Investigating the Relationship Between Teacher Training and Referral of African American and Hispanic Students for Gifted Programs

by
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Approval Page

This dissertation was submitted by Malcolm J. Gillard under the direction of the persons listed below. It was submitted to the Abraham S. Fischler College of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

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Abstract

Investigating the Relationship Between Teacher Training and Referring African American and Hispanic Students for Gifted Programs. Gillard, Malcolm J., 2017 Applied Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education. Keywords: gifted education, gifted students, diversity, professional development, gifted training, underrepresentation

The objective of this study was to explore the relationship between the representation of African American and Hispanic students in gifted education programs, professional development and teacher training in gifted education, and teacher referral of these students to gifted programs. Administrators, general education teachers, and gifted education specialists from both Title I and non-Title I elementary schools were surveyed in the school district in the study. Because African American and Hispanic students from low-socioeconomic background make up the majority of the demographic underrepresented in gifted education, the focus of the research was to determine whether the school district provided adequate and effective professional development and teacher training in cultural diversity and gifted education. The outcome variable, teacher willingness to share professional, personal, and educational experiences on cultural diversity and gifted education, was measured by an instrument adapted by the researcher based on an instrument developed by Morote and Tatum (2005) and the Park City School District Gifted and Talented Program Evaluation survey developed by Shepherd in 2005.

This mixed-methods study included an examination of the relationship between teacher perception of African American and Hispanic students in gifted education programs and professional development and teacher training in cultural diversity and gifted education. The research design included data from two different sources: numerical data of courses being offered for licensed educators in the school district and an anonymous online survey that included an open- and close-ended questionnaire based on participants' professional, personal, and educational background.

During an evaluation of the data results, it was revealed that elementary school educators' perceptions about gifted education programs negatively impacted the teacher referral rate for African American and Hispanic students to gifted education programs. In addition to the data results and the research study, the lack of professional development and teacher training in gifted education contributed to the underrepresentation of these students in gifted education programs in the school district.

Acknowledgement

First and foremost, I give honor to my Lord and Savior, Jesus Christ, through Him all things are possible.

To my spouse, Daniel, thank you for being my rock and believing in me when I didn't believe in myself. Without your love and endless support I would have not been able to complete this project.

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A sincere thank you to the organization in which this research was made possible. My hope is that the results of this research will create dialogue and collaboration amongst administrators, teachers, gifted education specialists on solutions to correct the underrepresentation of African American and Hispanic students in gifted education programs.

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Chapter 1: Introduction

Professional development and teacher training was considered major contributors to teacher knowledge, preparation, and student performance (Michael-Chadwell, 2010). Many school districts across Northern America provided professional development and teacher training; many of the courses were mandatory in order to renew teaching licenses; however, provisions are allowed based on each licensed teacher. As an example, a teacher pursuing a gifted and education endorsement had to teach gifted classes prior to receiving an endorsement in gifted education in 2010 in this school district. Professional development was also viewed as a standard practice to improve teaching practices, collaboration, and strategic planning of teachers (Salend, 2008; Sobel, Gutierrez, Zion, & Blanchett, 2011; Wiggins & McTighe, 2006). Researchers maintained that the indicators of success were teachers effectively implementing the knowledge, skills, and policies learned in professional development and teacher training programs (Leu & Ginsburg, 2011).

Teachers with professional development and teacher training in gifted education were better prepared to identify and helped meet the educational needs of students identified as gifted than teachers who had not received training (Robinson, Shore, & Enersen, 2007). Professional development and teacher training in gifted education could impact teacher knowledge in identifying gifted characteristics, recommendations to gifted programs, and the representation of African American and Hispanic students in gifted programs (Szymanski & Shaff, 2013).

While there was a great deal of empirical data focusing on the representation of

African American and Hispanic students from low-socioeconomic status (SES) backgrounds in gifted education programs, there was a general absence of research in how professional development and teacher training affected the representation of the overall student population in gifted programs. A large percentage of preservice and veteran teachers had minimal or no professional development or teacher training in gifted education (Pierce et al., 2006; Szymanski & Shaff, 2013). Gifted specialists maintained that the inability to identify the gifted characteristics in students could be a factor in the disproportion and representation of African American and Hispanic students in gifted education programs, according to the 2010 school district records. Gifted education programs began with the need to identify students who were academically high-achieving in general education classrooms (National Association for Gifted Children [NAGC], 2008a). Riedl Cross (2013) stated that gifted and talented students were being underserved in general education classrooms. Some of these students mastered above grade-level curriculum standards, which resulted in "boredom, unmotivated, and unchallenged" (p. 116).

Based on state-mandated test reporting for the fifth largest school district in the southwest region of the United States, school performance for the 2013-2014 school year decreased from the previous school year, according to the 2014 school district records. Many educators believe that the No Child Left Behind (NCLB) legislation intentions were to leave no child behind; however, the federal educational policy created a movement within school districts to solely focus on students who were failing state-mandated tests, which inadvertently led to students identified as gifted being left behind

(Krieg, 2011). The goal of the gifted education department in the fifth largest school district in the southwest region of the United States was to provide all gifted students with a higher level and challenging curriculum that could help them reach their full educational potential.

The gifted education program included 124 gifted and talented education (GATE) specialists, and the majority of gifted specialists provided services for two or more schools, according to the 2014 school district records. Gifted education programs were provided to students identified as gifted and talented to develop and increase strategies in higher level and critical-thinking skills, according to the 2012 school district records. The curriculum for the GATE programs for the school district is intended for gifted specialists to create, modify, and intensify lessons that promote the depth of knowledge, according to the 2013 school district records.

The gifted program included 150 minutes of instruction beyond assigned grade levels to qualifying students in Grades 3, 4, and 5. According to the 2013 school district records,

> Students are eligible with test scores at or above the 98th percentile on the Naglieri Nonverbal Abilities Test (NNAT), Second Edition or the Kaufman Brief Intelligence Test (KBIT), Second Edition. Tests are administered by the GATE specialist assigned to the student's home school.

Student scoring below the 98th percentile were identified as a gifted learner with a matrix score of 12 or above. According to Pereira and Gentry (2013), elementary, general education, classroom teachers spent the majority of the day with students; therefore, these

teachers provided information regarding academic performance and specific characteristics of the students. Based on the academic and social needs of gifted students, the school district gifted program director suggested that all eligible grade-level teachers had to create an environment conducive to increasing gifted students' higher level and critical thinking skills, metacognition, and life-skills abilities in both gifted and general education classrooms, according to the 2011 records of this school district. Trained, general education, classroom teachers in gifted education were more likely to identify and assist gifted students in reaching their highest potential as gifted learners.

Problem Statement

The problem was an underrepresentation of African American and Hispanic students in gifted education programs in the fifth largest school district in the southwest region of the United States. Ideally, the proportion of these students in the gifted program should increase with the increase of their population in the schools. The investigation of this study in this school district was intended to examine the factors of the underrepresentation of African American and Hispanic students in gifted education. The population of African American and Hispanic students in the district continued to increase yearly and had become the largest group of all races; however, the disproportion and underrepresentation of these groups continued to be a problem within the school district gifted education program department (see Tables 1 and 2).

Table 1

Factors, Items, and Reliabilities

Factors	Items	*n*

Cultural diversity	1 2 3 4 13 15 16 24 27	3,373
Professional development	5 11 14 18 19 20 21 22 25 26	3,576
School climate	6 7 8 9 10 12 17 23 28 29 30	3,935

The underrepresentation of these groups could have a variety of measures, including SES, teacher perception, behavior (Hopkins & Garrett, 2010), grades, standardized test scores, and achievement comparisons (Olszweski-Kubilius & Thompson, 2010) with other racial groups. Michael-Chadwell (2010) maintained that the determining factors of the underrepresentation of African American and Hispanic students in gifted programs were ethnicity, achievement ability, lack of parental awareness of gifted programs, and lack of professional development and teacher training in gifted education. Burney and Beilke (2008) stated, “The field of education has long sought to identify more students from traditionally underrepresented populations for high-ability services” (p. 295) to gifted education programs.

Table 2

Factor 1: Cultural Diversity

Item	Cultural diversity	Factor loadings
1	I grew up in a culturally diverse neighborhood.	50.13
2	I attended schools that were culturally diverse.	50.77
3	I would consider myself knowledgeable about the cultures of other ethnicities.	93.61
4	Cultural diversity training is important as an educator.	94.69
13	The organizational culture of my school fosters positive interaction among various ethnic and cultural groups.	86.31

15	Training in gifted education is important as an educator.	93.29
16	Gifted and talented students require specialized services.	90.47
24	My administrators are supportive of the gifted program at my school.	89.66
27	It is important that all students learn about cultural diversity and tolerance.	98.32

The underrepresentation of African American and Hispanic students in gifted programs had been an issue for decades (Ford, 2012, 2013; Kendrick, 2012; King, Kozleski, & Lansdowne, 2009; Miller, 2009; Olszewski-Kubilius & Thompson, 2010). U.S. Department of Education (DOE, 2012a) in its data report included that, on a national level, school districts offering GATE programs included the following: 49% White students, 25% Hispanic, 19% African American, 5% Asian Pacific Islander, and 2% American Indian. The proportion of students identified and enrolled in GATE programs was 62% White, 16% Hispanic, 10% African American, 10% Asian Pacific Islander, and 2% American Indian. Giessman, Gambrell, and Stebbins (2013) maintained that the disproportion of certain groups could be considered as "chronic underrepresentation" (p. 101): This trend could continue to separate students of different socioeconomic classes (Codrington & Fairchild, 2012).

Background and Justification

Elementary school teachers were the primary source for identifying and recommending potentially gifted students to gifted programs (Blair, 2011; Carman, 2011; Siegle, Moore, Mann, & Wilson, 2010). Day-to-day interaction with students could help teachers develop and understand which students were academically high achievers, underachievers, below grade level, above grade, and average (Moon & Brighton, 2008).

Teachers unfamiliar with recognizing gifted characteristics could be confused or overlook a potentially gifted student as an average student or might depend on personal experiences and generalizations of gifted characteristics (NAGC, 2011a, 2014). Subsequently, untrained teachers' inability to identify gifted characteristics could prevent teachers from referring students to gifted programs. School administrators who endorsed gifted specialists meeting with general education, classroom teachers could be aware of the underrepresentation of culturally diverse students in gifted education programs at their schools. The meeting between gifted education specialists and general education classroom teachers could be considered an informational meeting and unsupported as a means to an endorsement for teacher licensure. The meeting might include information about the referral process, identifying gifted students, and differentiating and modifying curriculum to meet the needs of gifted students.

Gifted Education Program

Gifted programs had been synonymous with students who were deemed academically high achieving and even referred to as "geniuses" by their teachers. According to the NAGC (2010), "gifted individuals are those 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 rarer) in one or more domains" (para. 4). Gifted education programs were designed to create an enriched educational environment for all students ranging from high levels of academic achievement to underachievement and low proficiency; however, high aptitudes, self-perception, high potential, and low motivation (McCoach & Siegle, 2007; Reis & Siegle,

2007) could be a gifted characteristic factor based on intelligence scores of the student (Hoagies, 2014). Although gifted education programs increased their overall student population, the underrepresentation of culturally diverse students in these programs remained a growing concern (Lovett, 2011).

The history of gifted education programs influenced and impacted students of all racial backgrounds. Research was documented that gifted programs had an overrepresentation of White students and underrepresentation of minority students. Gifted programs had always been synonymous with students who were deemed academically high achieving, which could be viewed as a prerequisite to mainstream culture, educational value, two-parent, middle- to upper-class families (Franklin, 2007). However, the representation of minority students in gifted education programs had been a concern since its inception. The NAGC (2008b) stated that gifted students demonstrated a high level of intellect, creativity, artistic ability, and could be advanced in one or more areas academically. In addition, according to NAGC (n.d.a), gifted students showed evidence of "outstanding levels of aptitude (defined as an exceptional ability to reason and learn) or competence" (para. 40). Overall, gifted education programs were for students that demonstrated intelligibility beyond that of their age group. According to Curby, Rudasill, Rimm-Kaufman, and Konold (2008), gifted programs provided services for students identified with intellectual giftedness. There were many variations in identifying a gifted student (Palmer, 2006).

Gifted Learners

Gifted learners possessed higher levels of intelligence than children of the same

age group (Page, 2010). The cognitive ability of gifted learners included independent learning, problem solving, creative or divergent thinking, critical thinking, communication, and research inquiry. Gifted learners could have affective abilities, which include intrapersonal skills and interpersonal skills, according to the 2014 school district records. According to NAGC (2008c), "It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction or be referred for further assessment and services" (para. 1). Educational opportunities fared differently for non-affluent schools than for affluent schools. Due to the academic achievement gap between low-SES and middle- to high-SES backgrounds, students attending schools identified as low-income schools could qualify for gifted services or Title I Alternative Gifted Services, according to the school district records.

TAGS

In 1965, the federal government created the Title I Act. Title I Act was a federal education law providing funding for elementary and secondary schools that had a high percentage of students from low-socioeconomic families (U.S. DOE, Office of Elementary and Secondary Education, Office of State Support, 2015). Federally funded programs were designed to ensure all children had a fair and equal opportunity to receive a high-quality education (U.S. DOE, 2011) and helped students meet proficiency on state standardized tests. Government-funded Title I schools promoted opportunities for elementary school students in Grades 3, 4, and 5 due to SES or background. Students attending Title I schools had an opportunity to become eligible for advanced programming. Overall, according to the school district records, "Title I is intended to help

close the gap in academic achievement between students in different ethnic and income groups."

In order to close the achievement gap between race and socioeconomic classes, qualifications for students attending Title I schools differed from students attending non-Title I schools. According to the school district records, students attending a Title I school "who score from the 90th through the 97th percentile on either the NNAT, Second Edition or the KBIT, Second Edition are provided 50 minutes of differentiated activities each week." Students scoring below a 90 percentile or receiving a matrix score of 11 or below did not meet the criteria to receive TAGS. All testing was given by licensed gifted specialists. General education classroom teachers who recognized gifted characteristics of a student could complete the GATE program referral and teacher rating scale forms.

Gifted Education Program Referral Process

Traditionally, the gifted referral process began with third-, fourth-, and fifth-grade general education classroom teachers. According to NAGC (2008c), in the fifth largest school district in the southwest region of the United States, teachers who observed students that "demonstrate outstanding levels of aptitude or competence in one or more domains" (para. 4) could refer students to gifted education programs. The referring teacher evaluated the student's academic and social skills and evaluated the student's affective and cognitive domains, according to the records of the school district. In addition, the referring teacher wrote a brief summary and description on why the student could be considered for testing for the gifted program. The forms were forwarded to the GATE specialist. The assigned school GATE specialist sent home a permit form

authorizing the testing of the student. Once the authorization form was signed by a parent or guardian and returned, the student was administered the nonverbal ability and verbal tests.

The nonverbal test measured the student's cognitive ability, which evaluated and indicated their strengths and weaknesses in general problem-solving and reasoning ability. The assessment included pattern completion, reasoning of analogy, serial reasoning, and spatial visualization (Naglieri, 2015). According to Pierson, Kilmer, Rothlisberg, and McIntosh (2012), students were also screened by using the KBIT, which consisted of a three-part subtest that included "two verbal (verbal knowledge and riddles) and one nonverbal subtest (matrices)" (p. 13). Maccow (2011) reported the KBIT measured student knowledge of word meaning: "verbal concept formation, reasoning ability, and range of general information" (p. 11). Based on the percentile score of each student screened, a qualifying letter was mailed to the home of the student. The letter included the student's scores and a normal distribution (bell curve) graph to help parents understand statistically where the students' intelligence ability ranged in the general population of students of the same age group (Beatty, 2013). Students were GATE eligible if they scored at or above the 98th percentile on either NNAT, Second Edition or the KBIT, Second Edition. Students receiving 97th percentile or below were eligible with qualifying scores and a matrix of 12, according to the 2013 records of this school district. Students receiving low scores and a matrix of 11 or below were ineligible for gifted services. Upon receipt of an eligibility form with parent signature, the student began to receive GATE services. The representation of African American and Hispanic students in

gifted education programs could be disproportioned based on the ethnic distribution representation data of these students in the fifth largest school district in the southwest region of the United States.

GATE Ethnic Distribution

The school district's operation of 356 schools had a total student enrollment of 320,400 for the 2015-2016 school year. The total number of elementary schools was 217 and the total number of enrolled students eligible for gifted services was 73,040. The GATE programs serviced 8,477 students in 212 elementary schools throughout the district. Figure 1 included a representation of the total percentage of students eligible for testing for GATE in Grades 3, 4, and 5. Figure 2 included a representation of the total percentage of students identified as gifted for the school years from 2011 to 2016 for the school district in the southwest region of the United States, according to the records of the school district.

The school years 2011-2016 suggested that the ethnic distribution and representation of culturally diverse students in gifted education programs could be disproportioned. TAGS could have more underrepresented culturally diverse students in the school district.

TAGS Ethnic Distribution

The TAGS program included services for qualifying students at Title I schools. The federally funded program promoted improvement of the academic achievement for economically disadvantaged students.

The program had a purpose to ensure all children had an equal and fair

opportunity to a high-quality education. Schools that were eligible for Title I were required to have 40% or more enrollment of students from low-income families (U.S. DOE, 2014).

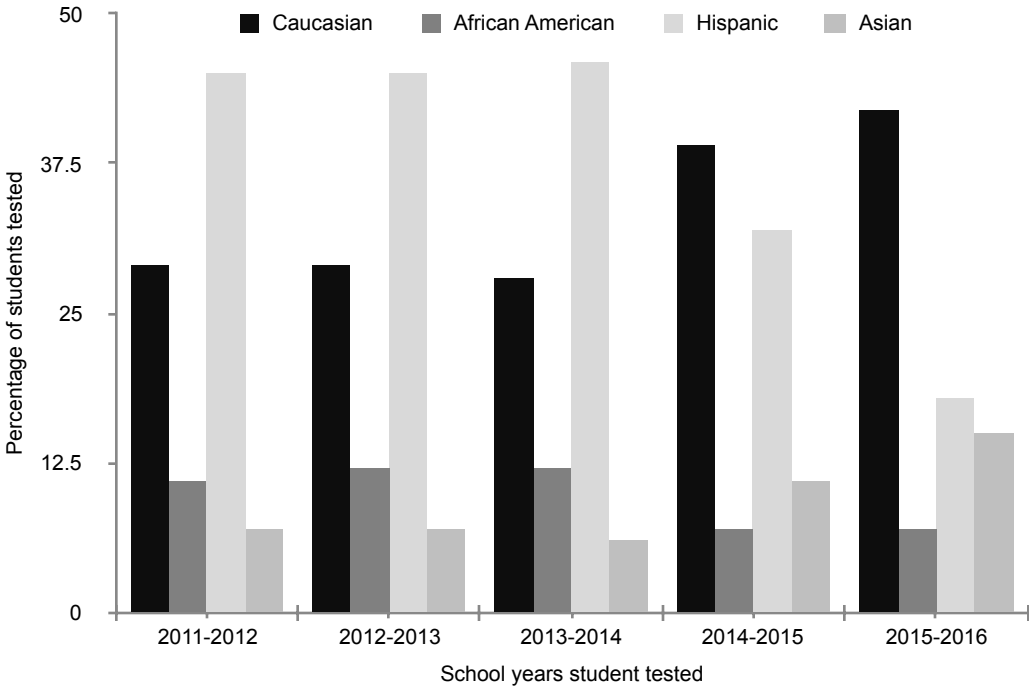

Figure 1. Ethnic distribution of gifted and talented education eligibility of students tested: 2011 to 2016.

The school district had 167 Title I Alterative Gifted Services (TAGS) schools and a total student enrollment of 49,819 for the 2015-2016 school year. The TAGS programs serviced 1,962 identified students throughout the district. Figure 3 was a presentation of the total percentage of students eligible for testing for TAGS in Grades 3, 4, and 5. Figure 4 was a display of the total percentage of students identified as TAGS for the 2011-2012, 2012-2013, 2013-2014, 2014-2015, and 2015-2016 school years for the study school district.

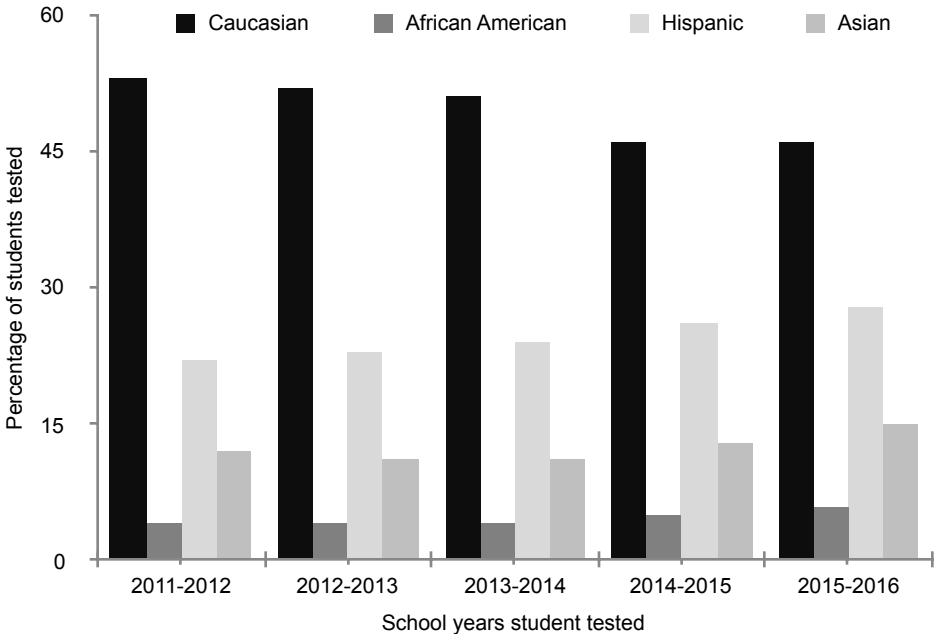

Figure 2. Ethnic distribution of gifted and talented education students identified: 2011 to 2016.

Diversity groups increased and moved at a rapid pace (Kayne, 2013); however, the representation of African American and Hispanic students in gifted programs decreased or remained stagnant (Payne, 2011). Nationally, African Americans and Hispanic populations collectively made up most all racial groups (Kayne, 2013; U.S. Census Bureau, 2012). The disproportionality in the study school district was a concern for educators (McHugh, 2013), gifted education specialists, and parents for these groups' education and future.

Gifted Universal Screening

The representation and equity of students in gifted programs warranted dialogue and collaboration between GATE administrators, coordinators, and facilitators in the school district on closing the ethnic disparity in gifted programs. The teams concluded that to help increase the representation of culturally diverse students, the implementation of a second-grade universal screening program should be created. In 2009, the school

district began screening every second-grade student attending Title I schools. Although by 2011, universal screening of second graders for TAGS had increased by 8% in the school district in gifted programs (Milliard, 2012), overall the group remained underrepresented in gifted programs. Subsequently, general education classroom teachers remained untrained in gifted education programs.

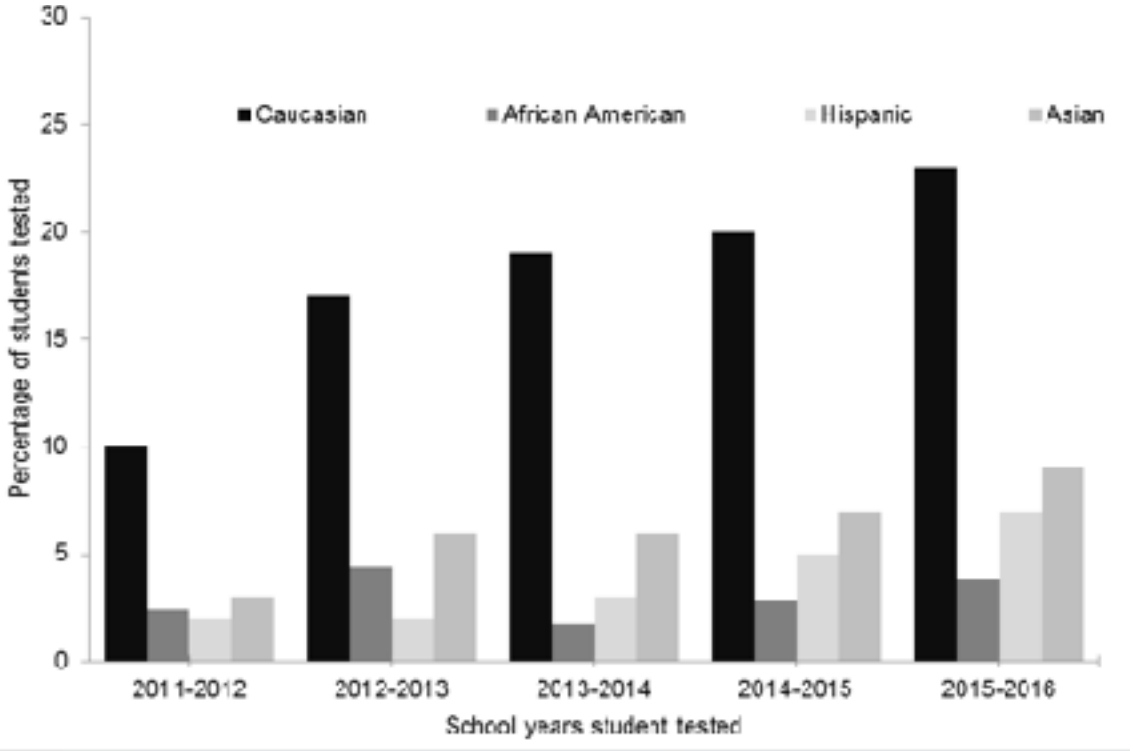

Figure 3. Ethnic distribution of Title I Alternative Gifted Services of students tested: 2011 to 2016.

The school district demographic majority included African American and Hispanic students, yet these groups were underrepresented in gifted education programs, according to the school district records of 2014. As the number of culturally diverse students increased, the inequity of African American and Hispanic students identified in gifted education had increased (National Association for Gifted Education, 2011a or b; U.S. DOE, 2014). Historically, most general education classroom teachers receive

minimal to no training in gifted education (Plunkett & Kronborg, 2007, 2011).

Purpose of Study

This study was to identify and further understand key factors that could have contributed to the underrepresentation of culturally diverse students in gifted education. The purpose of the research study was to provide evidence regarding whether the underrepresentation of culturally diverse students in gifted education programs and teacher participation in professional development and teacher training in gifted education were associated.

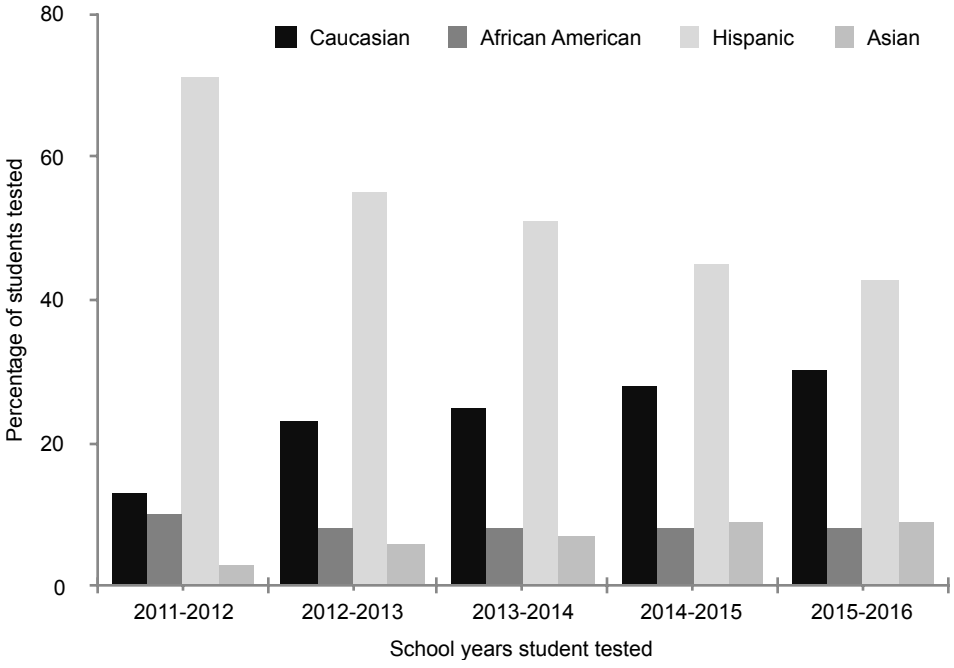

Figure 4. Ethnic distribution of Title I Alternative Gifted Services of students identified: 2011 to 2016.

The school district demographic majority included African American and Hispanic students, yet these groups were underrepresented in gifted education programs, according to the school district records of 2014. As the number of culturally diverse students increased, the inequity of African American and Hispanic students identified in

gifted education increased (National Association for Gifted Education, 2011a; U.S. DOE, 2014). Historically, most general education classroom teachers received minimal to no training in gifted education (Plunkett & Kronborg, 2007, 2011).

The researcher investigated the school district's professional development and teacher training schedule of courses, student ethnic distribution report, and participant surveys regarding their perception and experience with gifted education and culturally diverse students to help interpret the overall contribution to the underrepresentation of these students in gifted programs. The results of the study would benefit all educational personnel with an interest in the success of the organization's goals.

The results of the study could help general education classroom teachers with self-reflection of their ideas about gifted education programs and culturally diverse students in gifted programs. In addition, elementary school students from the fifth largest school district in the southwest region of the United States could gain the opportunity to be observed for their gifted characteristics and recommended to be tested for the GATE program. Furthermore, according to the U.S. DOE (2009), based on the data surrounding GATE programs, the school district would benefit by being recognized as an institution that "operated from common values and a common vision for student achievement" (p. 5) and collaborated successfully on meeting the needs of culturally diverse students who demonstrated gifted characteristics.

As a tenured licensed gifted specialist, the researcher was afforded personal and professional experiences with general education classroom teachers and administrators untrained in gifted education. These experiences provided first-hand information and

knowledge of these educators' ideas and perceptions about gifted programs and culturally diverse students. In addition to being the school site's literacy liaison for teachers serving gifted and high-achieving students, the researcher' position helped build rapport with all teachers, answered specific questions regarding gifted education, assessed students for gifted education, and provided resources and materials for general education classroom teachers. The overall involvement and support provided to the school site as a gifted specialist and literacy resource liaison demonstrated the researcher was an authority to conduct the study.

Definition of Terms

The following terms were defined to provide clarity in their use in this paper.

Culture, according to Leung (2013), was defined as a "dynamic system of rules, implicit or explicit, established by a social [and/or professional] group" (para. 1).

Deficit thinking, according to Simone (2012), was the practice of educators "holding lower expectations for students with demographics that do not fit the traditional context of the school system" (p. vii). Some teachers believed that these students were culturally, socially, and economically disadvantaged. Elementary schools that predominantly served African American and Hispanic students were from low-socioeconomic background. Teachers with preconceived ideas could hold biases against culturally diverse students from low-socioeconomic background, which could serve as factors when recommending culturally diverse students to gifted programs (Erwin & Worrell, 2012; Quintana et. al, 2012; Ryan & Gottfried, 2012). Additionally, Ford (2010a) maintained that the attitudes, biases, and deficit thinking of teachers contributed to the

disproportion of African American and Hispanic students in gifted education programs. Deficit thinking of some untrained teachers could be eliminated through participation in professional development and teacher training in gifted education (Dray & Basler Wisneski, 2011).

Gifted and Talented Education (GATE), according to Heath (2013), was a program that offered "instruction beyond assigned grade level to identified students [in Grades 3 through 5]. Students have the opportunity to develop their potential through curriculum that emphasizes complexity and higher level thinking" (para. 5).

High-poverty school was defined as being within the bottom quartile throughout the state for percentages of students who qualified for free or reduced-price lunch.

Highly qualified teacher was defined as an elementary or secondary school teacher who had obtained a state certification as a teacher or passed the state examination requirements for teacher licensing. In addition, the teacher held a bachelor's or master's degree and had demonstrated subject-manner competency in which the teacher taught (National Association of Special Education Teachers, 2007).

In-service facilitator was a staff member that facilitated discussion in a specialized area and provided knowledge, expertise, and strategies to [teachers] that, according to Pearson Assessment (2012a), "may need to develop specific skills to fully realize the benefits of collaborative, self-directed professional development" (p. 221).

Kaufman Brief Intelligence Test (KBIT) was a test that measured verbal and nonverbal cognitive ability and intelligence (Pearson Assessment, 2012b).

Low-poverty school was defined as being within the top quartile throughout the

state for percentages of students who qualified for free or reduced-price lunch.

Naglieri Nonverbal Abilities Test (NNAT), according to Pearson Assessment (2012a), was a general ability test that "uses progressive matrices to allow for a culturally neutral evaluation of students' nonverbal reasoning and general problem-solving ability, regardless of the individual student's primary language, education, culture or socioeconomic background" (para. 2).

No Child Left Behind (NCLB) Act of 2001 is the reauthorization of the Elementary and Secondary Education Act, a federal law mandating that all students in every public school in America were proficient in standardized tests.

Organizational culture was the doctrine of an organization and shared views based on the dynamics of mainstream culture. The integration of beliefs, values, practices, and sanctions encouraged and protected the positive representation of an organization and its members (Bolman & Deal, 2008; Watkins, 2013).

Peer-coaching or mentoring was defined as colleagues guiding and teaching one another by refining and expanding job skills, advising of organizational goals, and helping solve workplace issues (Lord, Atkinson, & Mitchell, 2008; Robbins, 2008).

Title I Alternative Gifted Services (TAGS) was a program that offered modified GATE Services to qualifying students attending Title I schools. According to Heath (2013), "TAGS Program provides a continuum of services and alternative programming options to identified students [in grades 3-5] in Title I schools" (para. 3).

Title I was a federal education law that provided funding for elementary and secondary schools that had a high percentage of students from low-socioeconomic

families (U.S. DOE, Office of Elementary and Secondary Education, Office of State Support, 2015). According to the records of the school district in this study, “Title I is intended to help close the gap in academic achievement between students in different ethnic and income groups.”.

Universal screening was a process to pretest second-grade students for GATE programs. The results of the prescreening test of participating students would determine which students were identified for actual GATE testing for the following school year.

Chapter 2: Literature Review

The purpose of the literature review was to investigate possible contributing factors of the underrepresentation of culturally diverse students in gifted education programs. The two main areas of focus were the beliefs of general education classroom teachers about gifted education and availability and opportunity for professional development and teacher training in gifted education. More specifically, African American and Hispanic students were the largest ethnic groups underrepresented in gifted education programs (Ford, 2010b). The literature review provided an analysis and interpretation of the statistics, data, and research studies regarding the effects of professional development and teacher training in gifted education. The researcher explored the underrepresentation of culturally diverse students in gifted programs associated with professional development and teacher training in gifted education, which provided insight for researchers, school administrators, and teachers on the overall indication of the underrepresentation of the culturally diverse students in gifted education programs.

A common complaint in the field of gifted education was teacher perception and beliefs that prevented teacher referral of culturally diverse students. More specifically, African American and Hispanic students were less likely to be identified as gifted or referred to gifted education programs (Davis, Rimm, & Siegel, 2011; Devries & Shires Golon, 2011). Based on the literature review research on teacher knowledge, experience, and beliefs of GATE programs, culturally diverse students, and participation in professional development and teacher training in gifted education, there could be a

connection to the problem of the underrepresentation of African American and Hispanic students in gifted education.

Untrained Classroom Teachers' Perceptions and Beliefs

Researchers assessed that the underrepresentation of African American and Hispanic students in gifted education programs decreased teacher referral nominations for these students (Erwin & Worrell, 2012; Ford, Grantham, & Whiting, 2008; Frye & Vogt, 2010). Subsequently, the disproportionate representation of African American and Hispanic students in gifted education programs continued. The inability of untrained teachers in gifted education to nourish and enrich the gifts and talents of students in the general education classroom proved to be a disservice to both gifted students and the untrained teacher.

Some teachers could have preconceived ideas about what it meant to be gifted. Ford and Frazier Trotman (2001) supported the notion that the perception and ideas of untrained teachers about gifted characteristics was based on mainstream culture: Those perceptions and ideas could be used to identify and refer students to gifted programs. Miller (2009) asserted that untrained teachers used model students as a guide to identify gifted students; this could include "good behavior, high academic achievement, hard worker, competitiveness, well-rounded, and verbal strengths" (p. 67). In addition, some untrained teachers used SES, two-parent home, parent educational background, and positive social skills as qualifications as a potential candidate for gifted referral. Research included support for the notion that the perception of untrained teachers about gifted characteristics was based on mainstream culture.

Mainstream culture was defined as dominant trends and shared ideas as a way of life, such as beliefs, religion, law, art, family, behavior (Laderman & Leon, 2014), and any elements of livelihood and welfare practiced by most humankind. Based on a teacher survey, attitude, biases, and preconceived ideas of some untrained teachers toward gifted education were determining factors (Carman, 2011; Grissom, Rodriguez, & Kern, 2015; Ryan, 2011; Szymanski & Shaff, 2013) in nonrecommendation of culturally diverse students. Researchers conveyed that the perception of some teachers could weigh heavily on student achievement more than student potential (Hodge & Kemp, 2006) when referring students to gifted programs. The other end of the spectrum of teachers' perception of culturally diverse students in gifted education could involve teacher experience and background with these students.

Syzmanski and Shaff (2013) maintained that teacher experience and background could contribute to the underrepresentation of African American and Hispanics students in gifted education programs. Teacher perception of these students in gifted programs could stem from deficit thinking (Ford, 2010a, 2010b, 2011; Ford, Frazier Trotman, Scott, Moore, & Amos, 2013; Moon & Brighton, 2008). Ford et al. (2008) maintained that deficit thinking was holding biases and beliefs against a specific group whose "culture, beliefs, values, language, practices, customs, traditions" (p. 232), and SES could be considered a substandard culture. Teachers with active deficit thinking ideas could hold low expectations of African American and Hispanic students and could not identify or use their potential and strengths as qualifications to refer them to gifted education programs. Furthermore, Szymanski and Shaff (2013) maintained that teachers' personal

beliefs often impacted their ideas and decisions regarding the recommendation of students to gifted education programs. More specifically, these beliefs impacted teacher referral and recommendation for African American and Hispanic students from low-SES backgrounds. Most commonly, teachers with these perceptions were untrained in gifted education (Schroth & Helfer, 2008).

Interviews conducted by Casey and Koshy (2012) revealed that some untrained teachers believed the recommendation of students to gifted education programs based on SES was elitist. More specifically, participants of the researchers conveyed that children coming from a more privileged background were more likely to be considered for referrals to gifted education programs than children from a low-SES background. Troxclair (2013) conveyed that some preservice and in-service teachers could be inexperienced in working with culturally diverse students. In addition, untrained teachers could overlook potentially gifted students based on problematic behavior, incomplete assignments, and performing at a lower grade level (Elhoweris, 2008; Morgan, 2014).

Teacher attitudes, biases, and preconceived ideas could impact teacher ability in identifying the giftedness (Elhoweris, 2008) of African American and Hispanic students. In addition, the impact of teacher biases towards this group could impact teacher referral of African American and Hispanic students to gifted programs (Ryan, 2011). Speirs Neumeister, Adams, Pierce, Cassady, and Dixon (2007) reported the results of a teacher survey revealing a consensus that disadvantaged African American and Hispanic students' underrepresentation continued to be a problem. Subsequently, the issue gained national attention among professional educators and observation studies: The research led

to published literature. Gifted programs overwhelmingly underrepresented African American and Hispanic students (Harris, Rapp, Martinez, & Plucker, 2007; McBee, 2010; McBee, Shaunessy, & Matthews 2012; Milner & Ford, 2007). Particularly, African American and Hispanic students could be prejudged by teachers based on limited English proficiency, SES background, home environment, educational level of parents, and parental involvement. According to Ford et al. (2008), the concern about the underrepresentation of African American and Hispanic students in gifted programs continued to impact the educational potential of these students. Moreover, there was a lack of effective measures to reverse the disproportionality of these groups in gifted education programs.

Underrepresentation in Gifted Education Programs

The underrepresentation of culturally diverse students from low-SES background in gifted programs could be correlated with the lack of professional development and teacher training in gifted education. Pendarvis and Wood (2009) posited that the underrepresentation of minorities in gifted programs have been consistent in the United States for decades and caused concern within the field of education (Yoon & Gentry, 2009). African American and Hispanic students represented the lowest group underrepresented among minority groups. As a result, the underrepresentation of these students in gifted programs continued to increase (Erwin & Worrell, 2012; Ford et al., 2008). Frye and Vogt (2010) assessed that the attitudes and beliefs of untrained teachers about African American and Hispanic students from low-SES background in gifted programs increased inequity of teacher referral for these students.

It was revealed in a report that African American and Hispanic students were significantly underrepresented in gifted education. Statistically, the total school population of White students was approximately 49%; however, 62% were identified and enrolled in GATE programs. Comparably, Asian students comprised approximately 5% of the student population, but accounted for 10% of students identified and enrolled in GATE. Dissimilarly, Black or African American students made up 19% of the student population, but accounted for only 10% of the GATE population, and Hispanic students made up 25% of the total student population, but accounted for 16% of students in GATE (U.S. DOE, 2012b). Based on available national data, approximately 500,000 African American and Hispanic students were underrepresented and had inaccessibility to gifted education services. Overall, statistics showed that the opportunity for an equal education for these students could be compromised (Ford, 2010b) and could be the catalyst of untrained teacher perception and beliefs about these groups' disproportionality in gifted programs.

Zimpher and Howey (2013) stated that failing schools in America may be due to the lack of active promotion of professional development and teacher training in gifted education in school districts. Furthermore, professional development and teacher training in gifted education could be unsupported in many school districts (Hall & Hord, 2011; NAGC, 2014).

Gifted education training opportunities. According to the school district records, the purpose for district-wide professional development and teacher training courses was to "provide teachers and administrators with opportunities to grow

professionally and earn renewal credit for teaching licensure and/or salary advancement." Many of the professional development and teaching training courses offered to teachers in this school district in the southwestern United States were based on students receiving scores falling below district average.

The opportunities for general education classroom teacher training in gifted education through the school district could be nonexistent. The lack of teacher opportunity in professional development and teacher training in gifted education could prevent teacher recommendation of culturally diverse students. Many school districts in the United States spent less funding on gifted education training than any other educational programs (NAGC, 2009). Untrained teachers in gifted education lacked the proper training to help meet the needs of students identified as gifted (Lichtenwalter, 2010). The DOE in the state of the school district maintained that all licensed teachers were mandated to participate in professional development and teacher training to maintain valid teacher licensure, according to the 2013 school district records. Although many teachers in the school district participated in professional development courses, few had training in gifted education. Subsequently, untrained teachers' referral for culturally diverse students impacted teacher referral of students to gifted programs.

The trend in this school district could be the lack of availability in professional development and teacher training in gifted education. In addition, preservice teachers could be unequipped in identifying and meeting the needs of gifted students. According to the Nevada Legislative Counsel Bureau (2013), professional development funding for teachers and administrators for the school district from 2009 to 2011 was zero.

Professional development funding for teachers and administrators for the years from 2011 to 2015 for the same school district on average was $5,066,702. Jones (2011) maintained that the school district's estimated cost for a 5-year fiscal impact for professional development and teacher training beginning 2012-2013 school year was $7,500,000. The total average of professional development courses offered to elementary school teachers from 2011 to 2015 was 400. The total number of professional development and teacher training professional development courses offered for gifted education was zero. These trends could create a social and educational stigma that gifted education programs were unimportant (Szymanski & Shaff, 2013). General education classroom teachers untrained in gifted education were less qualified to identify gifted characteristics and less likely to recommend African American and Hispanic students from Title I and non-Title I schools to gifted programs (Blair, 2011; Siegle et al., 2010; Speir Neumeister et al., 2007). School district data concluded that general education classroom teachers' nonparticipation in gifted education training contributed to the underrepresentation of culturally diverse students in gifted education, according to the 2010 records of the school district in this study.

Because the federal government did not mandate gifted education programs nationally, each state or local agency mandated educational policies regarding professional development and teacher training in gifted education. Some states required gifted education specialists to receive an endorsement in gifted education, while other states require general education classroom teachers to receive special training (Boone, 2008). For school districts that had no professional development courses for teachers in

gifted education, their inability to identify the gifted characteristics of students was increased. Furthermore, the educational needs of these students in a general education classroom were being compromised (NAGC, 2011b, 2014). These actions could continue the trend in the underrepresentation of African American and Hispanic students in gifted programs.

Understanding professional development. The overall success of organizations could be based on the effectiveness of professional development and training of employees. Byrd and Thornton (2013) posited that professional development and training in any job position built confidence in job performance and created a better understanding of job expectations. Hall and Hord (2011) stated that "professional development reveals parallel findings, both of which identify the imperative of learning in order to use improved programs, processes, and practices" (pp. 7-8). Regularly scheduled professional development and training could establish an organization as a professional development standard-based organization. Furthermore, according Bolman and Deal (2008), investing the "time and money to develop needed knowledge and skills" (p. 378) could ensure that employees receive proper training in gifted education to benefit all students.

Professional development and teacher training had been most effective in promoting continuous lifelong learning (Đurić & Radojević, 2012). Furthermore, according to Đurić and Radojević (2012), increasing personal and professional growth, professional development and teacher training provided new and innovative ways of teaching and implementing activities and had been considered "an integral part of

international and national qualification frames and the framework of the whole idea of teachers' lifelong education" (p. 174). Professional development could provide general education classroom teachers with strategies for implementing differentiated instruction and higher level and critical-thinking lessons skills for gifted students (Doren, Flannery, Lombardi, & McGrath Kato, 2013). Professional development and teacher training in gifted education could provide self-assessment on cultural diversity. Additionally, adequate and effective professional development and teacher training in gifted education could impact the gifted and talented classroom by providing gifted students the academic enrichment needed to meet their educational needs (Geake & Gross, 2008; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Teacher referral and recommendation for these students to gifted programs could be impacted by professional development and teacher training in gifted education and cultural diversity (Banks & Banks, 2010; Ford et al., 2008).

Hillsborough County School District, the eighth largest school district in the United States (National Center for Education Statistics, 2012), had a critical shortage of teachers in gifted education (Office of Research and Evaluation, 2009). According to Eriksson, Weber, and Kirsch (2012), a survey completed by the DOE showed

> 77 new hires out of the estimated 2,224 teachers for the critical teacher shortage area in gifted [education] or 3.5% of the total number. The 31 newly hired individuals were hired out of the field of gifted education. Thus, 40% of the teachers hired to teach gifted [education], were not certified. . . . [In addition, the high and low poverty schools of the research study of the core subject classes are taught by nonhighly qualified teachers (Botts, 2013). Eriksson et al. indicated that

> school administrators hired] experienced subject area teachers who lacked course work in gifted education, but who may complete the requirements for gifted [education] endorsement. . . . 22% of teachers currently teaching gifted students are not certified. (p. 43)

The data supported that an increase of 21% in professional development and teacher training was needed in gifted education. Johnsen (2012) stated that professionals in the area of gifted education identified the following teacher preparation standards for all educators:

> 1. Understanding the issues in definitions, theories, and identification of gifted and talented students, including those from diverse backgrounds;
> 2. Recognize the learning differences, differences, developmental milestones, and cognitive/affective characteristics of gifted and talented students, including those from diverse backgrounds, and identify their related academic and social-emotional needs; and
> 3. Understand, plan, and implement a range of evidence-based strategies to assess gifted and talented students; to differentiate instruction, content, and assignments for them (include the use of higher order critical and creative-thinking skills); and to nominate them for advanced programs or accelerate as needed. (p. 51)

The underrepresentation of African American and Hispanic students in gifted programs could be attributed to the lack of professional development and teacher training in gifted education (Hopkins & Garrett, 2010; McBee, 2006; Romanoff & Algozzine, 2009). Moreover, understanding the relationship between teacher referral for African

American and Hispanic students to gifted education programs and professional development and teacher training could provide data for improving proportionality of these students in gifted programs. The national average for the underrepresentation of African American students was 50% and 40% for Hispanic students (Ford et al., 2008).

The researcher based the literature review on the study of the underrepresentation of culturally diverse students in gifted education. More specifically, the focus was to help understand the factors that surrounded the underrepresentation African American and Hispanic students in gifted education. Examining prior studies on teacher beliefs, professional development and teacher training in gifted education, increasing teacher awareness in cultural diversity, purpose of professional development, and the effectiveness of professional development and organizational improvement could assist in the research findings. Many published studies included the examination of predictors of the underrepresentation of African American and Hispanic students from low-SES backgrounds in gifted education. According to Ford (2010b), teacher recommendations were primarily based on the ethnicity of students. McBee (2006) noted that teacher recommendations for Asian and White students far exceeded teacher recommendation for African American and Hispanic students to gifted education programs. Professional development and teacher training in gifted education and cultural diversity availability for teachers could impact their ability to identify gifted characteristics in culturally diverse students (Ford et al., 2008).

Professional and personal experiences could help distinguish the cultural and socioeconomic background of teachers and possibly determine their perception of gifted

education and culturally diverse students. In addition to their inability to identify gifted characteristics (Burney and Beilke, 2008), untrained teachers are less likely to recommend culturally diverse students to gifted education programs (Schroth & Helfer, 2008). Moreover, multiple studies included the conclusion that some teachers held biased attitudes towards African American and Hispanic students (Peters & Gentry, 2012) that could, according to Carman (2011), "interfere with their ability to accurately nominate students for participation in gifted programs" (p. 794).

Penuel, Fishman, Yamaguchi, and Gallagher (2007) indicated that recommendations of untrained teachers highlighted the reasons students were not being referred to gifted programs. In part, teacher referral for African American and Hispanic students to gifted programs could be correlated to the underrepresentation of African American and Hispanic students in gifted programs. The results of an annual report highlighted specific areas that could be contributing factors to the underrepresentation of African American and Hispanic students in gifted programs. The NAGC (2011b), report stated,

- Only 6 states require all teachers to receive preservice training in GATE.
- Twenty-four states do not require gifted and talented credentials for professionals in specialized gifted and education programs.
- General education teachers in 36 states are not required to have any training on the nature and needs of gifted and talented students at any point in their careers.
- Only 5 states require annual professional development for teachers in specialized gifted and talented programs, 26 states do not require it, and 12 leave

it to the local school district. (para. 4)

The goal for the NAGC was to increase student diversity in gifted programs and have professional development and teacher training in gifted education federally mandated. The purpose was to create a system in which disadvantaged African American and Hispanic students could be potentially gifted. Teacher participation in professional development and teacher training in gifted education was essential (Speirs Neumeister et al., 2007) to help increase the proportion and representation for African American and Hispanic students in gifted education programs.

Reach All Teach All

The NAGC (2011a) advocated "before the Congress and the executive branch on a range of issues including teacher preparation, accountability for student learning, equity issues**,** and funding for research and services for [African American and Hispanic] gifted learners" (para. 6). Although, there were no federal mandates in preservice and in-service teacher training in gifted education programs, there were state−ordered mandates for gifted education programs. The state mandated that every student identified as a gifted student must receive gifted services. According to NAGC (2008c), any state without "mandates to identify and/or serve gifted and talented students, it is up to each district to determine whether and how to identify students and what programs and services to offer high ability learners" (p. 5). Robins and Jolly (2013) reported the American Association for Gifted Children noted that "training more effective teachers to work with this population African American and Hispanic students" (pp. 139-140) could increase the proportion and representation of African American and Hispanic students in gifted

education. In addition, it could effectively suggest that the connection between professional development and teacher training in gifted education and the underrepresentation of African American and Hispanic students in gifted education programs had validity. Biases, assumptions, and second guessing in identifying gifted characteristics of potential students could be eliminated through professional development and teacher training in gifted education. In addition, professional development and teacher training in gifted education could decrease cultural, racial, and SES biases held by some teachers and encourage self-examination on personal views and perceptions regarding African American and Hispanic students (Hargrove & Seay, 2011; Heinfield, Moore & Wood, 2008).

Walker-Dalhouse and Dalhouse (2006) maintained that including professional development in training teachers in gifted education as a mandate for licensed teachers could help untrained teachers become more aware of how predispositions and attitudes towards culturally diverse and economically disadvantaged students were manifested (Hargrove & Seay, 2011; Murdock-Smith, 2013; Walker-Dalhouse & Dalhouse, 2006). A research study was completed on trained general education teachers in gifted education that included observations and assessments of the multiple intelligence of gifted students and were compared to the multiple intelligences of students that were referred, but not identified, as gifted (Romanoff & Algozzine, 2009). General education classroom teachers with gifted education training were better able to recognize and identify the gifted characteristics and multiple intelligences of students (Miller, 2009).

The main goal for professional development and teacher training was to assist

teachers with cultural awareness, sensitivity, and identifying students with gifted characteristics. In addition, the quality of education for students identified as gifted was provided an opportunity to receive modified curriculum and instruction, as well as increased higher level critical thinking skills. Morote and Tatum (2005) conveyed that increasing teacher participation in professional development and teacher training in gifted education could increase the proportional representation of African American and Hispanic students. Above all, professional development and teacher training in gifted education could increase teachers' knowledge in identifying gifted characteristics, teaching strategies, and provide cultural diversity instruction, according to Fry and Vogt (2010), "that will allow them to see the potential in every child regardless of race, ethnicity, language, gender," and SES (p. 11).

Scott (2012) reported that professional development and teacher training in gifted education had an aim to help "better equip teachers with the knowledge, disposition, and skills needed to" identify gifted characteristics in African American and Hispanic students (p. 30). In addition, Johnsen, VanTassel-Baska, and Robinson (2008) noted that teachers receiving professional development and teacher training in gifted education were more likely to identify students with gifted characteristics than untrained teachers. A survey completed by 890 teachers nationally concluded that improving professional development and teacher training would be very effective (51%) or somewhat effective (44%) in teachers' effectiveness in teaching (Archibald, Coggshall, Croft, & Goe, 2011). In addition, in a national survey, the consensus from both general education classroom teachers and gifted education specialists highlighted the importance of professional

development teacher training in gifted education to help meet the needs of gifted learners (NAGC, 2015).

The Schenley High School Teacher Center, the Holmes Group (Holmes Partnership), and many other educational institutions created professional development and teacher training to increase effective professional development for primary and secondary educational institutions. The focus areas were curriculum, faculty, pedagogy, students, instructional settings and groups, research and scholarship, and partnerships. The Holmes Group (2015) theorized that professional development could strengthen, educate, and increase teachers' knowledge and teaching ability, which helped foster continuous learning for teachers. The results of a professional development study conducted by researchers at the University of South Carolina determined that most preservice teachers found professional development and teacher training useful. These preservice teachers concluded that course work in observing various teaching methods and engaging and teaching culturally diverse students contributed to the field of education.

The most recent data from the Professional Education Data Systems, based on the higher education teacher preparation program from the American Association of Colleges for Teachers, revealed that teacher preparation programs for undergraduate programs and postbaccalaureate programs exceeded the minimum requirements and the majority of candidates in the Professional Education Data Systems 2011 earned a degree in education (Johnsen et al., 2008). The focus of a similar professional development program called Mississippi LEADS was designed to provide school administrators the skills and

knowledge needed to reverse ineffective schools to effective schools (Clifford, 2013) in the areas of professional development and teacher training in cultural diversity and gifted education. Programs, such as Mississippi LEADS training, could assist school administrators with an opportunity to understand cultural diversity as it relates to the disproportional underrepresentation of African American and Hispanic students' in teacher referral for these students to gifted education programs. Clifford (2013) suggested that formalized learning was important and necessary in professional development and educational training at all levels of education. More specifically, formalized learning opportunities included workshops, graduate course work, and conference presentations where educators gained access to factual or technical information and could have opportunities to practice techniques in a safe environment.

A study completed by Chadwell (2010) revealed that some parents and teachers acknowledged that professional development and training for teachers in gifted education was recommended for increasing nomination referral and representation of African American and Hispanic students to gifted education programs. Jenkins and Agamba (2013) posited that education initiative and legislation (e.g., NCLB, 2001) and most recently the Common Core State Standards (2011) could be directly connected to professional development and teacher training (Desimone, 2009; Rebofa, 2011).

Professional development and training could increase the educators' knowledge to identify gifted characteristics and decrease any potential racial and SES biases as it pertained to examining all students, especially African American and Hispanic students (Heinfield, Moore, & Wood, 2008; Heinfield, Owens, & Moore, 2008). Grantham (2011)

posited that general education classroom teachers trained in gifted education could create a learning environment conducive to teaching higher level and critical-thinking skills and could be willing to collaborate with gifted specialists, administrators, teachers, and parents to help meet the needs of gifted students (Coburn & Russell, 2008; Frank et. al, 2008; Sun, Penuel, Frank, Gallagher, & Youngs, 2013). In addition, these teachers could share information and knowledge received in professional development and teacher training. In addition, researchers maintained that leadership support and collaboration in professional development and teacher training increased teacher empowerment, student achievement, and school improvement (Chen, 2012; Hadar & Brody, 2010; King, 2011; Raban et al., 2007; Ritchhart, Church, & Morrison, 2011; Waniganayake, Harrison, Cheeseman, De Gioia, & Burgess, 2008). Furthermore, the commitment and collaborative efforts of teachers, administrators, and school district staff in mandating participation in professional development and teacher training in gifted education could positively impact in meeting the educational needs of gifted students.

Data collected on surveys completed by teachers included conclusions that professional development and teacher training could have a positive impact on increasing teacher knowledge skills, continuous self-improvement, teaching and leadership ability, motivation, and self-efficacy (Garba, 2012; Ghamrawi, 2013; Yildirim, 2012). In addition, increasing the effectiveness of professional development and teacher training had been attributed to peer coaching by qualified gifted specialists. Peer-coaching strengthened the knowledge of teachers' professional development, teacher training, collaboration, new skills, and new methods in gifted education (Cotabish & Robinson,

2012; Tschannen-Moran & Tschannen-Moran, 2010). Some teachers became more confident and effective in working with culturally diverse students (Borders et al., 2011). Moreover, Cotabish and Robinson (2012) posited that peer coaching could influence organizational support, efficiency, and teacher performance.

The possible benefits of teacher participation in professional development and teacher training and peer coaching included learning new skills and implementing ideas for students in the classroom (Hadar & Brody, 2010), as well as meeting and increasing student educational needs and outcome (Beckett, 2012). Educators successfully completing professional development and teacher training in gifted education could increase the ability to relate to the higher academic and gifted ability of all students in the field of gifted education (Hakel, Koenig, & Elliott, 2008; Joseph & Ford, 2006). In addition, teachers who participated in professional development and teacher training in gifted education were exposed to the cognitive and affective characteristic theories of high-achieving gifted students, which could contradict any previous preconceived ideas (Geake & Gross, 2008) and were "significantly more positive toward gifted students" (p. 228). Ghamrawi (2013) posited that questionnaires completed by teachers revealed that professional development and teacher training increased professional knowledge and ideas, and teachers felt more prepared, motivated, and confident in teaching the focused skill.

Professional development and teacher training in gifted education could be critical to the increased representation of low-SES African American and Hispanic students in gifted education programs (Codrington & Fairchild, 2012). Burney and Beilke (2008)

noted that in the field of GATE, it could be imperative to identify more African American and Hispanic students from low-SES background for high-ability services. According to McCoach and Siegle (2007), the opportunity to participate in professional development and teacher training in gifted education assisted and "enable[d] teachers to acquire broader, more inclusive, multidimensional notions of giftedness" (p. 253), as this might increase teacher referral for African American and Hispanic students from low-SES background to gifted programs while decreasing the disproportion of these students in gifted education programs.

Extrapolating and exploring research studies in the availability of professional development and teacher training in gifted programs could help to identify the source by which economically disadvantaged African American and Hispanic students are underrepresented in gifted programs. More specifically, the focus of the study was to investigate the connection between professional development and teacher training in gifted education and the underrepresentation of African American and Hispanic students from low-SES backgrounds in gifted programs.

Need for Student Diversity in Gifted Education Programs

The representation of student diversity in gifted education had been addressed in the field of education by scholars, researchers, teachers, and gifted education specialists. Mandating professional development and teacher training in gifted education by school district officials and state and federal governments could help increase teacher awareness. In part, increasing teacher awareness could assist in self-assessment of teachers' overall ideology of gifted education. Baldwin, Buchanan, and Rudisill (2007) reported that many

teachers labeled minority students as unmotivated, difficult, and unenthusiastic about school. Elhoweris (2008) expressed that misinformed or untrained teachers in gifted education and cultural diversity could affect their decision to refer and recommend these students to gifted programs. One of the most common teacher beliefs is that a small percentage of ethnic minority groups from low-SES background are incapable of being in gifted programs. The manifestation of these beliefs might have led to identifying minority groups as lacking basic grade-level skills and abilities, and as unlikely to possess and develop higher level thinking skills (Michael-Chadwell, 2010). Briggs, Reis, and Sullivan (2008) conveyed that untrained teachers in gifted education and cultural diversity might typically "misunderstand [African American and Hispanic] students' attributes, characteristics, and behaviors" (p. 133). This might result in teachers misconstruing these diverse characteristics as inabilities and deficiencies.

Culturally diverse students shared the same needs and concerns as gifted students in general. However, the needs of African American and Hispanic students were compounded with social and environmental issues, such as lowered teacher expectations, perceptions, and the inability of teachers identifying gifted characteristics. More specifically, Lovett (2011) conveyed that African American and Hispanic students from low-SES backgrounds needed support from educators to ensure the development of "their academic and cultural identities" (p. 67) and to help students value, internalize, and embrace a culture unpopular to mainstream. The National Council for Accreditation of Teacher Education (2010) maintained that increasing teacher awareness in gifted education might assist preservice and veteran teachers in learning, according to Troxclair

(2013), to “possess and demonstrate the disposition of fairness toward all learners” (p. 58). Some studies included confirmation that some untrained teachers in gifted education had a predisposition toward African American and Hispanic students from low-SES families as being incapable, unmotivated, and intellectually inferior to students of a higher SES (Hargrove & Seay, 2011).

The NAGC (2008b) conveyed most teachers might recommend students for eligibility testing to gifted programs by reviewing and focusing on general or typical gifted characteristics of a gifted student or focus primarily on student achievement. Some untrained teachers might misinterpret unfamiliar or unorthodox gifted characteristics, which could include intense motivation, extraordinary qualitative skills, superior memory and concentration, exceptional problem-solving abilities, high level of creativity, accelerated pace of learning, and exceptional capacity for seeing relationships and patterns (McHugh, 2013). Typically, culturally diverse students might not often demonstrate those characteristics or display high-achieving abilities. More specifically, African American children might demonstrate characteristics and certain skills that could be innate or taught and appreciated at home; these skills could be overlooked and undervalued in the classroom and might not reflect mainstream culture. These skills could include nonverbal communication, dance and rhythmic movements, learning through cooperation, and verbal interplay during instruction (McDougall, 2010).

The researcher conveyed that the gifted characteristics of Hispanic children might be overlooked due to a demonstration and expression of Latin or Hispanic culture, which could include submissiveness, hesitation to lead, cooperation, and reluctance to share

differences of opinion. Szymanski and Shaff (2013) stated that teachers unfamiliar with traditions, values, behavior, and common practices of diverse cultures might lead to having low expectations of these students, which could ultimately lead to student underachievement. Teacher perception, attitude, and beliefs might have influenced how teacher recommendations of these students to gifted programs were assessed (de Wet & Gubbins, 2011). Biases and preconceived ideas of untrained, preservice, first-year, and veteran teachers could compromise their confidence and might prevent them from teaching effectively. Furthermore, teachers who embraced and executed the ideas of mainstream culture could impact their decision in referring African American and Hispanic students to gifted education programs (Bonner, Lewis, Bowman-Perrot, Hill-Jackson, & James, 2009). The overall general perception of teachers identifying gifted students was poor (Szymanski & Shaff, 2013), and they were more likely to refer low-achieving students than African American and Hispanic students from other ethnic groups to gifted education programs (Elhoweris, 2008).

Miller (2009) maintained that the lack of teacher referral for African American and Hispanic students from low-SES backgrounds to gifted education might be their inability to recognize and identify gifted characteristics. Self-evaluation for general education classroom and preservice teachers, in both professional and personal beliefs, could increase teacher awareness of students from low-SES background**.**

Specific issues regarding teachers' beliefs and attitudes of low-SES African American and Hispanic students in gifted education must be addressed, respectively, in professional development teacher training and in university or courses (Walker-Dalhouse

& Dalhouse, 2006). Some untrained teachers nominated students based on behavior and academic success and overlook students with high potential (Balchin, 2007; Bianco & Leech, 2010).

Fallback of Exclusion

The underrepresentation of culturally diverse students in gifted programs contributed to the low percentage of minorities in the career field of science and technology (NAGC, 2011a). Selingo (2015) maintained that the United States had 5,300 colleges and universities. The number of colleges and universities that offered gifted education courses are 90 or 93 when including the universities and colleges outside the United States (NAGC, 2011b). These academic institutions were contributing to increasing courses in the field in science, technology, engineering, and math. Mack, executive director of the National Society of Black Engineers ("Collegiate Minority Retention Programs in Engineering Recognized by National Society of Black Engineers and ExxonMobil," 2012), praised various academic institutions in successfully keeping and maintaining "Black, Latino, and other underrepresented minority students in engineering" (para. 3). The minimal or decreasing availability of these courses at other higher education institutions included a suggestion that the interests of culturally diverse students in these career fields. The underrepresentation of African American and Hispanic students in gifted education could potentially affect the future of these students. Achieving the goal of attending a science, technology, engineering, and mathematics (STEM) institution limited minority students because of the lack of opportunity to be in a gifted education program. Furthermore, it adversely impacted school districts,

communities, and states by compromising the ability to grow and compete equally with other countries (Ford, 2010b).

American students were dropping out of school at a rapid rate, earning low scores on standardized tests (Farhi, 2012), and some teachers were unmotivated [and frustrated] to teach students who fell short one to two grade levels below student current grade-level standards. The federal government mandated educational standards for school districts based on the national proficiency average of students; however, American students fell below the national average of proficiency. The educational standards set for American students were considered the lowest worldwide. As a result, the U.S. educational system ranked 17th in reading and 27st in math, based on statistical data of the Organization for Economic Cooperation and Development (OECD, 2012). Albada (2010) maintained that setting low and minimal educational standards compromised the educational potential and ability to thrive in a global economy, as well as threatened the national security of the United States.

The continuous trend of America's failing education system could force the workforce in the global innovation economy (Atkinson & Ezell, 2012) and might lead U.S. industries to outsource to foreign workers (Canton, 2007). The negative impact on America's educational system was due to the lack of student diversity in gifted education programs, professional development, and teacher training in gifted education (Lynch, 2015). The possibility of reversing the underrepresentation of African American and Hispanic students in gifted education programs could begin by understanding that professional development and teacher training needs of preservice and general education

teachers. Professional development and teacher training in gifted education might increase the culturally diverse students' population in gifted education (McDougall, 2010).

Adequate opportunities in professional development and teacher training in gifted education increased teacher knowledge and skills in identifying gifted characteristics and promoted effective classroom instruction (Mizell, 2010). Professional development and teacher training could help teachers self-evaluate their ideas of stereotypes, misconceptions, and attitudes about African American and Hispanic students from low-SES backgrounds and how these ideas might affect the consideration of teacher nominations to gifted programs (Petty, 2007). In addition, Grantham (2012) noted that inactive participation of school administrators in promoting and supporting gifted programs at school sites may inadvertently reinforce that gifted programs may be unimportant. Furthermore, the lack of support from school administrators continued to perpetrate stereotypes and preconceived ideas about culturally diverse students. More specifically, these attitudes influenced already preexisting ideas of African American and Hispanic students and the inability to recognize gifted characteristics (Grantham, 2012; Sternberg, 2007). Ryan and Gottfried (2012) reported, "The attitudes of teachers towards inclusive education consistently state that the attitudes of teachers have a great effect on the successfulness of these programs" (p. 566). In some cases, the attitudes of teachers might be deliberate, whereas deficit thinking might be based on the socioeconomic background and professional and personal experiences of teachers.

According to Ford, Moore, and Trotman Scott (2011), the effects of deficit

thinking lead to “misguided and distorted views” of teachers that may perceive African American and Hispanic students as less capable and academically inept than students of mainstream culture (p. 241). Based on multiple studies, among African American and Hispanic students from economically disadvantaged background, the recommendation to gifted education programs were significantly low (Carman, 2011; Riedl Cross, 2013). Teacher perception of these students led to the likelihood of teacher referral to gifted education programs remained low.

Since the inception of gifted education programs, research was completed on the superior intelligence of Caucasian children, whereas the examination of African American students’ superior intelligence was neglected (Jenkins, 1936; Jordan, Bain, McCallum, & Mee Bell, 2013). This trend led some teachers to direct and focus on mainstream culture as the superior intelligent group (Rothenbusch, Zettler, Voss, Lösch, & Trautwein, 2016). Untrained teachers in gifted education could rely on developed conceptions and experiences and focus on the idealistic terms of giftedness. In addition, some untrained teachers might recommend students to gifted programs (Pierce et al., 2006) by exclusively using, according to Speirs Neumeister et al. (2007), a “published checklist without realizing that all gifted kids do not demonstrate all of the characteristics” (p. 480). Furthermore, these teachers might be unfamiliar identifying, instructing, and meeting the needs of gifted students with high-ability skills (Manning, 2006). The ineffectiveness of these teachers to identify African American and Hispanic students for gifted education programs could be a critical component in showing that mainstream culture might perpetuate stereotypes of groups from diverse cultures.

Untrained teachers use personal and professional experiences to justify student eligibility for referral to gifted programs (Siegle et al., 2010). In addition, teachers used culture, ethnic background, environment, and SES to influence which student closely identified as a model student to be recommended to gifted education programs (Speirs Neumeister et al., 2007; Szymanski & Shaff, 2013). Subsequently, African American and Hispanic students continued to be underrepresented in gifted education programs.

In this study, a compilation of instruments were used to gather data from administrators, teachers, and gifted specialists, including Multicultural Awareness to School Environment (MASE) and Park City School District (PCSD) Gifted and Talented Program Evaluation. The study included an investigation of the relationship between the survey responses of participants and the quantitative research study. The intention of the study was to compile data from participants regarding self-interpretation of the survey questions and how personal and professional experiences with African American and Hispanic students impacted the gifted referral rate. The study also sought to determine the connection between professional development and teacher training in gifted education, proportion of teacher referral to gifted education, and the representation of African American and Hispanic students from Title I and non-Title I schools in gifted education programs.

Research Questions

Six questions served as a guide for the study:

1. How does professional development in gifted education and cultural diversity impact school administration perception of African American and Hispanic students from

Title I and non-Title I schools to gifted programs?

2. What is the gifted referral rate of culturally diverse students by untrained, general education, classroom teachers?

3. What method and sources do general education classroom teachers not trained in cultural diversity and gifted education use to identify and refer students to gifted programs?

4. What type of impact would professional development and teacher training in cultural diversity in gifted education have on untrained, general education, classroom teachers' perceptions of African American and Hispanic students from Title I and non-Title I schools?

5. How does the perception of untrained teachers identifying gifted characteristics affect their referral of African American and Hispanic students from low-SES background to gifted programs?

6. How does professional development and teacher training impact teacher referral of African American and Hispanic students from Title I and non-Title I schools to gifted programs?

The survey questions were developed based on the research questions. Survey Questions 6, 10, 20, and 26 were used to answer Research Question 1. Survey Questions 6, 10, 21, 22, 23, and 29 responses were used to answer Research Question 2. Survey Questions 11 and 17 were used to answer Research Question 3. Survey Questions 2, 6, 10, and 20 were used to answer Research Question 4. Survey Questions 4, 5, 8, and 27 responses were used to answer Research Question 5. Survey Questions 5, 7, 28, and 29

gathered information to answer Research Question 6.

Chapter 3: Methodology

Overview

The purpose of this mixed-methods study was to examine the connection between the underrepresentation of culturally diverse students and general education teachers' knowledge about gifted education programs. The completion of this study and the findings of the researcher provided a cohesive comparison between the representation and proportion of culturally diverse students and teacher knowledge in identifying Title I and non-Title I students from elementary schools in this large school district in the southwestern United States.

The words, investigating the school district's professional development and teacher training schedule of courses, were used to help support the amount of professional development courses in gifted education available to licensed teachers. The researcher analyzed data from the scheduled courses offered by the school district and determined the trend of professional development and teacher training courses in which it tended to focus. In addition, the gifted education department's *Ethnic Distribution of Gifted Eligibility and Identified Students* report provided consecutive school year data that assisted as an expansive measure in determining another factor of the research problem.

The words, investigating student ethnic distribution report, were used to help support the data in the disproportion and representation of African American and Hispanic students in gifted education programs. The analyzed data from the gifted department's ethnic distribution report provided consecutive school year data on students

that were eligible for testing and compared the percentage to the percentage of students tested and identified as gifted. Furthermore, analyzing the student ethnic distribution report provided additional information on the underrepresentation of culturally diverse students. Analyzing participant surveys regarding teacher knowledge, training, and experience with gifted education and culturally diverse students was used as a comprehensive measure in determining the research problem.

The words, analyzing participant survey, were used to compare and contrast the responses of participants' professional and personal experiences, education, and training in gifted education, as well as their overall perception of their schools' organizational culture. The researcher analyzed the responses of the participants' surveys regarding teacher knowledge, personal and professional experiences with gifted students, culturally diverse students, and professional development and teacher training in gifted education were validated as contributing factors to the research problem. Participants' surveys regarding self-reflection of personal and professional knowledge and experience with culturally diverse students of various SES background were also determined as factors contributing to the disproportion of African American and Hispanic students in gifted education programs.

According to Bulsara (n.d.), this mixed-methods research involved "collecting, analyzing, and integrating (or mixing) quantitative and qualitative research (and data)" from 2011 to 2016 reports from this school district (p. 6), as well as surveys from general education classroom teachers, gifted education specialists, and school administrators. The findings of this mixed-methods study included information on the variables that connect

teachers' personal and professional experiences in gifted education and the underrepresentation of culturally diverse students in the school districts' gifted education program. Using the mixed-methods research approach in this study, multiple perspectives in understanding the integration of the quantitative and qualitative methods (Plano Clark, 2010) were provided in both statistics and participant survey. The incorporation of the two methods strengthened the validity of this study (Madrigal & McClain, 2012).

Research Methods

The model used for developing the methodology and research questions was mixed methods. Mixed methodology was used in this study to evaluate the perceptions of teachers reacting to questions related to personal and professional experiences with culturally diverse students and gifted education. *Mixed-methods research* is a term that referred to focusing and combining the strengths of both quantitative and qualitative research data (Sandelowski, Voils, & Knafl, 2009). More specifically, the qualitative method resulted in findings other than statistical procedures, with the objective being the interpretation of how research participants view the world (Letts et al., 2007) and strengthen the research method of a study. The specific use of the quantitative research required the identification of a central phenomenon and exploring the variables of the cause and effect of the research problem by utilizing the setting to observe, interview and survey participants, and analyze and interpret data (Creswell & Plano Clark, 2011; Marshall & Rossman, 2011).

Professional development and teacher-related training assisted in the empowerment of teaching practices of educators, student performance, and school

improvement on how students of various cultures were viewed (Byrd-Blake & Hundley, 2012; King, 2011). The purpose of the study was to determine the connection between the underrepresentation of African American and Hispanic students in gifted programs and professional development and teacher training in gifted education. In addition, the aim of the study was to determine the connection between the ideas, perception, and personal and professional experiences of teachers in identifying gifted characteristics of culturally diverse students.

Participants

The targeted population for the study consisted of gifted specialists, general education classroom teachers, and school administrators from 50 elementary schools in this large school district. Elementary schools receiving government funding under the Elementary and Secondary Education Act (ESEA; Title I) were considered for the research study. A total of 1,655 general education classroom teachers from Grades 3, 4, and 5, gifted specialists, and school administrators were invited to participate in the research study. Gifted specialists were included in this study because of their direct contact with general education classroom teachers. General education classroom teachers were invited to participate in this research study to bring awareness to the lack of professional development and teacher training in gifted education and whether it contributed to the low referral rate of African American and Hispanic students to gifted programs. School administrators were invited to participate in this research study to help reveal possible reasons for the disproportion of referrals of African American and Hispanic students to gifted programs. Participants' age range, gender, ethnicity, and

number of years in education were included in the study results. The researcher chose 50 Title I and non-Title I elementary schools based on convenience. The purpose of the survey was to include personal and professional perceptions of each participant regarding cultural diversity, gifted education, and professional development.

Instruments

The researcher used the MASE survey, an instrument developed by Morote and Tatum (2005), and the PCSD Gifted and Talented Program Evaluation survey developed by Shepherd in 2005. The rationale for using the MASE survey instrument was to help identify the significant differences of the perception, culture, sensitivity, SES, culture experiences, multicultural (Navita, 2014), and gifted education awareness of each participant. In addition, MASE was a reliable survey instrument that provided a foundation for measuring the specific views of school administrators, general education classroom teachers, and gifted specialists as it pertained to their job position and participation in multicultural activities at their school site. The MASE survey instrument was most recently used by Navita (2014). The Navita study explored "a proposed program for the enhancement of multicultural awareness of teachers to school environment" (p. 102).

The second instrument used was the PCSD Gifted and Talented Program Evaluation survey. The purpose for the modification of the survey instrument was to guide, direct, and seek answers to questions addressed by the researcher. The modified survey instrument was intended to focus on participants' knowledge of gifted education and participation in professional development and teacher training in gifted education. In

addition, some of the survey questions assisted participants with self-reflection of their perception, opinion, and experiences with culturally diverse students in gifted education. Both survey instruments were used previously as part of a planning guide for school district improvement in the areas of multicultural awareness and gifted education programs in Park City.

The researcher's modified survey questions were intended to measure the overall participation in professional development and teacher training in gifted education and cultural diversity at participants' school sites. The survey instrument contained appropriate items for all participants under the subject matter of professional development and teacher training in gifted education and cultural diversity to ensure instrument validity. The purpose of including participants' gender, age range, race, and education provided a demographic setting that analyzed, assessed, and categorized participants' responses. The goal of the survey findings was to bring awareness, dialogue, and collaboration on the factors regarding the underrepresentation of African American and Hispanic students in gifted education. Overall, prompting dialogue and collaboration among school district staff, school administrators, general education classroom teachers, and gifted specialists created an ideal solution to the research study.

The 31-item Likert-type scale questionnaire ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) and was specifically designed for school administrators, general education classroom teachers, and gifted specialists. The dimensions of the survey were divided into 11 questions relating to cultural diversity, 12 questions relating to gifted education, and eight questions relating to professional development and teacher training

in gifted education. The questionnaire also included three open-ended questions, which read: “Please use the space below and describe your role in identifying gifted students,” as well as completing demographic questions. The validity and reliability of the surveys were documented by the preexisting questionnaires that were previously field tested by PCSD.

Procedures

Tariq and Woodman (2013) asserted that mixed-method research was quantitative and qualitative methods in a single or series of studies. Creswell (2008) maintained that quantitative research measured structured questionnaires and the researcher “asks specific, narrow questions; collects quantifiable data from participants; analyzes these numbers using statistics and conducts the inquiry in an unbiased, objective manner” (p. 46). Spratt, Walker, and Robinson (2004) maintained that the quantitative method created convergent thinking and helped with the validity of the study. Creswell and Creswell (2009) asserted that qualitative research was naturalistic, used descriptive data, was process oriented, used inductive reasoning, and its goal was meaning making.

This mixed-methods research design included data collected from the survey reports. The archival research data revealed the demographics of the total number of students enrolled from low-SES families and the total number of African American and Hispanic students in the school district, as well as those students enrolled in gifted programs.

Teachers, gifted specialists, and school administrators had an opportunity to assess the overall school-site climate regarding teacher knowledge of gifted education,

cultural diversity, and professional development and teacher training. The following procedures were conducted in administering the survey instrument: Step 1. Approval from Institutional Review Board; Step 2. Permission from school district; and Step 3. Permission from school principals. The researcher sent an e-mail to elementary school administrators explaining the focus of the study. Approval was granted to survey each school site's licensed teachers (Grades 3 to 5) and administrators. The researcher sent an e-mail to participants that included a link to SurveyMonkey for subjects to complete the survey and notice of consent. SurveyMonkey is an online survey tool that is used to create questionnaires and surveys and provide data collection and data analysis about businesses, academic institutions, and individuals (SurveyMonkey, 2017).

A total of 325 licensed teachers in Grades 3 through 5, 68 administrators, and 40 gifted specialists from more than 50 Title I and non-Title I schools participated in the study. The researcher was given written permission to use questions from a preexisting survey (MASE; Morote & Tatum, 2005) and PCSD Gifted and Talented Program Evaluation (Shepherd, 2008). Some of the preexisting survey questions were used verbatim and others modified to customize the survey questions for the study. The researcher subcategorized and analyzed the surveys by organizing the data by questions and examined across all respondents and their answers to identify the consistencies and differences. The researcher received Institutional Review Board approval and completed the following:

1. Approximately 433 participants (licensed elementary school administrators, general education classroom teachers, and GATE specialists) were e-mailed the secured

online survey.

2. The survey included an informed consent to participate or not to participate, as well as an overview of the study (background, justification, and purpose of the research study).

3. Participants completed the secured online survey in 1 week.

4. The survey questionnaire consisted of 31 questions relating to professional and personal experiences and beliefs on cultural diversity, gifted education, and professional development and teacher training; three open-ended response questions, and one response question for additional comments that were not covered in the questionnaire.

5. The survey questionnaire was anonymous, and no identity data were available.

6. The researcher used a nominal scale to code ethnicity.

7. The Likert-type scaled questionnaire was cross-tabulated per participants' respective responses, ethnicity, and commonalities and differences of experiences and backgrounds.

8. Participants were provided a phone number and contact of the principal investigator for clarification and additional information regarding the survey.

9. The researcher collected, analyzed, and evaluated all data for the study.

10. All completed surveys were viewed only by researcher.

11. The researcher transferred all survey information on a thumb-drive, which was placed in a locked home office desk drawer.

This mixed-methods research design provided a combination of quantitative and qualitative methods that was intended to increase the validity of the research and

minimize the weakness of the research (Meissner, 2015). This method also provided information based on the survey responses of the participants, as well as current and past school district reports. Upon receiving the Institutional Review Board approval, the researcher was granted permission from the school district GATE coordinator in a school district in the southwestern United States to e-mail surveys to approximately 50 Title I and non-Title I elementary school gifted specialists. The researcher requested and received approval from the GATE coordinator to e-mail survey link to all GATE specialists at designated locations.

The cultural diversity representation survey items dealt with the history and cultural background of teachers and administrators. It included their perception, attitude, and judgment of other cultural groups. The cultural diversity items also helped to identify whether teachers and administrators believed that all culturally diverse students from low-SES backgrounds had equal educational opportunities. In addition, the representation of culturally diverse students in gifted programs was reflective of the inability of teachers and administrators to identify potentially gifted students.

The professional development questionnaire items related to the perception of the general education classroom teachers and school administrators regarding teacher training in gifted education and cultural diversity. It included whether preservice teachers, general education classroom teachers, and school administrators believed professional development and teacher training in gifted education and cultural diversity was an effective and relevant way to identify the gifted characteristics of culturally diverse students.

School climate items related to the level of awareness of school administrators, general education classroom teachers, and GATE specialists regarding their respective school site's cultural, racial, ethnic, and linguistic diversity of students and staff. In addition, these items included teacher awareness of cultural sensitivity toward cultural diversity by the school staff. The items included the access and opportunities to participate in school events, such as multicultural and multiethnic celebrations. Furthermore, items included whether the support of administrators of GATE programs provided opportunities for professional development and teacher training in gifted education and cultural diversity for general education classroom teachers.

The researcher collected and analyzed the participants' survey responses. Based on the results of the survey responses, the underlined structure of the study helped guide and support the connection between professional development and teacher training in gifted education and cultural diversity courses offered in the fifth largest school district in the southwestern United States and the underrepresentation of African American and Hispanic students in gifted programs. The statistical analysis used for the mixed-methods research was based on the evaluation of the rating scales and written responses of elementary school administrators, general education classroom teachers, and gifted specialists from Title I and non-Title I schools.

Assessment of the survey results helped determine whether the perspective, ethnic and cultural background, SES, and professional development and teacher training in gifted education impacted teacher ability in identifying gifted characteristics and meeting the academic needs of students identified as gifted in a general education classroom.

Furthermore, the study included indications of whether elementary schools in this school district provided sufficient professional development and teacher training in gifted education for teachers, gifted specialists, and administrators.

Tables 1 to 11 and Tables A1, A2, and A3 in Appendix A displayed the factors, items, and reliabilities that were used to analyze the responses of participants. Each survey item corresponded to the factors related to the underrepresentation of culturally diverse students in gifted education. As an example, participants responded to all questions related to cultural diversity, professional development, and school climate as it pertains to the personal, professional, and educational experiences of each participant. The overall total of participants responded to the respective items that were factors in the underrepresentation of culturally diverse students in gifted education (see Table 1).

Based on Factor 1, Cultural Diversity, participants' responses displayed in Table 2 revealed that cultural diversity represented a factor in the underrepresentation of culturally diverse students in gifted education. Overall, the participants' (n = 2,820) responses had the highest factor of the Likert-type scale in the underrepresentation of culturally diverse students.

Based on Factor 2, Professional Development, participants' responses displayed in Table 3 revealed that professional development represents a factor in the underrepresentation of culturally diverse students in gifted education. Overall, the participants' (n = 3,575) consensus was the highest factor of the Likert-type scale in the underrepresentation of culturally diverse students.

Based on Factor 3, School Climate, participants' responses displayed in Table 4

revealed that school climate represent a factor in the underrepresentation of culturally diverse students in gifted education. Overall, the participants' (n = 3,461) responses had the highest factor of the Likert-type scale in the underrepresentation of culturally diverse students.

Table 3

Factor 2: Professional Development

Item	Professional development	Factor loadings
5	My school provides cultural diversity training yearly.	58.33
11	My school's administrators have a responsibility to include cultural diversity training as a part of professional development.	76.34
14	I was identified as a gifted and talented student in elementary school.	32.40
18	I am aware of the programs and services available at my school to meet the needs of gifted and talented students.	79.77
19	I understand the referral process for identifying students in need of gifted and talented services.	83.75
20	I am able to identify a student with gifted characteristics.	89.61
21	My school provides gifted education training yearly.	27.10
22	I have taken courses in gifted education prior to becoming a licensed teacher.	27.24
25	Since being a licensed teacher, I have referred ten or more African American and Hispanic students to gifted programs.	35.48
26	I differentiate and modify lessons based on the needs of the gifted students in my class.	86.28

Data from participants were obtained and listed by job position, ethnic background, cultural diversity training or courses taken, gifted training or courses taken, school site cultural awareness, and school site gifted education awareness. Based on the qualitative survey, the participants' responses were divided into two categories: yes and no. Each participant's response to the questions was recorded on the Likert-type scale. As

an example, a 5-point scale can be used with responses ranging from strongly agree to strongly disagree.

Table 4

Factor 3: School Climate

Item	School climate	Factor loadings
6	There is a large population of culturally diverse students at my school.	81.28
7	The teachers at my school are culturally diverse.	65.64
8	Teachers at my school are provided opportunities to participate in activities to better understand ethnic and cultural backgrounds.	53.91
9	School assemblies and holidays observed at my school reflect multiethnic and multicultural diversity in the United States.	58.50
10	Administrators in my building are culturally diverse.	57.18
12	The total staff's attitude and behavior reflect cultural sensitivity.	81.56
17	Gifted and talented students have unique social and emotional needs.	87.71
23	My school's administrators have a responsibility to include gifted education training as a part of professional development.	60.57
28	In your school, what has been most helpful in addressing teacher training in cultural diversity?	18.45
29	In your school, what has been most helpful in addressing the need for gifted education training?	18.45
30	Additional comments on your view about the importance of professional development in meeting the gifted educational needs of culturally diverse students.	17.63

The data collected were analyzed using both descriptive statistics and typological analysis. According to Creswell (2008), descriptive statistics offered information to facilitate the description of responses to individual questions and determine trends. The items used from the Likert-type scale addressed age, gender, race, educational background, experience teaching culturally diverse students, gifted education training, and teaching license status. The item survey responses were analyzed and interpreted.

According to Holmes, Signer, and MacLeod (2010), the "exploratory analysis will identify the underlying factor structure suggested by the pattern of responses," which determined the favorable to less-favorable responses and trends from each demographic area (p. 79). In qualitative studies, reliability of the data are emphasized (Creswell & Plano Clark, 2011).

The qualitative data obtained from the Likert-type, scaled, open-ended questions were transcribed and theoretically coded and tabulated based on the frequency of responses from each demographic area. The survey instrument included three items that allowed participants to write a brief narrative of their opinions on cultural diversity, gifted education, and professional development, which strengthened the findings of the study (Holmes et al., 2010). In order to ascertain the internal reliability or consistency of the instrument for the study responses, Cronbach's alpha test was employed. This test was one that measured the internal consistency of a group (Tavakol & Dennick, 2011). To further ensure reliability and consistency, a one-way analysis of variance (ANOVA) was conducted and illustrated to determine the comparative of the variables (*Selecting Tests: Make Sure You're Using the Correct Statistical Tests to Analyse Your Data*, 2013).

According to Hanover Research (2013), the overall purpose for the survey was to "provide valuable feedback to teachers that may ultimately help to improve their effectiveness" (p. 14) as to how they perceived gifted education and culturally diverse students in gifted programs. The intention of the researcher was to share findings with the GATE department of this large school district and to possibly publishing the research findings.

Chapter 4: Results

The problem was an underrepresentation of African American and Hispanic students in gifted education programs in this school district located in the southwestern United States. The purpose of this study was to identify and further understand key factors that contributed to the underrepresentation of African American and Hispanic students in gifted education**.** This chapter included a description of the analysis of data followed by a discussion of the research findings. The findings of this study were guided by six research questions:

1. How does professional development in gifted education and cultural diversity impact school administration perception of African American and Hispanic students from Title I and non-Title I schools to gifted programs?

2. What is the gifted referral rate of culturally diverse students by untrained, general education, classroom teachers?

3. What method and sources do general education classroom teachers not trained in cultural diversity and gifted education use to identify and refer students to gifted programs?

4. What type of impact would professional development and teacher training in cultural diversity in gifted education have on untrained, general education, classroom teachers' perceptions of African American and Hispanic students from Title I and non-Title I schools?

5. How does the perception of untrained teachers identifying gifted characteristics affect their referral of African American and Hispanic students from low-SES background

to gifted programs?

6. How does professional development and teacher training impact teacher referral of African American and Hispanic students from Title I and non-Title I schools to gifted programs?

Data were analyzed to identify the relationship between teacher training in gifted education and teacher referral of African American and Hispanic students to gifted education programs.

Descriptive statistics were calculated for all study variables. This included the mean and standard deviation for continuous measures, counts and frequencies for categorical measures. Log-linear models were used to examine each attitudinal survey question. The model variables included subjects' length at current position, gender, age, ethnicity, job position, and teaching grade. If response options (e.g., agree or disagree) were not fully utilized, the response options were recoded for statistical purposes. For additional insight into the responses, phi-coefficient correlations were computed between the survey questions. R 3.2.2 was used for all statistical analysis, plot for all plots, and the program MASS for all modeling. Statistical significance was found at $p < .05$.

A total of 357 subjects completed the survey. A review of subjects' responses revealed missing response options or incomplete data; therefore, for consistency purposes data were recoded for all statistical analyses (see Appendices B, C, and D). For the survey response questions, all response items were dichotomized into *agree* and *other*. The following demographic variables were recategorized: (a) Age: 21 to 41 versus 42+, (b) Ethnicity: Other versus White; and (c) Job Position: other versus teacher. Results from

the analysis revealed that 34% of responders were in their current position 1 to 5 years, 84% were female, 76% were White, and 34% taught third grade. A full detail of the descriptive statistics is presented in Table B1 (see Appendix B). Responses to each survey response question are presented in Table C1 (see Appendix C).

Results from the log-linear models reveal significant associations between a subject's response and a subject's length in current position, gender, age, ethnicity, job position, and teaching grade in Table D1 (see Appendix D). For each model, adjusted odds ratios with 95% confidence levels are presented in the tables. There were six research questions in this study and all of them involved inferential analysis using correlation. The variables in all of the questions are ordinal, thus Spearman rank-order correlations were used. A Spearman rank-order correlation calculated a correlation coefficient known as rho, which is the measure of the strength and direction of the relationship between two ordinal variables (Sheskin, 2011). The surveys were anonymous and distributed under similar conditions. Respondents completed the surveys online at their discretion.

Research Question Results

Research Question 1. How does professional development in gifted education and cultural diversity impact school administration perception of African American and Hispanic students from Title I and non-Title I schools to gifted programs? Four questions were asked to gather data to answer Research Question 1: Question 6 (As an educator, I believe cultural diversity training is important); Question 10 (The teachers at my school[s] are provided opportunities to participate in activities to understand other

ethnicity and cultural backgrounds); and Question 26 (I have taken GATE courses prior to becoming a licensed teacher; represent professional development in gifted education and cultural diversity). Question 20 (Gifted and talented students have unique social and emotional needs) represented the perception of African American and Hispanic students from Title I and non-Title I schools to gifted programs. A Spearman rank-order correlation matrix was developed to see the relationship between Questions 6, 10, and 26 with Question 20. In Table 4, Question 20 was significantly and positively correlated with Question 26, *rs* (354) = .195, *p* = < .001, and Question 6, *rs* (355) = .153, *p* = .004, but not Question 10 *rs* (357) = -.008, *p* =.885. The data indicated that teachers who had taken GATE courses and who believed that cultural diversity training is important had increased perceptions that gifted and talented students have unique social and emotional needs (see Table 5).

Table 5

Correlation Matrix for Research Question (Q) I

Category	Q	Item	Q6	Q10	Q26	Q20
Spearman's rho 153**	Q6	*rho*	1.000	.102	.076	.
		p		.055	.153	.004
		n	358.000	355.000	353.000	355.000
	Q10	*rho*	.102	1.000	.052	.017
		p	.055		.325	.743
		n	355.000	358.000	354.000	357.000
	Q26	*rho*	.076	.052	1.000	195**
		p	.153	.325		.000
		n	353.000	354.000	356.000	354.000
	Q20	*rho*	.153**	.017	.195**	1.000
		p	.004	.743	.000	
		n	355.000	357.000	354.000	358.000

Note.
** Correlation is significant at the 0.01 level (2-tailed).

Research Question 2. What is the gifted referral rate of culturally diverse students by untrained, general education, classroom teachers? Six questions were asked to gather data to answer Research Question 2. Question 29 (I have referred 10 or more African American and Hispanic students to be tested for the GATE Program) represented the referral rate. Question 6 (As an educator, I believe cultural diversity training is important); Question 10 (The teachers at my school[s] are provided opportunities to participate in activities to understand other ethnicity and cultural backgrounds); Question 21 (I am aware of resources available at my school[s] to help meet the needs of gifted and talented students); Question 22 (I am able to identify students with gifted and talented characteristics traits); and Question 23 (I understand the referral process for gifted and talented student testing) referred to level of training in teachers.

A Spearman rank-order correlation matrix was developed to see the relationship between Question 29 and Questions 6, 10, 21, 22, and 23. There was a display in Table 5 of the summary of the results for Question 29, which was significantly and positively correlated with Question 10 rs (355) = .119, p = .025; Question 21 rs (354) = .170, p = .001; Question 22 rs (354) = .274, $p < .001$; and Question 23 rs (355) = .323, $p < .001$; but not Question 6 rs (355) = .058, p = .274. This meant that as the agreement that the gifted referral rate of culturally diverse students rose, so did opportunities to participate in activities to understand other ethnicity and cultural backgrounds, awareness of resources available at schools to help meet the needs of gifted and talented students, ability to identify students with gifted and talented characteristics traits, and understanding the

referral process for gifted and talented student testing (see Table 6).

Research Question 3. What method and sources do general education classroom teachers not trained in cultural diversity and gifted education use to identify and refer students to gifted programs? Two questions were asked to gather information to answer Research Question 3. Question 17 (I was identified as a gifted and talented student while in elementary school) was used to represent teachers not trained in cultural diversity and gifted education and Question 11 (School assemblies and holidays are observed at my school[s] that reflect the majority of all culturally diverse students) was used as a way to identify and refer students to gifted programs.

Table 6

Correlation Matrix for Research Question (Q) 2

Category	Q	Item	Q29	Q6	Q10	Q21	Q22	Q23
Spearman's rho	Q29	*rho*	1.000	.058	.119*	.170**	.274**	.323**
		p	.274	.025	.001	.000	.000	
		n	358	355	356	354	354	355
	Q6	*rho*	.058	1.000	.115*	-.011	.041	.045
		p	.274		.030	.840	.439	.404
		n	355	358	355	353	353	354
	Q10	*rho*	.119*	.115*	1.000	.222**	.043	.103
		p	.025	.030		.000	.423	.052
		n	356	355	358	356	356	357
	Q21	*rho*	.170**	-.011	.222**	1.000	.346**	.462**
		p	.001	.840	.000		.000	.000
		n	354	353	356	356	354	355
	Q22	*rho*	.274**	.041	.043	.346**	1.000	.466**
		p	.000	.439	.423	.000		.000
		n	354	353	356	354	356	355
	Q23	*rho*	.323**	.045	.103	.462**	.466**	1.000
		p	.000	.404	.052	.000	.000.	
		n	355	354	357	355	355	357

Note.

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

A Spearman rank-order correlation was developed to see the relationship between Question 17 and Question 11. Displayed in Table 7, Question 17 was not significantly correlated with Question 11 rs (358) = .071, p = .181. This means there was no relationship between being a gifted and talented student while in elementary school, and school assemblies and holidays that reflect the majority of all culturally diverse students (see Table 7).

Research Question 4. What type of impact would professional development and teacher training in cultural diversity in gifted education have on untrained, general education, classroom teachers' perceptions of African American and Hispanic students from Title I and non-Title I schools? The responses to three questions were analyzed to answer Research Question 4: Question 6 (As an educator, I believe cultural diversity training is important); Question 10 (The teachers at my school[s] are provided opportunities to participate in activities to understand other ethnicity and cultural backgrounds); and Question 26 (I have taken GATE courses prior to becoming a licensed teacher) represent professional development in gifted education and cultural diversity. Question 2 (How many years have you been in your current position?) was used to represent untrained teachers.

Table 7

Correlation Matrix for Research Question (Q) 3

Category	Q	Item	Q17	Q11

Spearman's rho	Q17	*rho*	1.000	.071
		p		.181
		n	358.000	358.000
	Q11	*rho*	.071	1.000
		p	.181	
		n	358.000	359.000

A Spearman rank-order correlation matrix was completed to see the relationship between Question 2, and Questions 6, 10, and 26. As seen in Table 7, Question 2 was significantly and positively correlated with Question 6 *rs* (357) = .160, *p* = .002 and Question 10 *rs* (357) = .112, *p* = .034, but not with Question 26 *rs* (355) = .072, *p* = .175. This meant as teaching experience increases so does the belief that cultural diversity training was important and participating in activities to understand other ethnicity and cultural backgrounds (see Table 8).

Table 8

Correlation Matrix for Research Question (Q) 4

Category	Q	Item	Q2	Q6	Q10	Q26
Spearman's rho	Q2	*rho*	1.000	.160**	.112*	.072
		p		.002	.034	.175
		n	360.000	357.000	357.000	355.000
	Q6	*rho*	.160**	1.000	.102	.076
		p	.002		.055	.153
		n	357.000	358.000	355.000	353.000
	Q10	*rho*	.112*	.102	1.000	.052
		p	.034	.055		.325

		n	357.000	355.000	358.000	354.000
	Q26	*rho*	.072	.076	.052	1.000
		p	.175	.153	.325	
		n	355.000	353.000	354.000	356.000

Note.
* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Research Question 5. How does the perception of untrained teachers identifying gifted characteristics affect their referral of African American and Hispanic students from low-SES background to gifted programs? Four questions were asked to gain data to answer Research Question 5. Question 27 (Administrators at my schools have a responsibility to include culturally diverse training as a part of professional development) represented untrained teachers. Question 4 (I attended schools that were culturally diverse); Question 5 (I consider myself knowledgeable about other cultures); and Question 8 (There is a large culturally diverse student population at my school[s]) represented teachers identifying gifted characteristics affecting their referral of African American and Hispanic students from low-SES background to gifted programs. A Spearman rank-order correlation matrix was completed to see the relationship between Question 27, and Questions 4, 5, and 8. As seen in Table 8, Question 27 was not significantly correlated with Question 4 rs (355) = -.001, p = .985; Question 5 rs (354) = .081, p = .130; and Question 8 rs (353) = .043, p = .424. This means there was no relationship between the perception of untrained teachers identifying gifted characteristics affecting their referral of African American and Hispanic students from low-SES background to gifted programs (see Table 9).

Table 9

Correlation Matrix for Research Question (Q) 5

Category	Q	Item	Q27	Q4	Q5	Q8
Spearman's rho	Q27	*rho*	1.000	-.001	.081	.043
		p		.985	.130	.424
		n	355.000	355.000	354.000	353.000
	Q4	*rho*	-.001	1.000	.266**	.015
		p	.985		.000	.773
		n	355.000	361.000	360.000	358.000
	Q5	*rho*	.081	.266**	1.000	.059
		p	.130	.000		.264
		n	354.000	360.000	360.000	357.000
	Q8	*rho*	.043	.015	.059	1.000
		p	.424	.773	.264	
		n	353.000	358.000	357.000	358.000

Note.
** Correlation is significant at the 0.01 level (2-tailed).

Research Question 6. How does professional development and teacher training impact teacher referral of African American and Hispanic students from Title I and non-Title I schools to gifted programs? Four questions were asked in an attempt to answer Research Question 6. Question 29 (I have referred 10 or more African American and Hispanic students to be tested for the GATE Program) represented referral of African American and Hispanic students from Title I and non-Title I schools to gifted programs. Question 5 (I consider myself knowledgeable about other cultures); Question 7 (My school[s] provide cultural diversity training for the current school year) and Question 28 (The administrators at my school[s] are supportive of the GATE Program) represented professional development and teacher training. A Spearman rank-order correlation matrix was completed to see the relationship between Question 29 and Questions 5, 7, and 28. In

Table 9, Question 27 was not significantly correlated with Question 5 *rs* (357) = .020, *p* = .713, Question 7 *rs* (357) = .038, *p* = .470, and Question 28 *rs* (356) = .061, *p* = .248. This meant that there is no relationship between professional development and teacher training and teacher referral of African American and Hispanic students from Title I schools and non-Title I to gifted programs (see Table 10).

Table 10

Correlation Matrix for Research Question (Q) 6

Category	Q	Item	Q29	Q5	Q7	Q28
Spearman's rho	Q29	*rho*	1.000	.020	.038	.061
		p		.713	.470	.248
		n	358	357	357	356
	Q5	*rho*	.020	1.000	.120*	.066
		p	.713		.024	.210
		n	357	360	359	357
	Q7	*rho*	.038	.120*	1.000	.196**
		p	.470	.024		.000
		n	357	359	360	357
	Q28	*rho*	.061	.066	.196**	1.000
		p	.248	.210	.000	
		n	356	357	357	358

Note.
* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

The evaluation of the data results indicated the responses of the participants to be strongly associated with variables and showed significant correlation between the lack of professional development in gifted education and teacher perception of gifted education programs with the underrepresentation of African American and Hispanic students in gifted education programs. As confirmed in Figure 7, with phi correlations, the larger

circles represented stronger correlations. Dark gray positive numbers represented positive correlation and light to dark gray negative numbers represented negative correlations. All the responses in the boxes represented highly associated questions. This information included indications that there were more negative responses to the questions than there were positive responses (see Figure 5).

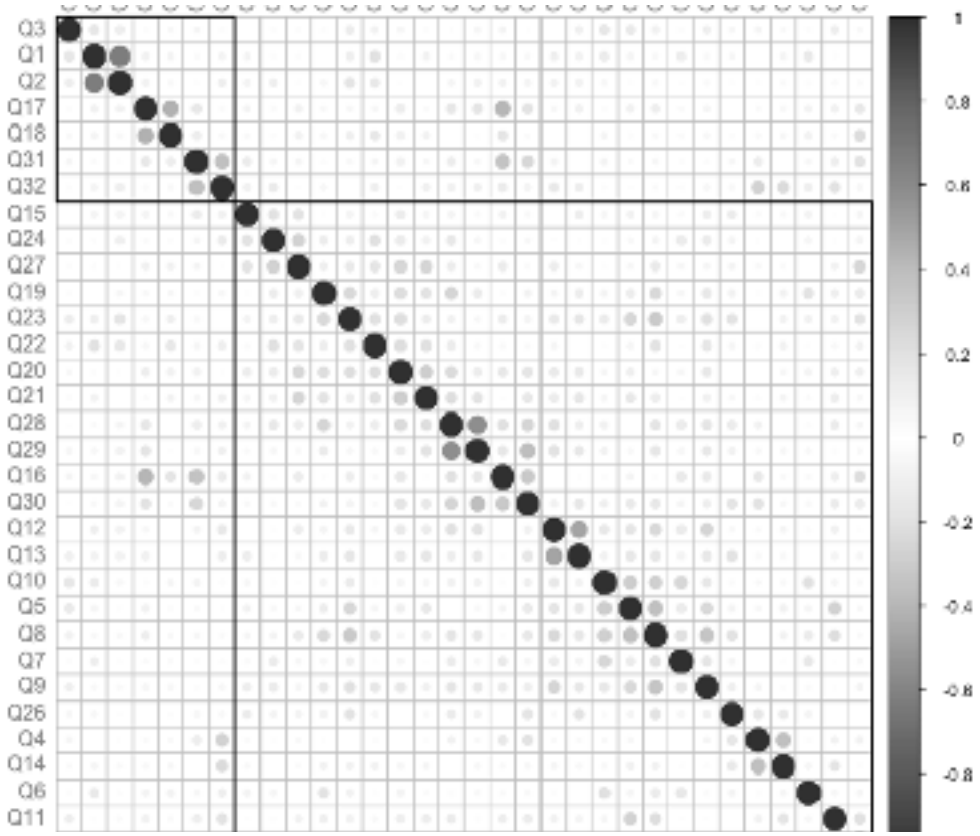

Figure 5. Phi correlations.

Teacher Responses to Likert-Typed Scaled Items on the Written Survey

The written portion of the survey included open-ended questions that pertained to participants' perspective of the overall organizational culture of addressing teacher training in cultural diversity. The responses by participants varied based on professional and personal perspective. The results of the comparison between the various means of

addressing cultural diversity training significantly showed that school resources were the most effective means of addressing cultural diversity training (see Table 11).

Table 11

Frequency of Administration Responses to Written Response Survey (N=27), At Your School(s), What has Been Most Helpful in Addressing Teacher Training in Cultural Diversity?

Statement	Frequency
1. Professional development	5
2. Training	1
3. Staff meetings	5
4. Nonschool district training	1
5. Book study	1
6. I have to address one answer above about if I have referred African Americans in my role as principal, I don't refer anyone. The teachers do.	1
7. School district workshops	1
8. Teaching school-wide programs to students	7
9. Personal beliefs	4
10. I have to address one answer above about if I have referred African Americans in my role as principal, I don't refer anyone. The teachers do.	1

Note. One administrator responded "N/A" to this survey prompt.

Chapter 5: Discussion, Summary, Limitations, Conclusion, and Recommendation

Discussion

The purpose of this mixed-methods study was to explore the underrepresentation of African American and Hispanic students in gifted education programs. Through the

literature review, research, data collection, and teacher survey, the conclusion of these students' representation in gifted programs suggested that educators alike possess autonomy when choosing areas for educational advancement. The focus of the research findings unveiled the relationship between the underrepresentation of African American and Hispanic students in gifted education programs. The theoretical framework of the study led the researcher to hypothesize, research, analyze, and conclude to research questions that would connect to the problem statement. In 1979, the U.S. DOE (2010) established a mission to promote student achievement that would meet all student needs, but it somehow fell short when it came to African American and Hispanic students in gifted education.

According to Bulsara (n.d.), this mixed-methods research involved "collecting, analyzing, and integrating (or mixing) quantitative and qualitative research (and data)" (p. 6) from the 2011 to 2015 reports from the fifth largest school district in the southwest region of the United States, as well as surveys from general education classroom teachers, gifted education specialists, and school administrators. The findings of this mixed-methods study provided information on how teacher knowledge about gifted education connected to the underrepresentation of culturally diverse students in the school district's gifted program. Using a mixed-methods research approach in this study provided multiple perspectives in understanding the integration of the quantitative and qualitative methods (Plano Clark, 2010) in both statistics and participant surveys. The incorporation of the two methods strengthened the validity of the study (Madrigal & McClain, 2012).

The focus of the study revealed the connection between the underrepresentation of African American and Hispanic students in gifted education programs and professional development and teacher training in gifted education. The areas of focus were to clarify the meaning of gifted education, examine the representation and proportionality demographically, teacher perception, teacher educational experience with culturally diverse students in gifted education, teacher referral pattern, and the school district professional development and teacher training department in cultural diversity and gifted education availability. The issue with the underrepresentation of African American and Hispanic students in gifted education program was twofold. This meant that the school district's focus for educational resources on professional development and teacher training on areas that they deemed were more pressing. What could be more pressing than two entire ethnic groups being deprived of an equity education?

Based on a report from the school district in the southwestern United States, the representation and proportionality of African American and Hispanic students were underrepresented in gifted programs. In addition, this district's professional development courses in gifted education training were not offered for 3 consecutive school years. In fact, the gifted education department offered gifted specialists extended training courses on Saturdays.

Researchers (Helland, 2016; McIntyre, 2016; Michael-Chadwell, 2010; Stargardter, 2016; Syzmanski & Shaff, 2013) maintained that the underrepresentation of African American and Hispanic students in gifted education programs contributed to a variety of measures, including SES, teacher perception, lack of training in gifted

education, and lower academic expectations. In fact, Moore and Flowers (2012) reported that African American [and Hispanic] students "are less likely to be represented in gifted and talented programs, and less likely to be selected (or identified) for these types of accelerated learning opportunities" (p. 10). These inequities contributed a significant negative impact on the future education of African American and Hispanic students.

Researchers (Freeman, 1979; Hodge & Kemp, 2006; Lee, 1999) maintained that untrained teachers' views of giftedness in students focused more on achievement than potential. The personal beliefs and personal history of teachers' impact their teaching methods, which affected gifted students academically (Brighton, 2003) and teacher recommendation of referral for culturally diverse students. More specifically, the beliefs and attitude of some untrained teachers about low-SES African American and Hispanic students in gifted education lacked cultural diversity awareness (Blair, 2011; Ford, 1998; Siegle et al., 2010; Speir Neumeister et al., 2007; Walker-Dalhouse & Dalhouse, 2006). Some teachers' perceptions of African American and Hispanic students in gifted programs stemmed from deficit thinking (Ford, 2003, 2010a, 2010b, 2011; Ford et al., 2013; Ford & Grantham, 2003; Ford, Harris, Tyson, & Frazier Trotman, 2002; Moon & Brighton, 2008).

Ford et al. (2008) maintained that deficit thinking

> is grounded in the belief that culturally different students are genetically and culturally inferior to White students. It is a belief that their culture–beliefs, values, language, practices, customs, traditions, [SES] and more–are substandard, abnormal, and unacceptable. When deficit thinking exists, educators are unable to

> focus on the strengths and potential of Hispanic and African American students; they are blinded, instead, by low expectations and stereotypes. Hence, the low referral rates of Black and Hispanic students for gifted education screening and placements. (p. 30)

Troxclair (2013) stated that teachers, specifically untrained preservice teachers, in working with culturally diverse students developed preconceived ideas or biases toward the population and impacted their decisions when referring students to gifted education programs. Giessman et al. (2013) reported that considered as a "chronic underrepresentation of certain groups" (p. 101), gifted education programs continued to separate the SES and race classes (Borland, 2004). A summary of the findings and discussion of findings was based on the theory of the underrepresentation of African American and Hispanic students in gifted education programs.

The purpose of the phenomenological mixed-methods study was to examine and explore specific connections between the representation and proportionality of culturally diverse students in gifted programs and professional development and teacher training in gifted education. More specifically, the study targeted the representation of African American and Hispanic students in gifted education programs. In addition, the study examined how those connections impacted the proportionality and representation of African American and Hispanic students in gifted education. Various researchers' views, thoughts, interviews, and conclusion of culturally diverse students in gifted education programs pertained to the perception of gifted characteristics, low expectations, SES, preservice teachers' course work and practicum, and teacher referral contributed to the

representation and proportionality in gifted programs of these students. The study was illustrated by specific research questions, which provided insight on how they impacted the underrepresentation of African American and Hispanic students. The six research questions follow:

1. How does professional development in gifted education and cultural diversity impact school administration perception of African American and Hispanic students from Title I and non-Title I schools to gifted programs?

2. What is the gifted referral rate of culturally diverse students by untrained, general education, classroom teachers?

3. What method and sources do general education classroom teachers not trained in cultural diversity and gifted education use to identify and refer students to gifted programs?

4. What type of impact would professional development and teacher training in cultural diversity in gifted education have on untrained, general education, classroom teachers' perceptions of African American and Hispanic students from Title I and non-Title I schools?

5. How does the perception of untrained teachers identifying gifted characteristics affect their referral of African American and Hispanic students from low-SES background to gifted programs?

6. How does professional development and teacher training impact teacher referral of African American and Hispanic students from Title I and non-Title I schools to gifted programs?

These research questions were examined using data collected from peer-reviewed articles, surveys or questionnaires, document analysis, and statistical data. The data were collected, transcribed, systematized, coded (using an open coding system), and analyzed.

The questions that measured participant perception included Research Question 1: How does professional development in gifted education and cultural diversity impact school administration perception of African American and Hispanic students from Title I and non-Title I schools to gifted programs? The question was used to address, measure, and characterize participant perception regarding the importance of professional development in cultural diversity and gifted education training. The question allowed the researcher to understand how the perceptions of participants' teaching ability impacted culturally diverse students identified as gifted and talented. As an example, Table 8 indicated that participants untrained in cultural diversity and gifted education were less likely to refer African American and Hispanic students to gifted program than teachers trained in cultural diversity and gifted education.

A second research question examined in this study follows: What is the gifted referral rate of culturally diverse students by untrained, general education, classroom teachers? This question addressed and measured participant perception of school administrators' responsibility of including cultural diversity and gifted education training during staff development. An overwhelming majority of participants concluded that school-site administrators' inclusion of professional development and teacher training in gifted education was obligatory. In addition, autonomy for general education classroom teachers was nonexistent. Furthermore, teachers depended on school site administrators

to provide guidance about how to best fit the needs of all students' educational needs (see Table 9).

The third research question follows: What method and sources do general education classroom teachers not trained in cultural diversity and gifted education used to identify and refer students to gifted programs? This question was intended to address and measure participants' perceptions about school site cultural diversity and gifted education training. The data included indications that untrained participants use personal experiences as a method and resource to identify students to gifted programs. As an example, participants that were identified as gifted students in elementary school, lived in culturally diverse neighborhoods, attended culturally diverse schools, and considered themselves knowledgeable about gifted education and cultural diversity used these as methods and sources to identify students. Hargrove and Sean (2011) maintained that untrained educators who referred students to gifted programs were less likely to identify gifted characteristics of students than educators who had been trained. In addition, based on research, professional development and teacher training provided school site administrators and educators with information and educational tools to help meet the needs of students.

The fourth research question follows: What type of impact would professional development and teacher training in cultural diversity in gifted education have on untrained, general education, classroom teachers' perceptions of African American and Hispanic students from Title I and non-Title I schools? Responses provided the researcher the opportunity to understand that participants' perception of school site teachers' attitude

impacted the organizational culture. As an example, a large percentage of teachers at school sites were culturally diverse, facilitated assemblies or holidays, and fostered positive interactions with staff and students of culturally diverse backgrounds.

The fifth research question follows: How does the perception of untrained teachers identifying gifted characteristics affect their referral of African American and Hispanic students from low-SES background to gifted programs? This question addressed and measured teacher perception about gifted education, administration responsibilities on professional development, and overall organizational culture at respective schools. As an example, Table 5 included that there were indications that the perception of untrained teachers' inability to identify gifted characteristics impacted teacher referral for African American and Hispanic students to gifted programs. The lack of training of these teachers resulted to low-to-zero teacher referral for African American and Hispanic students to gifted programs.

The sixth research question follows: How does professional development and teacher training impact teacher referral of African American and Hispanic students from Title I and non-Title I schools to gifted programs? This question was used to address and measure participant referral of African American and Hispanic students to gifted programs. This question allowed the researcher to examine the organizational culture and school climate as it related to professional development and teacher training in gifted education. As an example, Table 9 indicated that teachers who were trained in gifted education were more likely to refer African American and Hispanic students to gifted programs than teachers that were not trained.

Summary of Findings

The results of the research study revealed several contributing factors on the underrepresentation of African American and Hispanic students in gifted education programs. Untrained teachers' perception of gifted education programs used indirect sources to help identify gifted characteristics. The perception of these teachers led participants to be misinformed and misguided about gifted education programs. Some of these sources were personal experiences, such as the participant being a gifted student, growing up and attending a culturally diverse neighborhood, and attending a culturally diverse school. In addition, the study revealed that preteachers without any college courses or training were also less likely to refer students to gifted education programs. The study revealed that there was lack of professional development and teacher training in gifted education. The study indicated that the school district's professional development courses for gifted education were not offered in over a decade. Furthermore, the study indicated that school administrators were not proactive in including gifted education as a part of required professional development and teacher training.

All the research questions prompted participants to respond to questions regarding their race, education, SES, personal and professional experiences with other ethnic groups, and perception of the organizational culture at their school site. There were five questions that were a determining factor whether participants answered questions favorably that contributed to an issue that dated to the landmark Supreme Court case *Brown vs Board of Education* in 1954.

Data Analysis Summary

The collected data were analyzed using both descriptive and inferential statistics to allow the researcher to analyze the perceptions of administrators, general education classroom teachers, and gifted education specialists from non-Title I and Title I schools for comparative purposes. According to Creswell (2014), descriptive statistics offered information to facilitate the description of responses to individual questions and to determine perception.

The research questions were utilized to address and measure each non-Title I and Title I school participants' knowledge in GATE. Each Likert-type scaled question was based on the participants' perceptions of school site organizational culture. To ascertain the internal reliability and consistency of the instrument for the study's responses, the Cronbach's alpha test was employed. This test measured the internal consistency of a specific group (Institute for Digital Research and Education, 2015). To further ensure reliability and consistency, Laerd's analysis of variance (ANOVA) was enlisted to determine the statistical significance of the measure of reliability (*Selecting Tests: Make Sure You're Using the Correct Statistical Tests to Analyse Your Data*, 2013).

The researcher collected archival data from the 2011-2012, 2012-2013, 2013-2014, 2014-2015, and 2015-2016 academic school years. The mixed-methods design of these data was used to help establish a relationship between participants' survey responses and data regarding the GATE and cultural diversity courses offered by this school district. The participants in this study consisted of elementary school principals, general education classroom teachers in Grades 3, 4, and 5, and gifted specialists from

non-Title I and Title I schools.

The collected data were analyzed using descriptive and inferential statistics for the researcher to analyze the perceptions of participants from Title I and non-Title I schools for comparative purposes. According to Creswell (2009, 2014), descriptive statistics offered information to facilitate the description of responses to in, according to Creswell and Creswell (2009), individual questions and to determine trends. To ensure validity and increase value, collected data were organized and prepared, analyzed, and coded. Inferential statistics produced generalizations, conclusions, and inferences that were germane to the participants. The instruments used were survey responses by administrators, teachers, and gifted specialists. Student population enrollment data, student population in gifted program data, and professional development and teacher training in gifted education and cultural diversity courses were examined for this large school district in the southwestern United States.

Based on these data, an overwhelming majority of participants' responses included a conclusion that professional development training in gifted education was nonexistent at their school sites. In addition, the referral rate for 10 or more African American and Hispanic students to be tested for gifted programs was 39.19%. Based on these statistics, the underrepresentation of African American and Hispanic students in gifted education programs continued to be an issue.

Limitations

The limitations variables of the mixed-methods research design consisted of the clarity and accuracy of the questionnaire, number of survey responses, validity and

reliability, and different conclusion from the original hypothesis (Simon & Goes, 2013). In addition, limitations for the survey included the researcher not being able to collect a 100% response rate from all potential participants; complete honesty of participants in answering the questionnaire could have compromised the validity and reliability of the study; participants might have concluded the survey was an imposition by the researcher on professional and personal time; and the incompletion of the survey instrument and biases of personal or professional experiences of the participants could have compromised the validity and reliability of the survey.

Recommendations

The outcome of this research study clearly included indications of a need for additional research studies. The results of this study should be used as a blueprint to implement and mandate educational policy changes regarding professional development and teacher training in gifted education in school districts. Throughout the researcher's research and analysis of a plethora of peer-reviewed articles, it was apparent that the underrepresentation of African American and Hispanic students in gifted education programs was not new to education. The 357 participants of the study represented only a small fraction of the total licensed educators in this school district in the southwest region of the United States. Additional future studies should include a substantial number of licensed educators that had direct contact with students, including general education classroom teachers in Grades 1 through 5, school administrators, gifted specialists, psychologists, counselors, librarians, physical education teachers, and music teachers. A study of these individuals would capture a broader dimension of perceptions, biases,

views, knowledge and training in gifted education, professional and personal experiences with culturally diverse (specifically African American and Hispanic) students, and overall opinions of the organizational culture at respective school sites. The researcher would also suggest surveying culturally diverse students and their perceptions of their general education classroom teacher's views of them. This information would be vital for research and help understand students' emotional state and feelings of possible prejudices.

The two major findings from the research study data analysis had major implications for the underrepresentation of African American and Hispanic students in gifted education programs. First, it was found in the study that the fifth largest school district in the southwest region of the United States over a period of 6 years offered zero professional development education courses in gifted education for general education, classroom, licensed teachers. Reports from the school district indicated professional development opportunities to participate in GATE training were unavailable. The lack of availability for professional development education courses indicated that general education teachers lacked the knowledge to identify gifted characteristics.

The second major finding from the research study indicated participants were interested in receiving gifted education training, despite little support provided by elementary school principals. The researcher anticipated that the outcome of this study will create awareness and prompt dialogue between school district policymakers and educators regarding the impact that professional development and teacher training in gifted education could have on administrators, teachers, gifted education specialists, and

students.

To increase teacher referrals for African American and Hispanic students to gifted programs, the researcher recommends the federal government mandate that school districts require all licensed teachers to participate in professional development and teacher training in gifted education. Professional development and teacher training in gifted education that specifically addresses, in the words of Hargrove and Seay (2011), "cultural, racial, and income biases held by [some] teachers" (p. 442) may be a self-reflective component to help teachers understand their position on the issue. This mandate would be intended to assist general education classroom teachers, school administrators, and other licensed educators with information to better identify gifted characteristics in African American and Hispanic students (Ford et al., 2008; Manning, 2006; Milner, Tenore, & Laughter, 2008). Based on a combination of research and survey results, it was apparent that teacher perception, biases, deficit thinking, untrained teachers, and lack of leadership guidance by school site administrators negatively impacted referral recommendations for African American and Hispanic students to gifted education. While professional development and teacher training in gifted education could provide an enriched and accelerated curriculum for the instruction of students in the areas of STEM, it was critically important to increase student interest in these subjects.

O'Hara and Pritchard (2008) maintained that the following areas of professional development and teacher training helped general education classroom teachers become more effective:

- All teachers should be prepared to address the social, cultural, linguistic, and

economic backgrounds of the entire spectrum of American students.

- All teacher preparation programs should include in their curricula study of the nature of language development and first and second acquisition and dialect.
- All teachers need to develop an understanding of the diverse cultural patterns and the historical impact of diverse populations on the development of the [United States]. This understanding needs to be infused across courses in the teacher education programs.
- That teacher trainers and their colleagues in higher education engage in sustained and ongoing professional development related to preparing teachers for linguistic and cultural diversity of America's schools. (pp. 44-45)

The researcher's goal for this research study was to contribute a direct insight about the issue of underrepresentation of African American and Hispanic students in gifted education programs. In addition to the researcher's professional and educational involvement in gifted education, the researcher had the training ability to facilitate an in-service at respective schools. The organizational culture at the researcher's school-site represented an inconsistent supportive opportunity to lead an in-service training to educate general education classroom teachers in the field of gifted education.

Conclusions

In attempting to understand the reasons for the underrepresentation of African American and Hispanic students in gifted education programs, various studies were examined. Discussed in this study and supported through past and current research data, the teacher perceptions coupled with teacher attitudes, deficit thinking, low expectation,

and lack of professional development training courses in gifted education had been major factors in the underrepresentation of culturally diverse students in gifted education programs. Professional development divisions within school districts had been instrumental in creating courses and training classes for licensed teachers. Ford and Moore (2013) suggested that school administrators had responsibility for ensuring the effectiveness of school site organizational culture, which creates "what takes place in schools relative to [teacher] attitude, policies, and practices" (p. 401) and sets a precedent for educators.

As a GATE specialist, the researcher concurred with Dewey, an American philosopher and educator, in a personal philosophy that students learn more effectively through physical and kinesthetic learning methods. Many students were challenged and met their highest potential, whereas other students, for reasons explored in this study, were not afforded the opportunity to explore and nurture their potential gifts and talents.

Similarly, Piaget's theory of constructivism, as it was presented by Kimball and Miller (2011), was observed in how students learn through active understanding rather than traditional classroom learning of listen, remember, and regurgitate. Piaget's theory included support for this research in the capacity of how teachers learn. Professional development and teacher training in gifted education provided strategies for teaching critical to high-level thinking skills. In addition, modifying the curriculum for students who were high achievers and for students who were underachievers supported a teacher to be effective in teaching and meeting the needs of all students. The all importance of professional development and teacher training in gifted education was to meet the

pedagogical and emotional needs of gifted students. Chowdhury (2016) stated that some gifted students were *asynchronous*. This term is used to describe students' cognitive, emotional, and physical development as uneven (NAGC, n.d.b). As an example, a gifted student may excel in mathematics, yet not meet standards in reading at a respective grade level.

Another area of focus in the research study was to understand, create awareness, and possibly find solutions to the factors in the underrepresentation of African American and Hispanic students in gifted education programs. Erwin and Worrell (2012) maintained that a continuum of disproportional representation of minority students in gifted education programs reflects inequity in the educational system and is a disadvantage for these African American and Hispanic students (Payne, 2011). In addition, a study completed by Ryan and Gottfried (2012) highlighted issues that replicated previous studies that examined the barriers to teachers identifying gifted characteristics in minority students. Furthermore, prejudicial or preconceived ideas and attitudes about these students in gifted education programs are fostered by some teachers (Ford et al., 2013; McBee et al., 2012).

Professional development and teacher training in gifted education for elementary school administrators, general education classroom teachers, gifted specialists, school psychologists, and counselors can help create an understanding of the effects of the lack of teacher referral for African American and Hispanic students from Title I and non-Title I schools to gifted education programs. Based on the survey results from this school district, there is a need for improvement in teacher knowledge in the areas of gifted

education and proportional representation of teacher referral for culturally diverse students to gifted education programs. The research data concluded that the school district's professional development education division's gifted education courses were unavailable. The goal of the researcher was to highlight the validity of the research topic by identifying the attitudes, biases, views, and judgment of administrators and teachers regarding culturally diverse students.

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Appendix A

Administration, Teacher and Gifted Education Specialist Survey Responses

Table A1

Frequency of Administration Responses to Written Response Survey (N=26), At your school(s), what has been most helpful in addressing teacher training in gifted education?

Statement	Frequency
1. Professional Development	3
2. School-wide training	6
3. Informal training	7
4. Non-school district training	1
5. School District Training	1
6. No Training	5

Note. Three administrators responded N/A to this survey prompt.

Table A2

Frequency of Teacher and Gifted Education Specialist Responses to Written Response Survey (N=175), At your school(s), what has been most helpful in addressing teacher training in cultural diversity?

Statement	Frequency
1. Equity and Diversity liaison meetings	15
2. Professional Development	31
3. Learning Strategists Training	9
4. Teaching school-wide program to students	7
5. Nonschool district training	6
6. No school-wide training	43
7. School-wide staff meetings	16
8. Book Study	6
9. Guest Speaker	4
10. Personal beliefs	18
11. Challenges faced by cultural diversity population	9
12. Workshops by the school district	
13. Reflecting on the needs of the staff	1
14. Awareness and empathy	1
15. Don’t remember or recall	7

Note. Nine teachers and Gifted Education Specialists responded N/A to this survey prompt.

Table A3

Frequency of Teacher and Gifted Education Specialist Responses to Written Response Survey (N=176), At your school(s), what has been most helpful in addressing teacher training in gifted education?

Statement	Frequency
1. GATE specialist	52
2. Professional development	10
3. Staff meetings	10
4. School-wide training	8
5. Online course	4
6. Nonschool district training	3
7. School district training	3
8. To be treated fairly and equal as possible	1
9. Personal beliefs	5
10. Project-based learning	2
11. Thirty-minute meeting	4
12. My school screens all students in second grade for GATE. This is important to note for a question above that asks if I've referred 10 or more minorities to GATE. I don't need to.	1
13. No training	61

14.Don’t remember or recall	4

Note. Eight teachers and Gifted Education Specialists responded N/A to this survey prompt.

Appendix B

Descriptive Statistics for Demographic Variables

Table B1

Descriptive Statistics for Demographic Variables

	Response	Count (Percent)
Years you have been in your current position?	< 1 Year	20 (7.5%)
	1-5 Years	92 (34.6%)
	6-10 years	56 (21.1%)
	11-15 Years	47 (17.7%)
	16+ Years	51 (19.2%)
Gender	Male	42 (15.8%)
	Female	224 (84.2%)
Age	21- 41	115 (43.2%)
	42+	151 (56.8%)
Ethnicity	Other	62 (23.6%)
	White	201 (76.4%)
Job Position	Other	48 (18.2%)
	Teacher	216 (81.8%)
General Education Classroom Grade Level	Third	90 (34.6%)
	Fourth	61 (23.5%)
	Fifth	53 (20.4%)
	Other	56 (21.5%)

Appendix C

Descriptive Statistics for Questions

Table C1

Descriptive Statistics for Questions

Question	Agree Count (Percent)	Other Count (Percent)
I grew up in a culturally diverse neighborhood.	137 (51.3%)	130 (48.7%)
I attended schools that were culturally diverse.	164 (61.4%)	103 (38.6%)
I consider myself knowledgeable about other cultures.	249 (93.6%)	17 (6.4%)
As an educator, I believe cultural diversity training is important.	250 (94.7%)	14 (5.3%)
My school(s) provide cultural diversity training for the current school year.	162 (60.7%)	105 (39.3%)
There is a large culturally diverse student population at my school(s).	230 (87.1%)	34 (12.9%)
The teachers at my school(s) are culturally diverse.	186 (69.9%)	80 (30.1%)
The teachers at my school(s) are provided opportunities to participate in activities to understand other ethnicity and cultural backgrounds.	152 (57.1%)	114 (42.9%)
School assemblies and holidays are observed at my school(s) that reflect the majority of all culturally diverse students.	158 (59.4%)	108 (40.6%)
Administrators at my school(s) are culturally diverse.	156 (59.3%)	107 (40.7%)
Administrators at my school(s) have a responsibility to include culturally diverse training as a part of professional development.	210 (79.2%)	55 (20.8%)
Teachers at my school(s) are sensitive to students of culturally diverse backgrounds.	212 (80.0%)	53 (20.0%)
The organizational culture at my school(s) foster a positive interaction with all students and staff of culturally diverse backgrounds.	233 (87.9%)	32 (12.1%)

Question	Agree Count (Percent)	Other Count (Percent)
It is important for all students to understand the importance of cultural diversity.	261 (98.5%)	4 (1.5%)
I was identified as a gifted and talented student while in elementary school.	88 (33.2%)	177 (66.8%)
As an educator, professional development and teacher training in gifted education is important.	244 (92.1%)	21 (7.9%)
Students identified as gifted and talented require specialized services.	236 (89.1%)	29 (10.9%)
Gifted and talented students have unique social and emotional needs.	234 (88.0%)	32 (12.0%)
I am aware of resources available at my school(s) to help meet the needs of gifted and talented students.	201 (76.1%)	63 (23.9%)
I am able to identify students with gifted and talented characteristic traits.	230 (87.1%)	34 (12.9%)
I understand the referral process for gifted and talented student testing.	216 (81.2%)	50 (18.8%)
I understand the Normal Distributive Curve (Bell Curve) graph.	200 (75.5%)	65 (24.5%)
My school(s) provide gifted education training yearly.	72 (27.3%)	192 (72.7%)
I have taken gifted and talented education courses prior to becoming a licensed teacher.	70 (26.6%)	193 (73.4%)
The administrators at my school(s) have a responsibility to include gifted education training as a part of professional development.	157 (59.7%)	106 (40.3%)
The administrators at my school(s) are supportive of the Gifted and Talented Education Program.	230 (87.1%)	34 (12.9%)
I have referred ten or more African American and Hispanic students to be tested for the Gifted and Talented Education Program.	99 (37.4%)	166 (62.6%)

Question	Agree Count (Percent)	Other Count (Percent)
Professional development and teacher training I attended increased my effectiveness with staff and/ or students.	209 (79.5%)	54 (20.5%)
Professional development and teacher training increased my knowledge and skills.	231 (88.2%)	31 (11.8%)
Professional development and teacher training is likely to have a positive impact on my career goals.	233 (87.9%)	32 (12.1%)
I would be interested in participating in professional development and teacher training in gifted education.	201 (76.4%)	62 (23.6%)
I would be interested in participating in professional development and teacher training in cultural diversity.	201 (75.6%)	65 (24.4%)

Appendix D

Loglinear Model Results

Table D1

Loglinear Model Results

Question	Result
I attended schools that were culturally diverse.	C^2 (211, N=263) = 32.92, $p <$ 0.05
I consider myself knowledgeable about other cultures.	C^2 (211, N=263) = 12.20, *NS*
As an educator, I believe cultural diversity training is important.	C^2 (211, N=263) = 10.19, $p <$ 0.05
My school(s) provide cultural diversity training for the current school year.	C^2 (211, N=263) = 34.57, $p <$ 0.05
There is a large culturally diverse student population at my school(s).	C^2 (211, N=263) = 17.75, *NS*
The teachers at my school(s) are culturally diverse.	C^2 (211, N=263) = 34.05, NS
School assemblies and holidays are observed at my school(s) that reflect the majority of all culturally diverse students.	C^2 (211, N=263) = 36.46, *NS*
Administrators at my school(s) are culturally diverse.	C^2 (211, N=263) = 37.49, *NS*
Administrators at my school(s) have a responsibility to include culturally diverse training as a part of professional development.	C^2 (211, N=263) = 28.74, $p <$ 0.05
Teachers at my school(s) are sensitive to students of culturally diverse backgrounds.	C^2 (211, N=263) = 24.93, $p <$ 0.05
The organizational culture at my school(s) foster a positive interaction with all students and staff of culturally diverse backgrounds.	C^2 (211, N=263) = 17.25, $p <$ 0.05
It is important for all students to understand the importance of cultural diversity.	C^2 (211, N=263) = 3.32, *NS*

Question	Result
I was identified as a gifted and talented student while in elementary school.	C^2 (211, N=263) = 29.60, $p <$ 0.05
As an educator, professional development and teacher training in gifted education is important.	C^2 (211, N=263) = 11.97, *NS*
Students identified as gifted and talented require specialized services.	C^2 (211, N=263) = 18.11, *NS*
Gifted and talented students have unique social and emotional needs.	C^2 (211, N=263) = 19.03, $p <$ 0.05
I am aware of resources available at my school(s) to help meet the needs of gifted and talented students.	C^2 (211, N=263) = 19.99, *NS*
I am able to identify students with gifted and talented characteristic traits.	C^2 (211, N=263) = 20.63, *NS*
I understand the referral process for gifted and talented student testing.	C^2 (211, N=263) = 27.75, *NS*
I understand the Normal Distributive Curve (Bell Curve) graph.	C^2 (211, N=263) = 24.89, $p <$ 0.05
My school(s) provide gifted education training yearly.	C^2 (211, N=263) = 22.12, *NS*
I have taken gifted and talented education courses prior to becoming a licensed teacher.	C^2 (211, N=263) = 37.53, $p <$ 0.05
The administrators at my school(s) have a responsibility to include gifted education training as a part of professional development.	C^2 (211, N=263) = 21.73, *NS*
The administrators at my school(s) are supportive of the Gifted and Talented Education Program.	C^2 (211, N=263) = 28.32, *NS*
I have referred ten or more African American and Hispanic students to be tested for the Gifted and Talented Education Program.	C^2 (211, N=263) = 29.98, *NS*

Question	Result
Professional development and teacher training I attended increased my effectiveness with staff and/or students.	C^2 (211, N=263) = 20.65, *NS*
Professional development and teacher training increased my knowledge and skills.	C^2 (211, N=263) = 19.49, *NS*
Professional development and teacher training is likely to have a positive impact on my career goals.	C^2 (211, N=263) = 28.75, *NS*
I would be interested in participating in professional development and teacher training in gifted education.	C^2 (211, N=263) = 31.49, *NS*
I would be interested in participating in professional development and teacher training in cultural diversity.	C^2 (211, N=263) = 28.54, *NS*