic review to identify and measure all existing research involving the association between intellectual giftedness and child psychopathology. The most common finding in this systematic review included the association of intellectual giftedness with decreased levels of psychopathology among children and adolescents (Francis, Hawes, & Abbott, 2016). These results provide evidence for higher levels of social-emotional functioning in individuals identified as intellectually gifted when compared to individuals with average cognitive abilities (Francis, Hawes, & Abbott, 2016). Although these findings contribute to the literature on giftedness and behavior, most of the empirical research articles included in this systematic review date back to the 1980s, 1990s, and early 2000s.

Sing and Kaur (2012) compared levels of emotional intelligence among gifted and non-gifted adolescent students. Their total sample included 400 students; 200 identified as gifted through an IQ assessment and 200 identified as having average intellectual abilities (Sing & Kaur, 2012). In each group of 200 students, half were male and half were female (Sing & Kaur, 2012). The Ekta Emotional Intelligence Scale was used to

measure all students' emotional intelligence, which included areas of self-awareness, management of emotions, motivation, empathy, and relationships (Sing & Kaur, 2012). Descriptive statistics and t-ratios were used to analyze differences in emotional intelligence among gifted and non-gifted adolescent students (Sing & Kaur, 2012). Results revealed differences between these two groups, specifically that gifted students had higher scores in the management of emotions, motivation, empathy, and relationships when compared to students with average intellectual abilities (Sing & Kaur, 2012).

Riaz, Shahzad, Riaz, and Sarwat (2013) found similar results in their examination of the interrelation of intellectual differences and psychological adjustments among adolescents. The Reynolds Adolescent Adjustment Screening Inventory (RAASI) was used to measure participants' antisocial behavior, anger control problems, emotional distress, and positive self (Riaz, Shahzad, Riaz, & Sarwat, 2013). The RAASI was administered to two different groups; 93 students screened as intellectually gifted (IQ equal or above 130) and 104 non- gifted youth (IQ ranging from 90- 109) (Riaz, Shahzad, Riaz, & Sarwat, 2013). The t-test for independent samples was used to examine the difference between intellectually gifted and non-gifted adolescents on the variable of adjustment on the RAASI (Riaz, Shahzad, Riaz, & Sarwat, 2013). Results showed a significant difference on the variable of adjustment when comparing gifted and nongifted students (Riaz, Shahzad, Riaz, & Sarwat, 2013). Results suggest that gifted students have strengths in psychological adjustment when compared to non-gifted peers (Riaz, Shahzad, Riaz, & Sarwat, 2013). The researchers concluded that higher intellectual capacity may be related to higher levels of psychological adjustment (Riaz, Shahzad, Riaz, & Sarwat, 2013). Their interpretation of the results was that intellectual giftedness

may serve as a protective factor, lead to lower levels of psychological adjustment, and lead to higher levels of psychological wellbeing (Riaz, Shahzad, Riaz, & Sarwat, 2013).

Similar results related to psychological functioning are supported by a study comparing emotional and behavioral risk among gifted and nongifted elementary students (Eklund, Tanner, Stoll, & Anway, 2015). A multi-gate, multi-informant approach was used to assess behavioral functioning among gifted students (Eklund, Tanner, Stoll, & Anway, 2015). The BASC-2 parent and teacher rating scales were used as part of these behavioral evaluations. Results showed that gifted students demonstrated emotional and behavioral risk less frequently than non-gifted students (Eklund, Tanner, Stoll, & Anway, 2015).

Wilson (2015) investigated the affective characteristics of high early mathematics and literacy ability among 1,200 preschool students by using a logistic regression analysis. Affective characteristics were measured by asking parents and teachers to complete rating scale items taken from the Preschool and Kindergarten Behavioral Scales- Second Edition (Merrell, 2003) and the Social Skills Rating System (Gresham & Elliot, 1990). These items measured socially maladaptive behavior, concentration, empathy, worry, and friendship. Results indicated concentration and socially maladaptive behaviors as significant predictors of early giftedness in literacy, however, social-emotional predictors were not found for early giftedness in mathematics (Wilson, 2015). The researcher's interpretation of these results also showed that young gifted children do not demonstrate differences in friendships, anxious behavior, or empathy when compared to typically developing children. One of the purposes of this study by Wilson (2015) was

to examine the psychological wellbeing of gifted and nongifted children in first and second grade (Wilson, 2015). About 200 students were screened through methods of teacher nomination, creativity, and nonverbal reasoning ability to categorize students as gifted or as typically developing (Wilson, 2015). Thirty-five children were identified as gifted and 34 children were identified as typically developing (Wilson, 2015). Children completed a self-report assessment measuring self-worth, scholastic competence, social acceptance, and behavioral conduct (Wilson, 2015). Parents completed a questionnaire to measure their children's psychological behavior, which includes questions on emotional problems, conduct problems, hyperactivity and inattention, peer relationships problems, and prosocial behavior (Wilson, 2015). Analyses of the self-report and parent assessment results revealed overall little differences in wellbeing among gifted and non-gifted children (Wilson, 2015). Of the small differences that did exist in the results, were lower levels of self-worth, social acceptance, and internalizing behavior among gifted children (Wilson, 2015).

Giftedness and Misdiagnosis

Misdiagnosis can be described as a mismatch between an individual's true needs and the perception of those needs by mental health providers (Webb, 2016). A child may be labeled as having a mental health diagnosis or learning disability when the child's behaviors may actually be better explained by giftedness (Webb, 2016; Daniels & Piechowski, 2009). Misdiagnosis may also result in a missed diagnosis, or overlooking a health, behavior, or learning concern (Daniels & Piechowski, 2009; Webb et al., 2016). Two of the common misdiagnoses among the gifted population include Attention Deficit

Hyperactivity Disorder (ADHD) and Oppositional Defiant Disorder (ODD) (Nelson, Rinn, & Hartnett, 2006; Webb, 2016). These misdiagnoses will be discussed with regard to Dabrowski's overexcitabilities. Another important topic, twice exceptionality, will be discussed as it fits into the realm of giftedness and other potential diagnoses.

Attention Deficit Hyperactivity Disorder

Psychomotor overexcitability may be misidentified as Attention Deficit Hyperactivity Disorder (ADHD) among gifted children (Daniels & Piechowski, 2009; Webb, 2016). Overabundance of energy, rapid speech, and impulsivity are some behaviors indicative of an ADHD diagnosis, however, these are also behaviors associated with psychomotor overexcitability among gifted individuals (Daniels & Piechowski, 2009; Nelson, Rinn, & Hartnett, 2006; Webb et al., 2016). ADHD has received the most attention as a behavioral disorder that is overdiagnosed in children (Elder, 2010; Merten, Cwik, Margraf, & Schneider, 2017; Mullet & Rinn, 2015; Webb, 2016). It is estimated that about 20% of children labeled with ADHD are misdiagnosed and are receiving stimulant medications (Nelson, Rinn, & Hartnett, 2006; Webb, 2016). Taking stimulant medication for ADHD symptoms that are not present may also be harmful for a gifted child's development (Webb, 2016). Because ADHD is diagnosed based on observations and reports about a child's behavior, it is important for practitioners to know how to differentiate between the disorder and giftedness through behavioral assessment (Webb, 2016).

School psychologists should gather information on whether inattentiveness or hyperactivity occur across multiple settings or only in particular settings, such as in

school. Collecting behavioral information from both parents and teachers may help in determining the situational specificity of a child's behaviors, therefore helping to understand whether the behaviors are better explained by giftedness or by ADHD. It is important for practitioners to determine whether a child's inattentiveness is due to boredom, being asked to complete tasks at a level much lower than their cognitive proficiency, or not being provided with challenging opportunities. If so, these reasons may be more likely due to giftedness rather than symptoms of ADHD (Webb, 2016). In contrast, a student who has trouble planning, organizing, initiating, and staying focused on tasks that are aligned with their cognitive ability level may have executive function deficits or ADHD (Nelson, Rinn, & Hartnett, 2006). Children with ADHD Hyperactive-Impulsive Type have significant difficulty sitting still and their intense energy interferes with peer interactions, academic performance, and daily functioning (Bunford, Brandt, Golden, Dykstra, Suhr, & Owens, 2015). A gifted child with psychomotor overexcitability, however, may exhibit increased physical energy levels that likely do not interfere with everyday functioning (Webb, 2016).

Because behavioral features of giftedness may present themselves as symptoms of ADHD, it is important for school psychologists to learn the differences between the two in order to differentiate between them. Knowing and understanding the differences between gifted characteristics and behavioral disorders, such as ADHD or executive functioning deficits, will help practitioners make informed decisions in school-based evaluations and in gifted identification. Correctly identifying students with giftedness and ADHD will increase the likelihood that students receive supports for optimal development and success.

Oppositional Defiant Disorder

Webb (2016) explains that the overexcitabilities demonstrated by gifted children may also reflect behaviors that appear to be oppositional, therefore making gifted children at-risk for receiving a diagnosis of Oppositional Defiant Disorder (ODD), or simply being viewed as angry, oppositional, defiant, and vindictive individuals. According to the literature on gifted behavioral characteristics, Gifted children are passionate, intellectual, and inquisitive (Galbraith & Delisle, 2015; Webb, 2016). Unfortunately, these positive characteristics may be misinterpreted as negative characteristics because gifted children appear to question authority, disrupt others, and appear to be argumentative (Daniels & Piechowski, 2009; Neihart, Reis, Robinson, & Moon, 2002; Webb, 2016).

According to the DSM-5, Oppositional Defiant Disorder (ODD) is characterized by angry, argumentative, defiant, and vindictive behavior (American Psychological Association, 2013). It is important to examine the similarities and differences between giftedness and symptoms of oppositional defiant disorder in order to better differentiate between them. For example, a child with symptoms of ODD demonstrates defiance across all settings with almost all adults, intentionally ignores others, and is not concerned about others (Webb, 2016). On the other hand, a child who is gifted without ODD would likely demonstrate argumentative tendencies in regards to issues of unfairness or idealism (Webb, 2016).

Although ODD and some behaviors of giftedness may present similarly, it is important to differentiate between the two in order to avoid diagnosing a gifted child with a behavioral disorder. Identifying a gifted child with ODD will only lead to inappropriate intervention, therefore not providing the child with the services needed to support their true needs and talents.

Twice Exceptional

Although gifted children are more likely to be misidentified with mental health or behavioral problems, it is important to recognize that gifted children are not immune from having a dual diagnosis (Webb, 2016). *Twice exceptional* describes gifted learners who have a coexisting exceptionality such as ADHD, ODD, Autism, or a Specific Learning Disability (Assouline & Whiteman, 2011; Foley- Nicpon, Assouline, & Colangelo, 2013). Having a lack of consideration for possible twice exceptionality plays a role in misdiagnosis (Amend & Beljan, 2009). Precise estimates of twice exceptionality are unknown due to misdiagnoses, lack of identification, and because of limited research done on this population (Nicpon, Assouline, & Colangelo, 2013; Webb, 2016). It is important to understand the implications associated with twice exceptionality. For example, a child with dual diagnoses may be difficult to identify due to their gifted abilities appearing stronger than the deficit, therefore masking the disability (Webb, 2016). The same idea applies when a disability masks a child's giftedness and potential. It is also possible for each diagnosis to mask the other, making either giftedness or the disability difficult to recognize (Webb, 2016).

Webb (2016) explains that gifted children typically minimize or do not share problems that they are experiencing in order to avoid appearing weak. Gifted children with evident diagnoses such as cerebral palsy may also encourage caregivers andpractitioners to place more attention on the disability rather than the child's gifted abilities (Webb, 2016). Webb (2016) explains that these issues fall under misdiagnosis because the child's giftedness is disregarded, therefore potentially worsening problems for the child. Although twice exceptional students will not be an area of examination in this study, it is important to understand the fine line between misdiagnosing a gifted child as having a behavioral disorder and missing an exceptionality or diagnosis that a gifted child may have.

Consequences of Misdiagnosis

Inappropriate Educational Services

Misdiagnosis leads to either the labeling of a disorder when the exhibited behaviors can be better explained by giftedness, or a true disorder that goes unnoticed. The consequences of misdiagnosis are quite significant, leading to inappropriate treatment that may be detrimental to one's development (Daniels & Piechowsi, 2009; Webb, 2016). The unique social-emotional characteristics exhibited by gifted children make them at-risk for being misdiagnosed with social, emotional, and behavioral problems. Gifted children who receive labels of behavioral disorders will likely not receive services to encourage their high creative and intellectual potential. When gifted children are not recognized as gifted and instead labeled with disorders, they are likely to experience more challenges in development and school performance (Webb, 2016).

Disproportionality

Another significant consequence of misdiagnosis is the disproportionality of diverse students in both special education and gifted education. It has long been known that race and culture continues to be directly correlated with students' access to quality education beginning in early childhood (Skiba et al., 2008). Some of these educational inequities are reflected in the overrepresentation of students of color in special education (Skiba et al., 2008). Black students are more likely to be inappropriately identified with emotional/behavioral disorders (Skiba et al., 2008). Intellectual abilities and behaviors rooted in giftedness are commonly overlooked and interpreted as disorders more frequently among minority students, leading to placement in special education (Webb, 2016; Winsler, Karkhanis, Kim, & Levitt, 2013).

As special education reflects an overrepresentation of diverse students, gifted education reflects significant underrepresentation of students coming from culturally, linguistically, racially, and economically diverse backgrounds (Ford, Wright, Washington, & Henfield, 2016). Culturally inappropriate identification methods, such as the sole use of cognitive assessment or teacher referrals, continue to be used to identify students as gifted (Ford, Wright, Washington, & Henfield, 2016; Winsler, Karkhanis, Kim, & Levitt, 2013). Many standardized intelligence tests used for gifted identification and school-based psychoeducational evaluations are inappropriate for use with children from culturally diverse backgrounds. These tests have cultural and language biases, which indicates that they are discriminatory toward children of the minority culture or language (Winsler, Karkhanis, Kim, & Levitt, 2013). Relying on teachers to nominate

students for gifted and talented services is problematic due to having subjectivity about their students' behavior. For example, Winsler, Karkhanic, Kim, and Levitt (2013) indicate that teachers' selection bias is influenced by their negative attitudes toward Black students, expectations of Black students, and their weak teacher-student relationships with Black males in particular.

National data from the 2011-2012 school year indicate that gifted education programs included only 16% of Hispanic students and 10% of Black students (Ford, Wright, Washington, & Henfield, 2016; U.S. Department of Education, 2014). Educational disproportionality in primary education serves as a precursor for continued disproportionality in secondary education, leads to limited opportunities for success, and increases the risk of entering the school-to-prison pipeline for students of color (Skiba et al., 2008; Winsler, Karkhanis, Kim, & Levitt, 2013).

Improvement of Gifted Identification in Schools

Because misdiagnosis among the gifted population is a widespread concern with detrimental consequences, it is crucial to examine ways in which school-based identification can be improved (Almeida, 2016; Webb, 2016; Wilson, 2015). Two of the major reasons for misdiagnosis among gifted students include the lack of training among school psychologists and inadequate identification practices (Webb, 2016). These inadequate identification practices are often attributed to the limited use of behavioral assessment tools in addition to the misinterpretation of behavioral characteristics among gifted children (Bracken & Brown, 2006; Webb, 2016).

Because gifted children demonstrate unique social-emotional and behavioral functioning, incorporating assessment tools to measure these characteristics may improve the identification of giftedness and prevent misdiagnoses. Psychologists and educational professionals advocate for the use of a variety of assessment methods to evaluate for giftedness (Bracken & Brown, 2006; Merrick & Targett, 2004; Willisch & Brown, 2012; VanTassel-Baska, 2000). Using student behavioral characteristics and ratings within a comprehensive gifted identification process may help discriminate gifted students from nongifted students (Bracken & Brown, 2006). The researcher of this study also believes that behavioral assessment could help differentiate pathological behaviors from behaviors that are indicative of giftedness. Although rating scales such as the Gifted Evaluation Scale may serve as effective tools to measure gifted behavioral characteristics and support accurate identification decisions, the availability of these rating scales in school districts is unknown (McCarney & Arthaud, 2008). Making these rating scales more widely available in schools would require school districts to purchase new assessment kits and ensure school psychologists are properly trained in the assessment.

One way that schools can include behavioral assessment when identifying for giftedness is by using an existing and frequently used rating scale in school-based evaluations. All school psychologists are trained in social-emotional assessments (Friedrich, 2010). Given that school psychologists are familiar with social-emotional rating scales, it is suggested that this type of assessment tool be used to measure students' behavior within gifted identification methods.

Behavior Assessment Scale for Children—Third Edition (BASC-3)

The Behavior Assessment Scale for Children, Third Edition (BASC-3) is a commonly used rating scale that supports differential diagnoses of emotional and behavioral problems in addition to eligibility determination in school-based evaluations (Reynolds & Kamphaus, 2015). The BASC-3 includes several diagnostic components to promote a multidimensional assessment approach, two of which are the Parent Rating Scales (PRS) and the Teacher Rating Scales (TRS) (Reynolds & Kamphaus, 2015). The BASC-3 has strong psychometric properties, with Cronbach's alpha values indicating good reliability on the primary scales of the teacher and parent forms (α = .84-.89) (Reynolds & Kamphaus, 2015).

The BASC-3 Teacher and Parent rating forms include scales measuring a child's internalizing problems, externalizing problems, adaptive skills, and behavior symptoms. The BASC-3 Teacher rating form also includes a scale that measures school problems (Reynolds & Kamphaus, 2015). The Child (ages 6-11) version of the BASC-3 rating scales yield scores in the areas of Hyperactivity, Aggression, Conduct Problems, Anxiety, Depression, Somatization, Attention Problems, Learning Problems, Atypicality, Withdrawal, Adaptability, Social Skills, Leadership, Study Skills, and Functional Communication. These primary scales are combined into four different composite scale scores; Externalizing Problems, Internalizing Problems, School Problems, and Adaptive Skills. Additionally, these scores result in a broad composite, the Behavioral Symptoms Index (BSI), which assesses the overall level of problem behaviors. The BASC-3 offers some optional content scales that are more specific or syndrome oriented than the

primary scales. These content scales include Anger Control, Bullying, Developmental Social Disorders, Emotional Self-Control, Executive Functioning, Negative Emotionality, and Resiliency (Reynolds & Kamphaus, 2015).

Conclusion

This study will examine the value of the Behavior Assessment Scale for Children—Third Edition (BASC-3) in identifying gifted behavioral characteristics. It is anticipated that the findings of this study will contribute to the improvement of school-based gifted identification methods. Using a behavioral assessment tool to help identify gifted characteristics may help school psychologists make accurate decisions in regards to eligibility determination, which will ensure that students are receiving appropriate educational services that fit their needs. This chapter reviewed literature on different definitions of giftedness, strengths and weaknesses of gifted assessment methods, reasons for the misdiagnosis among gifted individuals, behavioral characteristics of gifted children, peer relations and social-emotional features among gifted children, common misdiagnoses among gifted children, and how school-based gifted identification may be improved through the use of a behavioral assessment too.

The most commonly referenced definition in education is the federal definition initially developed through the Marland Report in 1972. This report defines giftedness as having outstanding performance and capability through intellect, academics, creativity, art, leadership, or psychomotor skills (Marland, 1972).

The 1993 updated version of the Marland Report places greater emphasis on culturally responsive practices, specifically addressing cultural and socioeconomic opportunity gaps as related to students' talent, potential, environment, and experience (Ford, 2013).

Some challenges in the identification and assessment of giftedness are reflected in the inconsistencies of assessment methods across each state in the U.S. Cognitive assessments, achievement tests, teacher nominations, parent nominations, portfolios, and rating scales are some of the ways school districts determine eligibility for gifted education services (McClain & Pfeiffer, 2012). These assessments methods have strengths and weaknesses, with some states relying on only cognitive assessments and other states using multiple criteria when identifying for giftedness (McBee, Peters, & Miller, 2016; McClain & Pfeiffer, 2012; Mitra-Itle, 2011; Naglieri & Ford, 2005). Both parent and teacher versions of gifted rating scales with strong psychometric properties are not yet available (Cao, Jung, & Lee, 2017). The BASC-3 includes parent and teacher rating scales, captures a variety of behaviors, and is used in many school-based evaluations (Reynolds & Kamphaus, 2015). This behavior rating scale may have value in identifying gifted characteristics, specifically overexcitabilities, that are not measured in other gifted rating scales.

Behavioral characteristics unique to gifted individuals may be misinterpreted as behavioral or emotional problems (SENG, 2011; Webb, 2016). Misdiagnoses are typically rooted in the lack of training among healthcare and school professionals, cultural bias, and inadequate identification practices (Webb, 2016). Specifically,

practitioners are unaware of the social-emotional traits exhibited by gifted individuals, which increases the likelihood of misinterpretation of gifted behavior (Webb, 2016). Because gifted children demonstrate particular behavioral characteristics, they are more likely to receive diagnoses that reflect mental health and behavioral disorders (Webb, 2016).

Several common behavior patterns associated with giftedness include perfectionism, asynchronous development, differences in peer relationships, social-emotional functioning, and overexcitability (Daniels & Piechowski, 2009; Francis, Hawes, & Abbott, 2016; Neihart, Pfeiffer, & Cross, 2015; Webb, 2016). These differences in behavior may be misdiagnosed as behavioral and emotional disorders, including Attention Deficit Hyperactivity Disorder or Oppositional Defiant Disorder (Webb, 2016). Given that a high frequency of misdiagnosis among gifted individuals is attributed to behavioral misinterpretations, it is important to learn about specific behaviors that may be associated with giftedness (Webb, 2016).

Misdiagnosis leads to either the labeling of a disorder when the exhibited behaviors can be better explained by giftedness, or a true disorder that goes unnoticed (Webb, 2016). The consequences of misdiagnosis are quite significant, leading to inappropriate treatment that may be detrimental to one's development (Daniels & Piechowski, 2009; Webb, 2016). The unique social-emotional characteristics exhibited by gifted children make them at-risk for being misdiagnosed with social, emotional, and behavioral problems (Webb, 2016). Gifted children who receive labels of behavioral disorders will likely not receive services to encourage their high creative and intellectual

potential (Daniels & Piechowski, 2009; Webb, 2016). When gifted children are not recognized as gifted and instead labeled with disorders, they are likely to experience more challenges in development and school performance (Webb, 2016).

Misdiagnosis is also a contributing factor to the disproportionality in gifted education. Gifted education reflects significant underrepresentation of students coming from culturally, linguistically, racially, and economically diverse backgrounds (Ford, Wright, Washington, & Henfield, 2016; Winsler et al., 2013). Culturally inappropriate identification methods, such as the sole use of cognitive assessment or teacher referrals, continue to be used to identify students as gifted (Ford, Wright, Washington, & Henfield, 2016). Educational disproportionality in primary education serves as a precursor for continued disproportionality in secondary education, leads to limited opportunities for success, and increases the risk of entering the school-to-prison pipeline for students of color (Skiba et al., 2008).

Given that gifted children demonstrate unique social-emotional and behavioral functioning, incorporating assessment tools to measure these characteristics may improve the identification of giftedness and prevent misdiagnoses (Merrick & Targett, 2004; VanTassel-Baska, 2000; Willisch & Brown, 2012). Although gifted rating scales may serve as effective tools to measure gifted behavioral characteristics, adequate parent versions of these scales do not exist and the availability of these rating scales in school districts is unknown. Making these rating scales more widely available in schools would require school districts to purchase new assessment kits and ensure school psychologists are properly trained in the assessment.

One way that schools can include behavioral assessment within gifted identification is by using an existing and frequently used behavior rating scale in school-based evaluations. One broadband behavioral assessment, the Behavior Assessment Scale for Children—Third Edition is designed to collect information on many aspects of children's behavioral functioning (Reynolds & Kamphaus, 2015). School psychologists often include the BASC-3 within comprehensive psychoeducational evaluations to assess student's internalizing behavior, externalizing behavior, and to determine areas of student strengths (Reynolds & Kamphaus, 2015). It is anticipated that the BASC-3 parent and teacher rating scales may capture common behavioral patterns exhibited among gifted children, including overexcitability.

CHAPTER 3: METHODOLOGY

The lack of assessment tools and knowledge in gifted characteristics contributes to the misidentification among gifted students in schools (Daniels & Piechowski, 2009; Webb, 2016). The purpose of this study is to examine the use of the Behavior Assessment Scale for Children—Third Edition teacher and parent rating scales in recognition of gifted characteristics. By knowing how the BASC-3 performs in children identified as gifted, it is anticipated that this social-emotional assessment will help school psychologists understand common behaviors associated with giftedness. This will also allow school psychologists to use BASC-3 data as a way to differentiate between problem behaviors and behaviors indicative of giftedness, improve identification methods for giftedness, prevent misdiagnosis, and help guide school- based eligibility determination.

Research Questions:

1. How do gifted children score on the BASC-3 Rating Scales?
    a. What are the mean *T*-scores scores of gifted children on the clinical, adaptive, and content scales of the BASC-3?
    b. How do the scores of gifted children compare to normed scores on

children with ADHD, as measured by the BASC-3 PRS clinical, adaptive, and content scale mean *T*-scores?

c. What are the variances among *T*-scores of gifted children on the BASC-3?

The purpose of this chapter is to describe the methodology used in this study specifically about the theoretical framework, setting, population, sample, data collection procedures, instrumentation, research design, research questions, and data analyses. Prior to beginning research, Institutional Review Board (IRB) approval was obtained from the University of Denver and from public school districts with gifted/talented programs in and around Denver, Colorado. Permission from school principals and directors was obtained from private and charter schools participating in this study as well.

Theoretical Framework

The Theory of Positive Disintegration by Kazimierz Dabrowski was used to frame this study (Tillier, 2002). The theory explains the positive role that disintegration or conflict plays in one's development (Daniels & Piechowski, 2009; Tillier, 2002; Webb, 2016). One aspect of the theory, overexcitability, will serve as the main component of the theory to guide this study. Overexcitability is characterized as having an intense physiological response to internal or external stimuli due to increased neuronal sensitivities (Daniels & Piechowski, 2009; Webb, 2016). Dabrowski believed that overexcitabilities are essential for advanced personality development (Daniels & Piechowski, 2009; Webb, 2016). Individuals who have overexcitability often experience life in a richer, more intense way (Daniels & Piechowski, 2009). Overexcitability may be represented in five different forms; intellectual, imaginational, emotional, psychomotor,

and sensual overexcitability. Individuals with advanced developmental potential could experience one, a few, or even all types of overexcitabilities throughout their life (Webb, 2016).

The concept of overexcitability has had a strong influence on understanding the gifted population. Gifted individuals are very likely to exhibit overexcitabilities, which seem to explain the unique social-emotional characteristics of gifted children (Finlay, 2002; Mendaglio, 2002; Tillier, 2002). Webb (2016) explains that overexcitabilities among gifted children's may be misinterpreted as pathological behavior, which likely leads to misdiagnosis of gifted behavior labeled as an emotional or behavioral disorders such as Attention Deficit Hyperactivity Disorder or Oppositional Defiant Disorder for example. Gifted children with overexcitabilities may demonstrate atypical internalizing or externalizing behaviors when compared to typically developing children (Daniels & Piechowski, 2009; Webb, 2016). It is anticipated that a social-emotional assessment, the BASC-3, will capture behaviors indicative of overexcitability among gifted children.

Setting

Colorado public and private schools were used for data collection in this study. Colorado is among the few states that utilizes research-based, comprehensive assessment practices in the identification of gifted students (CDE, 2017; NAGC, 2013). The state recognizes that giftedness may be manifested differently in students, which is why multiple identification pathways may be explored through various types and sources of assessment (CDE, 2017).

Cognitive assessments, achievement tests, state assessments, curriculum based measures, interviews, observations, and behavior checklists are several pieces of information that fit into a body of evidence to be collected and examined when evaluating for giftedness (CDE, 2017).

The Colorado Department of Education provides a handbook detailing the state's standards for gifted identification that is supported by research (CDE, 2017). Relative to many other states in the U.S., Colorado demonstrates more than adequate school-based identification methods for giftedness. Because of the relatively higher standards Colorado has for gifted identification, it is assumed that students have been accurately identified with giftedness and therefore make them ideal candidates for data collection in this study.

The Colorado Department of Education defines "gifted and talented children" as:

> "Those persons between the ages of four and twenty-one whose abilities, talents, and potential for accomplishment are so exceptional or developmentally advanced that they require special provisions to meet their educational programming needs…gifted students include gifted students with disabilities (twice exceptional) and students with exceptional abilities or potential from all socioeconomic and ethnic cultural populations. Gifted students are capable of high performance, exceptional production, exceptional learning behavior by virtue of any or a combination of these areas of giftedness: general of specific intellectual ability; specific academic aptitude; creative or productive thinking; leadership abilities; visual arts, performing arts, musical or psychomotor abilities." (Colorado Department of Education, 2017)

Participants

The target population for this study included elementary students in public and private schools between the ages of 6 and 11 who have been identified as gifted/talented according to the Colorado requirements for gifted identification. The Colorado Department of Education specifies that many districts screen for "exceptional potential"

by the end of 2nd grade (CDE, 2016). Gifted students who are not identified as gifted and provided with appropriate support are at-risk for underachievement and social-emotional problems close to 3rd or 4th grade, which also reflects the importance of accuratelyidentifying students in their elementary years (Webb, 2016). Additionally, the BASC-3 child version specifically measures behavior in students between the ages of 6 and 11 (Reynolds & Kamphaus, 2015).

Purposive sampling, a sampling method used to include members of a particular group, was used to recruit participants (Gliner, Morgan, & Leech, 2009). Directors ofgifted education programs were contacted by phone and email to determine their interest in participating in the study. Upon agreement to participate, parents and teachers of students in the gifted education programs were asked to participate in the study through completion of a consent form outlining the details of the study and asking for a signature. A total of seventy elementary gifted students were included in this study, however, there was no active participation of these students. Seventy parents completed the BASC-3 behavior rating scale on behalf of the students.

Instrumentation

Demographic Questions

Demographic information was collected through several questions created by the researcher. Demographic questions for parents included questions on their children's gender, ethnicity, age, and other diagnoses or learning disabilities to ensure that twice exceptional students were not included in data analyses.

Teachers were asked several demographic questions regarding their training in gifted/talented education, length of teaching experience, and length of time they have been teaching the student.

Behavior Assessment Scale for Children—Third Edition (BASC-3)

The Behavior Assessment Scale for Children, Third Edition (BASC-3) is a commonly used rating scale that supports differential diagnoses of emotional and behavioral problems in addition to eligibility determination in school-based evaluations (Reynolds & Kamphaus, 2015). Because overexcitabilities are often misconstrued as behavioral and emotional disorders, it is anticipated that the BASC-3 may capture behaviors indicativeof overexcitability. The BASC-3 includes several diagnostic components to promote a multidimensional assessment approach, two of which are the Parent Rating Scales (PRS) and the Teacher Rating Scales (TRS) (Reynolds & Kamphaus, 2015). The BASC-3 has strong psychometric properties, with Cronbach's alpha values indicating good reliability on the primary scales of the teacher and parent forms (α = .84-.89) (Reynolds & Kamphaus, 2015). The BASC-3 parent and teacher rating scales were used as part of this study to measure students' gifted characteristics.

The BASC-3 teacher and parent rating forms include scales measuring a child's internalizing problems, externalizing problems, adaptive skills, and behavior symptoms. The BASC-3 teacher rating form also includes a scale that measures school problems (Reynolds & Kamphaus, 2015). The Child (ages 6-11) version of the BASC-3 rating scales yield scores in the areas of Hyperactivity, Aggression, Conduct Problems, Anxiety, Depression, Somatization, Attention Problems, Learning Problems, Atypicality,

Withdrawal, Adaptability, Social Skills, Leadership, Study Skills, and Functional Communication. These primary scales are combined into four different composite scale scores; Externalizing Problems, Internalizing Problems, School Problems, and Adaptive Skills. Additionally, these scores result in a broad composite, the Behavioral Symptoms Index (BSI), which assesses the overall level of problem behaviors. The BASC-3 offers some optional content scales that are more specific or syndrome oriented than the primary scales. These content scales include Anger Control, Bullying, Developmental Social Disorders, Emotional Self-Control, Executive Functioning, Negative Emotionality, and Resiliency (Reynolds & Kamphaus, 2015).

Scores on the BASC-3 are represented as *T*-scores with a mean of 50 and standard deviation of 10. On all of the scales, the Average *T*-score range (within which about two-thirds of the general population will score) is 41-59. Scale scores in the At-Risk range are between one and two standard deviations from the mean. On the clinical scales, this corresponds to *T*-scores from 60 through 69. On the adaptive scales, the At-Risk range is from 31 through 40. Scores in the At-Risk range may signify potential or developing problems. Finally, scores in the Clinically Significant range (70 and above; 30 and below) denote a high level of maladaptive behavior or absence of adaptive behavior (Reynolds & Kamphaus, 2015). The BASC-3 scoring system allows students' scores to be compared with same-age or same-grade norms. Additionally, the BASC-3 provides clinical probability, impairment, and executive functioning indexes. These indexes provide comparisons between the obtained behavioral ratings and the ratings of children who have an emotional and/or behavioral disability (Reynolds & Kamphaus, 2015).

Procedure

After obtaining IRB approval from the University of Denver and from public school districts, private schools, and charter schools, directors of gifted/talented programs of each school site were contacted by email or phone in order to recruit gifted/talented teachers and parents to participate in the study. Qualtrics, an online survey platform, was used to create study consent forms in addition to the parent and teacher questionnaires including BASC-3 and demographic questions. The IRB approved consent forms were sent via email to parents of the gifted students asking for their parent participation in the study. Teachers of gifted students with parent consent were also given a consent form to ask for their participation in the study. Teachers were asked to complete online Qualtrics versions of the BASC-3 teacher rating scale and answer several demographic questions. Parents were asked to complete the BASC-3 parent rating scale online in addition to several demographic questions via Qualtrics. Prior to completing the BASC-3 rating scale parents and teachers were again provided with a description of the study and were asked for their consent to participate.

Sample

Information was gathered on a total of seventy gifted children. The initial plan of this study was to collect data from parent and teacher perspectives through the Behavior Assessment Scale for Children—Third Edition. Five school sites participated in this study; two public school districts, one public charter school, and two private schools in Colorado. Principals and gifted/talented program directors of each school site advertised this study through a weekly or monthly school newsletter distributed to families. Digital

consent forms were then emailed by principals or gifted/talented school directors to a total of approximately 850 families among the five school sites. Eighty-two out of the approximate 850 families of gifted children provided consent to participate in this study, indicating about a 10% response rate. Digital consent forms were emailed to teachers of the students with parent consent. Forty-one teachers provided consent to participate in this study.

The parent consent form asked if the parent's child had a coexisting exceptionality in order to ensure that the children included in this study were not twice-exceptional, as this would interfere with the intention of this study. It was important for this screener question to be as specific as possible by asking parents if their child had a coexisting diagnosis, met school-based identification criteria, had 504 plan, or had an Individualized Education Plan (e.g. learning disability, ADHD, anxiety disorder). Parents were asked to specify the coexisting exceptionality through an open-ended response if they answered "yes" to the question item. Four of the 82 parents who consented to participation indicated that their child had a coexisting exceptionality, which resulted in excluding them from the study. All parent consent forms indicated that their children were between the ages of 6 and 11 and were formally identified as gifted.

Seventy-eight signed parent consent forms indicated that their children met eligibility requirements to participate in the research. Invitations to complete the Qualtrics questionnaire, including BASC-3 and demographic questions, were emailed to the 78 parents of gifted children. Forty out of the 78 parents with consent completed the BASC-3 parent rating scale in addition to answering demographic and related study

questions via the Qualtrics survey. Eight out of the 41 teachers with consent completed the BASC-3 teacher rating scale in addition to answering related study questions via Qualtrics. Each teacher who completed a questionnaire received compensation through a gift card. Upon finishing the parent questionnaire, parent emails were entered into a lottery to win one of ten gift cards.

Multiple efforts were made to increase parent and teacher participation in this study. Due to the significantly low response rate from teachers, the researcher decided to focus on collecting additional data only from parents of gifted children in Colorado. Snowball sampling was used to recruit more parents of gifted children to participate in this study. The study advertisement and digital consent form link were emailed and posted to social media outlets of gifted/talented parent organizations after receiving permission from the organization leaders. Thirty-three parents completed the study consent form through this method of participant recruitment, and eligibility requirements were met for the children of these thirty-three parents. Email invitations were sent to the parents to complete the BASC-3 assessment, demographic questions, and related study questions). Thirty out of the thirty-three parents completed the questionnaire and received gift card compensation through a lottery system.

Demographics of Sample

The total sample size in this study consists of seventy gifted children between the ages of 6 and 11. Sixty percent of these participants are male (42 males) and 40% percent are female (28 females). Approximately 73% of the participants are white, about 11% are Hispanic/Latino, 9% are multiracial, 6% are black, and 1% are Asian. In regards to

specific ages of the participants, about 33% are 9-years-old, 21% are 10-years-old, 17% are 11-years-old, about 13% are 7-years-old, about 9% are 6-years-old, and about 7% are 8-years old. Parents of the gifted children were also asked to specify their income level. About 30% of parents reported an income level above $170,000, 30% reported an income level between $110-$169,000, about 17% reported an income level of $80,000-$109,000, 10% reported an income level between $50,000-$79,999, about 7% reported an income level between $30,000-$49,000, about 3% of parents reported an income level below $30,000, and about 3% of parents preferred not to disclose their income.

Based on the demographic data collected on the participants in this study, the sample is not considered to be diverse in terms of ethnicity and income level. Most of the children in this study are white and come from relatively higher socioeconomic families. The lack of ethnic and socioeconomic diversity in this sample is a limitation to this study. The sample is, however, representative of the demographics in U.S. gifted and talented programs (Ford, Wright, Washington, & Henfield, 2016; Skiba et al., 2008). It provides additional evidence of the racial and socioeconomic disproportionality that exists in gifted and talented education programs. In regard to gender, there are more males than females included in this study. This is consistent with the literature in regard to male students being considered or referred more often than female students for gifted education programs (McClain & Pfeiffer, 2012). In regard to age, there is an uneven number of participants in each age group. It is important to consider the demographic data collected in this study when examining research limitations in the sample of participants.

These questions asked by this study focus on the behavioral characteristics among gifted children, how gifted children compare to children diagnosed with ADHD, and how gifted children differ amongst themselves on the BASC-3. Each parent and teacher BASC-3 questionnaire was scored using the BASC-3 online scoring program.
The BASC-3 parent scores were averaged to represent a mean score for each scale on behalf of the gifted children. A statistical analysis program, SPSS, was used for the data analyses.

Data Analyses

Data analyses addressed the following research questions:

1. How do gifted children score on the BASC-3 Rating Scales?
    a. What are the mean *T*-scores scores of gifted children on the clinical, adaptive, and content scales on the BASC-3 PRS?
    b. How do the scores of gifted children compare to normed scores on children with ADHD, as measured by the BASC-3 PRS clinical, adaptive, and content scale mean *T*-scores?
    c. What are the variances among *T*-scores of gifted children on the BASC-3 Parent Rating Scales?

Research Question 1a. The first analysis examined the mean *T*-scores of gifted children on the clinical, adaptive, and content scales of the BASC-3 Parent Rating Scales. The mean *T*-score for each scale of the BASC-3 assessment is 50. *T*-scores above 60 are considered "At-Risk" while *T*-score above 70 are considered "Clinically Significant". School psychologists and other practitioners often rely on these score classifications for

diagnostic consideration. Having elevated scores for the Aggression and Conduct Problems Scale, for example, may provide practitioners with behavioral data on symptoms of Oppositional Defiant Disorder. Having information on mean *T*-scores of gifted children may also help practitioners identify patterns in how gifted children may score on the BASC-3 scales.

The mean *T*-scores of the study sample determined whether gifted children, on average, score as "Average", "At-Risk", or "Clinically Significant" on the following BASC-3 scales: Hyperactivity, Aggression, Conduct Problems, Anxiety, Depression, Somatization, Attention Problems, Atypicality, Withdrawal, Adaptability, Social Skills, Leadership, Activities of Daily Living, Functional Communication, Externalizing Problems, Internalizing Problems, Adaptive Skills, the Behavioral Symptoms Index, and on the Content Scales.

Research Question 1b. The BASC-3 provides nationally normed data on children identified with Attention-deficit/hyperactivity disorder, which is a common misdiagnosis among the gifted population according to literature in the field. *T*-scores on the BASC-3. scales were compared between children identified with giftedness and children identified with ADHD from the BASC- 3 norming summary data. Descriptive statistics in each group represent the *T*-score means on all of the BASC-3 scales. Independent sample t-tests were used to determine if statistically significant differences were observed between the sample of gifted children and the BASC-3 norming sample of children identified with ADHD on the scales of Hyperactivity, Attention Problems, Aggression, Executive Functioning, and Emotional Self-Control. An independent sample t-test compares the

means of two independent variables (Gifted group, ADHD group) to determine if there are statistically significant differences between them on particular dependent variables (Frankfort-Nachmias & Leon-Guerrero, 2017).

Research Questions 1c. An independent sample t-test was conducted to determine the variance of *T*-scores of gifted children on the BASC-3. This analysis determined how gifted children vary amongst themselves in regards to gender. The independent sample t-test compared the T- score means of gifted males and gifted females to see if there were statistically significant differences between them on BASC-3 scales (Frankfort-Nachmias & Leon-Guerrero, 2017). Descriptive statistics also provide the standard deviations of gifted children on the BASC-3 scales in order to examine the variance of the total sample.

CHAPTER 4: RESULTS

This present study examined how gifted children score on the BASC-3, they compare to children diagnosed with ADHD on BASC-3 scale scores, and how gifted children differ amongst themselves on the assessment. BASC-3 data was collected and analyzed on seventy gifted children. Below is a discussion of the study findings.

Descriptive Statistics

Descriptive statistics were first examined to determine whether the average BASC-3 *T*-scores of gifted children in this study fell in the At-Risk (*T*= 60-70) and Clinically Significant (*T*> 70) ranges across the clinical, adaptive, and content scales of the assessment. On the BASC-3 assessment a score of 50 is considered Average with a standard deviation of 10. The Average "range" for the BASC-3 assessment includes scores between 41 and 59 across all scales.

The mean *T*-scores and standard deviations for the gifted sample in this study are represented in Table 1. The descriptive results show that overall, gifted children in this study did not exhibit At-Risk or Clinically Significant scores on any of the BASC-3 scales. All of the clinical, adaptive, and content scale scores for gifted children fell in the Average range (between 41 and 59). Although still falling in the average range, the most

elevated *T*-scores for gifted children are seen on the Anxiety clinical scale and Negative Emotionality content scale. According to the BASC-3 examiner manual, the Anxiety clinical scale is described as "the tendency to be nervous, fearful, or worried about real or imagined problems" (Reynolds & Kamphaus, 2015). The Negative Emotionality content scale is described as "the tendency to react in an overly negative way to any changes in everyday activities or routines" (Reynolds & Kamphaus, 2015).

T-scores and standard deviations are provided for the BASC-3 normed data on children with ADHD as a descriptive comparison to the gifted children in this study (see Table 1.0). According to the mean *T*-scores of children with ADHD, At-Risk scores are evident on the BASC-3 scales of Hyperactivity, Externalizing Problems, Attention Problems, Behavioral Symptoms Index, and Executive Functioning. There are no *T*-scores falling in the Clinically Significant range for the normed ADHD BASC-3 profile.

Table 1

BASC-3 Mean T-Scores for Gifted Children and Children with ADHD

BASC-3 Scale	Gifted Children *T*- score Mean (SD)	Children with ADHD *T*-score Mean (SD)
Externalizing Problems	53 (10.99)	60.2 (12.7)
Hyperactivity	54 (11.46)	61.9 (12.7)
Aggression	54 (11.80)	57.7 (13.9)

Conduct Problems	50 (9.97)	57.7 (12.3)
Internalizing Problems	56 (12.15)	55.1 (11.3)
Anxiety	58 (12.73)	53.9 (10.7)
Depression	56 (12.37)	57.5 (12.9)
Somatization	50 (11.68)	51.7 (10.6)

Attention Problems	48 (8.58)	64.5 (7.7)
Atypicality	51 (8.85)	56.4 (12.2)
Withdrawal	53 (10.24)	54.7 (11.4)
Behavioral Symptoms Index	54 (10.30)	61.3 (11.6)
Adaptive Skills	52 (8.22)	41.4 (8.4)
Adaptability	48 (11.17)	42.4 (9.0)
Social Skills	51 (9.40)	44.9 (9.7)
Leadership	54 (8.35)	42.2 (8.4)
Functional Communication	54 (8.02)	42.6 (9.0)
Activities of Daily Living	51 (8.85)	40.4 (9.1)

Anger Control	54.9 (12)	59.1 (12.9)
Bullying	52.2 (10.0)	55.6 (13.0)
Developmental Social Disorders	50.4 (8.2)	57.3 (10.7)
Emotional Self-Control	56.1 (11.9)	57.8 (11.7)
Executive Functioning	49.7 (9.7)	62.7 (8.9)
Negative Emotionality	58.5 (12.6)	58.4 (12.3)
Resiliency	52 (9.0)	42.2 (8.0)

Group Comparison Using t-tests

T-tests were completed to check for significant differences between the average BASC-3 *T*-scores of gifted children in this study and average *T*-scores of children with ADHD according to normed summary data provided by the BASC-3 examiner manual. Group comparisons were made on BASC-3 scales that closely or somewhat align with behaviors suggestive of ADHD. These scales include Hyperactivity, Attention Problems, Executive Functioning, Emotional Self-Control, and Aggression.

Results revealed no significant difference between gifted children and children with ADHD on the scale of Emotional Self-Control. There was a significant difference in the *T*-score for Attention Problems for gifted children (M= 48, SD= 8.58) and the *T*-score for Attention Problems for children with ADHD (M= 64.5, SD= 7.7); t (350) =15.68, p<

.0001). There was a significant difference in the *T*-score for Executive Functioning for gifted children (49.7, SD= 9.7) and the *T*-score for Executive Functioning for children with ADHD (M= 62.7, SD= 8.9); t (350) =10.74, p< .0001). There was a significant difference in the *T*-score for Aggression in gifted children (M= 54, SD= 11.8) and the *T*-score for Aggression in children with ADHD (M= 57.7, SD= 13.9); t (350) =2.05, p= 0.04). There was a significant difference in the *T*-score for Hyperactivity for gifted children (M= 54, SD= 11.46) and the *T*-score for Hyperactivity for children with ADHD (M= 61.9; SD= 12.7); t (350) = 4.75, p< .0001).

Within-Group Differences Using t-tests

In addition to the above analysis and comparison of descriptive statistics, independent sample *t*-tests were completed to check for significant gender differences on parent ratings of student behavior on the BASC-3. Results revealed no significant difference on any of the BASC-3 clinical, adaptive, or content scales when comparing gifted males versus gifted females.

Narrative Results

The BASC-3 assessment provides teachers and parents with the opportunity to answer two optional open-ended questions regarding the student's behavioral functioning. These questions ask about the child's behavioral strengths and behavioral concerns. Patterns in responses were informally identified from the written responses to these open-ended items completed by parents and teachers. In regards to behavioral concerns, parent responses indicated that gifted children exhibit behaviors of self-criticism and perfectionism. In regards to behavioral strengths, parent responses indicated

that gifted children demonstrate strong empathy and compassion toward others. Six out of 8 teachers completed the BASC-3 optional open-ended questions. At a glance, the teacher responses indicated that gifted children are hardworking, compassionate, and have perfectionistic traits. These qualitative data are not intended to answer the study's research questions, but to provide some insight into qualitative information about gifted behavioral characteristics on the BASC-3.

CHAPTER 5: DISCUSSION

The purpose of the present study was to examine the use of the BASC-3 assessment in identifying gifted characteristics. Gifted children typically have unique social-emotional characteristics, however, there is a significant lack of knowledge and training in these characteristics among school psychologists and other professionals in related fields (Bracken & Brown, 2006; McClain & Pfeiffer, 2012; Webb, 2016). The lack of assessment tools and knowledge in gifted characteristics also contributes to the misidentification among gifted students in schools (Daniels & Piechowski, 2009; Webb, 2016).

The Behavior Assessment Scale for Children—Third Edition (BASC-3) is designed to collect information on many aspects of behavioral functioning in childhood, adolescence and early adulthood (Reynolds & Kamphaus, 2015). School psychologists often include the BASC-3 within comprehensive psychoeducational evaluations to assess student's internalizing behaviors, externalizing behaviors, adaptive behaviors, and to determine some areas of student strengths (Reynolds & Kamphaus, 2015). It was anticipated that the results of this study would help school psychologists and other practitioners understand common behaviors associated with giftedness through the BASC-3, allow practitioners to use BASC-3 data as a way to differentiate between

problem behaviors and behaviors indicative of giftedness, improve identification methods for giftedness, prevent misdiagnosis, and help guide school- based eligibility determination.

Gifted children are at-risk for being misidentified or misdiagnosed with behavioral disorders such as ADHD and ODD (Webb, 2016). This current study examined the average *T*-scores of gifted children on the BASC-3 clinical, adaptive, and content scales. Attention was placed on examining specific assessment scales that intend to measure behaviors indicative of ADHD and ODD. These scales include the Hyperactivity, Attention Problems, Emotional Self-Control, Executive Functioning, Conduct Problems, and Aggression BASC-3 scales. Statistical differences in *T*-scores between gifted children and children diagnosed with ADHD were also examined, as the BASC-3 provides normed data on children diagnosed with ADHD. Additionally, BASC-3 variances among gifted children were analyzed to determine whether there were behavioral differences among gifted males and gifted females.

Descriptive statistics were obtained to present the average *T*-scores of gifted children on the BASC-3. School psychologists and other practitioners in related fields commonly reference these *T*-scores to determine students' behavioral concerns and potentially use the scores to support eligibility determinations in schools or diagnostic considerations in clinical practice. Average BASC-3 *T*-scores of normed data on children with ADHD are presented as a behavioral profile comparison. In order to examine statistical significance between BASC-3 groups in this study, differences between gifted children and children with ADHD were examined through conducting independent samples t-tests. The t-tests were conducted on ADHD- related BASC-3 scales including

Hyperactivity, Attention Problems, Emotional Self-Control, Aggression, and Executive Functioning. Within-group gender differences were examined among the sample of gifted children through an independent samples t-test.

The average mean *T*-scores of the gifted children included in this study did not indicate At-Risk or Clinically Significant scores on any of the BASC-3 clinical, adaptive, and content scales. All of the *T*-scores among the gifted sample fell within the "Average" range of behavioral functioning, indicating no behavioral concerns. The average mean *T*-scores of children with ADHD, according to BASC-3 normed summary data, reflect At-Risk scores on the scales of Hyperactivity, Attention Problems, and Executive Functioning. Independent sample t-tests indicated statistically significant differences between the gifted group and ADHD group on the scales of Hyperactivity, Attention Problems, Executive Functioning, and Aggression. There was no statistically significant difference between gifted children and children with ADHD on the Emotional Self-Control content scale. An independent sample t-test did not reflect statistically significant differences between gifted males and gifted females on any of the BASC-3 scales.

Due to the literature on particular behavioral characteristics and misdiagnosis among gifted individuals, it was anticipated that the findings of this study would show that gifted children appear to have similar score profiles to children with ADHD on the BASC-3. It was also anticipated that, based on the literature, gifted children would have elevated BASC-3 scores on the scales of Aggression and Conduct Problems, as they are also commonly misdiagnosed with Oppositional Defiance Disorder (Webb, 2016). Although still falling in the average range, the most elevated *T*-scores for gifted children are seen on the Anxiety clinical scale and Negative Emotionality content scale.

According to the BASC-3 examiner manual, the Anxiety clinical scale is described as "the tendency to be nervous, fearful, or worried about real or imagined problems" (Reynolds & Kamphaus, 2015). The Negative Emotionality content scale is described as"the tendency to react in an overly negative way to any changes in everyday activities or routines" (Reynolds & Kamphaus, 2015).

Limitations, Strengths, and Directions for Future Research

The results of this study are inconsistent with the reviewed literature on the behavioral characteristics and misdiagnosis of gifted children. According to research and literature on gifted behaviors, gifted children exhibit unique behavioral traits that are often misinterpreted by practitioners and therefore misdiagnosed as behavioral disorders. Because the results of this present study do not support the current literature, it is important to examine possible limitations of this study. Limitations of this study included (a) sample size, (b) sample demographics (c) lack of teacher perspective on the BASC-3, (d) parent bias, (e) transparency of the study details when recruiting participants, (f) and not knowing specifically how the gifted children in this study were identified with giftedness.

In regards to sample size, more participants in this study would allow for a greater effect size and could lead to different statistical results. Having a larger sample could also lead to a more representative sample, and therefore lead to different results on the BASC-3 *T*-score scales. Although the demographic characteristics of the sample in this study align with population demographic data of children in gifted and talented programs across the United States, the lack of ethnic and socioeconomic diversity is a limitation to this study. The gifted sample in this study may not be generalizable to families of gifted

children who have a lower socioeconomic status or who are ethnically diverse because of the sample being skewed toward families with higher income and who are white.

The lack of teacher perspective in this study is a limitation in that information was only collected on students' behavioral functioning in the home setting through the BASC-3 parent form. All psychological and educational assessment should collect information on an individual's functioning across home, school, and community settings if applicable. There is mixed research on the correlation between parent and teacher ratings on behavioral assessments of children, however, many conclusions on parent-teacher assessment correlation research consistently emphasize that different situations and environments influence one's behavior (Ellison, Bunder, Wygant, & Gore, 2016; Eklund, Tanner, Stoll, & Anway, 2015; Gresham et al., 2017; Mcclain & Pfeiffer, 2012). This indicates that BASC-3 teacher data may have provided additional or discrepant scores on gifted children's behavior in the school setting compared to BASC-3 parent scores. Additionally, parents may be biased regarding their child's behaviors for various reasons. For example, parents may have a higher tolerance for their child's intense or problematic behaviors (Gresham et al., 2017).

Another limitation included the transparency of the study details when recruiting parent participants. The study recruitment postings and parent consent forms highlighted the importance of this research through mentioning the prevalence of misdiagnosis among the gifted population, that gifted behaviors are commonly misinterpreted as behavioral problems, and that the current study may help promote accurate diagnostic decision-making for gifted children. The transparency of the study and its goals may have influenced the way parents completed the behavioral assessment. For example, it may

have been possible that parents did not want to respond to BASC-3 questions in a way that pathologized their child's behavior given that they know their child is identified as gifted and does not have a coexisting exceptionality. It is possible that parent responses and scores on the BASC-3 could be different if the assessment was administered to parents who did not have knowledge about the study details prior to completing the questionnaire.

Knowing specifically how the gifted children in this study were identified with giftedness may have provided additional insight for the research. In Colorado, multiple pathways of identification are used to ensure that each child's abilities are evaluated fairly (CDE, 2016). Although the identification practices represent much higher standards compared to other states, it is important to note that not every gifted child in Colorado was identified in the same, standardized way. Additionally, it is important to consider the possibility that gifted children in this sample may have been misidentified. For example, high-achieving students who present as gifted and talented may have been inaccurately identified with giftedness. This consideration captures the issue of misdiagnosis as a "false positive", rather than a "false negative" of misdiagnosing gifted children with behavioral disorders, which was the focus of this study. High-achieving, bright students may not have the same behavioral intensities or overexcitabilities as those who are gifted. The possibility of having high-achieving versus gifted students in this study may have influenced the BASC-3 behavioral scores. This study collected data on gifted children with the assumption that they were identified accurately, which is a limitation to the research.

In addition to examining the limitations of this study, it is also important to address the strengths to especially inform directions for future research. Snowball sampling proved to be a significantly more effective way to include parents in the study, as opposed to asking for parent participation through the avenue of contacting school districts and directors of private and charter schools. Specifying the requirements to participate in this study through the research recruitment postings, the consent forms, and informed consent prior to beginning the parent questionnaire, was beneficial in ensuring that twice exceptional children were not included in the study, as that would effect the intention of the research questions. Another unexpected positive outcome of this study was that many parents answered the open-ended BASC-3 questions to provide qualitative information about their child's behavioral strengths and weaknesses. There were apparent patterns of behavioral characteristics among these responses, which are consistent with the literature on gifted traits such as perfectionism and examples of emotional overexcitability (compassion, empathy).

The strengths and limitations of this study contribute to informing future research related to this research topic. For example, having a larger effect size for a study similar to this may potentially lead to different results. Excluding specific details about the study when recruiting participants may also help to ensure that parents are completing the BASC-3 questionnaire without expectations or bias. It may be beneficial for future research to include parents, teachers, and children themselves to complete BASC-3 rating scales in order to obtain a bigger picture of the child's functioning across multiple settings and according to different informants. Examining differences among parent respondents, such as comparing mothers' and fathers' ratings of their child, may reveal

insightful information about parent perceptions of child behavior. It may also be informative to examine how teachers across different school settings rate gifted students' behavior. Gifted and talented programs may be very different from each other, and this may influence teachers' tolerance or understanding of overexcitabilities. Differences in teachers' perceptions, tolerance, or patience for particular behaviors may impact the way they rate or interpret students' behavioral functioning.

This study examined the BASC-3 clinical, adaptive, and content scale scores of gifted children. It may be insightful to instead focus on item analysis or how gifted children were rated on particular BASC-3 question items to determine possible patterns in responses. It may also be helpful to obtain information on how gifted children were identified with giftedness, obtain their IQ score, and determine how that may be correlated with scores on the BASC-3. Future research should also consider the issue of "false positive" misidentification of gifted children and how that may impact behavioral assessment results or the absence of overexcitabilities. It is possible for non-gifted students to be misidentified as gifted by scoring well on achievement tests or presenting as gifted through alternative assessment methods.

Due to the apparent behavioral patterns informally identified from the BASC-3 open-ended questions, it is suggested that future research examine qualitative behavioral assessment items formally through qualitative data analysis. Additional research is needed to potentially find ways that school psychologists and other practitioners can include easily accessible, psychometrically strong behavioral assessments to help identify gifted characteristics that are commonly misinterpreted and therefore misdiagnosed.

Because of many limitations associated with existing gifted behavioral rating scales, limitations of the BASC-3 in this study, and the scarcity of other broad-band behavioral assessments, it may be necessary to develop a new standardized rating scale. Features of a new rating scale could consider behaviors indicative of both giftedness and behavioral disorders, frame questions both positively and negatively, and allow for open-ended responses. The development of a new behavioral assessment could include scales that represent pathological behavioral, behavioral strengths, and a giftedness scale for example.

Implications for Practitioners

The preliminary findings from this current study have several implications for school psychologists and practitioners in related fields. Utilizing the BASC-3 parent rating scale alone may not serve as a reliable tool in helping to identify gifted characteristics or differentiating gifted behaviors from maladaptive behaviors. Consistent with the literature on best practices in psychological and educational assessment, it is strongly suggested to use a multi-source and multi-informant approach to obtain as much information as possible regarding a child's behavioral functioning across home, school, and community settings (Ellison, Bunder, Wygant, & Gore, 2016; Mcclain & Pfeiffer, 2012). If the BASC-3 is being included as part of a comprehensive evaluation, it is strongly suggested to include the parent, teacher, and self-report versions of the rating scale in order to collect multi-setting and multi-informant data on a child's behavioral functioning.

Practitioners should encourage informants to complete the BASC-3 open-ended questions that ask about the child's behavioral strengths and areas of concern. These qualitative question items may provide insight into gifted behavioral characteristics that may not be easily captured by the BASC-3 standardized question items, as they are mostly framed in a pathological way. In this current study, many BASC-3 parent responses on the open-ended questions were similar to each other and reflected patterns in describing their child's behavioral traits. For example, many parents in this study indicated concerns with their child's eating habits. Many parents also described their child as perfectionistic, self-critical, very empathic, and compassionate. Although this qualitative information may not provide sufficient support to justify the use of the BASC-3 assessment in identifying gifted characteristics, it is important to point out that the narrative responses strongly align with the literature on gifted behavioral characteristics. This narrative information may be valuable in understanding a child's behavioral functioning.

Regardless of whether a formal assessment, such as the BASC-3, is used within school-based evaluations, practitioners are encouraged to be educated on the behavioral characteristics of gifted children in order to better differentiate between gifted traits and symptoms of behavioral diagnoses. Having this additional knowledge about gifted behavioral characteristics may provide practitioners with another perspective or lens on child behavior, which may help increase accurate identification practices, decrease misdiagnosis, and ensure that students are receiving services that fit their needs. In addition to considering "false negative" misdiagnosis or misidentifying a gifted child with a behavioral disorder, it is equally important for practitioners to consider "false

positives" when screening or identifying for giftedness. High-achieving students who follow school expectations and maintain high academic performance may possibly be misidentified with giftedness, which could also have negative consequences for their development.

As discussed in the review of literature, the educational disproportionality of students of color is a significant consequence of misidentification in schools. It is necessary for school psychologists to better understand the severity of disproportionally in education and the factors that contribute to it. The use of cognitive assessments, teacher nomination, behavioral misinterpretation, and students' attitudes or expectations toward themselves are some contributing factors to the underrepresentation of students of color in gifted education programs (Winsler, Karkhanis, Kim, & Levitt, 2013). School psychologists can play a significant role in combatting educational inequities by becoming more knowledgeable about gifted characteristics, becoming familiar with gifted identification practices, ensuring that assessments used in school-based evaluations and gifted identification are fair and non-discriminatory, and advocating for culturally and linguistically diverse students.

Although the findings of this study do not provide support for the use of the BASC-3 parent rating scale in reliably identifying gifted characteristics, the assessment or other formal/informal behavioral assessments may be potentially helpful as a first step in understanding a child's behaviors.

It is also suggested that school psychologists and other practitioners routinely include behavioral assessments that may provide information on common gifted characteristics within all psychological/educational evaluations to ensure that the evaluation is taking giftedness into consideration and that the evaluation is not deficit-focused.

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