PARENT AND TEACHER PERCEPTIONS OF GIFTED AFRICAN AMERICAN
AND WHITE STUDENTS: IS THERE A DIFFERENCE?

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Abstract

In American schools, African American students are underrepresented in gifted education programs while White students are overrepresented. School-based gifted identification referrals are primarily initiated by teacher nomination. However, many characteristics or attributes perceived as gifted by the African American cultural group are often not recognized under mainstream definitions of giftedness and by extension teachers who nominate students for gifted education. Teachers often attribute giftedness to very narrow and specific abilities used in mainstream definitions of giftedness such as IQ and academic achievement, and may subsequently overlook African American students who demonstrate non-traditional attributes of giftedness (i.e., creativity, leadership ability, strong social skills). Given evidence that attributions of giftedness may vary by culture, an evaluation of ways in which teachers and parents perceive giftedness is important. The current study aimed to (a) develop and validate a questionnaire to assess parent and teacher perceived attributes of giftedness in an African American and White sample of students; (b) examine parent and teacher perceptions of giftedness as a function of student culture; (c) examine teacher perceptions of which student attributes they are more or less likely to endorse when nominating African American and White students; and (d) examine differences between parent perceptions of gifted attributes and teacher perceptions of nomination for African American and White students. The study was conducted in two phases. In phase I, the researcher-developed Attributions of Giftedness Survey (AGS) was found to be psychometrically valid and reliable. In phase II, significant and non-significant findings emerged. Specifically, (a) parent perceptions of giftedness significantly differed between African American and White students, (b)

teacher perceptions of giftedness significantly differed between African American and White students, and (c) parent perceptions of giftedness significantly differed from teacher perceptions depending on the student's culture. While teacher perceptions of nomination did not differ significantly between the two cultural groups, teacher perceptions of nomination were found to differ from parent perceptions of giftedness depending on the student's culture. Future directions regarding policy and procedural implications such as a comprehensive definition of giftedness and revisions to the nomination and identification procedure are discussed. Study results also indicated teacher training is warranted to facilitate teacher knowledge of culturally-bound expressions of giftedness that is unique to the African American cultural group to improve nomination rates of gifted African American students and support subsequent greater representation of African American students in gifted education programs.

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Chapter I

Introduction

The goal of gifted education is to use specialized instruction to enhance the academic and career trajectories of students who exhibit attributes of giftedness (Borland, 1985; Lubinski, Webb, Morelock, & Benbow, 2001; Kell, Lubinski, & Benbow, 2013). Unfortunately, African American students are currently underrepresented in America's gifted education programs, while White students are overrepresented (Kitano & Dijiosia, 2002; Michael-Chadwell, 2008). Because of this underrepresentation, African American students may miss educationally enriched and challenging opportunities afforded by specialized instruction found in gifted programs. Thus, understanding factors that contribute to over- and underrepresentation may be helpful in ensuring the equity in access to gifted education.

Contributors to Over- and Underrepresentation of Students in Gifted Education

In order to participate in U.S. gifted education programs, students must be nominated by a parent or teacher, tested using qualifications set by the school district, and finally accepted or denied entrance into a program. As such, the nomination and identification process is key to determining which students will ultimately participate in gifted education programs. This study will examine three key factors regarding student nomination and identification that may contribute to the under- and overrepresentation of African American and White students in gifted education programs, respectively; restrictive nomination and identification procedures (Rushton & Jensen, 2005), a failure to consider culturally-bounded attributions or characteristics of giftedness (Bernal, 1974; Marquez et al., 1992; Bonner & Jennings; Moon & Brighton; Michael-Chadwell; Ford,

1993b; Peterson, 1999), and lack of teacher training in identifying culturally diverse students for giftedness (Ford, 1993b; Moon & Brighton; Michael-Chadwell). Researchers have suggested these three factors exacerbate over- and underrepresentation of culturally diverse student representation in gifted education.

Restrictive nomination and identification procedures. In the early 1990's, a gifted student was one identified as having superior intellectual ability (Terman, 1926). Over the past several years, gifted definitions have become multifaceted to include several traits considered as gifted behavior including leadership, creativity, superior intellectual ability, high academic achievement, motivation, and skills in the visual/performing arts (Renzulli, 1986; U.S. Department of Education, 2004). Revisions to the gifted definition have resulted in a more comprehensive representation of gifted students, as well as more comprehensive nomination and identification procedures to identify giftedness (Frasier, 1990; Marquez et al., 1992; Michael-Chadwell, 2008; NAGC, 2005; NCLB, 2002; Renzulli, 1986; U.S. Department of Education, 2004). Although these comprehensive nomination and identification procedures exist, school professionals in the U.S. often default to high intellectual ability and academic achievement as the primary criteria when nominating or considering a student as gifted (McClain & Pfeiffer, 2012).

Using criteria restricted to IQ and achievement in the absence of alternative criteria poses a problem for African American students, as these students (a) often score lower on IQ tests compared to White students (Rushton & Jensen, 2005) and (b) are expected by their teachers to demonstrate lower academic performance compared to White students (McKown & Weinstein, 2008; Moon & Brighton, 2008; Pigott &

Cownen, 2000; Tenenbaum & Ruck, 2007), thereby not considered as candidates for giftedness referral. Moreover, relying on intellectual ability and academic achievement as sole indicators of giftedness excludes from nomination and identification those students who may demonstrate other characteristics as defined by the federal government (e.g., creativity, motivation, leadership, visual and performing arts; Renzulli, Frasier; U.S. Department of Education, 2004). Therefore, lower performance on IQ tests, negative teacher academic expectations, combined with restrictive selection of IQ and achievement as sole indicators of giftedness, may contribute to the underrepresentation of African American students in gifted education programs (McKown & Weinstein, 2008; Moon & Brighton, 2008; Pigott & Cownen, 2000; Tenenbaum & Ruck, 2007; Rushton & Jensen, 2005). Some researchers suggested that a failure to consider culturally-bounded expressions of giftedness may also perpetuate underrepresentation of culturally diverse students in gifted education programs (Ford, 1993b; Michael-Chadwell, 2008; Marquez et al., 1992; Moon & Brighton, 2008; Peterson, 1999).

Culturally-bounded expressions of giftedness. Borland (2004) and Morris (2002) describe giftedness as a social construct based on the values, traditions, and beliefs of excellence within a culture. Therefore, perceptions of gifted behavior likely vary by culture. Two cross-cultural studies on perceptions of giftedness currently exist in which researchers found that different cultures describe and endorse different attributes as giftedness (Stone, 2000; Peterson, 1999). Stone (2000) compared culturally different university students' perceptions of gifted traits in the context of various national cultures (England, France, Germany, Italy, Spain, Japan, Korea, Taiwan, Thailand, and the United

States). Stone found that specific gifted traits (i.e., creativity, communication, imagination, and high IQ scores) were perceived differently across the cultures studied.

Peterson (1999) also explored perceptions of giftedness across cultural groups, but the author focused on specific cultural groups within the United States (Latino, immigrant Asian, American Indian, White, and African American). Peterson asked school-age students, community members, and teachers to describe individuals they would nominate from their own culture as gifted, and the author found similarities and differences in perceptions of gifted attributes across cultures. Among African Americans and Whites, Peterson found helping others was a culturally shared trait of gifted behavior, whereas other traits appeared more culturally-bound: African Americans attributed handiwork to giftedness, while Whites attributed storytelling ability, practical skills, and academic ability to giftedness (Peterson, 1999). These results indicate perceptions of giftedness likely differ across cultural groups.

Unfortunately, no other cross-cultural studies on perceptions of giftedness in the United States currently exists, which suggests a need for cross-cultural research in this area. Moreover, several limitations of Peterson's study call into question the validity of study findings (e.g., potential researcher bias and lack of an objective measure to compare cultural differences in perceptions of giftedness). Therefore, examining studies that assessed cultural perceptions of giftedness of African Americans and Whites separately may provide insight on characteristics these groups attribute to giftedness.

In a sample of African American parents, Michael-Chadwell (2008) explored parent perceptions of giftedness using qualitative phenomenological research methods. Michael-Chadwell asked parents to describe giftedness in an African American child and

found parents attributed giftedness to intelligence, academics, possessing special abilities, self-motivation, social skills, leadership skills, and an ability to grasp concepts immediately (Michael-Chadwell, 2008). Moreover, several researchers found that African Americans highly value emotional and social competence, the ability to improvise, curiosity, and humor as strengths within an African American individual (Ford, 1993b; Gay, 1978; Marion, 1981; Torrance, 1973, 1977; VanTassel-Baska, 1989). In regards to the mainstream culture, some researchers found the White culture values motivation, high intellectual ability, academic achievement, and winning competitions (Ford, 1993b; Kerr, 2009; Peterson & Margolin, 1997), further suggesting cultural differences in perceptions of strength and exceptionality.

In summary, both cross-cultural studies (Peterson, 1999; Stone, 2000) and single cultural group studies on African Americans and Whites (Ford, 1993b; Gay, 1978; Kerr, 2009; Marion, 1981; Michael-Chadwell, 2008; Peterson & Margolin, 1997; Torrance, 1973, 1977; VanTassel-Baska, 1989) indicate culturally-bounded variability in perceptions of giftedness between White and African American cultural groups. This variability in perceptions suggests some gifted students may demonstrate attributes of gifted behavior that are unique to their cultural perspectives and beliefs. Consequently, the use of mainstream, restrictive definitions of giftedness may undermine recognition of giftedness among African Americans. This in turn may impact teacher nomination for gifted education.

Teacher nomination of White and African American students. As giftedness is first identified in school, teachers are often the primary referring agent (Coleman & Gallagher, 1992). Therefore, it is often their perceptions of what constitutes giftedness

that dictates which students do and do not receive referral to gifted education. Teacher's perceptions of giftedness are likely influenced by attributes of giftedness that are endorsed by mainstream cultures (Peterson, 1999). As mainstream culturally- mediated perceptions of giftedness is often restricted to high intellect and academic achievement, (Ford, 1993b; McClain & Pfeiffer, 2012; Peterson & Margolin, 1997), teachers may more often nominate White students who demonstrate these characteristics. For example, some researchers found intellectual and academic ability significantly influenced higher teacher nomination rates for White students compared to African American students (Elhoweris, Mutua, Alsheikh, & Holloway, 2005; Tenenbaum & Ruck, 2007), suggesting teachers may default to IQ and academic achievement, traditional indicators of giftedness, when nominating a student for gifted education.

Students who demonstrate culturally-bounded, or non-traditional attributes of giftedness may be overlooked for nomination and subsequent identification for gifted education. For example, Moon and Brighton (2008) documented that teachers were less likely to consider identifying a gifted student who "is well liked by classmates… makes other students laugh" (p. 462). As the African American culture considers social competence and humor as traits of gifted behaviors (Michael-Chadwell, 2008; Torrance, 1973, 1977), African American students who demonstrate these characteristics may be overlooked for nomination. In contrast, Moon and Brighton (2008) found teachers nominated for gifted education White students who exhibited "traditional signals for giftedness" (p. 474), whereas more often recommended counseling and referral to school-based programs to target disruptive behaviors they perceived in culturally diverse students. Although not conclusive, these results suggest teachers may under-refer

students if they are unfamiliar with culturally- bound beliefs about what is considered a gifted characteristic.

It is possible that African American students who exhibit non-traditional, cultural-specific behaviors considered gifted may not be recognized for gifted testing and this contribute to underrepresentation of African American students in gifted education programs. However, this has yet to be studied. Moreover, additional studies that examine characteristics of giftedness as perceived by different cultures are needed. These studies are needed to both examine teacher perceptions of giftedness relative to different cultures and whether their perceptions align with culturally different populations' perceptions of giftedness. Therefore, further exploration is needed to identify which characteristics the African American and White cultural groups attributes to giftedness and the likelihood that teachers consider such characteristics during the nomination process.

In summary, several researchers have documented that perceptions of what is considered giftedness vary by culture (Ford, 1993b; Gay, 1978; Kerr, 2009; Marion, 1981; Michael-Chadwell, 2008; Peterson, 1999; Peterson & Margolin, 1997; Stone, 2000; Torrance, 1973, 1977; VanTassel-Baska, 1989). In schools, it is typically the teacher that refers a child for giftedness, yet referrals for giftedness are not distributed equally. It is possible that teachers subscribe to traditional and narrow definitions of giftedness and by extension nominate White students who more often demonstrate traditional giftedness attributes, as higher rates than African American students (Elhoweris et al., 2005; Moon & Brighton, 2008; Peterson, 1999; Tenenbaum & Ruck, 2007). Providing teacher professional development on cross-culturally different perceptions of giftedness attributes may reduce teacher bias and assist teachers in considering culturally- bound, non-

traditional attributes of giftedness. This may improve African American students chances of being nominated, and by extension possible representation in gifted education programs.

A need for teacher training in identifying gifted African American students. According to Ford et al. (1996), gifted education courses provide little information on traits exhibited by gifted minority students. As such, parents and teachers have expressed concerns regarding teacher training in recognizing culturally diverse gifted students (Michael-Chadwell, 2008; Moon & Brighton, 2008). For example, Michael-Chadwell explored parent and teacher perceptions on the reasons African Americans are underrepresented in gifted education programs and found several responses pointed to a lack of teacher training in identifying gifted African American students. Michael-Chadwell found that 73% of the parents reported that teachers had misperceptions about their child's race and ability, such that teachers did not recognize that African American children expressed giftedness and talents differently, compared to the majority culture (Michael-Chadwell, 2008). Therefore, 42% of the African American parents in the study reported teachers need training "to recognize gifts and talents" of African American children (p. 179). Teachers in this study also reported insufficient training in nominating culturally diverse gifted students (Michael-Chadwell, 2008). When asked what gifted educational training teachers received regarding minority children, Michael-Chadwell (2008) found 100% of the teachers reported receiving no training, which suggests a severe lack of training in identifying gifted minority students.

In light of these concerns, some researchers have recommend developing a further understanding of how different cultural groups perceive attributes of giftedness, in order

to inform teacher training on recognizing giftedness among culturally diverse students (Ford, 1993; Michael-Chadwell, 2008; Moon & Brighton, 2005). Understanding cultural perceptions of giftedness may (a) help teachers recognize giftedness in forms that depart from the traditional, mainstream definitions, especially among the African American culture; (b) reduce negative teacher expectations of deficits in African American students; and (c) provide insight into patterns of overrepresentation among White students and underrepresentation among African American students in U.S. gifted education programs.

In order to provide teachers with meaningful professional development on better identifying African American gifted students, it is important to identify what teachers already know. Some teachers have reported their perceptions of giftedness may differ from culturally diverse populations' perceptions of giftedness (Peterson, 1999), suggesting teachers recognize that different cultures perceive giftedness differently. However, no data exist that examines a teacher's existing knowledge of gifted characteristics as exhibited by African American and White students. Identifying teachers' awareness of gifted characteristics relative to the cultural group's own perceptions of giftedness may shed some light on where cultural misperceptions and discrepancies exist. This in turn may inform teacher professional development in recognizing culturally- bound gifted traits and considering such traits during nomination for gifted education.

This study has two main purposes. The first purpose of this study is to develop and validate a survey that assesses perceptions of giftedness for two distinct cultural groups (African Americans and Whites). The second purpose is to explore study aims.

The overall study aims are to attain more information on which characteristics parents and teachers perceive as giftedness for a specific cultural group, discrepancies in parent and teacher perceptions, and the likelihood that teachers consider specific gifted characteristics when nominating African American and White students for gifted education.

Delimitation

Labels for Culturally Diverse Groups

Scholars often use the concept of culture interchangeably with race and ethnicity. For example, in some studies, respondents must indicate their cultural background on a demographic questionnaire by choosing from categories that include race, ethnicity, and national origin (e.g., Asian, American Indian, African American/Black, Hispanic, or White; Betancourt & Lopez, 1993). For individuals who classify themselves within multiple categories, such a demographic question may lead to inappropriate labeling. The term *Hispanic*, for instance, refers to an ethnic group category, whereas African American/Black, Asian or Pacific Islander, and White designations are categorized as racial groups (U.S. Census Bureau, 2000, 2005). Therefore, a Hispanic individual can also belong to the racial groups White, Black, or Asian (Betancourt & Lopez, 1993). For example, an individual can identify as racially White but be of Hispanic origin. When respondents are requested to identify between race and ethnicity, this option limits denotation of a respondent's cultural background, as an individual's cultural background is encompassed by ones race *and* ethnicity. In addition, Barnett and Lee (2002) defined culture as a group's "values, attitudes, beliefs, customs, and thoughts" (p. 277), suggesting an individual's cultural values and beliefs are informed by his or her racial *and* ethnic identity (Milner & Ford, 2007). This implies that people transmit their culture's norms by means of their race, ethnicity, and associated beliefs and practices (Betancourt & Lopez, 1993; Milner & Ford, 2007).

For the purposes of this study, I will use the term *culture* as an overarching term referring to the different groups targeted in this study, as opposed to separating the

groups by racial and ethnic identity. I will follow the OMB's (2015) categories to identify the groups whose perceptions of giftedness I will assess. I will use the following terms as a direct reflection of the groups that are over- and underrepresented in gifted education: *White* and *African American* as "cultural groups" not of Hispanic origin. Overall, I will examine culturally-bounded perceptions of giftedness for two "cultural groups" consisting of African Americans and Whites. Appendix I provides definitions of racial and ethnic groups to provide uniformity and understanding of specific ethnic and racial groups mentioned throughout the document.

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Chapter II

Literature Review

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Functions of Gifted Education Programs

Researchers have highlighted that gifted education serves negative and positive functions relative to economy, education, and society (Gallagher, 2000; Margolin, 1995; Oakes, 1985; Richert, 2003; Sapon-Shevin, 1993, 1994, 2003). In terms of negative functions, several scholars have criticized gifted education for perpetuating economic, educational, and social inequalities, leading some researchers to favor elimination of gifted education programs altogether (Gallagher, 2000; Margolin, 1995; Oakes, 1985; Richert, 2003). For example, the National Educational Longitudinal Study conducted by the U.S. Department of Education (1991) revealed that students whose families' socioeconomic status (SES) placed them in the top quartile of the population were five times more likely to be enrolled in gifted education programs than were students from families in the bottom quartile. This finding suggests significant influence of economic inequality in relation to access to gifted education. African American children and their families are often represented in the bottom quartile, and represented less in gifted education suggesting economic inequality may play a role (U.S. Census Bureau, 2014). Although SES is often confounded with ethnic or cultural group status, it will not be a focus in the present study.

In terms of educational inequalities, researchers highlighted that students in gifted education programs receive benefits unavailable to the general student body that include smaller class sizes, enthusiastic teachers, richer and more challenging curricula, additional after school courses, and individualized attention (Gallagher, 2000; Richert,

2003). As African American students are less often referred and identified for gifted education programs (Elhoweris et al., 2005; Michael-Chadwell, 2008; Tenenbaum & Ruck, 2007), they may miss out on specialized and enriched instruction that supports their giftedness. Additionally, they may lag behind their White peers who are currently overrepresented in gifted education programs and who benefit from the enriched instruction provided through gifted education. Some, including Borland (2003) advocated for educational equity by suggesting gifted education benefits be provided to all students, regardless of SES, race, ethnicity, or gifted status.

In contrast, Sapon-Shevin (2003) justified gifted education through educational need, social justice, and economic necessity. Sapon-Shevin (1993, 1994, 2003) claimed that gifted education programs are necessary to provide enriched educational opportunities to students who have different educational needs, compared to their non-gifted peers. Sapon-Shevin (2003) suggested that just as students with disabilities have differentiated programing through special education (e.g., speech therapy, occupational therapy), students identified as gifted should have differentiated programming to develop their potential (e.g., specialized instruction, enrichment programs). Furthermore, professionals who advocate for gifted education programs using a political and economic model have argued that gifted students have the potential to contribute significantly to scientific and technological innovation within American society, which allows the United States to keep its powerful status among other nations (Sapon-Shevin, 1993, 1994). Although scholars have used educational, social justice, and economic explanations to both criticize and promote gifted education, evidence suggests that positive academic and career outcomes for gifted students support a continued need for gifted education

(Delcourt et al., 2007; Feldhusen et al., 1990; Kell et al., 2013; Lubinski et al., 2001; Lubinski & Benbow, 2006; Parke, 1983; Roberts et al., 1992).

Positive Outcomes of Gifted Education Programs

Several researchers have linked participation in gifted programs to positive outcomes. Specifically, researchers have found specialized instruction (e.g., pull outs and enrichment programs) resulted in higher academic achievement (Delcourt, Cornell, & Goldberg, 2007) higher math scores (Parke, 1983), higher cognitive process functioning (Roberts, Ingram, & Harris, 1992), and improvement in self-concept (Feldhusen, Sayler, Nielsen, & Kolloff, 1990). For example, Delcourt et al. (2007) assessed academic changes in gifted students during their first two years in a gifted program. The researchers compared gifted student's academic outcomes against the academic outcomes of non-gifted students in regular classrooms as well as high-achieving students from districts in which no gifted program was available. The researchers found higher academic outcome for gifted students who received specialized instruction compared to non-gifted and high-achieving students without enriched instruction. Delcourt et al.'s (2007) findings indicate an association between gifted education programs and positive educational outcomes.

In addition, long-term educational and career benefits accrue for gifted students who receive specialized instruction. For instance, in longitudinal studies, researchers have found specialized instruction had a positive effect on students' futures and academic plans (Lubinski et al., 2001; Lubinski & Benbow, 2006; Kell et al., 2013). Lubinski et al. (2001) conducted a 10-year follow-up study on 320 gifted students under age 13 who were identified as having high math ability. The researchers found that several of these

students took advantage of various forms of academic acceleration (e.g., advanced placement courses, early college entrance) and later intended to pursue masters and doctoral degrees. By age 23, 93% of the participants had secured bachelor's degrees, 31% had earned master's degrees, and 12% had earned doctoral degrees (Lubinski et al., 2001). Lubinski et al. (2006) found consistent results in a 20-year follow-up, with several students holding advanced degrees and careers in science or mathematics by age 33.

Similarly, Kell et al. (2013) conducted a 30-year longitudinal study of gifted students with high verbal and math ability and found that approximately 44% of the students had earned terminal degrees (M.D., Ph.D., or J.D.; Kell et al., 2013). Moreover, some of the participants held leadership positions in various organizations, produced numerous written and visual works of art, and held tenure at major research institutions (7.5%) and accredited universities (11.3%; Kell et al., 2013). Overall, among those identified as gifted, researchers have found positive career and educational trajectories correlated to strong mathematical or verbal reasoning abilities, as well as participation in specialized instruction (Kell et al., 2013; Lubinski et al., 2001; Lubinski et al., 2006; Lubinski & Benbow, 2006).

For these longitudinal studies, only students already included in gifted programs were studied, which biased the findings toward performance of those in the gifted programs. Thus, there was no way of knowing how non-gifted students performed or how their outcomes compared to the outcomes of gifted students. However, Lubinski et al. (2001) associated the benefits of specialized instruction as a contributing factor to educational and career success and reported, "a control group deprived of these opportunities might not have fared as well" (p. 727).

These researchers also chose participants based solely on high academic achievement, SAT, and IQ scores (Lubinski et al., 2001; Lubinski & Benbow, 2006; Kell et al., 2013). Due to the strict inclusionary criteria used in these studies, readers may assume these positive career outcomes were restricted to students with high IQ or high academic achievement. Although not studied, it is possible that students with other gifted attributes included in the U.S. federal definition of giftedness, such as creativity and leadership, also achieved career and academic success later in life (e.g., produced creative work, held leadership positions), but were not identified for these studies because of the strict inclusion criteria.

African American and White Gifted Students in Texas

The number of culturally diverse students in Texas public schools is expected to mirror the number of culturally diverse students relative to representation in in Texas gifted education. However, a disproportionate representation of African American (under-represented) and White students (over-represented) currently exists in Texas gifted education programs. The term disproportionate representation refers to either a higher or lower percentage of students from a particular group in special education programs, such as gifted education, than is found in the overall student populations (DeValenzuela et al., 2006). Ford et al. (2002) used the following two formulas to determine whether a specific student population was either under-or overrepresented in a gifted program:

1. If the percentage of a specific student population within an educational system is greater than the percentage of the same population in a gifted program, then the formula to calculate percent underrepresentation is

(1-[percentage of students in gifted programs/percentage of all students in school]*100); or

2.   If the percentage of a specific student population is greater than the percentage of the same student population within an educational system, then the formula to calculate percept overrepresentation is: (1-[percentage of students in school/percentage of students in gifted programs]*100).

As an example, the 2015-2016 school year, 12.6% of the overall student population in Texas public schools was African American students, whereas 28.5% of the student population was White students (TEA, 2015). This student representation is not reflected within gifted education programs in Texas; African American students made up 0.28% of the gifted student population, while White students made up 39.4% of the gifted student population (TEA, 2015), suggesting disproportionate representation among these two cultural groups in Texas gifted education programs.

Moreover, during the 2006-2007 school year, overrepresentation of White students and underrepresentation of African American students in gifted education programs in Texas was evidenced in two of Texas's most diverse cities, San Antonio and Houston (TEA; 2007). In San Antonio, "African Americans were 35% underrepresented; ….and Whites were 31% overrepresented" (as cited in Michael-Chadwell, 2008, p. 5). Similarly, members of a Houston Independent School District committee found that compared to their White peers, African American students in Houston were underrepresented in gifted education programs (Radcliffe, 2006). The over- and underrepresentation of gifted White students relative to gifted African American students

poses serious questions over gifted identification practices given the changing demographic landscape in the United States.

According to the U.S. Census Bureau, the percentage of African Americans is predicted to grow exponentially by 2060, while the percentage of Whites is predicted to decrease (as cited in Murdock, 2015). Specifically, from 2010 to 2060, the number of African Americans in the United States is expected to increase by 46.7%, whereas the number of Whites is expected to decrease by 9% (Murdock, 2015). Population projections for Texas indicate similar patterns. According to the Office of the State Demographer, by 2050, the percentage of African Americans in Texas is expected to increase by 40.84%, whereas the percentage of Whites will decrease by 1.16% (as cited in Potter & Hoque, 2014). The growth in gifted education is expected to parallel the growth in culturally diverse individuals in Texas; however, the Texas Education Agency (2001) has projected the continuation of disproportionate representation in gifted education programs for specific cultural groups (as cited in Murdock et al., 2002). By 2040, gifted education programs in Texas is projected to consist of 59% White and 10.1% African American (Murdock et al., 2002) -two widely disparate projections given population estimates. Projection data indicates African American students will remain underrepresented, while White students remain overrepresented in Texas gifted education programs. The current over and under-representation, as well as the projection of disproportionate representation of White and African American students in gifted education has called into question the equality of culturally diverse gifted student representation in American schooling.

As previously mentioned, several scholars have debated the need for gifted education on educational, societal, and economic grounds (Borland, 2003; Gallagher, 2000; Margolin, 1995; Oakes, 1985; Richert, 2003; Sapon-Shevin, 2003). Although these scholars have debated the pros and cons of gifted education, outcome data indicate several academic, career, and societal benefits resulting from gifted education (Delcourt et al., 2007; Feldhusen et al., 1990; Lubinski et al., 2001; Kell et al., 2013; Parke, 1983; Roberts et al., 1992). However, African American students who are not referred for gifted education programs because they demonstrate non-traditional attributes of giftedness (i.e., practical skills, emotional and social competence) may miss out on the many benefits associated with specialized instruction (Gallagher, 2000; Richert, 2003). The current increase and projected growth of African American students in Texas underscores a critical need to improve African American student representation in gifted education programs, so their potential is maximized through specialized and enriched instruction. In order to improve student representation in gifted education programs, it is first necessary to understand how a student is identified, in order to determine factors that contribute to under-referral and under-identification of students for gifted education.

Identification of the Gifted Student

Overrepresentation of White students and underrepresentation of African American students in U.S. gifted education has been a concern since the early 1900s and continues to be an issue today (Grantham, 2003; Jenkins, 1936). In the early 1900s, a gifted student was defined as a student with superior intellectual ability (Terman, 1926). However, several scholars criticized this practice as limiting assessment of the full spectrum of giftedness (Frasier, 1990; Renzulli, 1986). Therefore, over the past several

years, definitions of giftedness have evolved to become multifaceted and more inclusive of other traits now considered gifted. This has resulted in the development of more comprehensive nomination and identification procedures for gifted education (Frasier, 1990; Marquez et al., 1992; Michael-Chadwell, 2008; NAGC, 2005; NCLB, 2002; Renzulli, 1986).

Despite the emergence of more comprehensive definitions and procedures, school professionals still routinely attribute high intellectual ability and academic achievement as hallmarks of giftedness when nominating and identifying a student for gifted education (A. Smith, personal communication, January 19, 2016; Doe Elementary School, 2014; McClain & Pfeiffer, 2012). Several researchers have suggested that the continued restricted focus on high intellect and academic achievement likely perpetuates current underrepresentation of African American students and overrepresentation of White students in gifted education programs (McKown & Weinstein, 2008; Pigott & Cownen, 2000; Rushton & Jensen, 2005). For example, Rushton and Jensen (2005) found African Americans perform lower on IQ tests compared to Whites, especially in the areas of reasoning and problem solving ability. If African American students do not obtain a high IQ score that indicates giftedness, then these students may not meet criteria for enrollment in gifted education. Moreover, some researchers found that teachers demonstrate negative academic expectations for African American students compared to their White peers, suggesting teacher biases may influence teacher nomination of African American and White students for gifted education (McKown & Weinstein, 2008; Pigott & Cownen, 2000). Overall, differences in IQ performance and teacher expectations between African American and White students may contribute to underrepresentation of

African Americans and overrepresentation of White students in U.S. gifted education programs.

Evolution of the gifted definition. Since the early 1900s, theorists have equated giftedness with high IQ scores. Terman (1926) underscored giftedness in those who scored within the top 1% in general intellectual ability as measured by the Stanford-Binet Intelligence Scale. Sternberg (2007) identified students as gifted if they obtained an IQ of two standard deviations above the mean. Typically, a mean is 100 and a standard deviation is 15. Therefore, individuals with an IQ of 130 or above were considered gifted under Sternberg's criteria.

However, several scholars have claimed that the focus on IQ tests has limited assessment of the full spectrum of giftedness (Frasier, 1990; Marquez et al., 1992; Renzulli, 1986; Torrance 1971). Torrance (1971), Renzulli (1986), Frasier (1990) rejected IQ as the sole indicator of giftedness and expanded upon traits of gifted behavior. Renzulli, emphasizing that gifted behaviors can be nurtured, created a framework of giftedness containing three rings: above average ability, creativity, and task commitment. Frasier (1990) developed a model that included 10 traits of gifted behaviors: motivation, interest, communication skills, problem-solving ability, reasoning inquiry, memory, insight, humor, and imagination/creativity. Torrance indicated giftedness can take the form of creative achievement and developed the Torrance Tests of Creative Thinking. A review of the test across several geographic areas indicated differences in creative thinking between African American and White student. Higher creative expressions in the areas of originality, flexibility, and elaboration were found for African American students compared to White students. Overall, these researchers

emphasized that giftedness takes many forms, and educators should avoid relying on a single piece of data (e.g., IQ) as the primary criterion to document students' qualifications for gifted education program services.

In light of these criticisms, a multifaceted definition of giftedness has evolved over the years. In 1972, former U.S. Commissioner of Education Sidney Marland reported the first federal definition of *gifted and talented* to Congress. The Marland Report (1972) defined gifted and talented children as those who hold outstanding abilities, are capable of high performance, and require "services beyond those normally provided by the regular school program in order to realize their contribution to self and society" (p. 10). High performance may be expressed through any one or a combination of these areas: "(1) general intellectual ability, (2) specific academic aptitude, (3) creative or productive thinking, (4) leadership ability, (5) visual and performing arts, and (6) psychomotor ability" (Public Law 91-230, section 806). Although the public law contains descriptions of the different dimensions of giftedness, it does not define exactly how these dimensions would be expressed in students (Public Law 91-230, section 806), which makes the dimensions ambiguous. However, under the law's designation, dimensions other than intelligence, such as creativity and leadership abilities, began to be recognized as attributes of giftedness, thus expanding conceptions of giftedness (Public Law 91-230, section 806).

In 1993, the U.S. Office of Educational Research and Improvement revised the definition of giftedness to include an ecological perspective: "Outstanding talents are present in children and youth from all cultural groups, across all economic strata, and all areas of human endeavor". However, because the term *outstanding talent was* not

operationalized, it is unclear what specific "talents" encompass giftedness. Later in 2002,
under the No Child Left Behind (NCLB) legislation, the federal definition of gifted
students was revised to include

> "students, children, or youth who give evidence of high achievement capability in
> areas such as intellectual, creative, artistic, or leadership capacity, or in specific
> academic fields," also stating that such individuals "need services and activities
> not ordinarily provided by the school in order to fully develop those capabilities.
> (NCLB, 2002, para. 22).

The National Association for Gifted Children (NAGC; 2005) also operationalized
the construct by including specific attributes of giftedness. NAGC defined *gifted children*
as individuals who

> "demonstrate outstanding levels of aptitude (defined as an exceptional ability to
> reason and learn) or competence (documented performance or achievement in top
> 10% or higher) in one or more structured (e.g., math, music, language) and/or
> sensorimotor domains (e.g., painting, dance, sport)" (para. 5).

As evidenced by these institutional definitions, conceptualizations of giftedness
have become multifaceted and now provide a more comprehensive representation of a
gifted student. Despite the option to use a more inclusive definition of giftedness when
nominating and identifying a student for gifted education, teachers often default to the
more restrictive nomination and identification practices of students who have high
intellectual ability and academic achievement (A. Smith, personal communication,
January 19, 2016; Doe Elementary School, 2014; McClain & Pfeiffer, 2012), which may

result in non-referral and non-identification for students who demonstrate other traits that may qualify for giftedness.

Gifted identification using student IQ and academic achievement. In the United States, nomination and identification for giftedness is more often reserved for students with high intellectual ability and academic achievement as opposed to creativity and other behaviors (McClain & Pfeiffer, 2012). For example, McClain and Pfeiffer (2012) conducted a national survey on gifted identification methods and found 16 states (32%) mandated that schools use IQ, and 17 states (34%) mandated that schools use achievement tests. Only nine states supported assessment of creativity, and seven states supported behavioral checklists (McClain & Pfeiffer, 2012), suggesting IQ and achievement tests were the two most commonly required gifted identification methods in the U.S. (McClain & Pfeiffer, 2012).

This finding is consistent within Houston-area school districts, where gifted applicants more often receive assessments that test intellect and academic achievement as opposed to other attributes considered to show giftedness. For example, educators at Radford Independent School District (RISD) refer RISD elementary students to gifted education based on teacher or parent observation, academic achievement, and general intellectual ability. According to the advanced academics director at Sand Piper ISD (SPISD), educators in this district measure intellectual functioning and use a research-based teacher profile form to identify gifted students (A. Smith, personal communication, January 19, 2016).

On the other hand, Evergreen Independent School District's (EISD) definition of giftedness is more exhaustive than those used by RISD and SPISD. Educational

professionals from EISD determine whether students qualify for gifted services according to the Texas state definition of giftedness (74th Legislature of the State of Texas, Chapter 29, Subchapter D, Section 29.121), and therefore use measures of general intelligence, academic achievement, creativity, and leadership ability to identify a gifted EISD elementary student (B. Smith, personal communication, January 7, 2016). It is important to note that although definitions and identification procedures vary between Houston-area school districts, general intellectual ability and academic achievement are the common indicators of giftedness, suggesting IQ and academic achievement tests may be often used to nominate and identify gifted students.

African Americas and White student performance on IQ tests. Although IQ tests are common measures administered when assessing a student for giftedness, educators have grown increasingly concerned about the validity of IQ tests used to identify culturally diverse students for specialized education programs, like gifted programs. Some researchers found that culturally diverse students including Hispanics and African Americans perform differently on intelligence tests, compared to their White peers (Roth et al., 2001; Rushton & Jensen, 2005). For example, Rushton and Jensen (2005) found differences in IQ scores between Whites and African Americans. The authors reviewed 30 years of research on Black–White differences in average IQ and found Black students scored one standard deviation below White students on intelligence tests. Rushton and Jensen (2005) found the Black-White IQ gap was largely due to differences in reasoning and problem solving skills. Moreover, Nagelieri and Jensen (1987) found Black elementary students performed better than White students on tests of memory and spatial ability after the removal of general intelligence. However, as general intelligence is often

expressed as a single number (IQ) that represents underlying mental abilities and one standard deviation equaled 15 points (Sternberg, 2007), African American students might not have met predetermined cutoff scores on traditional intelligence tests. Therefore, these students would not have qualified for gifted education programs if these tests were the sole measure employed to determine entry.

Flanagan and Ortiz (2001) also reviewed various standardized norm referenced cognitive tests and found that IQ tests vary by degree of cultural loading and linguistic demand. Due to this and other limitations in assessing cognitive functioning of culturally diverse population, Ortiz (2002) later developed a framework for nondiscriminatory assessment that targets procedures to reduce bias in testing practices, evaluating learning ecology and language proficiency, and evaluating cultural and linguistic factors. Despite concerns about using standardized intelligence tests with African American students and recommendations to use nondiscriminatory assessments, the practice of using IQ tests as an indicator of giftedness continues (McClain & Pfeiffer, 2012), and so does underrepresentation of African American students in gifted education programs (TEA, 2014).

Teacher perceptions of academic achievement for African American and White students. Researchers have also expressed concerns regarding the use of high academic achievement in the nomination and identification of students for gifted education because teacher expectations and perceptions of academic performance have been found to vary according to a students' culture (McKown & Weinstein, 2008; Pigott & Cownen, 2000). For example, McKown and Weinstein (2008) explored the extent to which teachers use child ethnicity as the basis of their academic expectations and found differences in

teacher expectations between White and African American children. These authors controlled for prior student achievement and examined teacher academic expectations for elementary school students in several urban classrooms. McKown and Weinstein (2008) found that teachers ranked White students seven points higher on reading and more than eight points higher on math, compared to equally achieving African American students. McKown and Weinstein's (2008) findings indicate these teachers expected White students to demonstrate higher academic performance than African American students.

Pigott and Cownen (2000) found similar results for academic perceptions between African American and White students. These authors examined teacher perceptions of 445 African American and White elementary students and found teachers perceived African American students with more serious school problems and poorer future educational prognoses than White students (Pigott & Cownen, 2000). In regards to school problems, teachers rated African American students higher on learning problems and lower on task orientation than their White peers. These teachers also demonstrated lower academic expectations for African American students and higher academic expectation for White students regarding students' academic futures (Pigott & Cownen, 2000). As academic achievement is often considered when nominating and identifying a student for gifted education (McClain & Pfeiffer, 2013), higher teacher expectations on academic achievement for White students may result in an increase of nomination and subsequent overrepresentation of these students within U.S. gifted education programs.

In summary, limitations regarding the use of high student intellectual ability and academic achievement as the primary criterions for nominating and identifying a gifted student may contribute to the underrepresentation of African American students and

overrepresentation of White students in U.S. gifted education programs. Several researchers pointed out that culturally sensitive conceptualizations of giftedness may be missing from the nomination and identification process for gifted education (Ford, 1993b; Marquez et al., 1992 Michael-Chadwell, 2005; Moon & Brighton, 2008) and recommended that educators incorporate measures that assess culturally-bounded traits of what is considered gifted behavior (Bernal, 1974; Bonner & Jennings, 2007, Irby & Lara-Alecio, 1996; Marquez et al., 1992). However, in order to inform the development of such measures that are sensitive to culturally mediated aspects of giftedness, it is critical to identify ways in which different cultural groups perceive giftedness.

Culturally-bounded Perceptions of Giftedness

Sociocultural values, attitudes, and beliefs are reflected in cultural perceptions of intelligence, and specific skills are promoted based on a culture's ideals of intelligent behavior (Mistry & Rogoff, 1985). For example, the dominant culture in America has described verbal ability and cognitive skills as characteristics of high intelligence (Sternberg et al., 1981), and often promotes these skills with education. While Asians described nonverbal reasoning skills, ability to memorize, and social skills as indicators of intelligence (Chen & Chen, 1988), Australians considered memory skills insignificant and did not promote memorization (Chen et al., 1982). Since cultural beliefs influence perceptions of intelligence, it follows that cultural attitudes are also reflected in perceptions of exceptionalities, strengths, and gifts.

Borland (2004) and Morris (2002) suggested that giftedness is a social construct based on the values, traditions, and beliefs of excellence within a culture. Therefore, perceptions of what is considered gifted behavior may vary as a function of culture. A

review of existing literature shows that researchers found both similarities and

differences in perceptions of gifted attributes across the White and African American

cultural groups (Ford, 1993b; Michael-Chadwell, 2008; Peterson, 1999; Peterson &

Margolin, 1999). These differences in perceptions of what is considered gifted suggest a

need for cross-cultural research to identify which attributes of giftedness are consistent

cross-culturally and which attributes are culturally- bound.

Perceptions of giftedness across cultures. Few researchers have explored

perceptions of giftedness across cultural groups (Stone, 2000; Peterson, 1999). Stone

(2000) compared gifted traits within the context of various national cultures (England,

France, Germany, Italy, Spain, Japan, Korea, Taiwan, Thailand, and the United States)

and found a number of gifted traits were perceived differently across cultures. For

example, Stone found that traits such as reasoning, learning, problem solving, memory,

and inquiry were perceived as gifted attributes cross-culturally. Other traits such as

creativity, communication, imagination, and high IQ score were perceived as gifted

attributes only within specific cultures (Stone, 2000).

In Stone's (2000) study, mean scores above 4.0 implied a statistically significant

trait for that culture. Higher ratings on the 1- to 5-point scale indicated the respondent

perceived the trait as indicative of gifted behaviors (Stone, 2000). A comparison of mean

ratings on traits of gifted behavior indicated U.S. respondents rated high IQ scores highly

(4.21), whereas Japanese respondents rated high IQ scores low (3.39; Stone, 2000). On

the other hand, Japanese respondents rated imagination highly (4.36), and U.S.

respondents rated imagination low (3.79; Stone, 2000). Stone's findings suggest specific

traits of giftedness are perceived differently across cultural groups around the world. Perceptions of giftedness may also differ across cultural groups within the United States.

Peterson (1999) explored themes in gifted perceptions among Latinos, Asians, African Americans, Whites, and American Indians in the U.S. using a postpositivistic inquiry approach. Peterson interviewed students, community members, and parents from the above-mentioned cultural groups and found differences in perceptions of giftedness across cultures. For example, Latino respondents attributed artistic talent, humility, and community service to giftedness; immigrant Asian respondents perceived education, adaptation, caring for family, asceticism, and hard work for the future as gifted traits; African American respondents associated handiwork, concern for family, wisdom, and community service, with giftedness; White respondents stated gifted persons were helpers, storytellers, and had practical skills and academic ability (Peterson, 1999). Overall, in comparing African American and White perceptions of giftedness, helping and providing assistance to others were culturally shared traits of gifted behaviors, whereas other traits appeared more culturally-bounded (i.e., handiwork, story-telling ability, practical skills, academic ability; Peterson, 1999). Peterson indicated differences in perceptions between cultural groups might exclude "nonmainstream" students from nomination and identification for U.S. gifted education programs (p. 366), suggesting students who fail to demonstrate mainstream attributes of gifted behavior may be excluded from nomination and identification.

Although several culturally-bounded and cross-cultural attributes of giftedness were identified, two limitation question the validity of study findings (i.e., researcher bias and lack of objectivity in research method). First, the use of open dialogue in

postpositivist mode of inquiry may have allowed for researcher bias (Houghton, 2011). During discussions, Peterson may have unwittingly directed respondents to discuss attributes of giftedness that the researcher valued, thus biasing findings. This is potentially problematic as an attribute of giftedness in one cultural group may present differently in another cultural group. Second, it is possible that Peterson (1999) may have engaged in open-ended discussions with one cultural group about a specific gifted trait, but did not ask about the same trait with other cultural groups he interviewed. Therefore, this method severely lacks objectivity. Asking different cultural groups to rate a set of predetermined attributes will help to illuminate any causal relationships for culturally-bounded and across-cultural attributes of giftedness, and therefore improve the overall objectivity of the research method.

Currently, two cross-cultural studies on perceptions of giftedness exist (Peterson, 1999; Stone, 2000). While Stone's (2000) study is an international study, cross-cultural perceptions of giftedness relative to cultural groups within the Unites States are limited, to my knowledge, to a single study (Peterson, 1999), indicating a paucity of cross-cultural research in this area. Moreover, several limitations limit the validity of Peterson's (1999) findings. Exploring the African American and White cultural groups individually may provide insight on these groups perceptions of giftedness.

Perceptions of giftedness among African Americans. Research on perceptions of giftedness relative to the African American culture is scarce. In addition to Peterson's (2000) cross-cultural study, Michael-Chadwell (2008) is the only researcher who examined gifted perceptions according to African Americans as an individual cultural group. Michael-Chadwell (2008) explored perceptions of giftedness for African

Americans using a qualitative phenomenological research method. The author interviewed African American parents' perceptions of giftedness and found that these parents described several traits of gifted behavior that differed from traits included in U.S. definitions of giftedness. For example, Michael-Chadwell found that African American parents described giftedness as excelling in one or more subjects; having an exceptional ability to think productively and creatively; expressing self-motivation; demonstrating leadership; grasping concepts immediately; maintaining above-average grades; independence; and possessing special abilities, intelligence, sensorimotor abilities, or social skills (Michael-Chadwell, 2008). Some of these characteristics are similar to mainstream definitions of giftedness (i.e., academic achievement, leadership, intelligence), whereas others may be excluded from traditional nomination and identification practices for gifted education (i.e., self-motivation, independence, social skills).

Moreover, several of these parents expressed concerns that their children would not be considered for nomination for gifted education because their cultural values differed from the values of the dominant culture, suggesting that the African American culture may highly value strengths that differ from the values of the dominant culture. Michael-Chadwell (2008) did not elaborate on these differences, which warrants additional investigation on the values of the African American culture. Therefore, examining cultural values of the African American culture may provide insight into which characteristics the African American culture values as strengths in an African American individual, as well as how these characteristics differ from characteristics valued as strength in the dominant culture.

Some researchers found members of the African American culture value academic achievement, independence, originality, self-competence, the ability to express feelings and emotions, and the ability to interact successfully with others (Ford, 1993b; Gay, 1978; Marion, 1981; VanTassel-Baska, 1989). Moreover, Torrance (1973, 1977, 1978) found African American parents perceived humor, an ability to improvise, curiosity, and the use of expressive, verbal, and body language as strengths in African American children. Some of the characteristics this culture valued were identified as attributes of giftedness by parents in Michael-Chadwell's (2008) study (e.g. academic achievement, independence, and social skills), suggesting cultural values are also reflected in perceptions of strengths and gifts.

In considering cultural values and perceptions of giftedness identified by the African American cultural groups, few are included in U.S. definitions of giftedness. For example, creativity, academic achievement, and leadership are indicated as gifted traits in the federal definition of giftedness (U.S. Department of Education, 2004). However, independence, self-motivation, ability to improvise, humor, emotional competence, and social competence are abilities neither espoused in the U.S. definition of giftedness nor used in identifying a student for gifted education (NCLB, 2005). The exclusion of specific gifted attributes that the African American culture values and is often unrecognized by traditional methods of teacher nomination and identification may contribute to the underrepresentation of African American students in gifted education. Therefore, identifying how African Americans perceive giftedness may inform efforts in considering culturally mediated expressions of what is considered giftedness in the nomination and identification procedures for gifted education. This may subsequently

lead to an increase in representation of African American students in gifted education programs.

Perceptions of giftedness among Whites. Some researchers suggested that the values of the mainstream culture may drive definitions of giftedness and reflect overrepresentation of White students in U.S. gifted education programs (Elhoweris et al., 2005; Ford, 1993b; Kerr, 2009). The mainstream culture, which often reflects Whites, values motivation, high intellectual ability, academic achievement, and winning competitions (Ford, 1993b; Kerr, 2009; Peterson & Margolin, 1997). Intelligence and academic achievement are characteristics frequently considered in the nomination and identification processes for gifted education (McClain & Pfeiffer, 2012). As cultural values of the mainstream population aligns with gifted attributes commonly recognized for nomination and identification, White students who demonstrate these characteristics are more likely to be nominated, and thereby have more opportunities to be nominated. This in turn may result in overrepresentation of White students in gifted education programs.

However, Peterson (1999) found some perceptions of giftedness for Whites differed from mainstream cultural values. For example, Peterson (1999) found Whites reported gifted persons were nurturers, listeners, helpers, advisors, … versatile" (Peterson, 1999, p. 363). These White respondents also associated practical skills, writing ability, academic ability, and storytelling ability to giftedness. Some of these characteristics are consistent with mainstream definitions of giftedness (i.e., academic and writing ability), whereas the other characteristics are not recognized in traditional nomination and identification methods, suggesting some characteristics may be specific

to the White cultural group. Unfortunately, research on Whites perceptions of giftedness is limited. Currently, Peterson (1999), to the authors knowledge, is the only researcher who explored perceptions of giftedness for this cultural group. The paucity of research on Whites perceptions of giftedness, differing perceptions of giftedness between the U.S. mainstream culture and some Whites, combined with the overrepresentation of White students in U.S. gifted education programs warrants further exploration of perceptions of giftedness for this population.

In summary, several researchers found perceptions of what is considered giftedness vary according to the values and beliefs of a culture (Gay, 1978; Michael-Chadwell, 2008; Peterson, 1997; Peterson & Margolin, 1997; VanTassel-Baska, 1989). However, teachers appear to adhere to and thus nominate students based on giftedness according to the values of the mainstream culture and institutionalized by the U.S. school system (Peteson, 1999). Therefore, teachers may nominate White students who demonstrate traditional attributes of giftedness (i.e., high intellectual ability and academic achievement; McClain & Pfeiffer, 2012; Moon & Brighton, 2008; Kerr, 2009) as opposed to African American students who may exhibit culturally-bound, nontraditional attributes of giftedness such as social competence, leadership skills, independence, and practical skills (Michael-Chadwell, 2008; Peterson, 1999). As teachers often abide by the values of their schools when nominating students for gifted education, teachers may unknowingly be biased toward students who exhibit different behaviors and overlook students who do not adhere to traditional gifted attributes recognized in American schools.

Teacher Nomination of African American and White Students for Gifted Education

Classroom teachers are often the first to recognize high ability in students and refer them for gifted testing (Miller, 2006). However, educators and scholars have criticized teacher nominations for being subjective and often excluding students from culturally diverse populations (Cho & DeCastro-Ambrosetti, 2005; Elhoweris et al., 2005). In addition, teacher expectations of academic and behavioral performance have been found to vary according to students' cultures. (Elhoweris et al., 2005; Moon & Brighton, 2008; Michael-Chadwell, 2008; Tenenbaum & Ruck, 2007). These findings suggest possible teacher nomination biases that may play a key role in the underrepresentation of African American students and overrepresentation of White students in gifted education programs.

Teacher nomination of African American students. African American students are referred to gifted education programs at a lower rate compared to their White peers (Elhoweris et al., 2005; Tenenbaum & Ruck, 2007; Michael-Chadwell, 2008). For example, Elhoweris et al. (2005) examined teacher referral and placement decisions in gifted education programs, comparing rates between African American, White, and "no ethnicity provided" students and found a significant main effect for ethnicity. In the study, teachers' nominations were separated into three conditions (White, African American, no information about the child's ethnicity). Teachers received vignettes with several academic and behavioral gifted characteristics (Elhoweris et al., 2005). Despite the fact that the information on the vignettes was identical except for ethnicity, Elhoweris et al. (2005) found differences in teachers' referral rates (Elhoweris et al., 2005).

Teachers gave lower ratings to African American students compared to White and non-labeled students and referred students of unspecified ethnicity at a slightly higher rate, compared to African American students. Elhoweris et al. (2005) suggested that teachers perceived both non-labeled and White students possess higher ability than African American students. Overall, Elhoweris et al. (2005) found teachers demonstrated lower referral rates for African American students with the same behavioral and academic profile as White students, suggesting teacher bias in nomination. Other researchers have found differences in teacher nomination rate between African and White students and suggested teacher expectations regarding academic performance for specific cultural groups may have influenced teacher nomination (Michael-Chadwell, 2008; Tenenbaum & Ruck, 2007).

For example, Tenenbaum and Ruck (2007) conducted a meta-analysis and explored teacher nomination rate and teacher academic expectations for African American and White students. The authors found that teachers were less likely to refer African American students for gifted programs than White students with a difference of almost approximately one standard deviation (0.92). Moreover, Tenenbaum and Ruck (2007) found teachers held higher academic expectations for White students compared to African American students, suggesting teacher academic expectations may contribute to over-referral of White students for gifted education.

Michael-Chadwell (2008) also explored teacher nomination of African American students and focused on parent perceptions of the nomination process. Michael-Chadwell (2008) found that African American parents claimed teachers held misperceptions about their child's race relative to intelligence. These parents reported African American

students are overlooked for nomination for gifted education programs because teachers perceive African American students as less intelligent compared to their White peers (Michael-Chadwell, 2008). Overall, these study findings suggest some teachers hold negative perceptions regarding intelligence and academic ability for African American students compared to White students (Michael-Chadwell, 2008; Tenenbaum & Ruck, 2007), which may subsequently influence teacher differential nomination of African American relative to White students for gifted education programs. Unfortunately, these researchers did not examine negative teacher perceptions relative to teacher nomination of students for gifted education, as Michael-Chadwell (2008) used parent perceptions of teacher nomination and Tenenbaum and Ruck (2007) conducted a second meta-analysis to examine teacher perceptions.

Moon and Brighton (2008) explored teacher perceptions relative to gifted nomination for students from culturally diverse and dominant cultures and found significant differences. Using a case study approach, the authors presented descriptions of four culturally different children with typical gifted traits. The authors included various learning challenges in the descriptions of the culturally diverse student profiles (i.e., poverty, attention problems, language difficulties) and asked primary grade teachers to recommend educational services for the four students who displayed observable talents and deficits. Moon and Brighton (2008) found that several of the teachers held a "deficit-oriented" view of culturally diverse students. These teachers disproportionately rated culturally diverse students as disruptive or possessing deficits such as lack of achievement, language skills, and social skills in spite of their academic talents (Moon & Brighton, 2008). Despite academic strengths, some teachers focused on negative

characteristics of the culturally diverse students. As such, Moon and Brighton (2008) found that these teachers more frequently recommended resources for culturally diverse students such as "counseling programs, mentorships, tutoring, in-class instructional modifications, or referral to school-based services" (p. 473).

In considering gifted referral, these teachers recommended nomination for gifted testing for the child from the dominant culture for exhibiting "traditional signals for giftedness and had no observable deficits" (Moon & Brighton, 2008, p. 474), suggesting teachers may more often nominate White students who demonstrate traditional mainstream gifted characteristics. On the other hand, these teachers were less likely to consider nominating a gifted student who "is well liked by classmates… makes other students laugh" (p. 462). As the African American culture considers social competence and humor as traits of gifted behaviors (Michael-Chadwell, 2008; Torrance, 1973, 1977), African American students who demonstrate these characteristics may be excluded from nomination.

In summary, it appears that teachers in these studies appear to hold negative perceptions for African American students compared to White students and are more likely to refer students based on traditional mainstream gifted characteristics as opposed to non-traditional, culturally-bounded gifted characteristics. Teacher biases for culturally diverse students and teacher perceptions of giftedness may contribute to overrepresentation of White students and underrepresentation of African American students in gifted education programs. Training teachers to consider non-traditional gifted characteristics and nominate students based on attributes of gifted behavior as perceived

by student culture may reduce teacher bias and improve African American student representation in gifted education programs.

Teacher Training in Diverse Gifted Student Identification

Ford et al. (2001) investigated multicultural competencies that teachers need to teach and interact successfully with gifted students and found limited educational content and skills training to work with culturally diverse gifted students. Gifted education textbooks were found to lack content regarding multicultural gifted students and gifted behaviors culturally diverse gifted students may exhibit. Likewise, multicultural education courses were found to seldom include specific detail on the needs of culturally diverse gifted students (Ford et al., 2001). The lack of integrated training on recognizing culturally diverse gifted students who may show culturally-bounded gifted traits may perpetuate the underrepresentation of African American students in gifted education programs (Ford et al., 2001).

Indeed, in some studies, parents and teachers have acknowledged the lack of training in identifying culturally diverse students for gifted education (Michael-Chadwell, 2008; Moon & Brighton, 2008). For example, Michael-Chadwell (2008) investigated parent and teacher perceptions regarding underrepresented of African American students and found several respondents considered lack of teacher training and teacher inability to recognize giftedness within culturally diverse children as the primary reasons for the underrepresentation of African American students in gifted education programs. Michael-Chadwell found that 73% of the parents reported that teachers had misperceptions about their child's race and ability, such that teachers did not recognize that African American children expressed giftedness and talents differently, compared to the majority culture

(Michael-Chadwell, 2008). Moreover, 42% of the African American parents in the study reported teachers need training "to recognize gifts and talents" of African American children (p. 179).

Teachers in this study also reported inadequate training for identifying culturally diverse gifted students (Michael-Chadwell, 2008). When asked what educational training teachers have received to understand the needs of minority-gifted students, Michael-Chadwell (2008) found all the teachers admitted receiving no training, which suggests a severe lack of training in identifying minority students. Teacher responses included "none have been directed specifically toward minority gifted children… no culturally-based… basic training that helped you identify 'cookie cutter' gifted children characteristics" (Michael-Chadwell, 2008, p. 287-299). Similarly, Moon and Brighton (2008) found that teachers reported little understanding of how students from culturally diverse populations display gifted traits as well as a lack of teacher training to assist them in identifying gifted students from culturally diverse populations.

In light of teacher concerns and limitations in identification, several scholars have recommended training teachers to recognize abilities differentially considered gifted by different cultures to improve recognition, nomination, and by extension representation of culturally diverse students in gifted education programs (Bernal, 1981; Bermudez & Rakow, 1990; Frasier 1987; Kitano & Kirby, 1986; Michael-Chadwell, 2008; Wood & Achey, 1990). However, to my knowledge, no training materials or research on teachers receiving such training currently exist. In order to develop teacher training curricula that provides teachers with meaningful professional development on identifying culturally-bounded gifted characteristics, it is first important to identify what teachers already know.

Moreover, as parents can refer children to gifted programs and develop their children's capabilities, understanding giftedness through parent perceptions may help clarify how different cultural groups perceive giftedness. Parent and teacher information may inform development of training manuals and curricula to (a) help reduce teacher biases and misperceptions, and (b) inform teachers efforts in recognizing gifts as perceived by African American and White cultural groups. Overall, identifying attributes of giftedness as perceived by members of the African American and White cultural groups and training teachers to recognize such attributes may improve teacher nomination and identification practices, and subsequently improve student representation in gifted education programs.

Present Study

The aims of this study are to (a) compare parent and teacher perceptions of giftedness as a function of student culture, (b) examine teacher perceptions of which student characteristics teachers are more or less likely to consider when nominating African American and White students for gifted education, and (c) investigate differences between parent perceptions of gifted characteristics and teacher perceptions of nomination for African American and White students. In this study, a questionnaire was developed to identify attributes of giftedness as perceived by two distinct cultural backgrounds that are currently documented as over- and underrepresented in U.S. gifted education programs (Kitano & Dijiosia, 2002; Michael-Chadwell, 2008; TEA, 2007). This questionnaire was used to (a) highlight how the African American and White cultural groups perceive giftedness, (b) gather baseline data on teacher awareness regarding how the African American and White cultural groups perceive gifted student characteristics, and (c) identify discrepancies between how African Americans and

Whites perceive specific attributes of giftedness and the likelihood teachers recognize those attributes for African American and White students during nomination for gifted education.

The present study expands upon the single existing U.S. cross-cultural study on giftedness (Peterson, 1999) by (a) asking the African American and White cultural groups to rate agreement on a set of culturally-bounded gifted attributes and (b) comparing perceptions of these attributes across the two cultural groups. Including a specific set of attributes increased objectivity, which Peterson's (1999) study lacked, and helped me identify whether perceptions of giftedness are culturally-bounded or similar across cultures on the identified attributes. In addition, teacher perceptions of culturally-bounded gifted attributes were compared against African Americans' and Whites' own perceptions of what constitutes giftedness.

Another limitation of Peterson's study was that mainstream teachers reported their perceptions of giftedness may differ from those of other cultural groups, suggesting teachers recognize that different cultures perceive giftedness differently; however, Peterson (1999) conducted no further investigation on teachers' knowledge of gifted perceptions for culturally diverse populations. Moreover, no context was provided to either set of participants on which to agree or disagree. This gap was bridged by (a) identifying teachers' awareness on which abilities they recognize as gifted for a specific cultural group and (b) comparing teacher perceptions of culturally-bounded gifted attributes with that of the cultural group's own perceptions of what constitutes giftedness.

Results from the present study may contribute to existing, but limited, research by highlighting how perceptions of giftedness and nomination for gifted programs differ

between two distinct underrepresented and overrepresented cultural groups (i.e., African Americans and Whites). Study results may highlight target areas for teacher training, thereby (a) increasing knowledge on cultural perceptions of giftedness, (b) shedding light on possible reasons for discrepancies that exist in the nomination process, and (c) informing development of teacher training manuals in ways that improve the problem of over- and underrepresentation of specific cultural groups in America's gifted education programs.

Research Questions

The aims of the present study are to (a) examine parent and teacher perceptions of giftedness by African American and White student culture, (b) examine teacher perceptions of which student attributes they are more or less likely to consider when nominating African American and White students, and (c) investigate differences between parent perceptions of gifted attributes and teacher perceptions of nomination of gifted attributes for African American and White students. Therefore, five research questions guided the present study:

1. Is there a difference in parent perceptions of student giftedness between African American and White students?

2. Is there a difference in teacher perceptions of student giftedness between African American and White students?

3. Is there a difference between parent and teacher perceptions of student giftedness for African American and White students?

4. On the subscales of the AGS, is there a difference in teacher endorsement of gifted attributes for African American and White students during gifted

nomination (Cognitive Characteristics subscale, Academic Characteristics subscale, Creative Performance subscale, Originality subscale, Social subscale, and Intrapersonal/Interpersonal subscale)?

5. Is there a difference between teacher endorsement of gifted attributes during gifted nomination and parent perceptions of student giftedness for African American and White students?

Hypotheses

1. It is hypothesized that parent perceptions of student giftedness will differ between African American and White students.

2. It is hypothesized that teacher perceptions of student giftedness will differ between African American and White students.

3. It is hypothesized that parent perceptions of student giftedness will differ from teacher perceptions of student giftedness for White and African American students.

4. It is hypothesized that teacher endorsement of gifted attributes will differ for African American and White students on the subscales of the AGS during gifted nomination (Cognitive Characteristics subscale, Academic Characteristics subscale, Creative Performance subscale, Originality subscale, Social subscale, and Intrapersonal/Interpersonal subscale).

5. It is hypothesized that teacher endorsement of gifted attributes will differ from parent perceptions of student giftedness for African American and White students.

Chapter III

Methodology

The present study was conducted in two phases. In the first phase, the researcher-developed Attributions of Giftedness Survey (AGS; phase I) was piloted in order to assess the psychometric structure and rigor of the measure. In the second phase, the refined Attributions of Giftedness Survey was administered to parents and teachers to explore the study aims.

Phase I: Initial Pilot Study

During phase I, the researcher-developed AGS to be used in Phase II was piloted. Parents rated the degree of likelihood that specific attributes of giftedness represent their culturally-bounded perceptions of giftedness. In tandem, teachers rated the same attributes relative to their perceptions of giftedness in reference to the same cultural groups. Teachers also rated the likelihood that they would consider specific attributes of giftedness when nominating an African American or White student for gifted education. In phase I, the aim was to establish the instrument's psychometric properties (e.g., internal consistency) and refine survey items. Data were analyzed using inter-item correlations. An item correlation matrix was examined to eliminate items that did not correlate strongly to the assessed construct. The proposed structure was also evaluated by conducting a series of confirmatory factor analyses.

Participants. Participants recruited for this study consisted of a sample of parents with an elementary school-age African American or White student. Since a student can be referred for gifted testing as early as elementary age and teachers and parents often nominate students for gifted education programs during elementary age (Elhoweris et al.,

2005; Grissom & Redding, 2016), participants in the present study were limited to parents with a student in elementary school (grades 1 through 5). Students in kindergarten or grades higher than the 5th grade were excluded from the study.

In addition, elementary school teachers of any ethnicity/race who currently teach at a school with an identified gifted education program were invited to participate. These teachers were targeted to participate in the study, as they may have knowledge about their schools' nomination processes and could answer survey items regarding nomination for gifted education. Teachers who teach kindergarten or a secondary grade level were excluded from the study. Moreover, teachers who did not have a gifted education program at their campus was excluded from the study. As the present study was geographically limited to the greater Houston area, participants who indicated that they were from a school district outside of Houston were excluded from the data analysis.

G*Power analysis indicated a total sample size of 64 participants in order to detect a medium effect size ($r = .3$) on point biserial mode correlations test (Buchner et al., 2009). A total sample of 65 parents and teachers participated in phase I of the study. Demographic information of the participants is further discussed in the Results section of this study.

Recruitment. Upon obtaining approval from the University of Houston's Committee for the Protection of Human Subject Institutional Review Board (IRB), various school districts and churches within the greater Houston area were contacted. Permission to recruit participants for the current study was obtained from school principals and church leaders (see Appendix A). Participants were recruited through flyers provided to elementary schools and churches (see Appendix C). The study flyer

included the purpose of the study, inclusionary/exclusionary criteria, and incentive for study participation (see Appendix D). Participants were also recruited from a social networking outlet, Facebook (see Appendix B). Upon obtaining permission from administrators of gifted-related Facebook groups, a brief description of the study and survey link was posted on the Facebook groups (see Appendix B).

Phase I: Instruments

  Demographic questionnaire. Background variables such as parent and teacher race/ethnicity, parent and teacher gender, child gender, child grade, and education level was collected through a demographic questionnaire. Parents and teachers were also asked about their level of exposure to gifted education. Specifically, parents were asked whether they currently have a child in gifted education and whether parents were previously in gifted education themselves. Teachers were asked about the extent of training they received in nominating a student for gifted education programs. Please see Appendix E for the complete demographic questionnaire.

  Attributions of Giftedness Survey. The pilot AGS (see Appendix F) is a researcher-developed, 61-item self-report instrument designed to measure the extent to which respondents rate specific student characteristics that might be representative of giftedness in a specific cultural group. The AGS is the product of an extensive review of the literature on gifted children, as well as identification and nomination procedures for gifted education programs in the United States. The AGS includes attributes of gifted behaviors identified from previously validated surveys on giftedness (Frasier, 1990; Gibson, 1997; Irby & Lara-Alecio, 1996; Marquez et al., 1995; Stone, 2000). As giftedness is a social construct that is based on the values and beliefs of excellence within

a cultural group (Borland, 2004), gifted behaviors specifically associated to the African American and White cultural groups were also included in the AGS (Ford, 1993b; Gay, 1978; Marion, 1981; Michael-Chadwell, 2008; Morris, 2002; Peterson, 1999; Torrance, 1973, 1977; VanTassel-Baska, 1989).

As indicated by the literature and previously validated surveys on giftedness, the AGS items were categorized into six subscales (Cognitive Characteristics, Academic Characteristics, Creative Performance, Originality, Social Skills, and Intrapersonal/Interpersonal Skills; see Appendix H). The Cognitive Characteristics subscale focuses on ability in mental processes (Stone, 2000). The Academic Characteristics subscale addresses achievement in specific fields of education and learning (Irby & Lara-Alecio, 1996). The Creative Performance subscale focuses on attributes that deal with a student's creative products in the arts (Irby & Lara-Alecio, 1996; Marquez et al., 1995). The Originality subscale focuses on students' insight in novelty and their tendency to produce ideas different from others (Irby & Lara-Alecio, 1996; Marquez et al., 1995). The Social Skills subscale measures students' ability to collaborate and interact with others (Irby & Lara-Alecio, 1996). The Intrapersonal/Interpersonal Skills subscale assesses students' awareness of thoughts and feelings, as well as understanding of self and others (Gibson, 1997).

The sample of parents and teachers in the study were asked to rate the degree to which they agree with statements about attributes of a gifted student using a 5-point Likert scale (1 = *Strongly disagree*; 5 = *Strongly agree*). The parent AGS instructions directed parents to rate their level of agreement on attributes that describe giftedness relative to their child's racial/ethnic group (African American or White). Therefore,

parent AGS instructions remained the same, except for a notation regarding which cultural group the parents' responses are referencing. Teachers were asked to rate their level of agreement on attributes that describe giftedness relative to the African American or White cultural group. Therefore, teachers randomly received the AGS version specifically identifying an African American or White student. Similar to the parent AGS, teacher AGS instructions remained the same except for a notation indicating which cultural group teachers should reference when responding. However, different from the parent AGS, teachers were also requested to identify the likelihood that specific attributes of giftedness are used in the nomination process for gifted education on a 5-point Likert scale (1 = *Never*; 5 = *Always*).

After rating the AGS items, parents and teachers were given the opportunity to comment on confusing items. Parents and teachers were also asked to list attributions of giftedness that were not included in the survey to further improve and refine the survey. Specifically, parents and teachers were asked to include up to five attributes of giftedness that were not included in the survey. Teachers were also asked to include up to five attributes of giftedness they feel are used in the nomination process but were not included in the list.

Procedure. Study measures were administered using the online Qualtrics survey program. Upon opening the link, participants were able to view an introductory screen with basic information about the study including the study purpose, conditions of participation, rights of participants, contact information for the IRB and the principal investigator, time requirement (approximately 20 minutes), and risks/benefits of participation (see Appendix D). Participants were invited to participate by selecting either

agree or *disagree*. Participants were required to satisfy the inclusionary criteria before receiving approval to participate in the study. If participants did not meet the criteria, the survey program informed the participants that they are not eligible to participate. If participants met the criteria, they were routed to the survey.

Once participants consented to participate in the present study and met inclusionary criteria's, they were requested to complete the demographic questionnaire (see Appendix E). Afterwards, participants were routed to the AGS (see Appendix F). Finally, participants were invited to submit their e-mail addresses to enter a gift card drawing for participating in the study. Participants followed a link to a second electronic survey to submit their e-mail addresses. The purpose of the second electronic survey was to protect participants' anonymity—participants' responses were not connected to their e-mail addresses. At the conclusion of each phase of the study, 10 participants from the pool of parents and teachers were randomly selected to receive a $10 gift card.

Phase I: Data Analysis Plan

Survey development. Content validity of the AGS was established by developing survey items based on attributes of giftedness identified in existing measures of giftedness, as well as student characteristics attributed to giftedness by the African American and White cultural groups. Validity of the items was further assessed by incorporating verbal and written feedback from committee members and experts in the fields of giftedness and multiculturalism to help clarify wording, reduce ambiguity, and address content (Alzaeem et al., 2010). After expert, committee, and researcher review, the content was considered acceptable for pilot testing to explore the validity of the instrument further.

At the end of the measure, participant feedback was requested to refine the measure and address construct representation. Specifically, participants were asked to provide additional attributes of giftedness not included in the measure. Participants were asked to limit their responses to five attributes of giftedness to discourage excessive elaboration. A two-pronged approach to categorize and enter the respondents' answers into one of the six subscales was proposed. Specifically, an item was to be entered into the survey if (a) more than 50% of the respondents suggested a specific attribute of giftedness should be included in the survey and (b) the attribute is supported in gifted research studies as a trait of gifted behavior. This allowed attributes of giftedness that are only identified by a few participants and lacks scholarly evidence as being associated with giftedness to be excluded from the measure. No items were entered into the AGS as more than 50% of the study participants did not report additional attributes of giftedness. A small number of participants endorsed the following as attributes of giftedness that were excluded from the measure: thinking outside the box, energetic, and unique problem solving abilities.

Data screening. Data were screened for missing data because missing data can distort the results of the study. Bennett (2001) suggested that when more than 10% of data are missing, statistical analysis is likely to be biased. Phase I of the study did not have missing data.

Item analysis. Pilot data were analyzed using item-total correlations (Clark & Watson, 1995) to eliminate items that do not correlate strongly to the assessed construct. As denoted by Clarke and Watson (1995), interitem correlations were accessed for the acceptable range (.15 to .50). Items were analyzed to identify whether items that are

approximately perfect correlations (near 1.0) should be combined to reduce redundancy. Items were neither removed nor combined.

The intrasubscale and intersubscale item correlations were examined to determine whether the six subscales should remain or if a general total score better represents the collected data (Clark & Watson, 1995). Intrasubscale correlations were substantially higher than intersubscale correlations, suggesting the justification of subscales within the overall construct (see Results). In addition, internal consistency of the measure within each subscale was assessed using Cronbach's alpha. Alpha level of each item was examined to determine whether items should be removed or entered into different subscales. This process assisted in the development of a more reliable scale. Reliability coefficients for the scale met adequate reliability. Specifically, a high reliability coefficient was obtained for the total score (.97), and subscale reliability coefficients ranged from .73 to .95 (see Results).

Confirmatory factor analysis. In addition to inter-item correlations, a series of confirmatory factor analysis (CFA) were used to evaluate the proposed structure. CFA is theory-driven and a rigorous assessment of scale construct validity (Hu & Li, 2015; Prudon, 2015). CFA highlights the psychometric soundness of a measurement model, which is comprised of *latent constructs*, which are theoretical concepts that cannot be directly observed and thus cannot be directly measured. The *observed variables,* which include the items within a scale, are thought to represent the latent construct (Prudon, 2015; Schmitt, 2011). In this study, the latent constructs are the AGS subscales and the AGS total scale, while the observed variables are the AGS items.

CFA and sample size. It is important to note that an issue regarding the use of CFA is the appropriate sample size needed to effectively conduct CFA analyses (Awang, 2014; Schreiber, Nora, Stage, Barlow, & King, 2006; Zhao, 2014). The general rule of thumb has been a sample size of 200 (Furr, 2011). However, several researchers have suggested that CFA models can be conducted using smaller sample sizes. For example, Mundfrom, Shaw, and Ke (2005), after testing a variety of sample sizes for CFA analyses, determined that the ratio of 3:1, participants to observed variable, sufficed. Wolf et al. (2013), after conducting Monte Carlo tests, found that sample size requirements varied from between 30, for a CFA with four observed variables, to 450, for complex models involving mediation or moderation. Furr (2011) indicated that a sample size of 50 is adequate for CFA "with simple models" (p. 94). In addition, Sideridis, Simos, Papanicolaou, and Fletcher (2014) found that a sample size between 50 and 70 participants was adequate for analyses comprised of a minimal number of latent variables. Taken together, these results suggest that for the current scales six latent variables (i.e., AGS subscales), the phase I sample size of 65 participants is an adequate sample size for CFA analyses. Moreover, AMOS, the software used for CFA, does not run the CFA model if the sample size is too small, instead producing an output note stating an error message (Field, 2013). Therefore, a series of CFAs were conducted to determine if the scale structure of the AGS is a good fit based on the data collected.

Several researchers provided reporting practices and recommendations for conducting a CFA (Awang, 2014; Hu & Li, 2015; Jackson, Gillaspy, & Purc-Stephenson, 2009; Perry, Nicholls, Clough, & Crust, 2015; Plucker, 2003; Prudon, 2015; Schreiber et al., 2006). The most commonly used method to determine the distributional assumptions

of the estimation is maximum likelihood (Jackson et al., 2009; Schreiber et al., 2006).

Since the maximum likelihood method is sensitive to variable non-normality and small

sample sizes (Awang, 2014), bootstrapping was used in the CFA analyses to address

these two data issues. In addition, the variances-covariance matrix was used to analyze

the data and determine the parameters for the model (Jackson et al., 2009; Schreiber et

al., 2006). Model fit indices and the factor loadings of the observed variables are two

aspects of CFA that were used to determine the quality and fit of the measurement model

(Prudon, 2015).

Model fit indices. There are two types of model fit indices: absolute and

incremental fit (Jackson et al., 2009; Perry et al., 2015; Schreiber et al., 2006). Absolute

fit indices assess the degree of correspondence between the observed covariance matrix

derived from the study data set and the expected covariance matrix for the population that

is computed by the AMOS software. How well the factors fit the data were determine by

using the root mean square error of approximation (RMSEA) index and the chi-squared

(χ^2) goodness-of-fit test. Although .06 is preferable, a cutoff value of .08 for the RMSEA

was used in the study to determine a low average of unexplained residuals in the

proposed model (Jackson et al., 2009; Perry et al., 2015; Schreiber et al., 2006). Sample

size influences the model χ^2, and it is often significant when using large samples (i.e.,

over 200 cases). In contrast to typical statistical results, a *non-significant* chi-square value

indicates sound measurement model fit (Jackson et al., 2009; Perry et al., 2015; Schreiber

et al., 2006). Therefore, non-significance of the chi-squared goodness of fit was used to

determine model fit. CFA researchers further recommend the reporting of incremental fit

indices (Jackson et al., 2009; Hu & Li, 2015; Perry et al., 2015; Schreiber et al., 2006;

Plucker, 2003). The two most recommended incremental fit indices are the comparative

fit index (CFI) and Tucker-Lewis Index (TLI). A CFI and TLI index ≥.95 was used as the

determinant for an acceptable fit for the data (Jackson et al., 2009; Hu & Li, 2015; Perry

et al., 2015; Schreiber et al., 2006; Plucker, 2003).

Factor loadings. There is variability amongst researchers as to what is the lowest

acceptable factor loading (Perry et al. 2015; Santor, 2011). The range of the lowest

acceptable factor loading is broad, from .20 to .70 (Perry et al., 2015; Santor, 2011;

Schmitt, 2011; Schreiber et al., 2006). In this study, items with factor loadings that were

.30 or higher were retained.

Modification indices. A modification index is a one degree of freedom chi-square

test of the addition or removal of a parameter (Furr, 2010; Newsom, 2017). It is also

associated with the degree of error between two factor loadings (i.e., scale items), error

variances, or latent constructs (Furr, 2010; Newsom, 2017). As the critical value for a one

degree of freedom chi-square (χ^2) test is 3.84, a modification index over this value

suggested that one or both of the respective scale items be removed from the model or be

correlated (constrained) with one another (Furr, 2010; Newsom, 2017). Newsom (2017)

and Furr (2010) also suggested that model alterations from modification indices be done

one at a time, as "each change may affect other parameters" and could lead to "the

development of incorrect models" (Newsom, 2017, p. 1). The larger the modification

index, the greater "the potential benefit of revising" the CFA model by removing the item

or items that have high modification indices (Furr, 2010, p. 16).

Modification of the models was conducted in accordance with recommendations

from statistical scholars (e.g., Awang, 2014; Bowen, 2014; Furr, 2010; Newsom, 2017).

In phase I of this study, a series of CFAs were run on each of the AGS subscales. The

modification indices were examined after the first CFA. An item was removed if that

item had the highest modification index with another item, as well as had one or more

modification indices that were significant (i.e., over 3.84) with another item(s). A second

CFA was performed, and the process was repeated. CFAs were executed until a sound

model was achieved (i.e., based on model fit indices). If CFA findings showed that an

item had only one modification index with just one other item, the items were correlated,

up to two correlations based on recommendations (Awang, 2014; Bowen, 2014; Furr,

2010; Newsom, 2017). Moreover, if an item did not significantly load on the respective

factor, it was removed from the analysis and another CFA was carried out. Figure 1

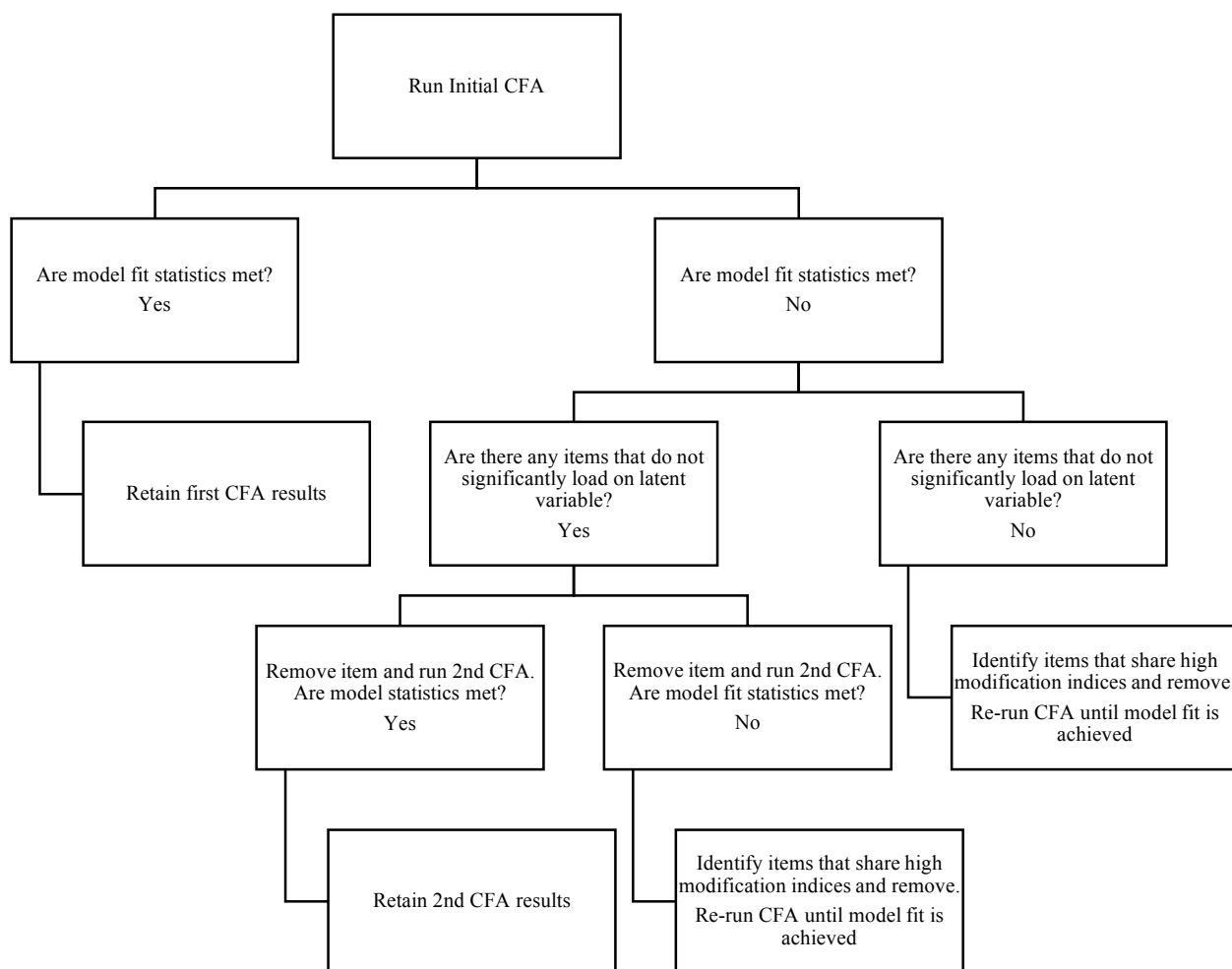shows the steps that were taken to achieve model fit.

```
                        ┌─────────────────────┐
                        │   Run Initial CFA   │
                        └─────────────────────┘
```

Are model fit statistics met?
Yes

Are model fit statistics met?
No

Retain first CFA results

Are there any items that do not significantly load on latent variable?
Yes

Are there any items that do not significantly load on latent variable?
No

Remove item and run 2nd CFA. Are model statistics met?
Yes

Remove item and run 2nd CFA. Are model fit statistics met?
No

Identify items that share high modification indices and remove. Re-run CFA until model fit is achieved

Retain 2nd CFA results

Identify items that share high modification indices and remove. Re-run CFA until model fit is achieved

Figure 1. Steps to Obtain Model Fit

Phase II: Attributions of Giftedness Survey

The aims of phase II were to (a) examine parent and teacher perceptions of giftedness as a function of student culture, (b) examine teacher nomination scores of gifted attributes by student culture, and (c) investigate differences between parent perceptions of gifted attributes and teacher perceptions of nomination for White and African American students.

Participants. A power analysis was conducted using the software program G*Power to determine the total sample size needed for an *F*-ratio medium effect size of .25 (Buchner, 2009; Cohen, 1988). An alpha error of probability of .05 and a power of

.80 for four groups yielded a total sample size of 179 participants. To attain an equal number of cultural groups and raters, an increased sample of 180 participants was proposed. As the present study included four groups (i.e., parent raters for White students, parent raters for African American students, teacher raters for White students, and teacher raters for African American students), the sample was proposed to consist of equal groups of 90 parents (45 parents of an African American child and 45 parents of a White child) and 90 teachers of any ethnicity/race. In accordance with the random distribution of the White and African American student survey, 45 teachers were proposed to receive the White student AGS and 45 teachers were proposed to receive the African American student AGS. The inclusion criteria and recruitment procedures described previously for the pilot study was applied for phase II of the study.

The sample size for the current study did not meet the proposed sample size. A sample of 99 parents participated in the study. The parent sample consisted of 35 parents of an African American child and 64 parents of a White child. Approximately half the proposed number of teachers participated in the current study. Specifically, twenty-five teachers completed the AGS for a White student, while 21 teachers completed the AGS for an African American student. The teacher sample consisted of a total of 46 teachers. Demographic information regarding the sample of parents and teachers are reported in the Results section. A power analysis was conducted to determine post-hoc power. A power analysis using a medium effect size of 0.25, an alpha error of probability of 0.05, and a sample size of 145 participants resulted in a power of 0.84.

Phase II Instruments

The AGS was refined and resulted in a 36-item measure. Similar to phase I, participants completed a demographic questionnaire and the AGS. Participants were asked to include up to five student characteristics they attribute to giftedness and the nomination process that were not included in the survey. However, in contrast to phase I of the study, participants were not given the opportunity to report on items that they found confusing, inappropriate, or ambiguous.

Cronbach alpha was used to establish reliability for the AGS. Despite the relatively small sample size, the reliability coefficients for both perceptions of giftedness and nomination of giftedness met adequate reliability (see Results). Specifically, the reliability coefficients for the measure and its subscales in regards to perception of gifted attributes met adequate reliability; a high reliability coefficient was obtained for the total score (.95), and subscale reliability coefficients ranged from .72 to .90. The reliability coefficients for the measure and its subscales in regards to nomination of gifted attributes also met adequate reliability; a high reliability coefficient was obtained for the total score (.95), and subscale reliability coefficients ranged from .72 to .86.

Procedure. The procedures described previously for the pilot study applied for phase II of the study. Participants were recruited through social media outlets as well as churches and school districts within the greater Houston area. After participants consented to participate in the present study, met inclusionary criteria, and completed demographic questions, they were routed to the 36-item AGS. The survey program randomly distributed one of the two culturally specific surveys to teacher respondents. In accordance with the proposed sample size, two groups of teachers were requested to

complete the AGS for African American or White gifted students. Additionally, parents from each of the two cultural groups were requested to complete the AGS specific to their child's culture.

Phase II: Data Analysis Plan

  Data screening. Data screening procedures described previously for the pilot study applied for phase II of the study. Phase II of the study did not have missing data.

  Analysis of the present study with the AGS. A series of ANOVAs were conducted using SPSS version 21 (SPSS, IBM Corp., 2012) to determine any significant differences between the three independent variables (culture, rater, and category of giftedness) on subscale scores and total score. ANOVA analyses were conducted for each research question. ANOVA analyses were used to determine whether there were differences in perceived giftedness across the two cultural groups between parents and teachers. In addition, ANOVA analyses were conducted to identify differences in teacher nomination scores across the two cultural groups. Post hoc *t* tests were conducted for statistically significant differences between the groups in order to determine which subscales were significantly different from each other. Furthermore, differences between parent perceptions of gifted attributes and likelihood of teacher nomination for gifted attributes across the two cultural groups were examined. In addition, participants' free responses were examined simply for qualitative purposes and not analysis. Therefore, free response answers were assessed using a frequency count.

  ANOVA assumptions. Several statistical assumptions for an ANOVA analysis were addressed including independence of observations, normality of variables, outliers, equal sample sizes in groups, homogeneity of variance, inclusion of a continuous

dependent variable, and inclusion of three independent categorical variables (Laerd

Statistics, 2013). The assumption of independence of observation was satisfied because

no teacher was able to respond for more than one cultural group, and parents can only

respond in reference to their children's culture. Therefore, no relationship existed

between the observations in each group or between the groups themselves.

Normality of variables were tested by visually examining data plots for skewness

and kurtosis (Laerd Statistics, 2013). *Z*-scores were also used to determine whether a

distribution is significant for skewness or kurtosis (Field, 2013; Thode, 2002). *Z*-scores

were calculated (by dividing skewness or kurtosis statistics by their respective standard

error) and the following criteria were used: z-scores $\geq |1.96|$ significant at $p \leq .05$, $\geq |2.58|$

significant at $p < .01$, and $\geq |3.29|$ are significant at $p < .001$ (see Results). Two outliers

were removed to reduce the probability of type II error (see Results). Transformations

were not necessary (Laerd Statistics, 2013).

Since cell sizes were unequal in the current study and normality was violated for

specific groups, bootstrapping analyses were used to compare the analyses to the original

analyses in order to determine if the unequal sample sizes and normality problems were

affecting the results (Xu, Yang, Abula, & Qin, 2013). All analyses were conducted with

and without bootstrapping. However, analyses were essentially the same with and

without bootstrapping. Therefore, the data without bootstrapping are reported (see

Results). In addition, analysis-specific assumptions (i.e., homogeneity of variance) were

not violated and are reported in their respective ANOVA analysis (see Results).

To meet assumptions related to the independent and dependent variables, the

dependent variables (giftedness and nomination score) were measured on a continuous

scale, whereas the three independent variables were identified as categorical variables. Categorical variables in this study are culture (African American and White), rater (parent and teacher), and category of giftedness (Cognitive Characteristics, Academic Characteristics, Creative Performance, Originality, Social Skills, and Intrapersonal/Interpersonal Skills).

<div align="center">

Chapter IV

Results

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Phase I

      Participant Demographics. Ninety-one individuals (n = 73 parents and n = 16 teachers) indicated their interest in participating in phase I of the study. Twenty-four individuals (n = 21 parents and n = 3 teachers) were disqualified from the study because they did not meet inclusionary criteria. The final sample for phase I consisted of 65 participants. Of the 52 parents, 45 (86.54%) were biological mothers, five (9.62%) were biological fathers, one (1.92%) was a stepfather, and one (1.91%) was an adoptive mother. All 13 teachers taught at the elementary school level. A summary of the parent and teacher demographic information is presented in Table 1.

Table 1

Frequencies and Percentages: Demographic Variables of Parents and Teachers (n = 65)

Variable	Parents (n = 52)		Teachers (n = 13)	
	N	*%*	*N*	*%*
Gender				
Male	7	13.46	1	7.69
Female	45	86.54	12	92.30
Ethnicity				
White	33	63.46	7	53.85
Asian/Pacific Islander	0	0.00	4	30.77
African American	19	36.54	1	7.69
Hispanic/Latino(a)	0	0.0	1	7.69
Age Group				
18-24	0	0.00	1	7.69
25-34	26	50.00	11	84.62
35-54	25	48.08	1	7.69
55 or older	1	1.92	0	0.0
Highest Level of Education				
12th grade or less	0	0.00	0	0.00
Graduated high school	0	0.00	0	0.00
Some College	4	7.69	0	0.00
College Degree	34	65.38	11	84.62

Postgraduate Degree	14	26.92	2	15.38
Income Level				
Less than $25,000	0	0.00	0	0.00
$25,000-$32,500	1	1.92	0	0.00
$32,500-$60,000	5	9.62	4	30.77
$60,000-$100,000	26	50.00	7	53.85
$100,000-$150,000	10	19.23	2	15.38
More than $150,000	10	19.23	0	0.00
Marital Status				
Single	2	3.85	2	15.38
Married	47	90.38	11	84.62
Separated	3	5.77	0	0.00
Divorced	0	0.00	0	0.00
Widow	0	0.00	0	0.00

Parents also reported on their children's demographic characteristics. Table 2 presents these findings. The average age of the children was 8.49 years ($SD = 1.46$), and children's ages ranged from six to 11 years.

Table 2

Frequencies and Percentages: Demographic Variables of Students (n = 52)

Variable	N	%
Gender		
Male	25	48.08
Female	27	51.92
Ethnicity		
White	32	61.54
African American	20	38.46
School Grade		
1st Grade	10	19.23
2nd Grade	7	13.46
3rd Grade	8	15.38
4th Grade	20	38.46
5th Grade	7	13.46

Parents also reported whether they participated in gifted education as a child (Table 3). Of the parents previously enrolled in gifted education, all were White, except for one African American parent. Parents also reported whether their child is currently in a gifted education program. Per parent report, 16 (72.72%) White children and six (27.27%) African American children are currently in a gifted education program. With regard to the 22 parents who reported that their child is currently in a gifted program, almost half nominated their child for the program. A slightly smaller number of teachers

and a fewer number of school psychologists nominated the child for gifted education. These children were primarily identified for gifted education based on their performance on an IQ test or a standardized achievement test.

Table 3

Frequencies and Percentages: Gifted Programming Variables (n = 52)

Variable	Parents	
	N	*%*
Parent in Gifted Education Program as a Child		
No	30	57.69
Yes	17	32.69
Missing	5	9.62
Child Currently in Gifted Education Program		
No	30	57.69
Yes	22	42.31
Person Nominating Child for Gifted Education Program (*n* = 22)		
Parent(s)	10	45.45
Teacher	8	36.36
School Psychologist (Testing Results	3	13.64
Missing	1	4.55

Teacher's teaching and nomination experiences, as well as their training in giftedness are presented in Table 4.

Table 4

Frequencies and Percentages: Teaching Experience of Teachers (n = 13)

	Teachers	
Variable	*N*	*%*
Grade Taught		
1st Grade	1	7.69
2nd Grade	2	15.38
3rd Grade	1	7.69
4th Grade	4	30.77
5th Grade	5	38.46
Number of Years Taught		
1-5 Years	11	84.62
6-9 Years	1	7.69
10+ Years	1	7.69
Training on Giftedness		
None	1	7.69
College Course	8	61.54
Training/Workshop	3	23.08
Gifted Class Teacher	1	7.69
Previously Nominated a Student for		
Gifted Education Program		
No	7	53.85
Yes	6	46.15

Descriptive statistics: AGS subscales and total scale. Descriptive statistics were

calculated on the six AGS subscales and the total AGS scale (Table 5). The 8-item

cognitive characteristics subscale had a possible range of scores from 8.00 to 40.00. The

mean score for the 8-item cognitive characteristics subscale was $M = 34.92$ ($SD = 3.42$),

with subscale scores ranging from 22.00 to 40.00 points. The 9-item academic

characteristics subscale had a possible range of scores from 9.00 to 45.00. The mean

score for the 9-item academic characteristics subscale was $M = 37.39$ ($SD = 5.74$), with

subscale scores ranging from 14.00 to 45.00 points. The 9-item creative performance

subscale had a possible range of scores from 9.00 to 45.00. The mean score for the 9-item

creative performance subscale was $M = 29.08$ ($SD = 6.79$), with subscale scores ranging

from 13.00 to 43.00 points. The 11-item social skills subscale had a possible range of

scores from 11.00 to 55.00. The 11-item social skills subscale mean score was $M = 37.05$

($SD = 9.33$), and the subscale scores ranged from 14.00 to 55.00 points. The 13-item

originality subscale had a possible range of scores from 13.00 to 65.00. The mean score

for the 13-item originality subscale was $M = 52.62$ ($SD = 7.50$), with subscale scores

ranging from 24.00 to 65.00 points. The 11-item intra/interpersonal subscale had a

possible range of scores from 11.00 to 55.00. The 11-item intra/interpersonal skills

subscale mean score was $M = 40.98$ ($SD = 8.13$), and the subscale scores ranged from

16.00 to 55.00 points. The potential range of scores for the 61-item AGS was 61.00 to

305.00. The total AGS scale, comprised of 61 items, had a mean score of 232.04 ($SD =$

35.70), and the scale scores ranged from 103.00 to 291.00.

Table 5

Descriptive Statistics: Attributes of Giftedness (AGS) Subscales and Total Scale (N = 65)

	M	*SD*	*Min*	*Max*	$Z_{skewness}$
Cognitive Characteristics	34.92	3.42	22.00	40.00	-2.92
Academic Characteristics	37.39	5.74	14.00	45.00	-3.54
Creative Performance	29.08	6.79	13.00	43.00	-0.66
Social Skills	37.05	9.33	14.00	55.00	-0.68
Originality	52.62	7.50	24.00	65.00	-2.32
Intra/Interpersonal Skills	40.98	8.13	16.00	55.00	-2.05
AGS Total Scale	232.04	35.70	103.00	291.00	-2.14

To assess if the AGS subscales and total scales displayed significant non-normality in their distribution of scores, $z_{skewness}$ values were computed by dividing the respective subscale/scale skewness value by the skewness standard error (Kim, 2013). Kim (2013) suggested that for sample sizes between 50 and 300, a $z_{skewness}$ value that is greater than +/-3.29 is indicative of skewness or non-normality. The $z_{skewness}$ value for the academic characteristics subscale was -3.54, which indicated substantial skewness, violating the assumption of normality. The $z_{skewness}$ values for the remaining five subscales

were less than +/- 3.29, indicating relative normality, with a range of $z_{skewness}$ values from

-2.92 for the cognitive characteristics subscale to -0.68 for the social skills subscale. The

total AGS scale had a $z_{skewness}$ value of -2.14, which denoted that the overall scale met the

assumption of normality.

Phase I: Correlational Analyses

       Interclass correlation coefficients (ICCs). The ICC is a measure of inter-item

reliability (Koo & Li, 2015). An ICC between .50 and .74 is satisfactory, an ICC between

.75 and .90 is good, and an ICC over .90 is considered to be excellent (Blizzard &

Stankovich, 2002; Koo & Li, 2015). A series of ICCs were conducted among the six

AGS subscales and the AGS total scale (Table 6). The inter-item correlation matrix was

examined. The AGS cognitive characteristics subscale had a satisfactory ICC, while the

academic characteristics, creative performance, and originality subscales had good ICCs.

The social skills and intra/interpersonal skills subscales had excellent inter-item

reliability. The ICC of the total AGS was .97, indicating excellent internal consistency.

Table 6

Intraclass Correlation Coefficients (ICCs) for AGS Subscales and Total Scale (N = 65)

Subscale	ICC
Cognitive Characteristics	.73
Academic Characteristics	.88
Creative Performance	.83
Originality	.88
Social Skills	.95
Intra/Interpersonal Skills	.92
Total AGS Scale	.97

Intersubscale/intrasubscale correlations. To substantiate the existence of subscales, intrasubscale item correlations must be systematically higher than the intersubscale item correlations. If this condition cannot be met, then the use of subscales is not justified, and a single overall score should be used instead (Clark & Watson, 1995). The mean inter-item correlations are presented below (Table 7). Intrasubscale correlations were higher than intersubscale correlations for all subscales. Moreover, the intrasubscale correlation ($r = .970$) was higher than the intersubscale correlation ($r = .340$) for all items combined. Overall, intrasubscale correlations were substantially higher than intersubscale correlations, suggesting the justification of subscales within the overall construct.

Table 7

Intrasubscale/Intersubscale Correlations: AGS Subscales and all items combined (N = 65)

Subscale	Intrasubscale Correlation	Intersubscale Correlation
Cognitive Characteristics	.727	.307
Academic Characteristics	.880	.455
Creative Performance	.826	.345
Originality	.875	.351
Social Skills	.945	.607
Intra/Interpersonal Skills	.915	.465
Total AGS Scale	.970	.340

Phase I: Confirmatory Factor Analysis

A series of confirmatory factor analysis (CFA) were used to evaluate the proposed structure. In accordance with reporting practices recommended by numerous researchers,

a cutoff value of .08 for the RMSEA was used in the study to determine a low average of unexplained residuals in the proposed model (Jackson et al., 2009; Perry et al., 2015; Schreiber et al., 2006). Non-significance of the chi-squared goodness of fit was used to determine model fit, and a CFI and TLI index ≥.95 was used as the determinant for an acceptable fit for the data (Jackson et al., 2009; Hu & Li, 2015; Perry et al., 2015; Plucker, 2003; Schreiber et al., 2006). In this study, items with factor loadings that were .30 or higher were retained (Perry et al., 2015; Santor, 2011; Schmitt, 2011; Schreiber et al., 2006). In addition, an item was removed if that item had the highest modification index with another item, as well as had one or more modification indices that were significant (i.e., over 3.84) with another item(s).

Cognitive characteristics subscale. The best model fit for the cognitive characteristics subscale was a six-item factor, derived after a series of three CFAs. Modification index results from the analyses showed that the model fit would improve with the removal of, *good listener*, *good problem-solving ability*, *good reasoning ability*, and *grasps concepts immediately*. Results from the third CFA showed that the error term for item 1, *high IQ*, shared a significant modification index with item 5, *good reasoning ability* (*MI* = 5.67). Due to the importance of including an item referring to high IQ as an indicator of giftedness coupled with a modification index that was not substantially greater than the critical value of 3.84, both items 1 and 5 were retained.

The final cognitive characteristics subscale was comprised of six items: (a) *high IQ*, with a factor loading of .43, p = .007; (b) *good memory*, which had a factor loading of .69, *p* < .001, (c) *good visual/spatial skills*, which had a factor loading of .80, *p* < .001; (d) *good problem-solving skills,* with a factor loading of .61, *p* < .001; (e*) grasps*

concepts immediately that had a factor loading of .72, *p* < .001; and (f) *thinks*

productively, which had a factor loading of .46, *p* < .001. The model chi-square was not

significant, $\chi^2(8) = 10.14$, *p* = .255, which indicated a good model fit. The TLI was .960,

the CFI was .979, and the RMSEA was .065. These incremental and absolute fit indices

fell within the expected range and indicate model fit for the cognitive characteristics

subscale.

      Academic characteristics subscale. The best model fit for the academic

characteristics subscale was a six-item factor, derived after a series of four CFAs.

Modification index results from the analyses showed that the model fit would improve

with the removal of, *high achiever in math*, *high achiever in school*, and *high achiever in*

science. The final academic characteristics subscale was comprised of six items: (a) *high*

achiever in reading, which had a factor loading of .61, *p* < .001; (b) *high achiever in*

history, which had a factor loading of .75, *p* < .001; (c) *high achiever in writing* that had

the highest factor loading of .82, *p* < .001; (d) *has large vocabulary*, with a factor loading

of .59, *p* < .001; (e) *speaks English well* that had a factor loading of .55, *p* < .001; and (f)

eager to learn, with a factor loading of .66, *p* < .001. The model chi-square was not

significant, $\chi^2(9) = 11.79$ *p* = .226, which indicates good model fit. The TLI was .961,

the CFI was .976, and the RMSEA was .070. These incremental and absolute fit indices

fell within the expected range and indicate model fit for the academic characteristics

subscale.

      Creative performance subscale. The best model fit for the creative performance

subscale was a five-item factor, derived after a series of five CFAs. Low factor loadings

and modification index results from the analyses showed that the model fit would

improve with the removal of, *good at painting, good at drawing*, *good at dancing,* and *creative in lyric production*. The five items retained for the creative performance subscale were (a) *is good at singing,* with a factor loading of .55*, p < .*001; (b) *instrumentally talented,* with a factor loading of .76, *p < .*001; (c) *artistically talented*, with a factor loading of .85, *p < .*001; (d*) high athletic ability,* that had a factor loading of .62, *p < .*001; and (e) *wins competitions*, which had a factor loading of .67, *p < .*001. The model chi-square (χ^2) was not significant, $\chi^2(5) = 5.193$, *p = .*393, which indicates good model fit. The TLI was .996, the CFI was .998, and the RMSEA was .025. These incremental and absolute fit indices fell within the expected range and indicate model fit for the creative performance subscale.

Social skills subscale. The best model fit for the social skills subscale was a six-item factor, derived after a series of six CFAs. Modification index results from the analyses showed that the model fit would improve with the removal of, *well-accepted by peers, good at giving advice*, *good body language, likes to please others*, *and good at explaining things*. Following the sixth CFA, one shared modification index existed between the error terms for item 9, *can form successful relationships* and item 11, *helps others* at a value of 4.04. These two items were retained as the modification index value was relatively low.

The final social skills subscale was comprised of six items: (a) *works well with others*, which had the highest factor loading of .90, *p < .*001; (b) *possesses leadership qualities,* with a factor loading of .82, *p < .*001; (c) *good at reading behavioral cues* that had a factor loading of .80, *p < .*001; (e) *forms successful relationships*, which had a factor loading of .84, *p < .*001; (f) *maintains successful relationships*, which had a factor

loading of .74, *p* < .001; and (g) *helps others*, with a factor loading of .78, *p* < .001. The

model chi-square (χ^2) was not significant, $\chi^2(13) = 9.20$, *p* = .419, which indicates good

model fit. The TLI was .999, the CFI was .999, and the RMSEA was .018. These

incremental and absolute fit indices fell within the expected range and indicate model fit

for the social skills subscale.

     Originality subscale. The best model fit for the originality subscale was a six-

item factor, derived after a series of eight CFAs. Low factor loadings and modification

index results from the analyses showed that the model fit would improve with the

removal of, *creative, can find many solutions to a problem*, *good at a variety of things, is*

good at finding other uses for things, good at storytelling, *is good at improvising,* and

inquisitive. The final originality subscale was comprised of six items: (a) item 1,

independent, which had the highest factor loading of .84, *p* < .001; (b) item 3, *likes to try*

new things, with a factor loading of .55, *p* < .001; (c) item 6, *good sense of humor*, with a

factor loading of .77, *p* < .001; (d) item 11, *can outwit others*, which had a factor loading

of .62, *p* < .001; (e) item 12, *good at handiwork* that had a factor loading of .70, *p* < .001;

and (f*)* item 13, *good practical skills,* which had a factor loading of .53, *p* < .001. The

model chi-square (χ^2) was not significant, $\chi^2(9) = 5.07$, *p* = .828, which indicates good

model fit. The TLI was 1.056, the CFI was 1.00, and the RMSEA was .000. These

incremental and absolute fit indices fell within the expected range and indicate model fit

for the originality subscale.

     Intra/Interpersonal skills subscale. The best model fit for the intra/interpersonal

skills subscale was a seven-item factor, derived after a series of four CFAs. Low factor

loadings and modification index results from the analyses showed that the model fit

would improve with the removal of, *curious*, *insightful*, *self-confident,* and *is patient*. The final intra/interpersonal skills subscale was comprised of seven items: (a) *self-aware*, which had a factor loading of .81, $p < .001$; (b) *sensitive to the feelings and needs of others*, with a factor loading of .88, $p < .001$; (c) *is respectful,* having a factor loading of .72, $p < .001$; (d) *empathetic*, with a factor loading of .89, $p < .001$; (e) *emotionally competent* (effectively express emotions) with a factor loading of .87, $p < .001$; (f) *has high self-motivation*, which had a factor loading of .71, $p < .001$; and (g) *flexible*, which had a factor loading of .75, $p < .001$. The intra/interpersonal skills factor had a non-significant model chi-square, $\chi^2(14) = 19.64$, $p = .142$, which indicates good model fit. The TLI was .974, the CFI was .982, and the RMSEA was .079. These incremental and absolute fit indices fell within the expected range and indicate model fit for the intra/interpersonal skills subscale.

   Summary of CFA findings for the AGS subscales. The results of the CFAs conducted on the AGS subscales are summarized on Table 8. Each subscale had items removed to improve the model fit. The removal of four items resulted in the 6-item cognitive characteristics subscale. The removal of three items from the academic characteristics and creative performance subscales resulted in a 6-item and 5-item subscale, respectively. The removal of five items resulted in the 6-item social skills subscale. The largest number of items removed was for the originality subscale (seven items), resulting in a 6-item subscale. Finally, the removal of four items resulted in the 7-item intra/interpersonal subscale. It is important to note that while the removal of two additional items from the cognitive characteristics and social skills subscales each would have contributed to a better model fit, these items were retained due to relatively low

modification indices and the widely-recognized association to the gifted construct.

Overall, removal of items from each subscale reduced the 61-item AGS to 36 items (see

Appendix G), and the revised subscales were comprised of approximately equivalent

number of items per subscale. As seen in Table 8, all AGS subscales displayed sound

model fit based on the absolute and incremental model fit indices.

Table 8

Review of CFA Model Fit Indices for AGS Subscales (N = 65)

	Cognitive Char. 6 items	Academic Char. 6 items	Creative Perform. 5 items	Social Skills 6 items	Originality 6 items	Intra/Inter-Personal Skills 7 items
Model χ^2	Nonsig	Nonsig	Nonsig.	Nonsig.	Nonsig.	Nonsig.
TLI	.960	.961	.996	.999	1.056	.974
CFI	.979	.976	.998	.999	1.000	.982
RMSEA	.065	.070	.025	.018	.000	.079
Good Model Fit	Yes	Yes	Yes	Yes	Yes	Yes

Note. The acceptable thresholds are: (a) chi-square should be non-significant; (b) the TLI should be > .90,

preferably > .95; (c) the CFI should be > .90, preferably > .95; (d) the RMSEA should be < .08, preferably

< .05 (Jackson et al., 2009; Perry et al., 2015; Schreiber et al., 2006)

CFA: AGS total scale. An additional CFA was conducted on the final 36-item,

six-factor AGS scale. The purpose of the single CFA analysis was to (a) assess if AGS

items continued to significantly load on their respective latent constructs (i.e., the AGS

subscales); (b) examine if the AGS measurement model displayed error, as indicated by

modification indices, and if so, to examine the degree of error, as well as to determine which AGS items or subscales displayed the most error; and (c) gauge the fit of the AGS total scale measurement model, as denoted by absolute and incremental model fit indices.

All of the items significantly loaded on the respective latent factor at $p < .001$, except for one item. This item was the cognitive characteristic subscale item 1, *high IQ*, with a factor loading of .36, $p = .017$. High IQ was not removed from the 36-item full scale because it is a traditional indicator of giftedness commonly used to identify a student as gifted. Modification indices of the full scale CFA were also reviewed to identify where error most existed in the model. Results revealed minimal error among the AGS subscales, suggesting adequate AGS subscales. Despite every item significantly loading on its respective latent construct and minimal error among the AGS subscales, the six-factor AGS latent construct displayed less-than-adequate model fit. The overall model chi-square was significant, $\chi^2(579) = 1239.064$, $p = .000$. The TLI was .635, the CFI was .664, and the RMSEA was .133.

Summary of phase I findings. In conclusion, the psychometric structure and rigor of the AGS measure was established during phase I of the current study. Refinement of the survey was determined by the responses of 65 participants. Demographic data revealed that study participants were predominantly female, White, between the ages of 25 and 34, college-educated, of upper-middle-class status, and married. In terms of child demographics, child gender group sample sizes were almost equivalent, and most of the children were White and in the 4th grade. According to the sample of parents who participated in phase I of the present study, a higher percentage of White children were reported to currently receive gifted education compared to African

American children. Children were reported to be nominated by their parents and identified for gifted education based on their performance on IQ and academic achievement standardized tests. A majority of the teachers who participated in the study had at least 1-5 years of teaching experience, received training on gifted nomination and education through a college course, and have never nominated a student for a gifted education program.

In regards to the psychometric properties of the measure, the AGS subscales and total scale met adequate reliability. Moreover, higher intrasubscale correlations compared to intersubscale correlations, justified the six subscales of the AGS within the giftedness construct instead of an overall total score. Furthermore, all six of the AGS subscales showed excellent model fit, while the full scale CFA for the 36-item measure did not reach adequate model fit.

Phase II

Participant demographics. One hundred ninety-nine individuals ($n = 137$ parents and $n = 62$ teachers) indicated their interest in phase II of the study. However, fifty-four individuals ($n = 38$ parents and $n = 16$ teachers) were disqualified from the study because they did not meet inclusionary criteria. Several parents indicated that they were not a parent of a student from either of the two cultural groups. In addition, teachers were not elementary school teachers. Lastly, some participants were from school districts outside of the greater Houston area. Therefore, these parents and teachers were excluded from the study. The final sample for phase II consisted of 145 participants. Of the 99 parents, 87 (87.88%) were biological mothers, 10 (10.10%) were biological fathers, and

two (2.02%) were stepfathers. All 46 teachers taught at the elementary school level. A summary of the parent and teacher demographic information is presented in Table 9.

Table 9

Frequencies and Percentages: Demographic Variables of Parents and Teachers

Variable	Parents (n = 99)		Teachers (n = 46)	
	N	*%*	*N*	*%*
Gender				
Male	12	12.12	1	2.17
Female	87	87.89	45	97.83
Ethnicity				
White	64	64.65	31	67.39
African American	35	35.35	6	13.04
Asian/Pacific Islander	0	0.00	6	13.04
Hispanic/Latino(a)	0	0.00	3	6.52
Age Group				
18-24	0	0.00	1	2.17
25-34	38	38.38	16	34.78
35-54	60	60.60	26	56.52
55 or older	1	1.01	3	6.52
Highest Level of Education				
12th grade or less	0	0.00	0	0.00
Graduated high school	0	0.00	0	0.00

Some College	15	15.15	0	0.00
College Degree	52	52.52	31	67.39
Postgraduate Degree	32	32.32	15	32.61
Income Level				
Less than $25,000	2	2.02	0	0.00
$25,000-$32,500	4	4.04	0	0.00
$32,500-$60,000	10	10.10	6	13.04
$60,000-$100,000	35	35.35	22	47.82
$100,000-$150,000	25	25.25	12	15.38
More than $150,000	22	22.22	6	26.09
Marital Status				
Single	5	0.50	8	17.39
Married	87	87.87	35	76.09
Separated	3	3.03	0	0.00
Divorced	3	3.03	3	6.52
Partnered	2	0.20	0	0.00

Parents also reported child demographic characteristics. Table 10 presents these findings. The students ages ranged from six to 11 years with the largest group of students aged nine-years-old ($n = 26$, 26.26%).

Table 10

Frequencies and Percentages: Demographic Variables of Students (n = 99)

Variable	N	%
Gender		
Male	50	50.50
Female	49	49.49
Ethnicity		
White	64	64.65
African American	35	35.35
School Grade		
1st Grade	16	16.16
2nd Grade	16	16.16
3rd Grade	14	14.14
4th Grade	32	32.32
5th Grade	21	21.21

Parents also reported whether they participated in gifted education as a child (Table 11). Of the 30 parents enrolled in gifted education, 26 (86.67%) were White and four (13.33%) were African American. Parents also reported whether their child is currently in a gifted education program. Per parent report, 31 (70.45%) White children and 13 (29.54%) African American children are currently in a gifted education program. With regard to the 44 parents who reported that their child is currently in a gifted program, almost half nominated their child for the program. A slightly smaller number of teachers and a fewer number of school psychologists nominated the child for gifted

education. These children were primarily identified for gifted education based on their

performance on an IQ test or a standardized achievement test.

Table 11

Frequencies and Percentages: Gifted Programming Variables (n = 99)

Variable	Parents	
	N	*%*
Parent in Gifted Education Program as a Child		
No	60	60.60
Yes	30	30.60
Missing	5	5.05
Child Currently in Gifted Education Program		
No	55	55.55
Yes	44	44.44
Person Nominating Child for Gifted Education Program (*n* = 44)		
Parent(s)	24	54.54
Teacher	16	36.36
Parents and Teachers	4	9.09

Teacher's teaching and nomination experiences, as well as their training in

giftedness are presented in Table 12.

Table 12

Frequencies and Percentages: Teaching Experience of Teachers (n = 46)

	Teachers	
Variable	*N*	*%*
Student Ethnicity		
White	25	54.35
African American	21	45.65
Grade Taught		
1st Grade	1	2.17
2nd Grade	6	13.04
3rd Grade	7	15.22
4th Grade	12	26.09
5th Grade	20	43.48
Number of Years Taught		
1-5 Years	20	43.48
6-9 Years	8	17.39
10+ Years	18	39.13
Training on Giftedness		
None	1	2.17
College Course	9	19.56
District Training	9	19.56
Staff Meeting	4	8.70
GT Certified	18	39.13

Previously Nominated a Student for		
Gifted Education Program		
No	16	34.78
Yes	30	65.22

Reliability of the measure. Cronbach alpha was used to assess reliability for the AGS. The reliability coefficients for the measure and its subscales in regards to perceptions of gifted attributes are reported below in Table 13. The AGS demonstrated adequate coefficient alpha reliability at .95 (Field, 2009). Three of the six subscale also demonstrated adequate coefficient alpha reliability above .80; however, three subscales, Cognitive Characteristics, Academic Characteristics, and Creative Performance, fell below the .80 criteria. The three subscales appeared to approach the adequate range of above .70.

Table 13

Cronbach Alpha Reliability for Total Scale and Subscales for Perceptions of Gifted

Attributes (N = 145)

Scale	Cronbach Alpha α
AGS Total	.95
Cognitive Characteristics	.72
Academic Characteristics	.75
Creative Performance	.74
Originality	.82
Social Skills	.90
Intrapersonal/Interpersonal Skills	.89

The reliability coefficients for the measure and its subscales in regards to nomination of gifted attributes are reported below in Table 14. Similar to reliability for perceptions for gifted attributes, the AGS demonstrated adequate coefficient alpha reliability at .95 for nomination of gifted attributes (Field, 2009). Three of the six subscale also demonstrated adequate coefficient alpha reliability above .80; however, similar to perceptions of gifted attributes, three subscales, Cognitive Characteristics, Academic Characteristics, and Creative Performance, fell below the .80 criteria. The three subscales appeared to approach the adequate range of above .70. Overall, internal consistency for the measure and its subscales was found to be acceptable for perceptions of gifted attributes as well as nomination of gifted attributes.

Table 14

Cronbach Alpha Reliability for Total Scale and Subscales for Nomination of Gifted

Attributes (N = 145)

Scale	Cronbach Alpha α
AGS Total	.95
Cognitive Characteristics	.79
Academic Characteristics	.77
Creative Performance	.72
Originality	.82
Social Skills	.81
Intrapersonal/Interpersonal Skills	.86

Phase II: Assumptions of ANOVA

Normality statistics for AGS subscales and total scale. As opposed to the

overall sample, ANOVA assumes that that distribution of scores within each group is

normal (Field, 2013). There are two independent variables in the study (i.e., student's

culture and rater). Student's culture was manipulated between-subjects and had two

levels: White and African American. Rater was also between-subjects and had two levels:

parent rater and teacher rater. Thus, there were four conditions for the perception of

giftedness variable and two conditions for the nomination of giftedness variable.

Normality statistics were calculated on the six AGS subscales and the total AGS scale by

student's culture and rater for parent/teacher perceptions of gifted attributes, as well as

teacher nomination of gifted attributes. Normality of variables was tested by examining

the data for skewness and kurtosis for each group separately. *Z*-scores were used to determine whether a distribution is significantly skewed or kurtosed (Field, 2013; Thode, 2002). Normality statistics are reported for perception of giftedness attribute (Tables 15-18) and nomination of giftedness (Tables 19-20).

     Z-scores indicated that there were no violations of normality for the White student group when the rater was a teacher (Table 16). However, normality was violated when the rater was a parent (Table 15). Specifically, the cognitive characteristic and academic characteristics subscales were significantly, negatively skewed and had significant kurtosis; thus, impacting the skewness and kurtosis for the perception of giftedness total score. In regards to the African American student group, there were no violations of normality when the rater was a teacher (Table 17). However, normality was violated when the rater was a parent (Table 18). Specifically, the creative performance subscale was negatively and significantly skewed.

Table 15

Normality Statistics for Perception of Giftedness Total Score and Subscales for: Child's

Culture = White, Rater = Parent (n = 64)

Variable	Skewness		Kurtosis	
	Statistic	Z-score	Statistic	Z-score
Total	-.70	2.32*	1.66	2.81**
Cognitive Characteristics	-1.03	3.43***	1.49	2.53*
Academic Characteristics	-1.43	4.79***	3.86	6.55***
Creative Performance	.09	.33	.89	1.51
Originality	-.38	1.26	.74	1.26
Social Skills	-.00	.00	.60	1.01
Inter/Intrapersonal Skills	-.20	.68	.16	.26

Note. Skewness *SE* = .299; Kurtosis *SE* = .590. *Z*-score reported as absolute value.

* *p* < .05, ** *p* < .01, *** *p* < .001

Table 16

Normality Statistics for Perception of Giftedness Total Score and Subscales for: Child's Culture = White, Rater = Teacher (n = 25)

Variable	Skewness		Kurtosis	
	Statistic	Z-score	Statistic	Z-score
Total	-.02	.03	-.90	.99
Cognitive Characteristics	-.69	1.48	1.24	1.38
Academic Characteristics	-.58	1.25	.46	.51
Creative Performance	-.42	.91	.26	.29
Originality	-.22	.46	-.72	.79
Social Skills	-.78	1.67	.40	.45
Inter/Intrapersonal Skills	-.19	.41	.53	.58

Note. Skewness *SE* = .464; Kurtosis *SE* = .902. *Z*-score reported as absolute value.

* *p* < .05, ** *p* < .01, *** *p* < .001

Table 17

Normality Statistics for Perception of Giftedness Total Score and Subscales for: Child's Culture = African American, Rater = Parent (n = 35)

Variable	Skewness		Kurtosis	
	Statistic	Z-score	Statistic	Z-score
Total	.01	.03	-1.27	1.63
Cognitive Characteristics	-.41	1.04	-1.26	1.62
Academic Characteristics	-.28	.69	-1.04	1.34
Creative Performance	-.88	2.20*	-0.19	0.25
Originality	-.36	.90	-1.19	1.52
Social Skills	-.29	.72	-0.76	0.97
Inter/Intrapersonal Skills	.07	.18	-1.16	1.49

Note. Skewness *SE* = .398; Kurtosis *SE* = .778. *Z*-score reported as absolute value.

* *p* < .05, ** *p* < .01, *** *p* < .001

Table 18

Normality Statistics for Perception of Giftedness Total Score and Subscales for: Child's Culture = African American, Rater = Teacher (n = 21)

Variable	Skewness		Kurtosis	
	Statistic	Z-score	Statistic	Z-score
Total	.61	1.22	1.07	1.10
Cognitive Characteristics	.19	.38	-.32	.33
Academic Characteristics	-.07	.14	-.27	.28
Creative Performance	-.10	.21	-1.36	1.40
Originality	-.53	1.05	.53	.54
Social Skills	-.73	1.45	.50	.52
Inter/Intrapersonal Skills	-.77	1.53	1.46	1.51

Note. Skewness *SE* = .501; Kurtosis *SE* = .972. *Z*-score reported as absolute value.

* $p < .05$, ** $p < .01$, *** $p < .001$

Normality statistics for nomination of giftedness are reported in Tables 19-20. Z-score values indicated that normality was violated for both cultural groups. The cognitive characteristic, social skills, and intrapersonal/interpersonal subscales were significantly, negatively skewed when the student's culture was White (Table 19). The creative performance and intrapersonal/interpersonal subscale was significantly, negatively skewed when the student's culture was African American (Table 20).

Table 19

Normality Statistics for Nomination to Giftedness Total Score and Subscales for: Child's Culture = White (n = 25)

Variable	Skewness		Kurtosis	
	Statistic	Z-score	Statistic	Z-score
Total	-.91	1.97	1.41	1.56
Cognitive Characteristics	-1.92	4.14***	4.11	4.56***
Academic Characteristics	-.20	.44	-.07	.08
Creative Performance	-.05	.10	-.63	.70
Originality	-.80	1.73	1.72	1.91
Social Skills	-1.09	2.34*	2.01	2.22*
Inter/Intrapersonal Skills	-1.11	2.39*	1.45	1.61

Note. Skewness *SE* = .464; Kurtosis *SE* = .902. *Z*-score reported as absolute value.

* *p* < .05, ** *p* < .01, *** *p* < .001

Table 20

Normality Statistics for Nomination to Giftedness Total Score and Subscales for: Child's

Culture = African American (n = 21)

Variable	Skewness		Kurtosis	
	Statistic	Z-score	Statistic	Z-score
Total	-.95	1.90	.21	.22
Cognitive Characteristics	-.31	.61	.21	.22
Academic Characteristics	-.48	.95	-.80	.82
Creative Performance	-1.12	2.24*	.01	.01
Originality	-.63	1.25	.06	.06
Social Skills	-.63	1.25	.09	.06
Inter/Intrapersonal Skills	-1.18	2.36*	.85	.87

Note. Skewness *SE* = .501; Kurtosis *SE* = .972. *Z*-score reported as absolute value.
* *p* < .05, ** *p* < .01, *** *p* < .001

Outliers. Potential outliers in the data were identified by using z-scores (> |2.58|)

and examining box-plots (Field, 2013). Eight potential outliers were identified. However,

only two participant's data were removed from the analysis. One parent participant who

responded to the AGS for a White student was identified to be an outlier on every

subscale and the total score for the perception of giftedness variable. In addition, a

teacher participant who responded to the AGS for a White student was identified as an

outlier on five of the subscales and the total score for the nomination of giftedness

variable. Exploration of these two participants' responses revealed that they seemed to be

'nay-saying' or simply putting a rating of 1 for all of their answers on the 5-point Likert

scale (Jackson, 2011). Thus, they were dropped from all remaining analyses. For the remaining six outliers, their data did not suggest a response bias (e.g., they were an outlier on one subscale only) and thus they were retained.

It is important to note that removing the parent participant corrected the skewness and kurtosis non-normality (respective z-scores) for the total scale for perception of giftedness, and the cognitive characteristics and academic characteristics subscales for this condition. When the outlier was dropped, skewness z-scores were: 2.45 (Cognitive Characteristics), 2.42 (Academic Characteristics), and .68 (Total Score). Dropping the teacher participant, however, did not correct the non-normality of the data for this condition. Since ANOVA is fairly robust to violations of normality in sample sizes larger than 30 (Field, 2013), the data were not transformed.

Equal sample sizes. ANOVAs require relatively equal sample sizes per cell (Field, 2013). However, cell sizes were unequal in the current study. Specifically, for the perception of giftedness variable, a majority of parents (64.3%) responded in regards to a White student, while 35.7% of parents responded in regards to an African American student. Cell sizes for the nomination of giftedness variable and the perceptions of giftedness variable were more equal for teachers. Weighted ANOVAs were considered to correct for the unequal cell sample sizes, however, because there were still violations of normality assumptions, bootstrapping analyses were used to compare to the original analyses to determine if the unequal sample sizes and normality problems were affecting the results (Xu, Yang, Abula, & Qin, 2013). All analyses were conducted with and without bootstrapping. However, the results were the same, and thus the data without

bootstrapping are reported. Analysis-specific assumptions (i.e., homogeneity of variance) are reported in their respective ANOVA analysis.

Phase II: ANOVA Analyses

ANOVA analyses for research questions 1, 2 and 3. Two separate ANOVAs were conducted to examine research questions 1, 2, and 3. One analysis was conducted for the total score on the perceptions of giftedness variable and another analysis was conducted to examine differences by the subscales. The analysis for the total score was a two-way ANOVA (student's culture x rater) and the analysis for the subscales was a three-way ANOVA (student's culture x rater x subscales). Partial-eta squared was used as a measure of effect size for all effects, and interpreted as: .01 = small, .09 = medium, and .25 = large (Cohen, Cohen, West and Aiken, 2003).

ANOVA analyses for research questions 1, 2, and 3: total score. A 2 (student's culture: White, African American) x 2 (rater: parent, teacher) between-subjects ANOVA was conducted to examine the main effects and interactions of the two independent variables upon a dependent variable. The total score on the perception of giftedness variable was the dependent variable. The interaction simultaneously tested research questions 1, 2, and 3. Specifically, the interaction effect tested whether: (a) parent perceptions of student giftedness would differ between African American and White students; (b) teacher perceptions of student giftedness would differ between African American and White students; and (c) parent perceptions of student giftedness would differ from teacher perceptions of student giftedness by the student's culture (i.e., White compared to African American students). The homogeneity of variance assumption was not violated, $F(3, 139) = .346$, $p = .792$. Therefore, equal variances were assumed.

There was a statistically significant main effect of student's culture on perceptions of giftedness, $F(1, 143) = 8.08$, $p = .005$, $\eta_p^2 = .06$. Specifically, perceptions of giftedness were higher for African American students ($M = 3.93$, $SD = .66$) compared to White students ($M = 3.53$, $SD = .54$), regardless of rater. The main effect of rater on perceptions of giftedness was statistically significant, $F(1, 143) = 22.81$, $p = .000$, $\eta_p^2 = .14$. Parents ($M = 3.79$, $SD = .63$) were found to give higher ratings for perceptions of giftedness than did teachers ($M = 3.46$, $SD = .53$), regardless of the student's culture. In addition, a statistically significant interaction existed for student's culture and rater, $F(1, 143) = 28.73$, $p = .000$, $\eta_p^2 = .17$, suggesting a difference among the cell means. Results for the ANOVA are reported in Table 21.

Table 21

Results for the 2 (Student's Culture) x 2 (Rater) Between-subjects ANOVA for

Perceptions of Giftedness Total Score

Effect	Type III SS	df	MS	F	p-value	η_p^2
Student's Culture	2.13	1	2.13	8.08	.005	.06
Rater	6.02	1	6.02	22.81	.000	.14
Student's Culture x Rater	7.58	1	7.58	28.73	.000	.17
Error	36.67	139	.27			
Total	1994.13	143				

Pairwise comparisons were used to follow up the interaction effect. It is important to note that for all pairwise comparisons, Bonferroni correction was not used as it can

increase the chances of making a Type II error. In regards to the first research question, a pairwise comparison was used to examine whether, for parents, there was a difference between perceptions of giftedness for White and African American students. The difference was statistically significant, $t(98) = 7.130$, $p = .000$. Specifically, parent's perceptions of giftedness were higher when the students they were rating were African American ($M = 4.28$, $SD = .43$) compared to when the student was White ($M = 3.51$, $SD = .55$). Descriptive statistics for student's culture and rater are reported in Table 22.

For the second research question, a pairwise comparison was used to examine whether for teachers, there was a difference between perceptions of giftedness for White and African American students. Although teachers' ratings for the White students were slightly higher than for the African American students, this difference was not statistically significant, $t(45) = 1.542$, $p = .63$. There was no difference in perception of giftedness attribute ratings for the teachers between the two cultural groups.

For the third research question, pairwise comparisons were used to examine whether for each student's culture, there were differences between the parents and the teachers in their perceptions of student giftedness. Perceptions of giftedness were significantly different between parents and teachers when the student was African American, $t(56) = 6.704$, $p = .000$, with parents providing higher ratings. However, there were no differences between parents' and teachers' perceptions of giftedness when the students were White, $t(87) = .44$, $p = .329$ The effects are presented in Figure 2.

Table 22

Descriptive Statistics by Student's Culture and Rater for Perception of Giftedness Total

Score

Student's Culture	Rater	*M*	*SD*	*N*
White	Parent	3.51	.55	63
	Teacher	3.57	.52	24
African American	Parent	4.28	.43	35
	Teacher	3.33	.53	21
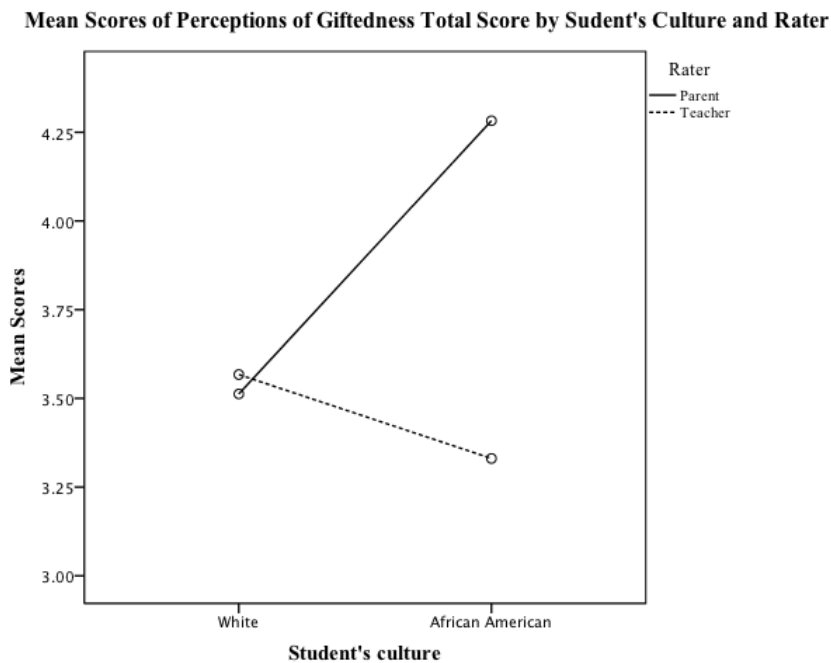
Figure 2. Differences in Perceptions of Giftedness Total Score by the Student's Culture

and the Rater

ANOVA analyses for research questions 1, 2, and 3: subscale scores. A 2

(student's culture: White, African American) x 2 (rater: parent, teacher) x 6 (perception

of giftedness subscales) mixed ANOVA was conducted. The six subscales were a within-subjects variable for the perception of giftedness dependent variable. Two-way interaction effects were examined for rater and the subscales, as well as student's culture and the subscales. A three-way interaction effect was also examined for rater, student's culture, and the subscales. The descriptive statistics for all the subscales by the student's culture and rater are reported in Tables 23-28.

Table 23

Descriptive Statistics by Student's Culture and Rater for the Cognitive Characteristics Subscale

Student's Culture	Rater	*M*	*SD*	*N*
White	Parent	4.33	.45	63
	Teacher	3.89	.75	24
African American	Parent	4.61	.35	35
	Teacher	3.80	.54	21

Table 24

Descriptive Statistics by Student's Culture and Rater for the Academic Characteristics Subscale

Student's Culture	Rater	*M*	*SD*	*N*
White	Parent	4.04	.60	63
	Teacher	3.74	.69	24
African American	Parent	4.12	.68	35
	Teacher	3.58	.64	21

Table 25

Descriptive Statistics by Student's Culture and Rater for the Creative Performance

Subscale

Student's Culture	Rater	*M*	*SD*	*N*
White	Parent	3.03	.65	63
	Teacher	3.52	.71	24
African American	Parent	4.17	.59	35
	Teacher	3.30	.54	21

Table 26

Descriptive Statistics by Student's Culture and Rater for the Originality Subscale

Student's Culture	Rater	*M*	*SD*	*N*
White	Parent	3.44	.61	63
	Teacher	3.44	.66	24
African American	Parent	4.34	.48	35
	Teacher	3.15	.78	21

Table 27

Descriptive Statistics by Student's Culture and Rater for the Social Skills Subscale

Student's Culture	Rater	*M*	*SD*	*N*
White	Parent	3.04	.79	63
	Teacher	3.50	.72	24
African American	Parent	4.25	.51	35
	Teacher	3.09	.76	21

Table 28

Descriptive Statistics by Student's Culture and Rater for the Inter/Intrapersonal Skills Subscale

Student's Culture	Rater	*M*	*SD*	*N*
White	Parent	3.17	.86	63
	Teacher	3.33	.63	24
African American	Parent	4.19	.51	35
	Teacher	3.09	.79	21

The assumption of sphericity was violated because Mauchly's test was significant, $W = .463$, $\chi^2(14) = 105.64$, $p = .000$. Therefore, degrees of freedom for the within-subjects effects were adjusted by using the Greenhouse-Geisser correction value ($\varepsilon = .739$). The Greenhouse-Geisser adjusted *F*-values are reported for all within-subjects effects. The two-way interaction effects (subscales x student's culture and subscales x rater) were both statistically significant. In regards to student's culture and subscales, the

statistical significance, $F(3.693, 513.368) = 6.10$, $p = .000$, $\eta_p^2 = .004$, indicates that perceptions of giftedness differ for White students compared to African American students, depending on the AGS subscales. In addition, the statistical significance for rater and subscales, $F(3.693, 513.368) = 1.07$, $p = .003$, $\eta_p^2 = .03$, suggests that perceptions of giftedness differ for parents and teachers, depending on the AGS subscales. These two-way interactions were not deconstructed further because the data were examined for the three-way interaction between the student's culture, the rater, and the six subscales on the perception of giftedness variable. The three-way interaction was statistically significant $F(3.693, 513.368) = 12.38$, $p = .000$, $\eta_p^2 = .082$, suggesting that there is a difference in the perception of gifted attributes by the student's culture and the rater, depending on the category of giftedness that is examined (cognitive characteristics, academic characteristics, etc.). Results for the within-subjects effects are reported in Table 29.

Table 29

Results for the 2 (Student's Culture) x 2 (Rater) x 6 (Subscales) Within-subjects ANOVA

for Perceptions of Giftedness Subscale Scores

Effect	Type III SS	*df*	MS	*F*	*p*-value	η_P^2
Perception of Giftedness Subscales	47.99	3.69	12.99	50.47	.000	.27
Subscales x Student's Culture	5.80	3.69	1.57	6.10	.000	.04
Subscales x Rater	3.95	3.69	1.07	4.16	.003	.03
Subscales x Student's Culture x Rater	11.77	3.69	3.19	12.38	.000	.08

The 3-way interaction was further interpreted by deconstructing it, first, into two 2-way ANOVAs corresponding to study research questions one and two, and then six 2-way ANOVAs were conducted corresponding to the third research question. The data were examined to identify whether there was a significant two-way interaction between the student's culture and the perception of giftedness subscales separately for each rater. Therefore, a 2 (student's culture) x 6 (subscales) ANOVA was conducted in regards to parent responses (research question one) and another 2 (student's culture) x 6 (subscales) ANOVA was conducted in regards to teacher (research question two). In addition, six 2 (student culture) x 2 (rater) 2-way ANOVAs were conducted for each subscale (research question three).

Corresponding to the first ANOVA, the interaction was examined to identify whether for the parents, there was a difference between their perceptions of giftedness for White and African American students, and whether any differences, if they do exist, depended on the subscales of the perceptions of giftedness variable. There was a significant interaction between the student's culture and the subscales, $F(3.384, 3.24.837) = 7.415$, $p = .000$, $\eta_p^2 = .239$, suggesting parent perceptions of giftedness differ by student's culture for the subscales. Pairwise comparisons were used to follow up the interaction effect. Specifically, pairwise comparisons were used to examine whether difference in parent perceptions of giftedness for White compared to African American students varied by the subscales on the perceptions of giftedness variable. These results are presented in Figure 3 (see Tables 22-27 for exact means). Parent perceptions of giftedness were significantly higher for African American students compared to White students for all of the subscales, except for the academic characteristics subscale. The following include the *t*-tests corresponding to these effects: Cognitive Characteristics, $t(97) = 3.23$, $p = .000$; Academic Characteristics, $t(97) = .64$, $p = .087$; Creative Performance, $t(97) = 8.64$, $p = .000$; Originality, $t(97) = 7.55$, $p = .000$; Social Skills, $t(97) = 8.14$, $p = .000$; and Intrapersonal Skills, $t(97) = 6.43$, $p = .000$.
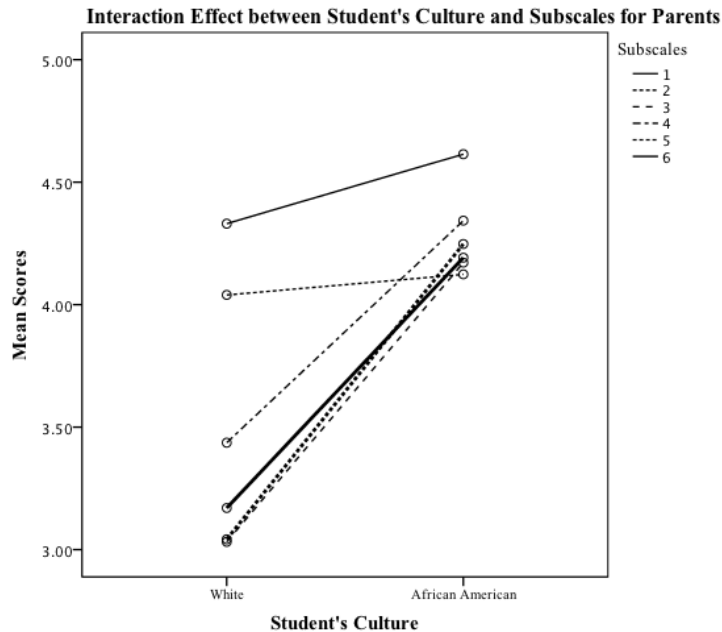
Figure 3. Perceptions of Giftedness: Interaction Effect between Student's Culture and Subscales for Parents

For the second research question, pairwise comparisons were also used to examine whether for teachers, there is a difference between perceptions of giftedness for White and African American students on the subscales. These results are presented in Figure 2 (see Tables 22-27 for exact means). For the teachers, there was no significant interaction between the student's culture and the subscales, $F(3.479, 149.617) = .549$, $p = .676$, $\eta_p^2 =. 013$. However, because the present study is a preliminary investigation and an interaction was of interest, based on the second research question, follow-up tests were examined even though the interaction was not statistically significant. The following are the *t*-tests corresponding to these follow-up effects: Cognitive Characteristics, $t(44) = .44$, $p = .11$; Academic Characteristics, $t(44) = .83$, $p = .069$; Creative Performance, $t(44) = 1.18$, $p = .042$; Originality, $t(44) = 1.37$, $p = .030$; Social Skills, $t(44) = 1.83$, $p = .012$; and Inter/Intrapersonal Skills, $t(44) = 1.16$, $p = .042$. As seen in Figure 4, teacher

perceptions of giftedness were higher for White students compared to African American students for all of the subscales. However, teacher perceptions of giftedness were only significantly higher for the creative performance, originality, social skills, and inter/intrapersonal skills subscale, though these differences should be interpreted with caution.
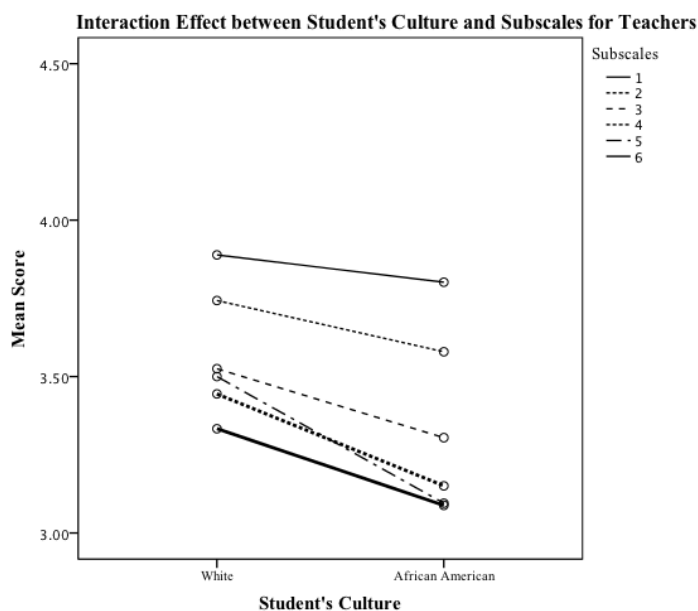
Figure 4. Perceptions of Giftedness: Interaction Effect between Student's Culture and Subscales for Teachers

The final set of analyses used to deconstruct the 3-way interaction corresponded to the third research question. Specifically, this was conducted to examine whether there were differences in the parents and the teacher's perceptions of student's giftedness depending on whether the student's culture was White or African American for each subscale separately. As such, six 2 (student culture) x 2 (rater) 2-way ANOVAs were conducted for each subscale. Follow-up comparisons for the interactions were conducted.

Figures 4 to 9 depict these two-way interactions between the student's culture and the rater separately for each subscale.

The interaction effect for the cognitive characteristics subscale was significant, $F(1, 143) = 4.04$, $p = .046$, $\eta_p^2 = .03$. For this subscale, the parents' perceptions of giftedness were higher than the teacher's perceptions, both when the student was White, $t(86) = 3.65$, $p = .000$, and when the student was African American, $t(55) = 5.85$, $p = .000$. The difference, however, is larger when the student is African American. These results are presented in Figure 5.

Interaction Effect for Cognitive Characteristics Subscale by Student's Culture and Rater
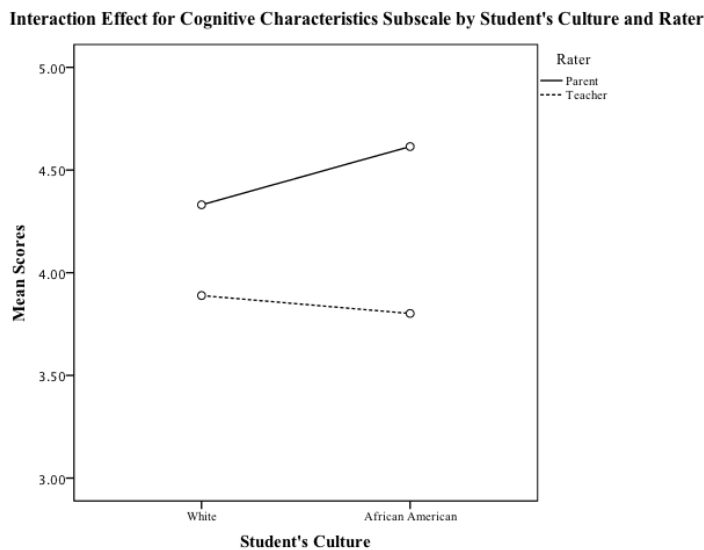
Figure 5. Perceptions of Giftedness Interaction Effects by Student's Culture and Rater for the Cognitive Characteristics Subscale

The interaction effect for the academic characteristics subscale was not significant, $F(1, 143) = 1.12$, $p = .291$, $\eta_p^2 = .01$, and thus no follow-up *t*-tests were conducted. These results are presented in Figure 6.

Interaction Effect for Academic Characteristics Subscale by Student's Culture and Rater
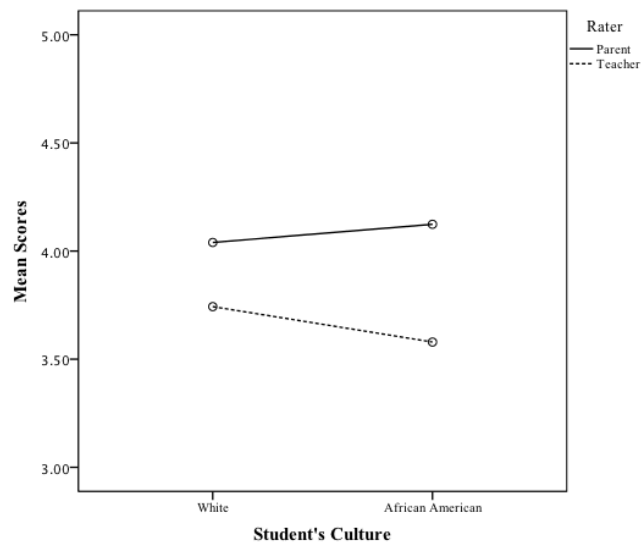
Figure 6. Perceptions of Giftedness Interaction Effects by Student's Culture and Rater for the Academic Characteristics Subscale

The interaction effect for the creative performance subscale was statistically significant, $F(1, 143) = 34.78$, $p = .000$, $\eta_p^2 = .20$. For this subscale, the teachers' perceptions of giftedness were lower than the parent's perceptions, when the student's culture was African American, $t(55) = 4.98$, $p = .000$. However, when the student was White, teachers were more likely to attribute creative performance to giftedness than were parents, $t(86) = 3.26$, $p = .000$. These results are presented in Figure 7.

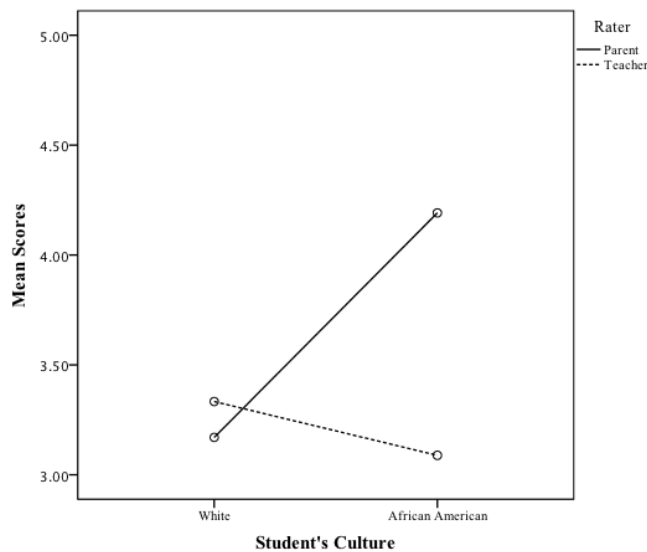**Interaction Effect for Creative Performance Subscale by Student's Culture and Rater**
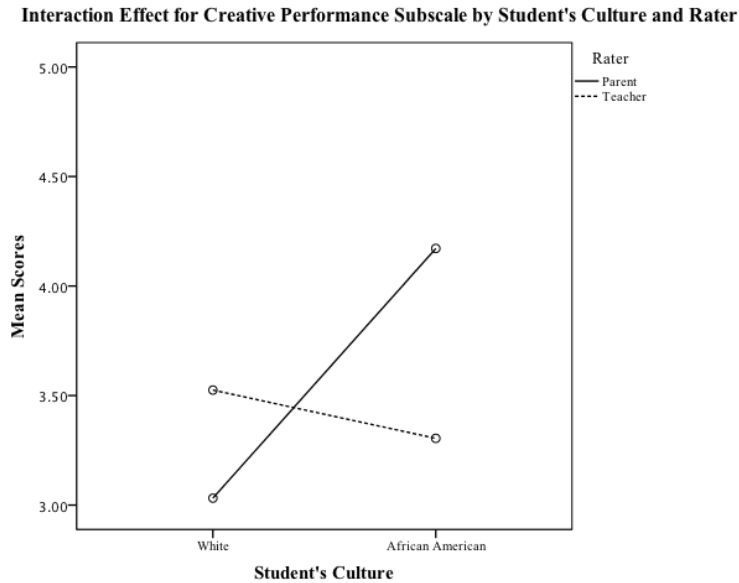
Figure 7. Perceptions of Giftedness Interaction Effects by Student's Culture and Rater for the Creative Performance Subscale

The interaction effect for the originality subscale was statistically significant, $F(1, 143) = 28.124$, $p = .000$, $\eta_p^2 = .168$. When the student's culture was White, there was no difference between parents' and teachers' perceptions of originality as an attribute of giftedness, $t(86) = .05$, $p = .479$. However, when the student's culture was African American, teachers were less likely to attribute originality to giftedness, compared to parents, $t(56) = 6.97$, $p = .000$. These results are presented in Figure 8.
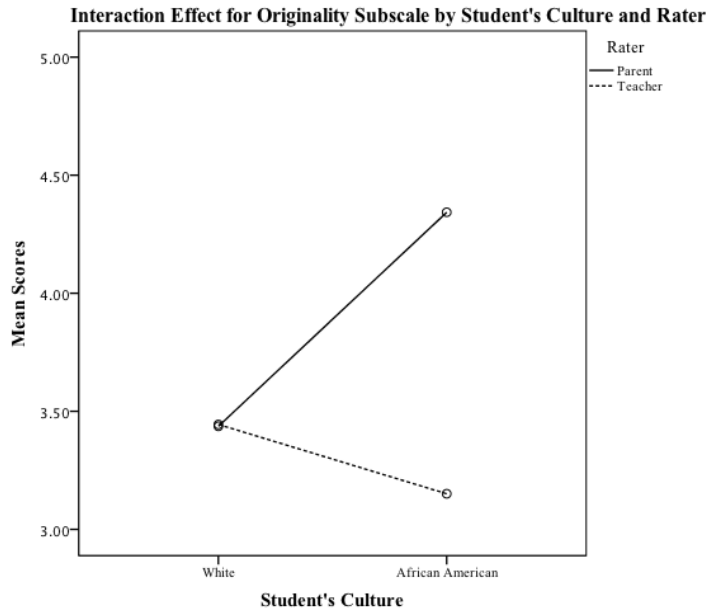
Figure 8. *Perceptions of Giftedness Interaction Effects by Student's Culture and Rater for the Originality Subscale*

The interaction effect for the social skills subscale was statistically significant, $F(1, 143) = 37.923$, $p = .000$, $\eta_p^2 = .214$. When the student's culture was White, teachers were more likely than parents to attribute social skills to giftedness, $t(86) = 2.68$, $p = .005$. However, when the student's culture was African American, teachers were less likely than parents to attribute social skills to giftedness, $t(55) = 5.85$, $p = .000$. These results are presented in Figure 9.

Interaction Effect for Social Skills Subscale by Student's Culture and Rater
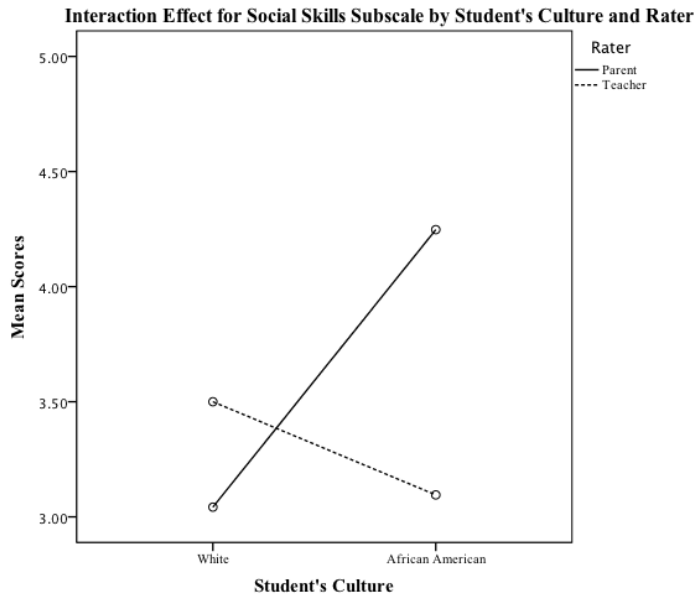
Figure 9. Perceptions of Giftedness Interaction Effects by Student's Culture and Rater for the Academic Characteristics Subscale

The interaction effect for the inter/intrapersonal subscale was statistically significant, $F(1, 143) = 21.944$, $p = .000$, $\eta_p^2 = .136$. When the student's culture was African American, teachers were less likely than parents to attribute inter/intrapersonal skills to giftedness, $t(55) = 5.41$, $p = .000$. However, when the student's culture was White, there was no difference between the parents and the teachers in terms of whether inter/intrapersonal skills was attributed to giftedness, $t(87) = .92$, $p = .180$. These results are presented in Figure 10.

Figure 10. Perceptions of Giftedness Interaction Effects by Student's Culture and Rater for the Inter/Intrapersonal Skills Subscale

ANOVA analysis for research question 4. Two separate ANOVA analyses were conducted to examine the fourth research question. One analysis was conducted for the total score on the teacher nomination of giftedness variable. Another analysis was conducted to examine differences by the subscales on the teacher nomination of giftedness variable. The analysis for the total score was a one-way ANOVA (student's culture), and the analysis for the subscales was a two-factor mixed ANOVA (student's culture x subscales).

ANOVA analysis for research question 4: total score. A one-way between-subjects ANOVA was conducted to examine whether there were differences in teacher's nomination of giftedness depending on whether the student was perceived to be White or African American. Levine's test for the equality of variances was not violated, $F(1, 43) = .52$, $p = .474$, and equal variances were assumed. The effect was not statistically

significant, $F(1, 45) = .67$, $p = .418$, $\eta_p^2 = .02$. Teachers were no more or less likely to nominate students for gifted education when they were White ($M = 3.48$, $SD = .57$) compared to when they were African American ($M = 3.33$, $SD = .66$).

ANOVA analysis for research question 4: subscale scores. A 2 (student's culture: White, African American) x 6 (subscales) mixed ANOVA was conducted to examine whether there were differences in whether teachers would nominate White students compared to African American students for gifted education programs, depending on the attributes of giftedness examined. The student's culture was a between-subjects variable, and the subscales was a within-subjects variable. Descriptive statistics are reported in Table 30.

Table 30

Descriptive Statistics by Student's Culture and Subscales for Teacher Nomination of

Giftedness

Subscales	Child's Culture	*M*	*SD*	*N*
Cognitive Characteristics	White	4.19	.66	24
	African American	4.12	.48	21
	Across Cultures	4.16	.58	45
Academic Characteristics	White	3.57	.73	24
	African American	3.55	.83	21
	Across Cultures	3.56	.77	45
Creative Performance	White	3.24	.85	24
	African American	2.94	.68	21
	Across Cultures	3.10	.78	45
Originality	White	3.47	.70	24
	African American	3.19	.82	21
	Across Cultures	3.34	.76	45
Social Skills	White	3.15	.69	24
	African American	3.02	.76	21
	Across Cultures	3.09	.72	45
Inter/Intrapersonal Skills	White	3.25	.67	24
	African American	3.13	.85	21
	Across Cultures	3.19	.75	45

The assumption of sphericity was violated because Mauchly's test was significant, $W = .274$, $\chi^2(14) = 53.21$, $p = .000$. Therefore, degrees of freedom for the within-subjects effects were adjusted by using the Greenhouse-Geisser correction value ($\varepsilon = .693$). The data were analyzed to determine whether regardless of student's culture, there were differences in the extent to which the subscales were used to nominate students. There was a significant main effect, $F(3.463, 148.916) = 38.71$, $p = .000$, $\eta_p^2 = .47$, suggesting a difference exists among the means for the subscales, regardless of the student's culture. Further analysis of the data indicates the cognitive characteristics subscale has the highest mean ($M = 4.16$, $SD = .58$), compared to all other subscales. These means are reported in Table 29. Pairwise follow-up tests were used to examine which means were statistically different. In comparing the cognitive characteristics subscale to all other subscales, a statistically significant difference existed for the academic characteristics subscale, $t(45) = 5.49$, $p = .000$; creative performance subscale, $t(45) = 10.23$, $p = .000$; originality subscale, $t(45) = 9.01$, $p = .000$; social skills subscale, $t(45) = 9.78$ $p = .000$; and inter/intrapersonal skills subscale, $t(45) = 8.13$, $p = .000$.

The academic characteristics subscale was used second most often to nominate students for gifted education, and it was significantly different from the creative performance subscale, $t(45) = 4.20$, $p = .000$); social skills subscale, $t(45) = 5.98$, $p = .000$; inter/intrapersonal skills subscale, $t(45) = 3.77$, $p = .000$; and originality subscale, $t(45) = 2.61$, $p = .031$. The originality subscale was used third most often to nominate students for gifted education, and it was significantly different from the creative performance subscale, $t(45) = 2.60$, $p = .032$, and social skills subscale, $t(45) = 4.17$, $p =$

.000. The social skills subscale was used the least often. None of the other subscales differed from one another.

With regards to the between-subjects effect for student's culture, Levine's test for the equality of variances was not violated for any of the subscales including cognitive characteristics, $F(1, 43) = .18$, $p = .672$; academic characteristics, $F(1, 43) = 1.00$, $p = .324$; creative performance, $F(1, 43) = .86$, $p = .359$; originality, $F(1, 43) = .59$, $p = .447$; social skills, $F(1, 43) = .69$, $p = .410$; and intra/interpersonal Skills, $F(1, 43) = .56$, $p = .458$. Equal variances were assumed. There was no significant between-subjects effect, $F(1, 43) = .72$, $p = .402$, $\eta_p^2 = .02$. Across all of the subscale, teachers are no more or less likely to nominate students to giftedness depending on whether they are White or African American. Although it appears as if teachers reported higher ratings of nomination for White students compared to African American students on all subscales, differences were not significant.

The interaction assessed whether teacher nomination of giftedness would differ for White students compared to African American students depending on the AGS subscales. This interaction was not significant, $F(3.463, 148.916) = .72$, $p = .561$, $\eta_p^2 = .02$. Results for the within-subjects effects are reported in Table 31. The effects are presented in Figure 11.

Table 31

Results for the 2 (Student's Culture) x 6 (Subscales) Within-subjects ANOVA for Teacher

Nomination of Giftedness Subscale Scores

Effect	Type III SS	*df*	MS	*F*	*p*-value	η_P^2
Nomination of Giftedness Subscales	37.78	3.46	10.91	38.71	.000	.47
Subscales x Student's Culture	.701	3.46	.20	.72	.561	.02
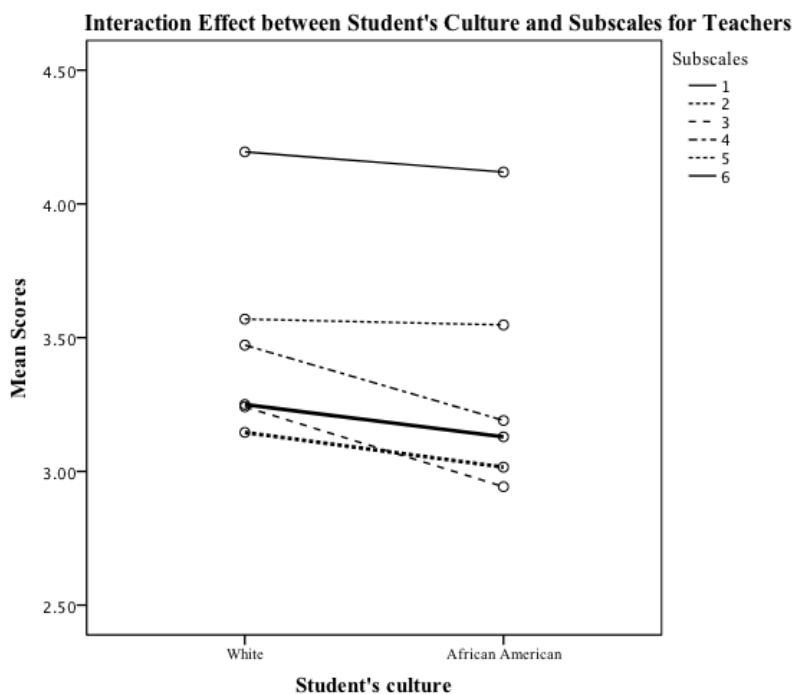
Figure 11. Perceptions of Nomination: Interaction Effect between Student's Culture and Subscales for Teachers

Analysis of research question 5. Parent perceptions of giftedness were compared to teacher nomination of giftedness to examine difference for the two cultural groups. However, this research question could not be examined statistically due to incomplete cells of the design (i.e., parents did not have nomination data). Therefore, previous analyses and data from the first four research questions were used to triangulate results. Student culture was compared for parent perceptions of giftedness first and then by teacher nomination of giftedness.

As seen for the first research question, parent perceptions of giftedness were significantly higher for African American students compared to White students for all of the subscales, except for the academic characteristics subscale. Mean parent ratings for perceptions of giftedness were calculated for African American students (Table 32). On a

5-point Likert scale, parents provided relatively high mean ratings for all subscales including cognitive characteristics (*M*= 4.61, *SD*= .35), academic characteristics (*M*= 4.12, *SD*= .68), creative performance (*M*= 4.17, *SD*= .59), originality (*M*= 4.34, *SD*= .48), social skills (*M*= 4.25, *SD*= .51), and inter/intrapersonal skills (*M*= 4.19, *SD*= .51). Mean parent ratings for perceptions of giftedness were also calculated for White students (Table 24). Parents provided moderate to high mean ratings for all subscales including cognitive characteristics (*M*= 4.33, *SD*= .66), academic characteristics (*M*= 4.04, *SD*= .73), creative performance (*M*= 3.03, *SD*= .85), originality (*M*= 3.44, *SD*= .70), social skills (*M*= 3.04, *SD*= .69), and inter/intrapersonal skills (*M*= 3.17, *SD*= .67).

As seen for the fourth research question, there was no significant difference between student culture and AGS subscales for teacher nomination of giftedness. However, for the purpose of examining this research question, mean ratings for perceptions of nomination were calculated for African American and White students (Table 32). It appears that teachers were less likely to nominate African American students on all the AGS subscales compared to White students. Teachers who responded in reference to an African American student provided moderate to low mean nomination ratings for all subscales including cognitive characteristics (*M*= 4.12, *SD*= 4.12), academic characteristics (*M*= 3.55, *SD*= 4.12), creative performance (*M*= 2.94, *SD*= 4.12), originality (*M*= 3.19, *SD*= 4.12), social skills (*M*= 3.02, *SD*= 4.12), and inter/intrapersonal skills (*M*= 3.13, *SD*= 4.12). Teachers who responded in reference to a White student provided relatively moderate mean nomination ratings for all subscales including cognitive characteristics (*M*= 4.19, *SD*= 4.12), academic characteristics (*M*= 3.57, *SD*= 4.12), creative performance (*M*= 3.24, *SD*= 4.12), originality (*M*= 3.47, *SD*=

4.12), social skills (*M*= 3.15, *SD*= 4.12), and inter/intrapersonal skills (*M*= 3.25, *SD*=

4.12). Overall, for all the subscales, parents of African American students rated the

subscales significantly higher as attributes of giftedness compared to parents of White

students, however, teachers appear to provide higher nomination rates for White students

compared to African American students on the subscales.

Table 32

Descriptive Statistics for Teacher Nomination of Giftedness and Parent Perception of

Giftedness by Student's Culture and Subscales

Subscales	Child's Culture	Parent Perception	Teacher Nomination
Cognitive Characteristics	White	4.33	4.19
	African American	4.61	4.12
Academic Characteristics	White	4.04	3.57
	African American	4.12	3.55
Creative Performance	White	3.03	3.24
	African American	4.17	2.94
Originality	White	3.44	3.47
	African American	4.34	3.19
Social Skills	White	3.04	3.15
	African American	4.25	3.02
Inter/Intrapersonal Skills	White	3.17	3.25
	African American	4.19	3.13

Chapter V

Discussion

The present study was conducted in two phases. The purpose of phase I was

to develop and validate the Attributions of Giftedness Survey (AGS), a questionnaire that

assesses parent and teacher perceived attributes of giftedness between the African

American and White cultural group. In phase II of the present study, the researcher used

the validated AGS to examine parent and teacher perceptions of giftedness as a function

of student culture, as well as the likelihood that teachers nominate African American and

White students for gifted education on a set of gifted attributes. Parent perceptions of

gifted attributes and teacher perceptions of nomination were compared to identify

discrepancies between the two cultural groups and inform practices to target the

disproportionate representation of African American and White students in gifted

education.

There were several notable findings in the present study. In phase I of the study,

the instrument was found to be psychometrically valid and reliable across the total scale

and AGS subscales (cognitive characteristics, academic achievement, creative

performance, originality, social skills, and intra/interpersonal skills). Once the instrument

was validated with a small sample, the instrument was used to explore phase II study

aims. Significant findings emerged: (a) parent perceptions of giftedness significantly

differed between African American and White students and (b) parent perceptions of

giftedness significantly differed from teacher perceptions depending on the student's

culture. In addition, teacher mean nomination scores show teachers in the study provided

higher nomination rates for White students compared to African American students. In the following section the findings are unpacked.

Phase I

While several researchers indicate that attributes of giftedness are culturally-mediated (Ford, 2013), few have attempted to both develop and psychometrically examine a measure of the many gifted attributes that may vary across culturally diverse groups. Moreover, Peterson (1999), the single researcher within the U.S. who examined behaviors of giftedness across the African American and White cultural group, used a study design that resulted in subjective responses from participants. These gaps in the existing literature were addressed by developing an objective measure that assesses cultural perceptions of giftedness on a predetermined set of gifted attributes. The overarching goal of phase I of this study was to assess the psychometric structure and rigor of the AGS, a measure developed for the purposes of this study.

Despite the relatively small sample size, phase I resulted in a psychometrically valid instrument with reliability estimates in the high range for the full scale and AGS subscales. Moreover, study participants reported moderate to high agreement that the AGS items were true indicators of giftedness, which may have contributed to some skewness within the data. Significant skewness within the academic characteristics subscale likely resulted from a large percentage of participants responding that they 'strongly agreed', a response set, that items related to academics were indicators of giftedness. For example, a majority of the participants, strongly agreed that achievement in academic subjects including Reading, Math, and Science were indicators of giftedness. Academic achievement is often recognized as an indicator of giftedness (McClain &

Pfeiffer, 2012), which may have contributed to this subscale comprising the highest number of skewed items.

In order to confirm the latent variables underlying the measure, confirmatory factor analyses were performed for the AGS subscales prior to the full scale. Confirmatory factor analyses resulted in model fit for the AGS subscale. Items were removed that did not load on the latent variables. The 61-item AGS scale was reduced to 36 items, a reduction by about half, and each subscale met model fit.

A CFA was also conducted on the six-factor total AGS. All items loaded significantly on the respective latent factor. The model fit indices, however, were not strong for the full scale. It is possible that the lack of model fit resulted from error between the factor loadings and between the latent constructs. Since error increases as sample size decreases, higher error terms may have also occurred in the present study due to the small study sample. In addition, poor model fit may have resulted from the retention of the item *high IQ*. This item yielded a low factor loading but was not removed from the scale as it is a widely known indicator of giftedness that is commonly used to identify a student as gifted.

Poor model fit of the full scale indicates the total AGS score did not represent the gifted construct examined in the present study. While the full scale CFA did not reach adequate model fit, the model fit of the subscales suggested the subscales are separate constructs that contribute to the overall giftedness construct. Given that the subscales were acceptable constructs of giftedness, they were used in all subsequent analyses. Although the total score was not a good indicator of the giftedness construct, it and subscale scores were used for the purposes of addressing the research questions within

phase II of the study. Overall, phase I findings were promising and suggested that the AGS could be a sound measure of giftedness for the purposes of this study.

Phase II

The goals of phase II of this study were to: (a) compare parent and teacher perceptions of giftedness by African American and White student culture, (b) examine teacher perceptions of which student characteristics they are more or less likely to consider when nominating African American and White students for gifted education, and (c) investigate differences between parent perceptions of gifted student characteristics and teacher perceptions of nomination for African American and White students for gifted education. Another goal of the present study was to use the researcher-developed AGS to contribute and expand upon the single existing U.S. cross-cultural study on giftedness (Peterson, 1999). Specifically, the AGS was used to identify whether parent perceptions of giftedness are culturally-bounded, as well as gather baseline data on teacher awareness regarding how the African American and White cultural groups perceive gifted student characteristics.

The AGS was completed by college-educated, middle to high SES, predominantly White female participants, a seemingly restricted sample of participants. As these background variables were similar to phase I findings, this suggests the AGS was validated for this specific demographic. Many of the teachers in the study identified themselves as gifted and talented certified with experience nominating a student for a gifted education program. These teachers' educational background and experiences with giftedness may represent the community of teachers in this study that may nominate a

student for gifted education, compared to novice teachers with less training in nominating/identifying students for gifted education.

Parents in the study also reported whether their child is currently in gifted education. Similar to phase I findings, a higher percentage of White students were reported to be currently receiving specialized instruction compared to African American students. The predominately White demographic of the current sample may reflect the higher percentage of White children reportedly in gifted education at this time compared to African American children. In addition, although the sample size in the current study is small, the study sample is similar to historical and current statistics on the representation of African American and White students in gifted education programs within Texas, as well as the United States (Fraiser, 1990; Kitano & Dijiosia, 2002; Michael-Chadwell, 2008; Radcliffe, 2006; TEA, 2007, 2015; Terman, 1926), suggesting a possible continued disproportionate representation of African American and White students in gifted education programs within the greater Houston area.

Interestingly, with regard to the parents who reported that their child is currently in a gifted program, over half of them nominated their child for gifted education, with most of the parents identifying as White and of moderate to high SES. It is plausible that parents of this specific demographic are more informed and involved in their child's school policies and curriculums. This difference also mirrors the higher percentage of White parents who participated in gifted education as a child compared to African American parents. Parents who participated in gifted education themselves may be more likely to want their child to access similar specialized instruction, and correspondingly nominate their child for gifted education. Although one of the goals in the current study

was to examine how often teachers nominate students to giftedness programs, depending on culture, it might also be interesting to examine, in future work, the role that parents play in this nomination process and how parent nomination may contribute to the disproportionate representation of culturally diverse students in gifted education programs. This is further discussed in the Limitations section.

Research question one. In the current study, parents rated their level of agreement that the White or African American cultural group would describe specific student characteristics as attributes of giftedness within a gifted African American or White student. Although parents in the study rated their perceptions for a hypothetical gifted African American or White student, it is important to note that each of the parents were also the parent of an African American or White child. If the parent was a parent of an African American child, they correspondingly rated attributes of giftedness for a gifted African American student. Similarly, if the parent was a parent of a White child, they correspondingly rated attributes of giftedness for a gifted White student. As parents are responding in reference to students of their same cultural group, it is assumed that parent's perceptions of giftedness likely match the cultural groups perceptions of giftedness.

A statistically significant difference was found between parent perceptions of giftedness for White students compared to African American students. Specifically, parent perceptions of giftedness were significantly higher for African American students compared to White students for all of the subscales, except for the academic characteristics subscale. Parents who responded in regards to African American students rated academic characteristics relatively similar to parents who responded in regards to

White students. Similarity in responses for the academic characteristic of giftedness is consistent with existing research that the African American cultural group (Michael-Chadwell, 2008) and White cultural group (Peterson, 1999) both associate high academic performance to giftedness. Similar responses may also be because academic achievement is highly valued within the school setting and considered to be one of the primary criterions for gifted nomination (McClain & Pfeiffer, 2012). Therefore, for both cultural groups, parents seemed to perceive high academic performance within school as important, especially for a gifted program, which offers specialized instruction that is considered to be a higher form of academic education and learning.

With the exception of the academic characteristics subscale, parents who responded in reference to an African American student reported significantly higher ratings for the five other AGS subscales, compared to parents who responded in reference to a White student. A reasonable explanation for significantly higher parent ratings for African American students compared to White students may be due to the existence of some parent bias. As part of consent to participate in the study, parents were informed that the purpose of the study was to better understand reasons for the underrepresentation of African American students and overrepresentation of White students in gifted education programs. It is plausible that parents who responded in regards to African American students may have endorsed higher levels of agreement to overcompensate for these statistics. These parents may also be demonstrating a type of "halo effect," to have themselves and their African American child be perceived favorably across the gifted student characteristics.

Further analysis of mean scores indicated the largest mean differences existed for the creative performance, originality, social skills, and inter/intrapersonal skills subscales, with significantly higher ratings by parents who evaluated African American students compared to parents who evaluated White students. Parents who responded in reference to White students reported moderate ratings that were on the lower bound of moderate on the 5-point Likert scale, whereas the ratings by the parents who responded in reference to African American students were on the upper end of the range. This is consistent with existing research, as several researchers identified that the African American cultural group associates giftedness to creativity, humor, handiwork, leadership skills, independence, and social and emotional competence (Ford, 1993b; Gay, 1978; Marion, 1981; Michael-Chadwell, 2008; Torrance, 1973, 1977; VanTassel-Baska, 1989). Current study findings support that gifted characteristics may be culturally-bound (Borland, 2004; Morris, 2002; Peterson, 1999), and specific gifted student characteristics that the African American culture considers as strengths and exceptionality do not align with mainstream definitions of giftedness or student characteristics that the White cultural group associates to giftedness (NCLB, 2005). This interpretation especially appears to align well with the social skills data in the present study.

Parents of African American students rated the social skills subscale the highest, indicating that these parents in the study perceive social competence to be highly attributed to giftedness compared to any other category of giftedness within the African American cultural group. This finding is supported by the existing literature as social skills are highly valued in the African American culture (Michael-Chadwell, 2008; Peterson, 1999; Torrance, 1973, 1977). Therefore, it is possible that for the sample of

parents in this study, possessing leadership qualities, forming and maintaining successful relationships, helping and working well with others, and being good at reading behavioral cues are student characteristics that are not only valued by African American parents, but also seem to be perceived as attributed to giftedness, particularly when a student is African American. For parents of White students, however, social skills appeared less important, indicating attributes of giftedness may be culturally-bounded, especially for social skills. While parent responses on the AGS total score and subscale scores suggested that attributes of giftedness are culturally-bounded, similar results were not found for teacher responses.

Research question two. One of the study goals was to gather baseline data on teacher awareness regarding how the African American and White cultural groups perceive gifted student characteristics. Therefore, teachers in the current study rated their level of agreement that the African American or White cultural group would describe specific student characteristics as attributes of giftedness in a gifted White or African American student. A statistically significant difference was not found between teacher perceptions of giftedness for White students compared to African American students on the total score, suggesting teachers responded relatively similarly regarding the attributes of giftedness across the two cultural groups. Non-significant findings may be due to a general limited teacher training on identifying culturally-bounded gifted behaviors.

It is important to note that most of the teachers in the present study were gifted and talented certified. Therefore, teacher's perceptions of giftedness were likely influenced by characteristics of giftedness that teachers are trained to identify. However, as stated in the literature review of this study, Ford et al. (1996) investigated multicultural

competencies of teachers of gifted students and found gifted education textbooks lacked content regarding multicultural gifted students and gifted behaviors these students may exhibit. This was later confirmed by Michael-Chadwell (2008), who found that teachers reported insufficient training in nominating African American gifted students. Moreover, Michael-Chadwell (2008) found that African American parents reported that teachers do not recognize that African American children express giftedness differently compared to the majority culture, and that teachers need training to recognize gifts of African American children. Therefore, the lack of teacher training in recognizing cultural perceptions of giftedness may have contributed to non-significant differences in teacher perceptions of giftedness across the two cultural groups on the total score of the AGS.

While significant differences were not found for the total score, significant differences in teacher perceptions of giftedness were found between specific AGS subscales for the two cultural groups. Specifically, teachers rated African American students lower than White students on all the AGS subscales, with significantly lower ratings on the social skills, creative performance, originality, and intra/interpersonal skills subscales. These categories of giftedness were not only attributed to giftedness by parents of African American students within the current study, but also identified by other researchers as associated to giftedness for the African American cultural group (Ford, 1993b; Gay, 1978; Marion, 1981; Michael-Chadwell, 2008; Torrance, 1973, 1977; VanTassel-Baska, 1989). A plausible explanation for this significant difference may be due to the influence of the majority cultural groups values within teacher training.

As opposed to culturally-bounded gifted student characteristics, teachers are trained to identify student characteristics of giftedness endorsed by the

mainstream/majority culture (Peterson, 1999), which may influence teacher responses when asked about gifted characteristics for culturally diverse students, such as African American students. Overall, although the total score was not significant, the pattern of lower teacher ratings for African American students and significant findings for specific subscales of the AGS may indicate lower teacher multicultural awareness for student characteristics that the African American cultural group attributes to giftedness. Limited multicultural awareness may subsequently result in teachers overlooking or failing to recognize characteristics considered by African American parents as gifted in African American students. These results may reveal some professional development opportunities for teachers in terms of (a) understanding how different cultural groups perceive attributes of giftedness and (b) recognizing giftedness (as perceived by others) in non-White populations.

Research question three. Differences in the parent's and the teacher's perceptions of giftedness depending on whether the student's culture was White or African American was examined for each subscale separately. The pattern of results for all the categories of giftedness (e.g., cognitive characteristics, creative performance, originality, social skills, and intra/interpersonal skills), except academic characteristics, indicated that there were significant differences between parents' and teachers' perceptions of giftedness depending on the student's culture. For example, for the creative performance subscale, which includes instrumental and artistic talents, teacher's perceptions of giftedness were lower than the parents' perceptions, when the student's culture was African American. However, when the student was White, teachers were more likely to attribute creative performance to giftedness than were parents. This pattern

in ratings was similar for the cognitive characteristics and social skills subscale such that teachers' perceptions of giftedness for intelligence and social skills were lower when the student was African American.

A similar pattern emerged for originality and intra/interpersonal skills. When the student's culture was White, there was no difference between parents' and teachers' perceptions of originality and intra/interpersonal skills as an attribute of giftedness. However, when the student's culture was African American, teachers in the current study were less likely to attribute student characteristics that constitute originality (independence, trying new things, good sense of humor, good practical skills, and good at handiwork) and intra/interpersonal skills (emotional competence, self-motivation) to giftedness, compared to parents. Overall, on the cognitive characteristics, creative performance, originality, social skills, and intra/interpersonal subscales, teachers were found to rate African American students lower.

According to the existing literature and African American parents who participated in the study, several of these student characteristics are identified as gifted behaviors for the African American cultural group. Specifically, student characteristics such as intelligence and independence (Michael-Chadwell, 2008), humor (Torrance, 1973, 1977, 1978), and handiwork (Peterson, 1999), as well as self-motivation and emotional competence (Michael-Chadwell, 2008; Torrance, 1973, 1977; VanTassel-Baska, 1989) are associated to giftedness for the African American cultural group. Parents in the current study also attributed the above-mentioned student characteristics to a gifted African American student. In summary, significantly lower teacher ratings for African American students on the cognitive characteristics, creative performance,

originality, social skills, and intra/interpersonal skills subscales continue to indicate lower teacher multicultural awareness for student characteristics that the African American cultural group attributes to giftedness.

In regards to the remaining AGS subscale (i.e., academic characteristics), there was no significant difference between parents and teachers in their perceptions of academic characteristics as attributes of giftedness by the student's culture. The lack of a statistical difference between parent and teacher ratings may be because parents and teachers recognize the importance of academic achievement within the school setting and that academic success is often used as a criterion when nominating a student for gifted education (McClain & Pfeiffer, 2012). This understanding may have contributed to parents and teachers similarly rating items on the academic characteristics subscale highly. As teachers' perceptions of giftedness are likely influenced by attributes of giftedness that are endorsed by mainstream cultures (Peterson, 1999), teachers in the current study who provided higher ratings for White students on cognitive and academic characteristics may agree that the White cultural group's perceptions of cognitive and academic characteristics match with mainstream definitions of giftedness. Specifically, perceptions of giftedness may align with factors of intelligence (high IQ, good memory, reasoning skills, etc.) and academic achievement (high achiever in various academic subject areas, eager to learn).

In summary, teachers' awareness of student characteristics that the African American and White cultural groups attribute to giftedness were examined relative to how parents from the same cultural groups perceive student gifted characteristics. Differences were examined in order to identify where cultural misperceptions and

discrepancies exist. On all the subscales except the academic characteristics subscale, teachers who responded in regards to African American students were significantly less likely than parents of African American students to perceive that the African American cultural group would attribute specific student characteristics to giftedness for a gifted African American student. This may suggest that parents of African American students have a better grasp of what their cultural group might attribute to giftedness than do teachers.

According to current study findings, African American parents attributed cognitive characteristics, creative performance, originality, social skills, and intra/interpersonal skills to a gifted African American student. However, teachers in the study perceived that the African American cultural group is less likely to attribute these gifted student characteristics to a gifted African American student. These differences point to a discrepancy between parent and teacher perceptions of giftedness. Lower teacher perceptions of giftedness for African American students also contrast with findings from existing literature that characteristics of creativity, originality, social skills, and interpersonal skills are associated to giftedness. Based on these two discrepancies, it is reasonable to assume that teacher training is warranted to help teachers recognize culturally-bounded gifted traits for gifted African American students, and to consider such traits during nomination of African American students for gifted education.

Research question four. Teachers rated the likelihood that specific attributes of giftedness are used when nominating an African American or White student for gifted education. Teachers were no more or less likely to nominate students for gifted education when they were White compared to when they were African American. Further,

mirroring the results for the total score, similar results were found across the subscales, indicating teachers were no more or less likely to nominate students to giftedness depending on whether they were White or African American on specific areas of giftedness. These findings are inconsistent with the existing research. Specifically, several researchers found that teachers are more likely to nominate White students compared to African American students, especially for areas of intelligence and academic achievement (Elhoweris et al., 2005; Michael-Chadwell, 2008; Tenenbaum & Ruck, 2007). This difference in nomination rate is reflective of the current overrepresentation of White students and underrepresentation of African American students in gifted education (Grantham, 2003; McKown & Weinstein, 2008; Pigott & Cownen, 2000; TEA, 2007).

A plausible explanation for non-significant results may be due to racial sensitivity discussions in the media and education system. Race is at the forefront of many issues in the U.S. currently, especially special education. The National Association of Gifted Children (NAGC) has discussed policy and procedural changes within schools to improve student representation in gifted education programs including using a comprehensive definition of giftedness that it not limited solely to intelligence and academic achievement, developing culturally sensitive assessment tools to identify culturally diverse gifted students, as well as teacher training to increase awareness of cultural differences and learn characteristics of underrepresented gifted populations (NAGC, n.d.). In addition, concerns over disproportionate representation of African American and White students in gifted education programs have prompted school district-wide changes to enhance representation of culturally diverse students. Specifically, one school district within the greater Houston area has taken steps to

improve student representation with a new funding proposal, which gives schools more funds for increased identification of gifted culturally diverse students in their gifted education programs (Foster, 2014). In light of more attention to race in the media and actions at the national and local level to address the disproportionate student representation of African American and White students in gifted education programs, teachers perhaps are more culturally aware and sensitive to racial differences and/or they may fear over- or under identifying students for gifted education, and may subsequently attempt to nominate both student cultural groups equally for gifted education.

In addition, teachers may have experienced some bias when responding to AGS items because during consent to participate in the study, teachers were informed that the purpose of the study was to better understand reasons for the underrepresentation of African American students and overrepresentation of White students in gifted education programs. Moreover, as part of the consent process, teachers were required to attest that they are a teacher who is able to nominate a student for gifted education. The fact that African American students are currently underrepresented in gifted education coupled with teacher nomination ability may have resulted in some bias in the teachers' responses. It is reasonable to assume that teachers may have responded in a manner to avoid appearing biased. Therefore, teacher bias regarding under-nominating or over-nominating African American students and White students respectively may have impacted their ratings, subsequently resulting in non-significant findings.

Non-significant findings for the total score and subscale scores may also likely be due to the training teachers in the current sample have received. As previously stated, some of the teachers in the present study are gifted and talented certified. Teachers who

are trained to use their school-based nomination forms which denotes a checklist of gifted characteristics (A. Smith, personal communication, January 19, 2016; EISD, 2018; APISD, 2018) may provide objective responses, regardless of student culture. Overall, the recent increase in media coverage and local educational policies revolving around racial issues, nature of the current study's consent process, and use of school-based nomination forms may have contributed to non-significant differences in teacher perceptions of nomination between the two cultural groups.

Research question five. The current cross-cultural study is, to this author's knowledge, the first study to examine differences between parent perceptions of giftedness and teacher perceptions of nomination for giftedness. Parent perceptions of giftedness were compared to teacher perceptions of nomination to examine difference for the two cultural groups. To make this comparison, mean scores from the previous analyses were compared. Mean ratings indicated a discrepancy between how parents of the African American and White cultural group perceive specific attributes of giftedness and the likelihood teachers consider those same gifted attributes when nominating an African American or White student for gifted education. Specifically, for all of the AGS subscales, parents of African American students rated the subscales higher as attributes of giftedness compared to parents of White students, while teachers provided higher nomination rates for White students compared to African American students on the subscales.

As these differences were compared solely by mean scores and could not be examined statistically, findings are interpreted with caution. Therefore, with caution, one could reasonably assume that while parents of African American students attribute

specific student characteristics to a gifted African American student, teachers may more often nominate White students on those same gifted student characteristics-a potential teacher bias. This discrepancy and potential teacher bias may highlight reasons for the underrepresentation of African American and overrepresentation of White students in gifted education programs. Specifically, while African American parents' responses suggest specific gifted behaviors are viewed as exceptionalities unique to the African American cultural groups, teachers may fail to recognize culturally-bounded expressions of giftedness within African American students and are more likely to recognize common mainstream indicators of giftedness within White students, as it aligns with teacher training on nominating/identifying gifted behaviors. Consequently, African American students who exhibit uncommon and untraditional gifted characteristics may be excluded from teacher nomination, which may subsequently impact identification rate of African American students for gifted education and contribute to current underrepresentation of gifted African American students in gifted education programs.

Limitations

Several limitations exist in the present study. First, despite every item significantly loading on its respective latent construct, the six-factor AGS latent construct displayed less-than-adequate model fit. The total score was deemed to not be a good measure of perceptions of giftedness, which was likely influenced by low sample size and retention of high IQ that yielded the lowest factor loading. However, the subscales appear to be acceptable constructs of giftedness. Therefore, future researchers may wish to use the subscales of the AGS as opposed to the full scale when studying perceptions of giftedness.

Second, phase II of the study had an increased risk for Type I error. Four ANOVA analyses were conducted in the present study for the first four research questions. As the number of ANOVA analyses increase, the probability of making a Type I error increases. Calculation of familywise alpha set the risk of Type I error that is deemed to be acceptable for the present study. The familywise error rate was calculated for four ANOVA analyses, using the formula: $1 - (1 - \alpha)^{\text{number of tests}}$, with an α of 0.05. This calculation yielded a familywise error rate of 0.186, which means there is a 18.6% chance of making a Type I error. Although Bonferroni correction decreases the chances of obtaining false-positive results, it was not used because it can reduce the adequate power of .80 significantly. Due to the preliminary nature of this study, the possibility of incurring a type I error was accepted. As opposed to missing potentially significant effects (type II error), trends/patterns in the data were reported and interpreted with caution. Significant results of this study should be replicated with a larger and more representative sample in future studies to prevent incorrect rejection of the null hypothesis.

Third, low sample size may have contributed to non-significant findings, especially when examining the teacher perceptions of giftedness variable and teacher nomination of giftedness variable. In addition to the sample as a whole being small, the number of teachers who participated in the study was substantially lower than the number of parents who participated in the study. Low teacher sample size appeared to not only affect teacher results, but also comparisons made between parent and teacher perceptions, due to the absence of unequal group sizes.

Fourth, since parents in the present study are from the United States, parent responses may be biased because of exposure to the U.S. school system. Parents from both cultural groups in the study attributed cognitive and academic characteristics to giftedness more than the other subscales. As parents may be knowledgeable of the values of their child's schools, they may place a higher value on intelligence and academic achievement and thus rate these student characteristics as more important attributes of giftedness, compared to other attributes of giftedness, potentially hindering responses on cultural attributions of giftedness. This was reflected in the violation of normality of the data, as the cognitive and characteristics subscales were significantly skewed for the sample of parents who responded in reference to White students. Further analysis of the data indicated that parents reported high agreement that items such as high IQ, good reasoning ability, and high achiever in Reading are attributes of giftedness. This is consistent with the existing literature, as these skewed items in cognitive functioning and academic achievement are often recognized as common indicators of giftedness within mainstream society (McClain & Pfeiffer, 2012).

Normality was also violated for the creative performance subscale for parents when the child's culture was African American, which is consistent with existing literature that African American parents perceive creativity as giftedness within African American students (Michael-Chadwell, 2008). In terms of nomination of giftedness, normality was violated for both student cultural groups. Further analysis of the data indicates teachers "strongly agreed" that intelligence and self-motivation are considered when nominating a White student for gifted education, whereas creative performances such as instrumentally and artistically talented and winning competitions are considered

when nominating an African American student for gifted education. It is possible that because winning competitions (Ford, 1993b; Kerr, 2009; Peterson & Margolin, 1997) and creative performance (Peterson & Margolin, 1997) are commonly associated to giftedness for the majority cultural group, these teachers may perceive African American students who win competitions and excel in creative performances to be uncommon and potentially view these students as exceptional, subsequently influencing nomination.

Fifth, the lack of parent nomination data limited insight into additional reasons for the disproportionate representation of African American and White students in gifted education. Compared to teachers, parents are the second most frequent referral source when a student is nominated for gifted education (Miller, 2006). Demographic data indicates that several parents in the present study nominated their child for gifted education. Moreover, as part of the free response section of the AGS, some parents in the study reported additional attributes of giftedness that they perceive are important to their respective cultures but were excluded from the measure (i.e., thinking outside the box, singing and dancing, compliance, perfectionistic tendencies, and attention to detail). Although these additional attributes of giftedness were not incorporated into the study due to the limited number of parents who endorsed these gifted attributes, it is plausible that parents of one cultural group may be more likely to consider these student characteristics as strengths and nominate students for gifted education, which subsequently influences student representation of that cultural group in gifted education programs. Also, comparing parent nomination to teacher nomination may have provided additional insight into differences in nomination rates that could impact representation of African American and White students in gifted education.

Sixth, generalizability of the sample may be limited because the current sample was geographically restricted to the greater Houston area. It may be inappropriate to generalize research findings to other geographical areas because states differ in their nomination and identification processes for gifted education (NAGC, 2005). Moreover, generalizability of responses from the African American and White cultural groups may be inappropriate. The African culture encompasses 51 subcultures from Southern, Northern, Central, Eastern, and Western Africa (National Center for Education Statistics, 2006). Furthermore, an individual who is White can have origins in Europe, Middle East, or North Africa (OMB, 2015). Therefore, perceptions of giftedness may differ within subcultures of the African American and White cultural groups. This study should be replicated in other educational, geographic, and cultural contexts to attain a better understanding of how different populations perceive giftedness.

Seventh, potential results may be confounded by teacher and child demographic variables including teacher race/ethnicity and child gender. For example, it is possible that African American teachers may be better able to perceive giftedness within an African American gifted student. Moreover, parents and teachers may perceive giftedness differently according to gender of the child and cultural beliefs associated to child gender. Due to the scope of the study, descriptive data on demographic variables was collected during study administration, but teacher ethnicity/race and child gender was not directly assessed as potential confounds in the present study. Future researchers should examine the effects of teacher ethnicity and student gender on perceptions of giftedness and nomination.

Eighth, this study may be vulnerable to researcher bias. Researcher bias exists because the researcher received gifted education during her elementary schooling. It is important that the researcher's personal perceptions of giftedness did not result in the development of a subjective survey. Therefore, review of the literature and feedback from experts on giftedness and multiculturalism were used to minimize researcher bias to develop a survey that is objective and representative of the two targeted cultural groups.

Relevance and Implications

The current cross-cultural study is unique for its focus on two specific cultural groups (White and African American) that are critical to better understand potential reasons for the over- and underrepresentation of these groups in gifted education programs. The present study contributed to the single existing cross-cultural study on perceptions of giftedness in the United States (Peterson, 1999). Asking the two cultural groups to rate a set of predetermined attributes not only addressed the limitation in Peterson's (1999) study and improved objectivity of the research method, but also helped illuminate which gifted attributes are culturally-bounded (i.e., cognitive characteristics, creative performance, originality, social skills, and intra/interpersonal skills) and which attributes may be similar across the African American and White cultural group (i.e., academic characteristics). Furthermore, identifying gifted perceptions through parent reports may help educators attain knowledge of cultural values prevalent in specific cultural groups.

The present study also contributed to the existing research by gathering baseline data on teacher awareness of culturally-bounded gifted attributes and which gifted attributes are considered when nominating African American and White students for

gifted education. Results from this study provided insight on discrepancies that exist between parent and teacher perceptions of gifted attributes, as well as discrepancies in the nomination process by student culture. Lower teacher ratings for African American students compared to higher ratings provided by parents may suggest low teacher multicultural awareness/knowledge of gifted student characteristics that are important to the African American cultural group. Moreover, the pattern of lower teacher mean nomination scores for African American students compared to White students on culturally-bounded gifted characteristics that parents of African American students rated higher on than parents of White students (i.e., creative performance, social skills, originality, and intra/interpersonal skills) may indicate that non-traditional and culturally-bounded attributes of giftedness may be potentially overlooked or not considered when nominating an African American student for gifted education.

In summary, the present study findings suggest attributes of giftedness are culturally-bounded, suggesting gifted students may demonstrate attributes of gifted behavior that are unique to their cultural beliefs. In addition, teachers in the present study may lack multicultural awareness regarding student characteristics that the African American cultural group values and associated to giftedness. Some researchers have suggested that a failure to recognize and consider non-traditional, culturally-bounded expressions of giftedness may lead to lower nomination rates, and by extension perpetuate underrepresentation of African American students in gifted education programs (Ford, 1993b; Michael-Chadwell, 2008; Moon & Brighton, 2008). This assumption may hold true with current study findings as mean scores indicated teachers' in the present study rated African American students lower for nomination on attributes

of giftedness that African American parents strongly agreed are gifted characteristics in a gifted African American student. It is important to note that due to the preliminary, pilot nature of the current study, findings should be replicated with a larger and more representative sample to demonstrate differences in teacher nomination rates between the two cultural groups. In addition, further exploration between African American and White cultural perceptions of gifted behaviors and factors of teacher bias in gifted nomination for these two cultural groups is warranted, as differences may further highlight reasons for the underrepresentation of African American students and overrepresentation of White students in gifted education programs.

Future Directions

Overall, study findings suggested that attributes of giftedness may be culturally-bounded with teachers lacking sufficient multicultural awareness such that, in this study, it precluded them from recognizing differences in giftedness between the African American and White cultural group. These teachers who likely adhere to mainstream definitions of giftedness may potentially overlook non-traditional attributes of giftedness and less often nominate African American students for gifted education compared to White students. This is but one example of the reason for disproportionality in the history of student disproportionality in gifted education programs. Present study results suggested more teacher awareness of the disproportionate representation of culturally diverse students in gifted programs, restrictive practices and biases that contribute to student representation, and recognition of cultural expressions of giftedness is needed. Study results also indicated that policy and procedural changes in nomination and

identification of culturally diverse students, including African American students, for gifted education may be warranted.

Policy changes such as considering a comprehensive definition of giftedness that not only includes intelligence and academic achievement, but also includes other gifted attributes such as creative performance, originality, social skills, and inter/intrapersonal skills may be helpful in recognizing gifted student characteristics perceived by culturally diverse groups. It is important that changes in the definition not only be addressed at the national level, but the state level as well. These policy changes at the national and state level may result in revisions to state and local regulations that direct gifted nomination/identification practices at the school district level. A comprehensive definition may allow teaches and other school professionals to perceive a child holistically when considering gifted behaviors.

In order to navigate the multiple aspects of under- and over-representation of African American and White students in gifted programs, school districts should engage in procedural changes. Procedural changes including revisions to nomination and identification procedures/tools that reflect a comprehensive definition of giftedness may subsequently improve African American students' representation in gifted education programs. Currently, several school districts within the greater Houston area use teacher nomination checklists that include narrow behaviors related to intelligence and academic achievement. School professionals may consider, as part of a gifted assessment, using existing gifted measures such as the Torrance Test of Creative Thinking (1985) to identify creative expressions and/or Frasier's (1990) gifted model that includes 10 traits of gifted behaviors beyond high academic performance. As reliability of the AGS and its

subscales, as well as model fit of the subscales indicate that the subscales of the AGS, at least, are good measures of giftedness, the AGS may be considered when attempting to identify gifted behaviors within the White and African American cultural groups. Similar to the AGS, other researchers may consider developing measures that assess gifted behaviors related to social skills, originality, and/or inter/intrapersonal skills.

Other procedural changes such as developing teacher training manuals and holding teacher/staff meetings to train teachers to identify culturally diverse gifted students and obtain more awareness of disproportionality in gifted programs is warranted. Teacher professional development may (a) help reduce teacher misperceptions/biases, and (b) inform teachers efforts in recognizing gifts as perceived by African American and White cultural groups. Overall, training teachers to use a comprehensive definition of giftedness, recognize culturally-bounded attributes of giftedness, and use culturally sensitive nomination and identification tools may improve teacher nomination and identification practices, and subsequently improve student representation in gifted education programs.

Although the present study is a preliminary investigation examining parent and teacher perceptions of how the African American and White cultural groups may perceive gifted behaviors and likelihood of nomination of these gifted behaviors for African American and White students, the pattern in the study results indicated a need for increased recognition and nomination of non-traditional attributes of giftedness. This may, by extension, target specialty schools that provide specialized instruction for gifted behaviors, such as one school within the greater Houston area that solely targets visual and performing arts, aspects of the creative performance gifted category. This may also

support the development of, for example, a leadership academy school that is currently

non-existent within the greater Houston area. As specialized instruction is understood to

develop a student's potential (Sapon-Shevin, 2003), students who demonstrate the gifted

characteristic of strong leadership skill, or other similar gifted attributes related to social

skills, may benefit from differential programming targeted to support their growth

towards council representation or other major leadership positions.

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Appendix A

Permission to Contact Participants from Organizations

Permission to Contact Parents and Teachers from School

From: Sonia Babu   Date: _____
School Psychology Doctoral Candidate
University of Houston

To: _____
     (School Principal/personnel)

I am a School Psychology student at the University of Houston working on a degree in Doctor of Philosophy. I am conducting a survey for a research study entitled: PARENT AND TEACHER PERCEPTIONS OF GIFTED AFRICAN AMERICAN AND WHITE STUDENTS: IS THERE A DIFFERENCE? The purpose of this study is to explore the perceptions of giftedness among parents who have an African American or White child. This study will also explore teacher perceptions of gifted attributes for African American and White students and examine the likelihood specific gifted attributes are currently used in the nomination process. Two goals of the study are to (1) determine factors that may influence the underrepresentation of African American students and overrepresentation of White students in gifted education programs, and (2) gain knowledge about cultural perceptions of giftedness to inform development of teacher training curriculums to improve the nomination rate of gifted students from different cultural groups.

I am inviting parents and teachers from your elementary school(s) to participate in my study. Their participation in the study is voluntary. In addition, they are able to withdraw from the study at any time without penalty of explanation. Participation in my study will take approximately 20-25 minutes in which participants will provide consent, complete a demographic questionnaire, and complete the survey on gifted behaviors. There is a direct incentive for participating in the study, as they will have the chance to win one out of ten $10 Amazon gift cards. Their participation will contribute to creating a measure of gifted attributes for culturally diverse populations and help us better understand cultural perceptions of gifted attributes. Their participation may also inform the development of training curriculums to improve representation of specific cultural groups in gifted education. The study will be conducted in two phases. Therefore, I hope to recruit teachers and parents from your elementary school(s) for Phase 1 and Phase 2 of the study. I plan to recruit participants by posting recruitment flyers at elementary schools. Specifically, I will provide a flyer to each teacher who teaches an elementary grade (1-5). I will also provide additional flyers to teachers and request that teachers send the flyer home to eligible parents.

Enclosed with this letter is a copy of a form to be completed by you, specifying agreement allow me to recruit parents and teachers from your school. Questions regarding this matter may be directed to me at sbabu4@uh.edu. Thank you in advance for your support.

Sincerely,

_____

Sonia Babu
School Psychology Doctoral Candidate
University of Houston

Permission Granted to Contact Parents and Teachers from School

From: _____ (Name)

_____ (Title)

_____ (School's name)

To: Sonia Babu

School Psychology Doctoral Candidate

University of Houston

I hereby authorize Sonia Babu, a student of the University of Houston, who is conducting

a study entitled: PARENT AND TEACHER PERCEPTIONS OF GIFTED AFRICAN

AMERICAN AND WHITE STUDENTS: IS THERE A DIFFERENCE? to contact

parents and teachers of this school for the purpose of this study to act as research

participants.

_____   _____

Signature   Date

Permission to Contact Parents and Teachers from Church

From: Sonia Babu   Date: _____
School Psychology Doctoral Candidate
University of Houston

To: _____
    (Church Leader)

I am a School Psychology student at the University of Houston working on a degree in Doctor of Philosophy. I am piloting a survey for a research study entitled: PARENT AND TEACHER PERCEPTIONS OF GIFTED AFRICAN AMERICAN AND WHITE STUDENTS: IS THERE A DIFFERENCE? The purpose of this study is to explore the perceptions of giftedness among parents who have an African American or White child. This study will also explore teacher perceptions of gifted attributes for African American and White students and examine the likelihood specific gifted attributes are currently used in the nomination process. Two goals of the study are to (1) determine factors that may influence the underrepresentation of African American students and overrepresentation of White students in gifted education programs, and (2) gain knowledge about cultural perceptions of giftedness to inform development of teacher training curriculums to improve the nomination rate of gifted students from different cultural groups.

I am inviting parishioners from your church to participate in my study. Their participation in the study is voluntary. In addition, they are able to withdraw from the study at any time without penalty of explanation. Participation in my study will take approximately 20-25 minutes in which participants will provide consent, complete a demographic questionnaire, and complete the survey on gifted behaviors. There is a direct incentive for participating in the study, as they will have the chance to win one out of ten $10 Amazon gift cards. Their participation will contribute to creating a measure of gifted attributes for culturally diverse populations and help us better understand cultural perceptions of gifted attributes. Their participation may also inform the development of training curriculums to improve representation of specific cultural groups in gifted education. The study will be conducted in two phases. Therefore, I hope to recruit teachers and parents from you're your church for Phase 1 and Phase 2 of the study. I plan to recruit participants by posting recruitment flyers at your church (i.e., bulletin board and classrooms).

Enclosed with this letter is a copy of a form to be completed by you, specifying agreement to allow me to recruit parents and teachers from your church. Questions regarding this matter may be directed to me at sbabu4@uh.edu. Thank you in advance for your support.

Sincerely,

_____

Sonia Babu
School Psychology Doctoral Candidate
University of Houston

Permission Granted to Contact Parents and Teachers from Church

From: _____ (Name)

_____ (Title)

_____ (Church's name)

To: Sonia Babu

School Psychology Doctoral Candidate

University of Houston

I hereby authorize <u>Sonia Babu</u>, a student of the University of Houston, who is conducting

a study entitled: PARENT AND TEACHER PERCEPTIONS OF GIFTED AFRICAN

AMERICAN AND WHITE STUDENTS: IS THERE A DIFFERENCE? to contact

members of this church for the purpose of this study to act as research participants.

_____   _____

Signature   Date

Appendix B

Website Recruitment Script

Facebook Recruitment Script (Permission)

Hello,

May I recruit participants to complete a survey through your Facebook page? The survey is for my dissertation to learn more about how culturally diverse populations perceive giftedness and nomination of gifted behaviors. Parents and teachers within the greater Houston area will enter to win an Amazon gift card for participating. The survey is online and should take approximately 20-25 minutes to complete. Let me know if this is possible, and I can send you a brief description about my study (including the link) to post on your group. Thank you for your help, and I look forward to hearing your response.

Sincerely,

Sonia Babu

School Psychology Doctoral Candidate

University of Houston

Facebook Recruitment Script (for Facebook groups and personal account)

Hello,

My name is Sonia Babu, and I am conducting research through the University of Houston. I am inviting parents and teachers from the greater Houston area to participate in my study. Specifically, I am looking for parents who have an elementary aged child of the African American or White cultural group. I am also looking for teachers who currently teach an elementary grade. I am attempting to create a survey that measures how different cultures perceive gifted behaviors, as well as the likelihood specific gifted behaviors are considered in teacher nomination for gifted education. Below is a link to my survey. Participation in my study should take between 20 to 25 minutes, and participants can enter to win an Amazon gift card. Thank you for your time and feel free to pass this message along to other parents and teachers who may be interested. Please let me know if you have any questions.

Link to survey: http://tinyurl.com/hgju6ob

Appendix C

Study Recruitment Flyer

Appendix D

Informed Consent

UNIVERSITY of
HOUSTON

DIVISION OF RESEARCH
Institutional Review Boards

APPROVAL OF SUBMISSION

January 3, 2018

Sonia Babu

sbabu4@uh.edu

Dear Sonia Babu:

On January 3, 2018, the IRB reviewed the following submission:

Type of Review:	Continuing Review
Title of Study:	PARENT AND TEACHER PERCEPTIONS OF GIFTED AFRICAN AMERICAN AND WHITE STUDENTS: IS THERE A DIFFERENCE?
Investigator:	Sonia Babu
IRB ID:	CR00000489
Funding/ Proposed Funding:	Name: Unfunded
Award ID:	None
Award Title:	
IND, IDE, or HDE:	None
Documents Reviewed:	
Review Category:	Expedited
Committee Name:	Not Applicable
IRB Coordinator:	Danielle Griffin

The IRB has granted continuing approval for this study from January 3, 2018 to January 2, 2019, inclusive.

To ensure continuous approval for studies with a review category of "Committee Review" in the above table, you must submit a continuing review with required explanations by the deadline for the December 2018 meeting. These deadlines may be found on the compliance website (http://www.uh.edu/research/compliance/). You can submit a continuing review by navigating to the active study and clicking "Create Modification/CR."

For expedited and exempt studies, a continuing review should be submitted no later than 30 days prior to study closure.

If continuing review approval is not granted on or before January 2, 2019, approval of this study expires and all research (including but not limited to recruitment, consent,

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study procedures, and analysis of identifiable data) must stop. If the study expires and you believe the welfare of the subjects to be at risk if research procedures are discontinued, please contact the IRB office immediately.

Unless a waiver has been granted by the IRB, use the stamped consent form approved by the IRB to document consent. The approved version may be downloaded from the documents tab.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system.

Sincerely,

Office of Research Policies, Compliance and Committees (ORPCC)
University of Houston, Division of Research
713 743 9204
cphs@central.uh.edu
http://www.uh.edu/research/compliance/irb-cphs/

U N I V E R S I T Y of
HOUSTON
A CARNEGIE-DESIGNATED TIER ONE
PUBLIC RESEARCH UNIVERSITY

Consent to Take Part in a Human Research Study

Title of research study: PARENT AND TEACHER PERCEPTIONS OF GIFTED

AFRICAN AMERICAN AND WHITE STUDENTS: IS THERE A DIFFERENCE?

Investigator: You are being invited to participate in a dissertation research project

conducted by Sonia Babu from the University of Houston under the supervision of Dr.

Jorge Gonzalez.

Why am I being invited to take part in a research study?

We invite you to take part in a research study because you are either the parent of an

African American elementary aged child, the parent of a White elementary aged child, or

an elementary grade level teacher.

What should I know about a research study?

Someone will explain this research study to you.

Whether or not you take part is up to you.

You can choose not to take part.

You can agree to take part and later change your mind.

Your decision will not be held against you.

You can ask all the questions you want before you decide.

Why is this research being done?

The purpose of this study is to explore the perceptions of giftedness among parents who have an African American or White child. This study will also explore teacher perceptions of gifted attributes for African American and White students and examine the likelihood specific gifted attributes are used in the nomination process.

How long will the research last?

We expect that you will be in this research study for 20-25 minutes.

How many people will be studied?

We expect to enroll about 244 people in this research study split between 2 phases. As a participant, you will not have to participate in both phases but can participate in either phase 1 or phase 2.

What happens if I say yes, I want to be in this research?

After reviewing this cover page and providing consent to participate, you will be asked to complete a demographic questionnaire. Afterwards, you will be asked to complete questions about gifted behaviors and enter in the chance to win a gift card.

What happens if I do not want to be in this research?

You can choose not to take part in the research and it will not be held against you. Choosing not to take part will involve no penalty or loss of benefit to which you are otherwise entitled.

What happens if I say yes, but I change my mind later?

You can leave the research at any time and it will not be held against you.

If you stop being in the research, already collected data may not be removed from the study record.

Is there any way being in this study could be bad for me?

There is very minimal risk associated with completing this study. Other than the possibility of becoming stressed when answering questions about yourself, there are no other foreseeable risks or discomforts.

Will I get anything for being in this study?

There is a direct incentive for participating in this study. After the completion of the survey, you will be invited to submit your email address for a gift card drawing for one out of ten $10 Amazon gift cards by following a provided link to a second electronic survey to provide anonymity. Therefore, researchers will have your email in order to contact you in case you have won a gift card. Your email will only be used to contact you for the gift card and will not be used for any other purpose.

What happens to the information collected for the research?

Your taking part in this project is anonymous, and information you provide cannot be linked to your identity. The results of this study may be published in professional and/or scientific journals. Results may also be used for educational purposes or for professional presentations without identifiable information. However, unless otherwise detailed in this document, we will keep your name and other identifying information confidential.

Who can I talk to?

If you have questions, concerns, or complaints, or think the research has hurt you, you should talk to the research team at sbabu4@uh.edu, 832-278-1208.

This research has been reviewed and approved by the University of Houston Institutional Review Board (IRB). You may also talk to them at (713) 743-9204 or cphs@central.uh.edu if:

Your questions, concerns, or complaints are not being answered by the research team.

You cannot reach the research team.

You want to talk to someone besides the research team.

You have questions about your rights as a research subject.

You want to get information or provide input about this research.

Please complete the Parent Consent questions if you are a parent of an African American or White child who is in elementary school. Please complete the Teacher Consent questions if you are an elementary school teacher.

Parent Consent:

I have read the content of this cover page and agree to participate in this study.

> Agree

> Disagree

I attest that my child is in elementary school (grades 1-5).

> Agree

> Disagree

I attest that I am a caregiver of a child who is of the African American or White cultural group.

> Agree

> Disagree

Please indicate child culture:

> White

> African American

Teacher Consent:

I have read the content of this cover page and agree to participate in this study.

Agree

Disagree

I attest that I am an elementary school teacher (grades 1-5).

Agree

Disagree

I attest that I am a teacher who is able to nominate a student for gifted education.

Agree

Disagree

Date:

* If a participant disagrees to any of the abovementioned questions, he/she will receive the automated message: "Thank you for your time. Unfortunately, you do not meet the necessary criteria to continue participating in this study."*

Appendix E

Demographic Questionnaires

Demographic Questionnaire- Parent

Directions for Parent Questionnaire: Please mark or enter the answers to the following demographic questions about yourself. Be honest; responses are anonymous. Thank you.

Parent Questions:

1. Your Race/Ethnicity?
   a. White
   b. African American
   c. Hispanic
   d. Asian
   e. Multi Racial/Ethnic: _____

2. Your Gender
   a. Male
   b. Female
   c. Other

3. Your Age
   a. 18-24
   b. 25-34
   c. 35-54
   d. 55+

4. Marital Status
   a. Married
   b. Partnered
   c. Divorced
   d. Widowed
   e. Separated
   f. Single

5. Highest level of education
   a. 12th grade or less
   b. Graduated high school or equivalent
   c. Some college
   d. College degree

  e. Postgraduate degree

6. Estimated combined annual household income

  a. Less than $25,000

  b. $25,000-$32,500

  c. $32,500 to $60,000

  d. $60,000 to $100,000

  e. $100,000 to $150,000

  f. $150,000 or more

7. How are you related to your child?

  a. Biological Mother

  b. Biological Father

  c. Adoptive Mother

  d. Adoptive Father

  e. Stepmother

  f. Stepfather

  g. Grandmother

  h. Grandfather

8. Have you been in gifted education before? If so, when?

  a. Open-ended response:

Directions for Child Questionnaire: Please mark or enter the answers to the following demographic questions about your child. Be honest; responses are anonymous. Thank you.

Child Questions

1. Child's Race/Ethnicity

  a. White

  b. African American

  c. Multi Racial/Ethnic: _____

2. Child Gender

  a. Male

  b. Female

3. Child Age

      a. Free Response:

4. Child Grade

      a. 1st grade

      b. 2nd grade

      c. 3rd grade

      d. 4th grade

      e. 5th grade

5. Which school district is your child currently in?

      a. Free Response:

6. Is your elementary age child currently in gifted education?

      a. Yes

      b. No

7. If you answered yes for question 6, please answer questions 7 and 8. Who nominated your child for gifted education?

      a. Parent

      b. Teacher

      c. Child

      d. Test score administered by your child's school/district

8. How was your child identified for the gifted education program? What criteria did he/she meet?

      a. Free Response:

Demographic Questionnaire - Teacher

Directions: Please mark or enter the answers to the following demographic questions about yourself. Be honest; responses are anonymous. Thank you.

1. Your Race/Ethnicity?
   a. Asian/Pacific Islander
   b. Black/African-American
   c. White
   d. Hispanic
   e. Native American/Alaska Native
   f. Other/Multi-Racial: _____
   g. Decline to Respond

2. Your Sex
   a. Male
   b. Female
   c. Other

3. Your Age
   a. 18-24
   b. 25-34
   c. 35-54
   d. 55+

4. Marital Status
   a. Married
   b. Partnered
   c. Divorced
   d. Widowed
   e. Separated
   f. Single

5. Highest level of education
   a. 12th grade or less
   b. Graduated high school or equivalent
   c. Some college

    d. College degree

    e. Postgraduate degree

6. Estimated combined annual household income

    a. Less than $25,000

    b. $25,000-$32,500

    c. $32,500 to $60,000

    d. $60,000 to $100,000

    e. $100,000 to $150,000

    f. $150,000 or more

7. Which school district are you currently a teacher in?

    a. Free Response:

8. What grade do you currently teach?

    a. 1st grade

    b. 2nd grade

    c. 3rd grade

    d. 4th grade

    e. 5th grade

9. How many years have you been teaching?

    a. 1-5 years

    b. 6-9 years

    c. 10+ years

10. What is the extent of your training in identifying/nominating giftedness?

    a. Free Response:

11. Have you nominated a student for gifted education in the past?

    a. Yes

    b. No

Appendix F

Phase I Study

Attributions of Giftedness Survey - Parent Pilot (African American)

Directions: Below are a series of phrases that describe a student's behavior

What is your level of agreement that the **African American** cultural group would

describe the following student characteristics as attributes of giftedness within a **gifted**

African American student?

Mark the number that describes your level of agreement/disagreement. Please use the

following ratings for each attribute:

 1- Strongly Disagree

 2- Disagree

 3- Do not disagree or agree /Neutral

 4- Agree

 5- Strongly Agree

For example, if you *Strongly Agree* that "is creative" is an attribute of giftedness that the

African American cultural group would use to describe a **gifted African American**

student, your response would look like:

	Level Of Agreement
According to the **African American** cultural group, a **gifted African American** student…	
1. Is creative	1 2 3 4 **5**

According to the **African American** cultural group, a **gifted African American** Student…

Level

Of

Agreement

1 2 3 4 5

1. Has a high IQ score
2. Is a high achiever in school
3. Has a good memory
4. Is good at painting
5. Has high athletic ability
6. Can maintain successful relationships
7. Is independent
8. Has good problem solving skills
9. Has good reasoning ability
10. Is a good listener
11. Is a high achiever in Reading
12. Is a high achiever in Math
13. Is instrumentally talented
14. Is good at story-telling
15. Has a good sense of humor
16. Is a good dancer
17. Is a high achiever in Science
18. Is good at giving advice
19. Likes to please others
20. Is a high achiever in History
21. Is patient
22. Is creative in lyric production
23. Is curious

24. Is inquisitive- asks questions

25. Is good at improvising

26. Is a high achiever in Writing

27. Has a large vocabulary

28. Is respectful

29. Helps others

30. Speaks English well

31. Has high self-motivation

32. Is good at singing

33. Is flexible

34. Is artistically talented

35. Can find many solutions to a problem

36. Has good visual/spatial ability

37. Likes to try new things

38. Is good at finding other uses for things

39. Is creative

40. Is insightful

41. Is good at drawing

42. Is good at a variety of things

43. Works well with others

44. Is well accepted by peers

45. Possesses leadership qualities

46. Is good at explaining things

47. Is self-aware

48. Is sensitive to feelings and needs of others

49. Is self-confident

50. Is empathetic

51. Is emotionally competent- able to successfully express emotions

52. Is crafty (good at handiwork)

53. Is good at reading behavioral cues

54. Has good body language

55. Can outwit others

56. Can form successful relationships

57. Is eager to learn

58. Has good practical skills

59. Thinks productively

60. Grasps concepts immediately

61. Wins competitions

Free Response:

1. Please list any items that you found confusing, inappropriate, and ambiguous, and offer any suggestions for improvement.

2. Please list up to five student characteristics that you feel the African American cultural group attributes to giftedness, but were not represented in the list.

Attributions of Giftedness Survey - Parent Pilot (White)

Directions: Below are a series of phrases that describe a student's behavior.

What is your level of agreement that the **White** cultural group would describe the

following student characteristics as attributes of giftedness within a **gifted**

White student?

Mark the number that describes your level of agreement/disagreement. Please use the

following ratings for each attribute:

 1- Strongly Disagree

 2- Disagree

 3- Do not disagree or agree/Neutral

 4- Agree

 5- Strongly Agree

For example, if you Strongly Agree that "is creative" is an attribute of giftedness that

the **White** cultural group would use to describe a **gifted White** student, your response

would look like:

Level
Of
Agreement
According to the White cultural group, a **gifted White** student…
1. Is creative 1 2 3 4 **5**

According to the White cultural group, a **gifted White** student…

Level

Of

Agreement

1 2 3 4 5

1. Has a high IQ score
2. Is a high achiever in school
3. Has a good memory
4. Is good at painting
5. Has high athletic ability
6. Can maintain successful relationships
7. Is independent
8. Has good problem solving skills
9. Has good reasoning ability
10. Is a good listener
11. Is a high achiever in Reading
12. Is a high achiever in Math
13. Is instrumentally talented
14. Is good at story-telling
15. Has a good sense of humor
16. Is a good dancer
17. Is a high achiever in Science
18. Is good at giving advice
19. Likes to please others
20. Is a high achiever in History
21. Is patient
22. Is creative in lyric production
23. Is curious

24. Is inquisitive- asks questions

25. Is good at improvising

26. Is a high achiever in Writing

27. Has a large vocabulary

28. Is respectful

29. Helps others

30. Speaks English well

31. Has high self-motivation

32. Is good at singing

33. Is flexible

34. Is artistically talented

35. Can find many solutions to a problem

36. Has good visual/spatial ability

37. Likes to try new things

38. Is good at finding other uses for things

39. Is creative

40. Is insightful

41. Is good at drawing

42. Is good at a variety of things

43. Works well with others

44. Is well accepted by peers

45. Possesses leadership qualities

46. Is good at explaining things

47. Is self-aware

48. Is sensitive to feelings and needs of others

49. Is self-confident

50. Is empathetic

51. Is emotionally competent- able to successfully express emotions

52. Is crafty (good at handiwork)

53. Is good at reading behavioral cues

54. Has good body language

55. Can outwit others

56. Can form successful relationships

57. Is eager to learn

58. Has good practical skills

59. Thinks productively

60. Grasps concepts immediately

61. Wins competitions

Free Response:

1. Please list any items that you found confusing, inappropriate, and ambiguous, and offer any suggestions for improvement.

2. Please list up to five student characteristics that you feel the White cultural group attributes to giftedness, but were not represented in the list.

Attributions of Giftedness Survey - Teacher Pilot (African American)

Directions: Below are a series of phrases that describe a student's behavior. Please provide 2 ratings for each item.

First, think about the **African American** cultural group. Mark the number describing

your level of agreement that the **African American** cultural group would describe the

following student characteristics as attributes of giftedness within a **gifted African**

American student.

1- Strongly Disagree

2- Disagree

3- Do not disagree or agree/Neutral

4- Agree

5- Strongly Agree

Second, think about your school's nomination process for gifted students. What is the

likelihood you use the following attribute when nominating an **African**

American student for gifted education?

1- Never

2- Seldom

3- Sometimes

4- Often

5- Always

For example, if you *Strongly Agree* that "is creative" is an attribute of giftedness that

African Americans would use to describe a **gifted African American** student, and that

you *Seldom* use "is creative" when nominating an **African American** student for gifted

education, your response would look as such:

	Level Of Agreement	Likelihood this Attribute is used in Nomination
1. Is creative	1 2 3 4 **<u>5</u>**	1 **<u>2</u>** 3 4 5

	Level Of Agreement 1 2 3 4 5	Likelihood this Attribute is used in Nomination 1 2 3 4 5

1. Has a high IQ score
2. Is a high achiever in school
3. Has a good memory
4. Is good at painting
5. Has high athletic ability
6. Can maintain successful relationships
7. Is independent
8. Has good problem solving skills
9. Has good reasoning ability
10. Is a good listener
11. Is a high achiever in Reading
12. Is a high achiever in Math
13. Is instrumentally talented
14. Is good at story-telling
15. Has a good sense of humor

16. Is a good dancer

17. Is a high achiever in Science

18. Is good at giving advice

19. Likes to please others

20. Is a high achiever in History

21. Is patient

22. Is creative in lyric production

23. Is curious

24. Is inquisitive- asks questions

25. Is good at improvising

26. Is a high achiever in Writing

27. Has a large vocabulary

28. Is respectful

29. Helps others

30. Speaks English well

31. Has high self-motivation

32. Is good at singing

33. Is flexible

34. Is artistically talented

35. Can find many solutions to a problem

36. Has good visual/spatial ability

37. Likes to try new things

38. Is good at finding other uses for things

39. Is creative

40. Is insightful

41. Is good at drawing

42. Is good at a variety of things

43. Works well with others

44. Is well accepted by peers

45. Possesses leadership qualities

46. Is good at explaining things

47. Is self-aware

48. Is sensitive to feelings and needs of others

49. Is self-confident

50. Is empathetic

51. Is emotionally competent- able to successfully express emotions

52. Is crafty (good at handiwork)

53. Is good at reading behavioral cues

54. Has good body language

55. Can outwit others

56. Can form successful relationships

57. Is eager to learn

58. Has good practical skills

59. Thinks productively

60. Grasps concepts immediately

61. Wins competitions

Free Response:

1. Please list any items that you found confusing, inappropriate, and ambiguous, and offer any suggestions for improvement.

2. Please list up to five student characteristics that you feel the African American cultural group attributes to giftedness, but were not represented in the list.

3. Please list up to five student characteristics that you feel are used in your school's gifted nomination process but were not included in the list.

Attributions of Giftedness Survey - Teacher Pilot (Whites)

Directions: Below are a series of phrases that describe a student's behavior. Please provide 2 ratings for each item.

First, think about the **White** cultural group. Mark the number describing your level of agreement that the **White** cultural group would describe the following student characteristics as attributes of giftedness within a **gifted White** student.

1- Strongly Disagree

2- Disagree

3- Do not disagree or agree/Neutral

4- Agree

5- Strongly Agree

Second, think about your school's nomination process for gifted students. What is the likelihood you use the following attribute when nominating a **White** student for gifted education?

1- Never

2- Seldom

3- Sometimes

4- Often

5- Always

For example, if you Strongly Agree that "is creative" is an attribute of giftedness that **Whites** would use to describe a **gifted White** student, and that you Seldom use "is

creative" when nominating a **White** student for gifted education, your response would

look as such:

	Level Of Agreement	Likelihood this Attribute is used in Nomination
1. Is creative	1 2 3 4 **5**	1 **2** 3 4 5

	Level Of Agreement 1 2 3 4 5	Likelihood this Attribute is used in Nomination 1 2 3 4 5

1. Has a high IQ score
2. Is a high achiever in school
3. Has a good memory
4. Is good at painting
5. Has high athletic ability
6. Can maintain successful relationships
7. Is independent
8. Has good problem solving skills
9. Has good reasoning ability
10. Is a good listener
11. Is a high achiever in Reading
12. Is a high achiever in Math
13. Is instrumentally talented

14. Is good at story-telling

15. Has a good sense of humor

16. Is a good dancer

17. Is a high achiever in Science

18. Is good at giving advice

19. Likes to please others

20. Is a high achiever in History

21. Is patient

22. Is creative in lyric production

23. Is curious

24. Is inquisitive- asks questions

25. Is good at improvising

26. Is a high achiever in Writing

27. Has a large vocabulary

28. Is respectful

29. Helps others

30. Speaks English well

31. Has high self-motivation

32. Is good at singing

33. Is flexible

34. Is artistically talented

35. Can find many solutions to a problem

36. Has good visual/spatial ability

37. Likes to try new things

38. Is good at finding other uses for things

39. Is creative

40. Is insightful

41. Is good at drawing

42. Is good at a variety of things

43. Works well with others

44. Is well accepted by peers

45. Possesses leadership qualities

46. Is good at explaining things

47. Is self-aware

48. Is sensitive to feelings and needs of others

49. Is self-confident

50. Is empathetic

51. Is emotionally competent- able to successfully express emotions

52. Is crafty (good at handiwork)

53. Is good at reading behavioral cues

54. Has good body language

55. Can outwit others

56. Can form successful relationships

57. Is eager to learn

58. Has good practical skills

59. Thinks productively

60. Grasps concepts immediately

61. Wins competitions

Free Response:

1. Please list any items that you found confusing, inappropriate, and ambiguous, and offer any suggestions for improvement.

2. Please list up to five student characteristics that you feel the White cultural group attributes to giftedness, but were not represented in the list.

3. Please list up to five student characteristics that you feel are used in your school's gifted nomination process but were not included in the list.

Appendix G

Phase II Study Surveys

Attributions of Giftedness Survey - Parent (African American)

Directions: Below are a series of phrases that describe a student's behavior.

What is your level of agreement that the **African American** cultural group would describe the following student characteristics as attributes of giftedness within a **gifted African American** student?

Mark the number that describes your level of agreement/disagreement. Please use the following ratings for each attribute:

 1- Strongly Disagree

 2- Disagree

 3- Do not disagree or agree/Neutral

 4- Agree

 5- Strongly Agree

For example, if you Strongly Agree that "is creative" is an attribute of giftedness that the **African American** cultural group would use to describe a **gifted African American** student, your response would look like:

	Level
	Of
	Agreement
According to the **African American** cultural group, a **gifted African American** student…	
1. Is creative	1 2 3 4 **5**

According to the **African American** cultural group, a **gifted African American** student…

Level

Of

Agreement

1 2 3 4 5

1. Has a high IQ score
2. Has a good memory
3. Has high athletic ability
4. Can maintain successful relationships
5. Is independent
6. Has good reasoning ability
7. Is a high achiever in Reading
8. Is instrumentally talented
9. Has a good sense of humor
10. Is a high achiever in History
11. Is a high achiever in Writing
12. Has a large vocabulary
13. Is respectful
14. Helps others
15. Speaks English well
16. Has high self-motivation
17. Is good at singing
18. Is flexible
19. Is artistically talented
20. Has good visual/spatial ability
21. Likes to try new things
22. Works well with others
23. Possesses leadership qualities
24. Is self-aware
25. Is sensitive to feelings and needs of others
26. Is empathetic
27. Is emotionally competent- able to successfully express emotions
28. Is crafty (good at handiwork)
29. Is good at reading behavioral cues
30. Can outwit others
31. Can form successful relationships

32. Is eager to learn
33. Has good practical skills
34. Thinks productively
35. Grasps concepts immediately

36. Wins competitions

Free Response:

1. Please list up to five student characteristics that you feel the African American cultural group attributes to giftedness, but were not represented in the list.

Attributions of Giftedness Survey - Parent (White)

Directions: Below are a series of phrases that describe a student's behavior.

What is your level of agreement that the **White** cultural group would describe the

following student characteristics as attributes of giftedness within a **gifted**

White student?

Mark the number that describes your level of agreement/disagreement. Please use the

following ratings for each attribute:

1- Strongly Disagree

2- Disagree

3- Do not disagree or agree/Neutral

4- Agree

5- Strongly Agree

For example, if you Strongly Agree that "is creative" is an attribute of giftedness that

the **White** cultural group would use to describe a **gifted White** student, your response

would look like:

Level
Of
Agreement
According to the White cultural group, a **gifted White** student…
1. Is creative   1 2 3 4 **5**

According to the White cultural group, a **gifted White** student…

Level

Of

Agreement

1 2 3 4 5

1. Has a high IQ score
2. Has a good memory
3. Has high athletic ability
4. Can maintain successful relationships
5. Is independent
6. Has good reasoning ability
7. Is a high achiever in Reading
8. Is instrumentally talented
9. Has a good sense of humor
10. Is a high achiever in History
11. Is a high achiever in Writing
12. Has a large vocabulary
13. Is respectful
14. Helps others
15. Speaks English well
16. Has high self-motivation
17. Is good at singing
18. Is flexible
19. Is artistically talented
20. Has good visual/spatial ability
21. Likes to try new things
22. Works well with others
23. Possesses leadership qualities
24. Is self-aware
25. Is sensitive to feelings and needs of others

26. Is empathetic

27. Is emotionally competent- able to successfully express emotions

28. Is crafty (good at handiwork)

29. Is good at reading behavioral cues

30. Can outwit others

31. Can form successful relationships

32. Is eager to learn

33. Has good practical skills

34. Thinks productively

35. Grasps concepts immediately

36. Wins competitions

Free Response:

1. Please list up to five student characteristics that you feel the White cultural group attributes to giftedness, but were not represented in the list.

Attributions of Giftedness Survey - Teacher (African American)

Directions: Below are a series of phrases that describe a student's behavior. Please provide 2 ratings for each item.

First, think about the **African American** cultural group. Mark the number describing your level of agreement that the **African American** cultural group would describe the following student characteristics as attributes of giftedness within a **gifted African American** student.

1- Strongly Disagree

2- Disagree

3- Do not disagree or agree/Neutral

4- Agree

5- Strongly Agree

Second, think about your school's nomination process for gifted students. What is the likelihood you use the following attribute when nominating an **African American** student for gifted education?

1- Never

2- Seldom

3- Sometimes

4- Often

5- Always

For example, if you Strongly Agree that "is creative" is an attribute of giftedness that **African Americans** would use to describe a **gifted African American** student, and that

you Seldom use "is creative" when nominating an **African American** student for gifted education, your response would look as such:

	Level Of Agreement	Likelihood this Attribute is used in Nomination
1. Is creative	1 2 3 4 **5**	1 **2** 3 4 5

	Level Of Agreement	Likelihood this Attribute is used in Nomination
	1 2 3 4 5	1 2 3 4 5

1. Has a high IQ score
2. Has a good memory
3. Has high athletic ability
4. Can maintain successful relationships
5. Is independent
6. Has good reasoning ability
7. Is a high achiever in Reading
8. Is instrumentally talented
9. Has a good sense of humor
10. Is a high achiever in History

11. Is a high achiever in Writing

12. Has a large vocabulary

13. Is respectful

14. Helps others

15. Speaks English well

16. Has high self-motivation

17. Is good at singing

18. Is flexible

19. Is artistically talented

20. Has good visual/spatial ability

21. Likes to try new things

22. Works well with others

23. Possesses leadership qualities

24. Is self-aware

25. Is sensitive to feelings and needs of others

26. Is empathetic

27. Is emotionally competent- able to successfully express emotions

28. Is crafty (good at handiwork)

29. Is good at reading behavioral cues

30. Can outwit others

31. Can form successful relationships

32. Is eager to learn

33. Has good practical skills

34. Thinks productively

35. Grasps concepts immediately

36. Wins competitions

Free Response:

1. Please list up to five student characteristics that you feel the African American cultural group attributes to giftedness, but were not represented in the list.

2. Please list up to five student characteristics that you feel are used in your school's gifted nomination process but were not included in the list.

Attributions of Giftedness Survey - Teacher (White)

Directions: Below are a series of phrases that describe a student's behavior. Please provide 2 ratings for each item.

First, think about the **White** cultural group. Mark the number describing your level of agreement that the **White** cultural group would describe the following student characteristics as attributes of giftedness within a **gifted White** student.

1- Strongly Disagree

2- Disagree

3- Do not disagree or agree/Neutral

4- Agree

5- Strongly Agree

Second, think about your school's nomination process for gifted students. What is the likelihood you use the following attribute when nominating a **White** student for gifted education?

1- Never

2- Seldom

3- Sometimes

4- Often

5- Always

For example, if you Strongly Agree that "is creative" is an attribute of giftedness that **Whites** would use to describe a **gifted White** student, and that you Seldom use "is creative" when nominating a **White** student for gifted education, your response would look as such:

	Level Of Agreement	Likelihood this Attribute is used in Nomination
1. Is creative	1 2 3 4 **5**	1 **2** 3 4 5

	Level Of Agreement	Likelihood this Attribute is used in Nomination
	1 2 3 4 5	1 2 3 4 5

1. Has a high IQ score
2. Has a good memory
3. Has high athletic ability
4. Can maintain successful relationships
5. Is independent
6. Has good reasoning ability
7. Is a high achiever in Reading
8. Is instrumentally talented
9. Has a good sense of humor
10. Is a high achiever in History
11. Is a high achiever in Writing
12. Has a large vocabulary
13. Is respectful
14. Helps others
15. Speaks English well

16. Has high self-motivation

17. Is good at singing

18. Is flexible

19. Is artistically talented

20. Has good visual/spatial ability

21. Likes to try new things

22. Works well with others

23. Possesses leadership qualities

24. Is self-aware

25. Is sensitive to feelings and needs of others

26. Is empathetic

27. Is emotionally competent- able to successfully express emotions

28. Is crafty (good at handiwork)

29. Is good at reading behavioral cues

30. Can outwit others

31. Can form successful relationships

32. Is eager to learn

33. Has good practical skills

34. Thinks productively

35. Grasps concepts immediately

36. Wins competitions

Free Response:

1. Please list up to five student characteristics that you feel the White cultural group attributes to giftedness, but were not represented in the list.

2. Please list up to five student characteristics that you feel are used in your school's gifted nomination process but were not included in the list.

Gift Card Survey

Thank you for participating in the study. If you would like to enter for the chance to win one of ten $10 Amazon gift cards, please provide your email address below. Your email address will not be connected to your survey responses. Gift cards will be distributed after survey responses from all study participants have been collected.

Please provide your email address

Appendix H

Subscales for the Attributions of Giftedness Survey

Cognitive Characteristics = 6

1. Has a high IQ score

2. Has a good memory

3. Has good visual/spatial ability

4. Has good reasoning ability

5. Grasps concepts immediately

6. Thinks productively

Academic Characteristics = 6

1. Is a high achiever in Reading

2. Is a high achiever in History

3. Is a high achiever in Writing

4. Has a large vocabulary

5. Speaks English well

6. Is eager to learn

Creative Performance = 5

1. Is good at singing

2. Is instrumentally talented

3. Is artistically talented

4. Has high athletic ability

5. Wins competitions

Originality = 6

1. Is independent

2. Likes to try new things

3. Has a good sense of humor

4. Can outwit others

5. Is crafty (good at handiwork)

6. Has good practical skills

Social Skills = 6

1. Works well with others

2. Possesses leadership qualities

3. Is good at reading behavioral cues

4. Can form successful relationships

5. Can maintain successful relationships

6. Helps others

Intrapersonal/Interpersonal Skills = 7

1. Is self-aware

2. Is sensitive to feelings and needs of others

3. Is respectful

4. Is empathetic

5. Is emotionally competent- ability to successfully express emotions

6. Has high self-motivation

7. Is flexible

Appendix I

Definition of Terms

The following definitions provide uniformity and understanding of these terms throughout the document.

Black or African American: A racial group in which a person has origins in any of the Black racial groups of Africa (Office of Management and Budget, 2015; U.S. Census Bureau, 2000). This also includes "entries such as African American, Afro-American, Black Puerto Rican, Jamaican, Nigerian, West Indian, or Haitian" (National Center for Education Statistics, 2006, Race section).

Culture: "The characteristics of a person that are developed through formal and informal experiences, knowledge, disposition, skills, and ways of knowing and understanding that are informed by race, ethnicity, identity, class, sexuality, and gender" (Milner & Ford, 2007, p. 168).

Hispanic or Latino: An ethnic group that includes a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race (Office of Management and Budget, 2015).

White: A racial group in which a person has origins in any of the original peoples of Europe, the Middle East, or North African and includes non-Hispanic White (Office of Management and Budget, 2015; U.S. Census Bureau, 2000). This also includes "entries such as Canadian, German, Italian, Lebanese, Near-Easterner, Arab, or Polish" (National Center for Education Statistics, 2006, Race section). Alternative forms of identify for this group include Caucasian (Moon & Brighton, 2008), Anglo (Masten & Plata, 2010), and European American (Elhoweris et al., 2005).

Appendix J

List of Tables

Appendix K

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