

SEEING THE PARADIGM: EDUCATION PROFESSIONALS' ADVOCACY FOR  
THE GIFTED STUDENT WITH AUTISM SPECTRUM DISORDER

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by

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## DEDICATION

I am forever indebted to my wonderful husband, Liam, for his unconditional love and support throughout this journey. Undertaking a doctoral program, working full-time, raising three daughters, and caring for elderly parents cannot be accomplished without support. Liam was my calm. He took care of our family, our home, and my disposition, often sacrificing his own agenda to attend to mine. Liam is a loving father, partner, and my best friend. I love you!

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**SEEING THE PARADIGM: EDUCATION PROFESSIONALS' ADVOCACY  
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**ABSTRACT**

Meeting the needs of the gifted student with autism spectrum disorder (ASD) requires addressing both conditions. Education professionals are in a unique position to begin this process by referring the student to school specialists for evaluation. However, diagnostic confusion surrounding autism, misconceptions about special education, varying conceptions of giftedness, and overlapping behaviors of giftedness and ASD can inhibit education professionals' ability to recognize unique behaviors of gifted students with ASD, and make appropriate referrals, placing the student at academic risk.

Autism and giftedness have been studied separately in the fields of education and psychology for more than half a century. Although the study of giftedness with ASD has begun to increase in recent years, no empirical study to date has focused on education professionals who successfully referred this student population for specialized services. The present mixed methods study examined perceptions and experiences of education professionals who successfully referred gifted students with ASD for specialized services.

Survey research probed training, experience, and credentials, as well as perceptions about twice exceptionality. Semi-structured interviews investigated observed behaviors prompting their student's referral for specialized services, experiences with their gifted students with ASD, and evidence they found influential in identifying their student as gifted. These elements combined to provide not only a conceptualization of the gifted student with ASD, but a conception of the education professional who worked with them. The results of this study will inform research, pre-service coursework, and professional development in meeting the needs of this special population of gifted student.

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## CHAPTER 1

### INTRODUCTION

#### **Seeing the Paradigm: Education Professionals' Advocacy for the Gifted Student with Autism Spectrum Disorder**

This study examined teachers' perceptions regarding the unique behaviors and characteristics of gifted students with autism spectrum disorder (ASD) prompting them to make appropriate referrals for specialized services. Students who are identified as gifted and as having a disability, which include gifted students with autism spectrum disorder (ASD) are known as twice exceptional (Assouline, Nicpon, & Doobay, 2009; Cash, 1999). Twice exceptional learners have academic and psychosocial needs that differ from other populations and therefore require specialized evaluation and programming strategies in order to meet those needs (Burger-Veltmeijer, Minnaert, & Van Houten-Van den Bosch, 2011; Doobay, 2010). Identification of both giftedness and autism plays a critical role in this endeavor (Assouline, et al., 2009; Assouline & Whiteman, 2011; Burger-Veltmeijer, Minnaert, & Van Houten-Van den Bosch, 2011, 2014; Doobay, 2010; Little, 2002; Foley-Nicpon, Allman, Sieck, & Stinson, 2012).

The process for determining eligibility for both gifted and special education services begins with a referral. Because education professionals spend much of the day with students, they are in a unique position to recognize behaviors associated with ASD as well as giftedness, and make appropriate referrals for interventions to meet the needs of this special population of student (Bianco, 2005; Bianco & Leech, 2010; Foley-Nicpon, Assouline, & Colangelo, 2013). The gifted student with autism spectrum disorder (ASD) is a unique presence in the classroom. Exhibited behaviors may or may not be like those of other gifted students, other students with ASD, or even other gifted students with ASD (Assouline, Foley-Nicpon, Colangelo, & O'Brien, 2008; Assouline & Whiteman, 2011).

### **Statement of the Problem**

When both giftedness and autism are present in the same child, problems may arise in meeting her or his needs. A student must meet eligibility criteria in both giftedness and autism, which involves three different processes, often with conflicting goals (Assouline & Whiteman, 2011). The eligibility process begins with a referral. Changing diagnostic criteria, confusing special education policy, widely varying definitions and conceptions of giftedness, and overlapping behaviors of giftedness and ASD exhibited by the student pose obstacles to referral of gifted students with ASD for specialized services by education professionals. When obstacles prohibit access to appropriate services, the child's academic needs may not be met, placing the student at academic risk. A conceptualization of the gifted student with ASD assists education professionals in understanding this complex student population, and therefore make appropriate referrals for services and programming to meet their needs.

The current study examined the perceptions and experiences of education professionals who successfully referred gifted students with ASD for specialized services. The overarching goal of this study was to better understand the gifted student with ASD by more clearly appreciating the perceptions, knowledge, and experience of education professionals who recognized their unique behaviors and made an appropriate referral. Two purposes assisted in achieving this goal: 1) a more clear understanding of unique student behaviors underlying education professionals' decision to refer a gifted student with ASD for specialized services; and 2) determining the training education professionals perceived as important in enabling them to understand the characteristics, needs, and abilities of gifted students with ASD and make appropriate referrals to meet their needs.

### **Conceptual Framework**

To understand the gifted student with ASD through the eyes of education professionals, it is important to know who the education professional is. Establishing a profile assists in more fully appreciating this population's perceptions because it provides a demographic and experiential context in which to view them. To understand the perceptions of the education professional regarding the gifted student with ASD, it is equally important to hear about their experiences and perceptions directly, in their words. This allows the education professional to elaborate on ideas, interpretations and descriptions of the process by which he or she makes sense of the gifted student with ASD.

Therefore, this study was conducted in two parts, utilizing both quantitative and qualitative methods in each part to accomplish the stated goals. Survey research was



conducted in the first component. Descriptive analysis was utilized to generate a demographic profile of the education professional who referred gifted students with ASD for specialized services. The description includes training, credentials, and level of experience as an education professional. Grounded theory was used in the second component to analyze and code data generated from specified questions in the survey, from semi-structured interviews, analysis of student artifacts, and field notes generated by the researcher. Emerging themes were identified, resulting in a clearer understanding of the gifted student with ASD.

### **Quantitative Component**

Quantitative research has historically been associated with a positivist/post-positivist paradigm (Creswell & Plano Clark, 2007). This view assumes one reality and one truth, awaiting discovery through value-free inquiry. All knowledge is scientifically verifiable sense data. In other words, knowledge is derived strictly from one's experiences through the senses, and can be objectively analyzed and thus, proven. Positivists assert that the social world can be viewed in the same way as the physical world, and both operate under certain absolute laws (Mertens, 2005). In the present study, survey data were viewed through a positivist lens to help create a profile of the education professional who successfully referred a gifted student with ASD for specialized services. The profile revealed an external truth, via the survey.

Conversely, qualitative research espouses an interpretivist paradigm. This view asserts there are many different realities, informed by each individual's perceptions. Knowledge is acquired through an interaction between one's experiences and one's ideas, and reality is constructed based on each person's subjective interpretation of and

interaction with social and cultural ideas (Patton, 2002). Qualitative methods accomplish such interpreted truth. In the interpretivist paradigm, the social world is different from the physical world, and therefore requires a different study approach (Guba & Lincoln, 1988).

### **Qualitative Component**

The inductive, primary component of this study utilized a grounded theory approach. Developed by Glaser and Strauss (1967), grounded theory is a process in which theories emerge from the data themselves and are therefore said to be grounded. Rather than beginning with a hypothesis to be tested, grounded theory begins with a relatively unexplained phenomenon: the gifted student with ASD as seen through the perceptions and experiences of the education professionals who referred them for specialized services. Theories emerge through a systematic collection and analysis of data.

Grounded theory makes no *a priori* assumptions. Interpretivist ontology is at play, operating on the assumption that people do not react to an external reality out there waiting to be discovered. Rather, people place their own perceptions, biases and values on the external world, thus creating their own reality (Glesne, 2011). Theory emerges through observation, interpretation and description of the process by which participants, in this study, make sense of the gifted student with ASD. The researcher allowed the theory to emerge by bracketing personal assumptions, biases, and values.

That is not to say the researcher entered the study without having explored the extant literature on the gifted student with ASD. Actually, through reading and analysis of the empirical research, the researcher has constructed the following substantive theory,

which Glaser and Strauss (1967) define as theory grounded in the extant literature. They encourage the use of substantive theory as a starting point to stimulate the separation and merging of ideas in the formulation of grounded theory (p. 79).

The extant literature reveals four main factors that act as barriers to making referrals for gifted students with ASD: 1) diagnostic confusion stemming from differences between the latest clinical diagnostic criteria for ASD defined by the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (*DSM-5*; American Psychiatric Association [APA], 2013) and its predecessors (DSM-III, 1980; DSM-III-R, 1987; DSM-IV, 1994; DSM-IV-TR, 2000); 2) differences between clinical diagnostic criteria and educational criteria for ASD defined by the Individuals with Disabilities Education Improvement Act (IDEA, 2004); 3) widely varying conceptions of giftedness, and in how it is identified and addressed in school; and 4) manifestations of twice-exceptionality, particularly overlapping behaviors of giftedness and ASD, including the masking effect. Each is a factor in understanding the characteristics and functioning of the gifted student with ASD and each is essential to the education professional's ability to recognize behaviors unique to the gifted student with ASD and make an appropriate referral.

**Clinical diagnosis of ASD.** Leo Kanner's (1943) initial observations of 11 autistic children noted cognitive impairment along with a triad of behaviors including social isolation, disturbances in communication, and rigid and repetitive patterns of behavior beginning at an early age. At the same point in history, Austrian researcher Hans Asperger observed four children with behaviors similar to those of the children Kanner observed. However, Asperger's group had average to above-average cognitive ability and did not

exhibit the same delays in language as Kanner's children (Wing, 1981).

Coining the term Asperger's Syndrome, Wing (1981) re-introduced the work of Asperger to researchers outside Europe in 1981, well after Kanner's work (1943) had been introduced and studied, resulting in confusion about diagnosis (Doobay, 2010; Worley, 2012). By happenstance, both researchers used the term *autistic*, from the Greek meaning *self* to describe the lack of social interaction and communication of this population. However, there were differences in the cognitive abilities of these two groups, causing debate as to whether Asperger's Syndrome was a separate condition, or simply a different manifestation of autism (Doobay, 2010; Worley, 2012).

As a result, the diagnostic criteria for ASD have undergone dramatic changes since 1980 (Huber, 2007, Worley, 2012). Changes regarding cognitive functioning, age of onset, and severity of behaviors are found in each revision of the DSM, from the DSM-III to the DSM-IV-TR (Huber, 2007). The evolution of DSM criteria for diagnosing autism spectrum disorder and the diagnostic confusion arising from it will be discussed in greater detail in Chapter 2. The current conception of ASD (DSM-5, 2013) places autistic disorder (AD), Asperger's Syndrome (AS) and pervasive developmental disorder-not otherwise specified (PDD-NOS) under a single diagnosis called autism spectrum disorder (ASD; American Psychiatric Association, 2013). Behaviors of ASD, according to the DSM-5, fall on a spectrum of severity and complexity, and cognitive functioning falls on a continuum from very low to very high, including the intellectually gifted.

Although students with ASD are diagnosed by a clinical psychologist who administers standardized assessments to make *clinical* diagnoses, education professionals

may not be aware of the new DSM-5 criteria. Confusion may arise from a general lack of familiarity with ASD, former conditions such as AS and PDD-NOS, and how they fit into the current diagnostic criteria (Bianco, 2005; Bianco & Leech, 2010; Foley-Nicpon, Doobay, & Assouline, 2010; Foley-Nicpon, Assouline, & Colangelo, 2013).

Compounding the difficulty may be the non-educational nature of the assessments utilized for clinical diagnoses (Foley-Nicpon, Assouline, & Colangelo, 2013).

**ASD as a disability under IDEA.** The Individuals with Disabilities Education Improvement Act (IDEA, 2004) identifies 13 categories of disability, of which autism is one. Each disability has a separate federal definition, and criteria informing how school districts provide a free, appropriate public education to qualifying students. The goal of special education is to provide the student with accommodations that allow equal access to the standard curriculum in the least restrictive environment. The measures set forth by IDEA (2004) differ from those defined in the DSM-V (APA, 2013). Consequently, a student clinically diagnosed with ASD may not be eligible for special education services due to differences in criteria between clinical and educational entities.

Eligibility for special education services is determined by a team of professionals including a school psychologist, school social worker, and special education specialist. The goals and accommodations set forth in the student's individualized education plan (IEP) will most likely be executed by the regular education teacher, speech therapist or other education professional (Foley-Nicpon et al., 2013). An education professional not trained in the nature of ASD and giftedness may not recognize gifted behaviors, mistaking them for symptoms of ASD, and may consequently fail to refer the student for gifted identification.

**Giftedness.** Although there is no single definition, the term *gifted* has historically been associated with above average intellectual ability and high academic achievement, performance areas most closely associated with school (Manning, 2006). The first federal definition of giftedness was part of (then) U. S. Commissioner of Education Sidney P. Marland's (1972) landmark report to the Congress. The Marland report identified six areas of giftedness: general intellectual aptitude, specific academic aptitude, creative or productive thinking, leadership ability, ability in the visual and performing arts, and psychomotor ability.

The conception of giftedness has evolved since the Marland (1972) report to include measurement of one's *potential*; having an ability or potential that must be developed, rather than an innate ability that remains constant throughout one's life (Gagné, 2003; Renzulli, 1977, 1998; Subotnik, Olszewski-Kubilius, & Worrell, 2011; Tannenbaum, 2003). Not all gifted students display the same degree of ability, or the same degree of potential, making identification difficult. Some propose that giftedness, then, occurs along a spectrum with intellectual abilities ranging from mildly gifted to genius (Cash, 1999).

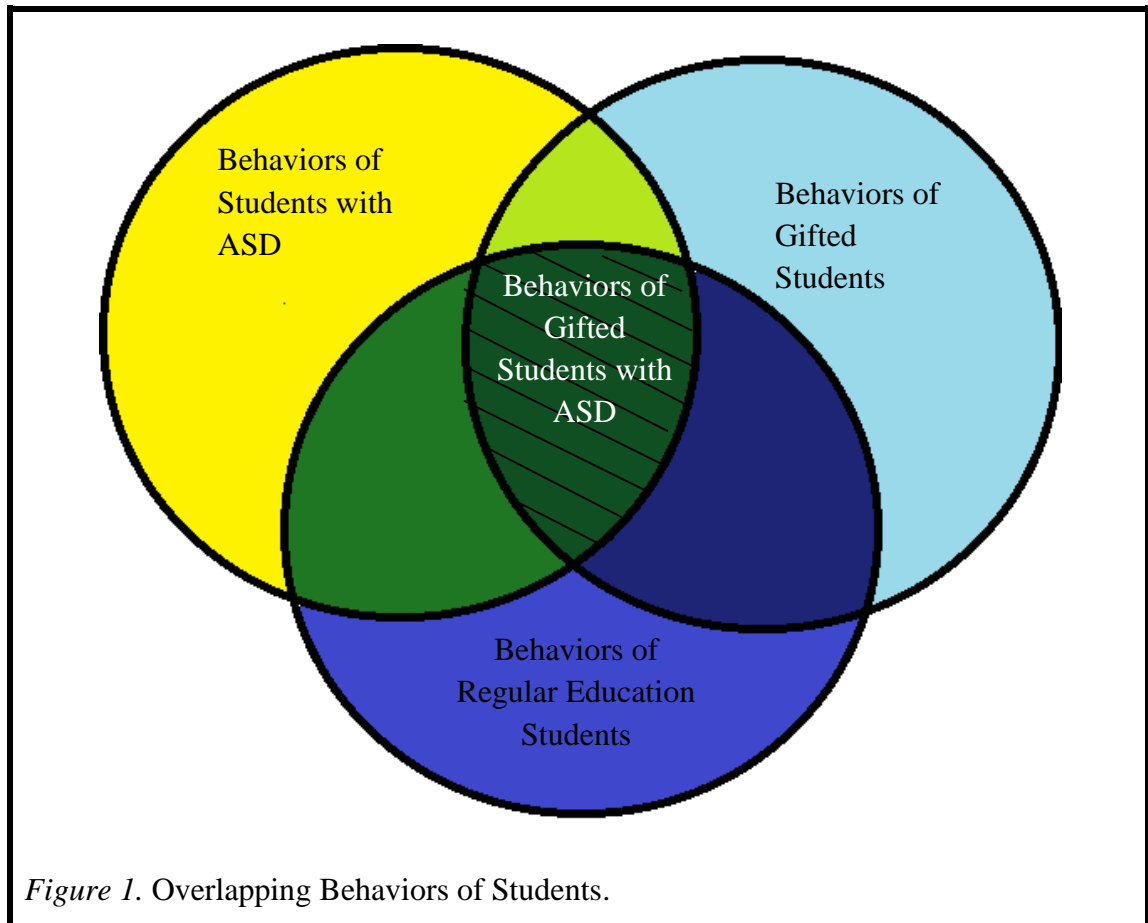
Although the education of gifted students and the education of students with learning disabilities are defined and recognized at the federal level, federal legislation regarding the two populations is both separate and unequal. Decisions regarding whether, and to what extent, gifted students are identified and educated are left to each state, thus definitions and identification criteria vary widely by state. Some states do not mandate gifted education, while some states mandate an IDEA-like approach, complete with an IEP for the gifted student. The discrepancy in federal and state policy regarding students

with disabilities and gifted students contributes to misconception regarding students who exist in both populations, the gifted student with ASD.

**Overlapping behaviors of giftedness and ASD.** The criteria forming the conception of the gifted student with ASD manifest as a set of observable, overlapping behaviors. However, there is disagreement among researchers as to a common set of criteria for identifying the gifted student with ASD (Burger-Veltmeijer et al., 2011). Observed behaviors consistent with giftedness and observed behaviors consistent with ASD can indicate an underlying condition of giftedness, ASD, or both. Although marked by unique observable behaviors, the separate condition of ASD is diagnosed through a comprehensive evaluation and series of tests administered by a licensed psychologist trained in ASD. The separate condition of giftedness is also marked by unique observable behaviors, but it is determined by measures defined by each state's board of education. It is asserted that the overlapping behaviors of gifted students with ASD indicate a unique set of underlying, overlapping characteristics that, only through assessment, can be delineated (Assouline et al., 2009; Doobay, 2010). However, future research is needed to empirically test this notion in a school setting, and discover which common behaviors are present.

The overlapping behaviors of gifted students and those who have ASD are well documented, primarily in the areas of gifted education and psychology (Burger-Veltmeijer, 2011; Doobay, 2010; Gallagher & Gallagher, 2002; Little, 2002; Neihart, 2000; Webb et al., 2005). Behaviors include excellent use of language, strong memory skills, and an intense interest in a given domain. Gifted students and students with ASD may also ask a seemingly limitless number of questions about a topic, or talk ceaselessly

about a topic of interest to them. The researcher asserts that these behaviors can also be present in regular education students, that is, non-gifted students without ASD (Figure 1).



The presence of overlapping behaviors among students in the regular education classroom, that is, non-gifted students, students who are identified as gifted, and students with ASD, can result in a student's inappropriate identification in three distinct ways. First, behaviors indicative of giftedness can be mistakenly interpreted as ASD in highly gifted students, resulting in a *misdiagnosis* (Assouline, et al., 2009; Beljan, et al., 2006). Second, the behaviors can be dismissed as quirky gifted behavior, as discipline problems,



or go unrecognized as symptoms in need of evaluation, when in reality they are characteristic of ASD behavior, causing a *missed diagnosis* (Assouline et al., 2009; Burger-Veltmeijer et al., 2011; Webb, et al., 2005). The third way a student may be misidentified is when behaviors of the gifted student who also has ASD are interpreted as either gifted or autistic, but not both, resulting in incomplete identification (Assouline et al., 2009; Assouline, et al., 2008; Burger-Veltmeijer, et al., 2010; Doobay, 2010). Each of these scenarios results in an inaccurate assessment of the student's performance and ability, placing the student at risk for inappropriate interventions or no interventions at all (Assouline & Whiteman, 2011).

**Use of substantive theory.** One caveat about grounded theory research is the researcher may claim as substantive theory an attempt to test a hypothesis rather than to just observe (Suddaby, 2006). A suggested remedy is to draw from multiple contexts within a given domain of research. In the present study, the gifted student with ASD was examined in the extant literature from the fields of clinical psychology, special education, and gifted education. All of these areas are relevant in the study of the gifted student with ASD. Viewing the topic through multiple lenses and approaches helps prevent the formulation and testing of hypotheses.

Two essential components of grounded theory are constant comparative analysis and theoretical sampling. The constant comparative method is a simultaneous interplay between data collection and analysis. During interviews, data are collected and analyzed simultaneously, theories emerge, and more data are collected. The constant comparative analysis informs the data to be collected next. Theoretical sampling is the process by

which these data collection decisions are made (Glaser & Strauss, 1967). Theories emerge from the interplay between data collection and analysis.

The extant literature sets as a launching point for this study four barriers impacting education professionals' abilities to successfully refer students with ASD for gifted identification. Studying empirical research from the fields of psychology, special education, and gifted education reduces the potential for testing hypotheses. Making no a priori assumptions, the researcher merged and separated ideas from the interviews with education professionals who seemed to navigate the barriers, evidenced by a successful gifted referral.

### **Research Questions**

To understand the gifted student with ASD through the eyes of education professionals who successfully referred them, this study investigated the following questions.

1. What are the characteristics of education professionals who have successfully referred a gifted student with ASD for specialized services?
  - a. What, if any, specialized training did referring education professionals have that they perceive better equipped them to refer a gifted student with ASD for specialized services?
2. How do education professionals describe the gifted student with ASD?
  - a. Which observed behaviors of gifted students with ASD prompted successful education professionals to make appropriate referrals?
  - b. Which type(s) of evidence of student work do education professionals perceive as supporting the referral of a gifted student with ASD?

The first question describes a characteristic profile of the education professional who successfully referred a gifted student with ASD for specialized services and the specific training they found useful in their ability to refer. The profiles of education professionals add a richer understanding and context to the perceptions they elucidate. The second question, how education professionals describe the gifted student with ASD, can be more fully addressed by answering two smaller questions. The two smaller questions add depth and clarity to the larger, overarching question of describing the gifted student with ASD. The answers to these questions inform future research; pre-service coursework, professional development, and practice in helping education professionals make more informed decisions regarding the identification of and design of specialized curricula for gifted students with ASD.

### **Significance of the Study**

There exists a rapid increase in the diagnosis of autism spectrum disorder (ASD) in the United States. The first epidemiologic studies in Europe in the 1960s revealed a prevalence of 1 in every 2,500 children (Centers for Disease Control and Prevention [CDC], 2014). The diagnostic rate has risen to 1 in every 68 children, and 46% of those diagnosed with ASD show average or above average intellectual ability (CDC, 2014). The rise in the diagnosis of ASD has focused attention on the increasing variety of symptoms presented and their impact on student learning (Khouzam, El-Gabalawi, Pirwani, & Priest, 2004).

Empirical research on the intersection of giftedness and ASD is limited. Indeed, only four empirical studies examine education professionals' roles in the identification of gifted students with ASD and each exists only as one part of a larger study of twice

exceptionality. A survey of regular education and special education teachers studied whether a special education label has an impact on a special education or regular education teacher's decision to refer a child with a disability for gifted programming (Bianco, 2005). A follow-up study by Bianco and Leech (2010) included gifted educators and focused not only on the special education label as a factor, but the teacher's credentials as well. Foley-Nicpon, Doobay, and Assouline (2010) assessed the perceptions of parents, teachers, and gifted students with ASD regarding psychosocial functioning using the Behavior Assessment System for Children (2<sup>nd</sup> ed., *BASC-2*, Reynolds & Kamphaus, 2004). Education professionals' familiarity and experience with educational services for twice exceptional students was examined by Foley-Nicpon, Assouline, and Colangelo (2013).

All four of these studies made important contributions to the current literature by empirically focusing on the perceptions of education professionals in referring and supporting the needs of twice exceptional students. However, further empirical study of teachers' perceptions, particularly of the interactions between education professionals and gifted students with ASD, is needed to better appreciate the unique needs of this population.

The present study is designed to fill this gap in the literature. No empirical research to date has examined what specific observed behaviors, and what specific evidence was interpreted in real cases by the people who made them, that resulted in proper identification of gifted students with ASD. The perceptions and analyses of education professionals who successfully referred a gifted student with ASD for specialized services contributes to a conceptualization of the gifted student with autism

spectrum disorder.

### **Definitions of Key Terms**

Contributing to the difficulties faced by education professionals in recognizing the unique behaviors of the gifted student with ASD and making appropriate referrals are the numerous definitions of key terms surrounding the conditions of this population of student. In order to better understand the ideas and concepts in the present study, it is important to establish shared meaning. Key terms are clarified and defined here.

- *autism spectrum disorder (ASD)*- a neurobiological disorder which causes the individual to interact with the world differently than typically neurologically functioning people. Autism spectrum disorder is characterized by deficits in two major areas: 1) social communication and social interaction across contexts; and 2) Restricted, repetitive patterns of behavior, interests, or activities. These symptoms appear in the early developmental stages of childhood (APA, 2013), although they are not always recognized by caregivers until later. People with a diagnosis of Asperger's Disorder, or pervasive developmental disorder not otherwise specified, under the DSM-IV (1994) now have a diagnosis of autism spectrum disorder.
- *DSM*- Diagnostic and Statistical Manual of Mental Disorders; a publication by the American Psychiatric Association which offers classification of and diagnostic criteria for mental disorders, including autism spectrum disorder.
- *education professionals*- For the purposes of the present study, education professionals include classroom teachers, gifted educators, gifted specialists, special education teachers, school counselors, school psychologists, school

administrators, or any other person working in an educational capacity where he or she encounters students on a daily basis.

- *gifted students*- the definition utilized by the school district in which the study was conducted, and the definition by which all participants based their referrals for gifted identification. According to the definition, the gifted are students “...whose abilities and potential for accomplishment are so outstanding that they require special services and programs to meet their educational needs. Gifted students come from many backgrounds, and their special abilities cover a wide spectrum of human potential (the District, local plan for the gifted, 2012-2017).
- *misdiagnosis*- an incorrect diagnosis of one’s condition, including autism spectrum disorder; this can occur when professionals misinterpret observed behaviors.
- *missed diagnosis*- failure to make a diagnosis when a condition warrants one.
- *needs-based assessment*- a systematic process designed to identify and determine the degree of one’s needs
- *psychosocial functioning*- psychological development in the context of a student’s interaction with his or her social environment.
- *social impairments*- a lack of interest in, dissociation with, and/or difficulties with interacting with others
- *special populations*- The local plan for the gifted does not define or describe special populations of gifted students. However, the state plan gifted includes a definition which describes special populations as gifted students who are

culturally different, disabled, or come from low income backgrounds (VDOE, 2010).

- *student artifact*- an original work created or completed by a gifted student with autism spectrum disorder, used in determining that student's eligibility for specialized programming.
- *twice-exceptional*- the definition used by the state department of education governing the district in which the study was conducted; those are "students identified as gifted by the identification and placement committee for the school division's gifted education program and identified with a disability as defined by federal and state special education regulations" (Virginia Department of Education, VDOE, 2010)

## CHAPTER 2

### REVIEW OF THE LITERATURE

Identifying and meeting the needs of gifted students with autism is a difficult task that often entails navigating a confusing labyrinth of clinical diagnoses, federal legislation, and state and local education policy. Disagreement and misconception among researchers, policymakers, and educators makes a nebulous process even more difficult to traverse.

#### **Autism Spectrum Disorder**

Autism spectrum disorder (ASD) is a spectrum condition marked by impairments in social communication, restricted interests, and repetitive behaviors (Diagnostic and Statistical Manual fifth edition [DSM-5], American Psychological Association [APA], 2013). Currently, autism affects 1 in every 68 people in the United States and boys are more than four times more likely to have autism than girls (CDC, 2014). The severity of symptoms falls on a continuum with non-verbal, low cognitive ability on one end and verbal, high cognitive ability at the other. The current construct of ASD is described in the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5, APA, 2013), the text used by mental health professionals in the US to classify, describe and diagnose an array of mental disorders.



Diagnostic criteria and the conceptualization of autism have undergone drastic changes since 1980, when autism first appeared in the DSM-III (APA, 1980). Each revision to the DSM has reflected current research at the time, and has sought to ameliorate challenges in the diagnosis of autism, including the importance of age of onset, the role of cognitive ability as it relates to severity of symptoms, and the inclusion of diagnoses for atypical and milder forms of autism (Doobay, 2010; Huber, 2007).

As the definition and diagnostic criteria have evolved, misconceptions and myths about the nature of the disorder have also arisen. A discussion of the research and resulting revisions to the DSM help to elucidate the enigma surrounding autism diagnosis and its presence as a barrier to behavior recognition among gifted students with autism and appropriate referrals by education professionals.

### **Discovery of Autism**

The first cases of autism were recorded by Kanner in 1943. His study of eleven children noted behaviors including delays in language acquisition and lack of the use of language for the purpose of communication. An obsession with objects, sameness, and order were prominent findings as well. Kanner found that this group perceived anything coming from outside of self as an interruption of the order in their minds. Many of the children did not answer to their names. Further, seven of the children were thought to be deaf due to the children's perceptions of vocal commands as an interruption of their environment (Kanner, 1943). A significant finding of Kanner's was that all eleven children showed "good cognitive potentialities" (p. 247). In the children who spoke, pragmatic use of language was eventually acquired, and Kanner cited exceptional

vocabularies in these children, as well as the ability to remember events and complex patterns (Kanner, 1943).

The word autism comes from the Greek “aut” meaning “self,” and “ism” meaning “state” (Online Etymology Dictionary, 2014). Kanner adopted the term autism from Bleuler, a Swiss psychiatrist who used the term to describe the behaviors of people with schizophrenia (Doobay, 2010). Although Kanner (1943) distinguished the social impairments in children with autism from the withdrawal of schizophrenics from social reality, the association between the two conditions remained for many years, causing controversy and contributing to misconceptions about autism (Fombonne, 2003; Wing, 2005). In point of fact, the American Psychological Association’s first two editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM, APA, 1952; DSM-II, APA, 1968) characterize and define autism as childhood schizophrenia (Volkmar, Cohen, & Paul, 1986).

The conceptualization of autism has undergone many changes since 1943 as researchers have pursued many etiologies including psychodynamic theories in an effort to uncover root causes of the symptoms associated with autism. During the 1950s through the 1970s, autism was thought to be a normal, infantile developmental phase from birth to age two months in which the child is unable to distinguish between self and others (Anthony, 1958; Mahler, 1952). Through clinical observations, Anthony (1958) and Mahler (1952) concluded that children with autism either do not progress beyond this stage of *normal autism* or they regress back to it.

Pronoun reversal, a common linguistic feature of autism, was presented as evidence of an inability to separate self from others (Klin, 2006). For example, if a child

with autism wanted to express fatigue, rather than say, “I am sleepy,” he or she would say, “You are sleepy,” thus reversing the pronouns. Kanner noted however, that children with autism do have early, comparatively normal development periods (1949, p. 418), and subsequent research revealed that children do possess awareness of self and others at birth, and communicate by imitating. Pronoun reversal is a form of delayed echolalia, the repetition of what others have said, and not indicative of a psychodynamic function of autism (Bartak & Rutter, 1974). In fact, there are no developmental stages at which typical development and autism overlap (Meltzoff, 1985; Trevarthen, 1998; Tustin, 1981).

Another popular psychodynamic theory during this era was that autism stemmed from aloof parenting styles. Kanner (1943, p. 250) noted that the parents of all eleven of his initial subjects were highly educated, worked outside the home and were interested in topics other than people, and later posited that autism is caused by emotionally detached mothers (Kanner, 1949); however, Kanner noted that his data did not support this notion (Tustin, 1981). However, the Freudian psychoanalytic trends of the era perpetuated psychodynamic etiologies of autism, and the refrigerator mother theory gained significant attention (Farrugia, 2009).

Bettelheim, a celebrated psychiatrist specializing in emotional disturbance in children, popularized Kanner’s theory of “refrigerator parenting” (Eisenberg & Kanner, 1958) as the single cause of autism and recommended that autistic children should be separated from their parents to best meet their needs. Further, he compared the experiences and subsequent behavior of an autistic child to that of a prisoner in a concentration camp, and behavior of the mother as that of an SS guard (Bettelheim,

1967). After Bettelheim's suicide in 1990, evidence emerged that Bettelheim plagiarized the work of others and entered the academic world with false credentials (Pollak, 1997). The refrigerator parenting theory has largely faded as cognitive and biogenetic etiologies have been explored (Farrugia, 2009; Trottier, Srivastava, & Walker, 1999). However, the stigma of autism as the result of poor parenting remains (Farrugia, 2009).

Finally, Kanner's (1943) finding of delays in social communication among his original population has perpetuated the idea that most or all individuals with autism are cognitively impaired (Huber, 2007). As a result, nearly all research on autism has involved individuals with intellectual disability, indicated by IQ of 70 or below (DSM-5, APA, 2013). However, some researchers grouped their autistic participants with IQ scores above 70 and referred to them as having high functioning autism (HFA), a term not included in the DSM diagnostic criteria, but accepted among the research community (Doobay, 2010; Sanders, 2009).

Misconception lies in the fact that *high functioning* refers to cognitive functioning and not severity of the autism, as the categorization seems to imply (Assouline, Foley-Nicpon, & Dockery 2012). In addition, disagreement exists about whether HFA is a separate condition from autism and Asperger's Syndrome (Doobay, 2010). HFA is sometimes defined as autism with normal intelligence. This can also be misleading because IQ scores between 70 and 100 are considered subnormal (DSM-5, APA, 2013). In addition, the misconception exists that all gifted students have AS/HFA, or that all individuals diagnosed with AS/HFA are gifted (Gallagher & Gallagher, 2002). This evidence suggests that *normal* must be explicitly defined when referring to students as having HFA. Although Kanner (1943) noted in his original study that autism can occur at

all intellectual ability levels, and current conceptualizations of autism support Kanner's finding, very little research on autistic children with high intellectual functioning exists in the autism literature. Consequently, misconceptions remain, adding to misunderstanding about the nature of autism, particularly among the intellectually gifted (Huber, 2007).

### **DSM Revisions**

The DSM, developed by the American Psychological Association (1952, 1968, 1980, 1987, 1994, 2000, 2013) is the manual used by mental health professionals in the US to classify and diagnose mental disorders. To date, five editions of the DSM have been published. Each edition has brought sometimes dramatic change, as well as diagnostic confusion and misconception about the diagnostic criteria for ASD.

**DSM-III.** The DSM-III (APA, 1980) included diagnostic criteria for, and made use of the term autism for the first time under a more general category of pervasive developmental disorders. It was called infantile autism (IA) and other diagnoses under this category included childhood onset pervasive developmental disorder (COPDD), and atypical pervasive developmental disorder (APDD). A broad, vague set of diagnostic criteria was described for each condition and IA was primarily differentiated from COPDD by age of onset (Huber, 2007). Children presenting before age 30 months were diagnosed with IA, and those presenting after 30 months of age were diagnosed with COPDD. The age of onset was not empirically proven (Volkmar & Klin, 2005) and was found to be arbitrary and possibly too stringent (Volkmar, Cohen, & Paul, 1986).

Other diagnostic criteria for both IA and COPDD included social impairment, speech and language deficits, and resistance to change in environment. The diagnosis of childhood schizophrenia was eliminated from this category; however, ruling it out was

listed among the diagnostic criteria for autism. APDD was diagnosed in children who did not meet all of the criteria for IA or COPDD (DSM-III; APA, 1980).

The diagnostic criteria in the DSM-III (1980) did not describe developmental variations in IA and COPDD. Although Kanner described the strong cognitive potential, episodic memory and excellent vocabulary (of the eight children who spoke), these strengths were not included in the DSM-III criteria (Sanders, 2009). Also, the use of the term infantile implied that this was a condition reserved for very young children. Residual diagnoses were made for IA and COPDD in children who once met the criteria, but no longer did. The changing diagnoses and major revisions made to the DSM criteria for autism spectrum disorder are described in Table 1.

**DSM-III-R.** When the DSM-III was revised in 1987, the triad of pervasive developmental disorders and their accompanying diagnostic criteria were refined, broadened and renamed (DSM-III-R; APA, 1987). Infantile autism was renamed autistic disorder (AD), and age of onset was eliminated. These measures stressed the current conceptualization that autism was not reserved for the very young, and could be diagnosed at any age (Huber, 2007). Residual diagnoses of IA and COPDD were also eliminated, and the standard practice of including the term “not otherwise specified” in diagnoses of children who exhibited some but not all of the diagnostic criteria of a given condition was included. Thus, COPDD was renamed pervasive developmental disorder—not otherwise specified (PDD-NOS; Doobay, 2010).

Table 1

*Comparison of Diagnostic Criteria for Autism Spectrum Disorder*

Manual	Year	Included Diagnoses	Major Changes
DSM-III	1980	Infantile Autism (IA) Childhood onset pervasive developmental disorder (COPDD) Atypical Pervasive Developmental Disorder (APDD)	<ul style="list-style-type: none"> <li>eliminated childhood schizophrenia as a disorder</li> <li>included autism in a group of pervasive developmental disorders (PDDs)</li> <li>ruling out of schizophrenia became a criterion</li> </ul>
DSM-III-R	1987	Autistic Disorder (AD) Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS)	<ul style="list-style-type: none"> <li>greatly expanded diagnostic criteria and specificity for each pervasive developmental disorder (PDD)</li> <li>eliminated ruling out of schizophrenia</li> </ul>
DSM-IV	1994	Autistic Disorder (AD) Asperger's Syndrome (AS) Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS) Rett Syndrome Childhood Disintegrative Disorder	<ul style="list-style-type: none"> <li>added Asperger's Syndrome, Rett Syndrome and Childhood Disintegrative Disorder to the group of PDDs</li> <li>criteria text more general for each PDD</li> <li>age of onset changed to 36 months for AD and older than 36 months for AS</li> </ul>
DSM-IV-TR	2000	Autistic Disorder (AD) Asperger's Syndrome (AS) Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS) Rett Syndrome Childhood Disintegrative Disorder	<ul style="list-style-type: none"> <li>included impairments in social interaction in criteria for PDD-NOS</li> <li>expanded description of AD and AS, but not diagnostic criteria</li> </ul>
DSM-V	2013	Autism Spectrum Disorder Social Communication Disorder	<ul style="list-style-type: none"> <li>eliminated the term "pervasive developmental disorders"</li> <li>eliminated Ret Syndrome and Childhood Disintegrative Disorder</li> <li>combined AS and PDD-NOS into ASD diagnostic criteria</li> <li>Added SCD to better address symptoms of former PDD-NOS</li> </ul>

*Note:* Adapted from American Psychological Association (1980-2013). *Diagnostic and statistical manual of mental disorders* (3<sup>d</sup> - 5<sup>th</sup> ed.). Washington, DC: Author.

In the DSM-III-R (APA, 1987), revisions included the expansion of definition and diagnostic criteria for AD and PDD-NOS to include behaviors, characteristics, and examples of 16 criteria, of which a child must display eight to be diagnosed with autism. Expanded criteria included types of speech, sample phrases, descriptions of social play, and examples of reactions to social interaction (DSM-III-R; APA, 1987). The new broader definition led to an overdiagnosis of autism in cognitively impaired children, which perpetuated the myth that autism was reserved solely for the cognitively challenged (Volkmar & Klin, 2005).

**DSM-IV.** Revisions made to the diagnostic criteria in the DSM-IV (APA, 1994) were the result of extensive literature review, empirical testing, and field trials (Volkmar, Paul, Klin, & Cohen, 2005). Age of onset before 36 months was attached to autistic disorder (AD). Diagnosis of PDD-NOS was more clearly defined, and Rett's Syndrome, childhood disintegrative disorder (CDD), and Asperger's Syndrome (AS) were added to the category of pervasive developmental disorders. The addition of AS as a disorder had a great impact on the conceptualization of autism, especially as it related to the diagnosis of children with higher intellectual ability.

Asperger's Syndrome was first introduced to English-speaking countries in 1981, when Wing wrote about a 1944 study in which Austrian physician Asperger described four children with symptoms much like Kanner's (1943) original eleven. Both groups exhibited rigid behavior and social limitations. However, the children in Asperger's group presented with a later age of onset (after 36 months), a high level of language development, and average to above average intelligence (Wing, 1981). Although Kanner reported cognitive promise and strong vocabulary among the members of his group with



speech, these strengths were listed in the DSM-IV (APA, 1994) under diagnostic criteria for AS, and were not included as criteria for AS and PDD-NOS.

The inclusion of AS in the DSM-IV (1994) reduced the overdiagnosis of cognitively impaired children, and seemed to fill a void in the explanation of children with autistic behaviors who presented higher intellectual ability and an absence of language delay (Huber, 2007). However, the research of higher functioning children with ASD that followed added to the diagnostic confusion, as researchers struggled with the controversy over whether AS and HFA or AD were the same condition. The terms were used interchangeably by clinicians, and consequently, children may have received different diagnoses depending upon the clinician and the diagnostic tool (Doobay, 2010).

**DSM-IV-TR.** This publication provided a text revision (TR) for the DSM-IV (APA, 1994). Although the diagnostic criteria for AD and AS were not changed in the text revision of DSM-IV-TR (APA, 2000), the description of each was greatly expanded, reflecting the findings of empirical research (Meyer & Minshew, 2002) to clarify the differential diagnosis of AD and AS. In doing so, the DSM-IV-TR highlighted the overlap of the two conditions. For example, DSM-IV criteria stated that children with AS have normal intelligence and do not have a language acquisition delay. The DSM-IV-TR clarifies this by describing a variety of cognitive functioning rather than solely average or above average functioning. In addition, although language delay may not be present, other communication impairments may exist, such as extreme verbosity, lack of conversational conventions, and lack of response to non-verbal cues. In addition, the definition of PDD-NOS was revised to include deficits in social interaction in addition to

having either communication deficits or repetitive behavior. Prior criteria called for impairments in only one of these three domains (DSM-IV-TR; APA, 2000).

**DSM-5.**After an extensive review of the literature and the diagnostic criteria of the DSM-IV-TR (2000), the APA posed some concerns for consideration. They questioned the consistency of the diagnoses of high functioning autism and Asperger's Syndrome (Kaufmann, 2012), finding that the two diagnoses were being used interchangeably by clinicians. In addition, the appropriateness of PDD-NOS diagnoses was examined, as well as the validity of Rett's Syndrome, and childhood disintegrative disorder. The use of pervasive developmental disorders as a category was also questioned. These questions signaled dramatic change in the conceptualization of autism. The field even moved away from using the Roman numeral V, and began using the Arabic numeral 5.

The revisions to the diagnostic criteria in the DSM-5 (APA, 2013) were sweeping. The current construct of autism is one of a spectrum disorder and symptoms are not pervasive, but specific to the social-communication domain, as well as restricted behaviors and fixed interests. First, the use of the term pervasive developmental disorders was eliminated. Next, APA researchers determined that Rett's Syndrome and childhood disintegrative disorder are not spectrum disorders, and therefore eliminated them from the new APA category of autism spectrum disorder.

Examination of the nature of Asperger's Syndrome found that the diagnostic criteria in the DSM-IV (APA, 1994) did not match the behaviors originally described by Asperger (Wing, 1981); his descriptions fit the autism criteria (Kaufmann, 2012). Further, no empirical evidence was found to support the differentiation of Asperger's

syndrome from autism, supporting the decision to eliminate AS from the DSM-5. AD, AS, and PDD-NOS were thus collapsed into a single diagnosis called autism spectrum disorder (ASD). Social Communication Disorder (SCD) was added to better address the communication deficits of individuals who would have been diagnosed with PDD-NOS. The new construct better explains the symptoms; and differentiation from typically developing individuals was found to be valid and reliable, whereas such differentiation within the former triad of impairments was not (Kaufmann, 2012).

Diagnostic criteria were revised, combining symptoms from the social and communication domains, and retaining the domain of fixed interests. The APA (2013) determined that social deficits and communication deficits are inextricably linked, constituting different manifestations of the same symptoms, and should therefore be considered together. The second domain, restricted patterns of behavior, includes stereotypic behaviors and fixed interests. Although symptoms must exist in early childhood for diagnosis, it is recognized that these may not manifest until later in life, or they may have been previously overlooked by a parent or caregiver.

### **Diagnostic Confusion**

The changes in the conceptualization of autism between the publishing of the DSM-III and DSM-5 have caused lingering confusion, misconception and controversy. Researchers have found it impossible to compare studies over time due to shifts in diagnostic systems, concepts, and criteria. Clinicians have struggled to keep pace with the changes in diagnostic criteria and conflicting findings in the literature. This has led to clinicians' development of nonstandard variations in diagnostic criteria (e.g., Lovecky, 2004), including the addition of terms to characterize specific groups of people on the

spectrum (e.g., high-functioning autism [HFA]). These terms and non-standard criteria have even made their way into the literature (Shoppler, 1998). As a result, children are receiving multiple or incomplete diagnoses and families find conflicting and/or confusing information when they try to learn more about their child's condition (Doobay, 2010). Poor clinical practices leading to inconsistent diagnosis of AS, and overdiagnosis of PDD-NOS, support the decision to eliminate subtypes and diagnose individuals using a single set of diagnostic criteria (Kaufmann, 2012).

**DSM-IV and DSM-5 contrast.** Revisions to the DSM regarding diagnostic criteria reflect the most recent research at the time as evidenced by reviews of the literature and field trials of proposed revisions. The changes resulting in the DSM-IV (APA, 1994) and now the DSM-5 (APA, 2013) represent some of the most dramatic revisions, effectively altering the way autism is viewed by clinicians, practitioners, and, by association, educators. Ongoing disagreement among researchers in the wake of these revisions contributes to misunderstanding about diagnosis and treatment.

Field trials of the DSM-5 (APA, 2013) diagnostic criteria support the validity of the DSM-5 diagnostic criteria (Frazier et al., 2012). The DSM-5 criteria resulted in higher specificity than DSM-IV-TR (APA, 2000), but lower sensitivity. Recommendations included reducing the number of symptom criteria by one to increase sensitivity. A follow-up study supported the recommendation (Frazier et al., 2012). Kaufmann (2012) reported, however, that specificity and sensitivity in the DSM-5 criteria are comparable to those of the DSM-IV. The APA acknowledges a slight reduction in prevalence, but assert that the reduction is negligible, and not due to decreased sensitivity.

Further field tests showed that, although specificity of DSM-5 criteria was high (McPartland, Reichow, & Volkmar, 2012), sensitivity varied by subgroup (Beighley, & Matson, 2014; Frazier et al., 2012; Matson, Hattier, & Williams, 2012; Matson, Kozlowski, Hattier, Horovitz, & Sipes, 2012; McPartland et al., 2012). At particular risk for underdiagnosis as a result of the revised criteria are females (Frazier et al., 2012), those previously meeting criteria for AS and PDD-NOS (Matson, Kozlowski, Hattier, Horovitz, & Sipes, 2012), and high-ability individuals (Carrington et al., 2014; McPartland et al., 2012).

The overall decrease in prevalence under the DSM-5 criteria is of concern. Although the findings of one study found a 12% decrease in prevalence (Frazier et al., 2012), four others found an average 40% decrease on prevalence overall (Beighley, & Matson, 2014; Matson, Hattier, & Williams, 2012a; Matson et al., 2012b; McPartland et al., 2012). The drastic reduction in prevalence cannot all be the result of false positive diagnoses (Beighley & Matson, 2014). This would point to lower scores on clinical measures of ASD symptoms, such as the Autism Diagnosis Observation Schedule (ADOS) or the Autism Diagnostic Interview-Revised (ADI-R).

In fact, the individuals not meeting the DSM-5 criteria for ASD exhibited significant impairment when measured against typically functioning individuals (Beighley, & Matson, 2014; Matson, Hattier, & Williams, 2012; Matson et al., 2012; McPartland et al., 2012). This could mean that a significant segment of the population does not qualify for needed services, particularly students with high ability.

**AD or AS?** The addition of AS in the DSM-IV has caused more confusion and misconception about the nature of ASD than any other revision (Volkmar & Klin, 2005).

Its elimination from the DSM-5 criteria has also caused misconception and controversy (Ghaziuddin, 2010; Wing, Gould, & Gillberg, 2011; Worley, 2012). Further, disagreement among researchers exists as to whether AD, high functioning autism (HFA) and AS are separate disorders or simply different manifestations of the same disorder (Doobay, 2010).

Asperger referred to the children in his study as having *autistic psychopathy* (Wing, 1981). Ironically, he described autistic psychopathy as a character trait, differentiating it from autism, which he characterized as having psychotic underpinnings (Wing, 1981). Van Krevelen (1971) agreed with Asperger, stating that autism followed a course, but AS was a static condition. He drew distinctions between AS and autism in social interaction, speech acquisition and verbal communication, and motor ability between the two conditions. However, he offered no empirical evidence to support his assertions.

Early empirical studies comparing AD to AS in children with similar intellectual ability produced mixed results. However, research difficulties in method and sample selection may have contributed to the findings. Szatmari, Bartolucci, & Bremner (1989) found comparable Verbal and Performance IQ scores between children with AD and AS. Gillberg (1989) found flat affect and odd intonation in speech more prevalent among children with AD, a characteristic most commonly found in children with AS.

Ozonoff, Rogers, and Pennington (1991) found that children with AS had significantly higher verbal ability than those with autistic disorder (AD). Additionally, they found less discrepancy in subtest scores within the AS group than those found within the AD group. All of these studies were conducted prior to the publishing of DSM-IV

(APA, 1994) criteria for Asperger's Syndrome. The use of non-standard criteria to diagnose AS in these studies calls into question the reliability of the results, and makes their generalization difficult.

Cognitive profiles comparing individuals with AD and AS reveal that children with AS are believed to have higher verbal IQ and full scale IQ scores than those with AD, but the two groups show comparable performance IQ scores (Ehlers et al., 1997; Ghaziuddin & Mountain-Kimchi, 2004; Gilchrist et al., 2001). However, many scholars believe that the distinctions in cognitive profiles, particularly as the sole discerning factor, do not constitute a differential diagnosis (Ehlers et al., 1997), and that the differences point instead to severity (Meyer & Minshew, 2002).

The DSM-IV-TR (2000) diagnostic criteria for AS and AD differ only in that children with AS do not have a language acquisition delay and are of normal intelligence. The large degree of overlap in the diagnostic criteria supports the assertion that AD and AS are two manifestations of the same disorder. Further, in a study of 12 university testing sites, wide variation was found within and across sites in how each subtype of ASD (AD, AS and PDD-NOS) was diagnosed (Lord et al., 2012). This suggests that there is more variation within each group than between them, illustrating disagreement among experts in the field of ASD as to when and how to diagnose ASD, and supporting the use of a single diagnosis.

The relative lack of empirical research on children with ASD who are at the superior range of intellectual ability leaves unanswered questions about how autistic behaviors manifest in this population, what effect these behaviors have on academic achievement, and what interventions are necessary to meet their needs (Doobay, 2010;

Foley Nicpon, Allmon, Sieck, & Stinson, 2011; Foley Nicpon et al., 2012; Huber, 2007). These unanswered questions are even more problematic with the adoption of the DSM-5 diagnostic criteria, as gifted children are less likely to be diagnosed using these criteria (Carrington et al., 2014; McPartland et al., 2012). The historical disagreement among researchers and the lack of a universally accepted definition for ASD compound the difficulty in defining and describing the gifted student with ASD.

### **Autism and the IDEA**

The Individuals with Disabilities Education Act (IDEA; Public Law 94-142) originally passed in 1990, grew out of the 1975 Education for all Handicapped Children Act (EHA). The EHA established a national need to educate students with disabilities and allowed the federal government to collaborate with states while operating within the general welfare clause (Herring, 1991). The IDEA protects the educational rights of students with disabilities, specifies requirements for meeting the needs of qualifying students, and offers due process for parents to resolve conflicts. It states that all students with disabilities are entitled to a free, appropriate, public education (FAPE) in the least restrictive environment (LRE). This legislation lists 13 impairments that constitute a disability, of which autism is one.

The IDEA was reauthorized in 2004 as the Individuals with Disabilities Education Improvement Act (IDEA, 2004) and provides requirements measuring the present level of performance and the academic progress of students with disabilities. Each eligible student receives an Individualized Education Plan (IEP). This is an annually reviewed document that sets forth the exact criteria in each individual child's curriculum, which services the child receives, frequency of services, goals and objectives, and the method(s)



for measuring success. Further, the IDEA (2004) provides due process protection for parents and caregivers throughout the process of identifying and providing and delivering services for this child with a disability (1 300.507(a)).

Autism is defined by IDEA (§300.101I(1), 2004) as:

...a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child's educational performance. Other characteristics often associated with autism are engaging in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.

In order for a student with ASD to receive curriculum accommodations under the IDEA (2004), his or her symptoms must be significant enough to pose a negative educational impact. A clinical diagnosis does not automatically rule the student eligible for special education services. States develop methods and adopt assessment tools for measuring the severity of educational impact guided by the definition and criteria and in compliance with the policies set forth in the IDEA (2004). The methods are employed as part of a comprehensive psycho-educational evaluation by a team of education professionals in each school district. The team may include school psychologists, school social workers, counselors, the child's general education teacher, special educators, and parents.

A gifted student with ASD may face difficulties in being found eligible for special education services. He or she may be performing in the average range, which, upon closer examination, falls far short of the child's measured intellectual ability. ASD masks

his or her true ability, and the child suffers a missed-diagnosis as a result (Beljan et al., 2006; Pfeiffer, 2009). The IDEA (2004) states that special education services must be offered to a student even though he or she is not failing, has not been retained, and is advancing from grade to grade. This implies that special education is offered to students so that they may perform at a level commensurate with their abilities. However, the perception that a student is not failing may inhibit an education professional's ability to recognize a masked disability, discouraging him or her from referring the student for special education services, due to a lack of awareness or education about the IDEA.

Education professionals are less aware of policies and guidelines outside their own domains (Foley Nicpon, Assouline, & Colangelo, 2013). The eligibility process includes assessments by a team of education specialists from different education domains. Consequently, members may have little to no familiarity with twice-exceptional students. In fact, in a survey of 300 education professionals, more than 60% reported having little or no familiarity of the concept of twice-exceptionality (Robertson, Pfeiffer, & Taylor, 2011).

According to the IDEA (2004) parents are considered partners in the identification, design, and evaluation of services provided to their children with special needs. However, some educators consider parents to be unreliable sources of information (Gilliam & Coleman, 1981), or adversaries (Powell, Hecimovic, & Christensen, 1993). Further, parents' satisfaction levels with their school's ability to meet the needs of their child with ASD decline as the child gets older (Spann, Kohler, & Soenksen, 2003). A lack of knowledge about policies and procedures for identifying students for special and

gifted education services and a poor working relationship with parents act as barriers to the academic success of the gifted student with ASD.

### **Section 504**

The Rehabilitation Act of 1973, §504 is a civil rights measure to protect children from discrimination in school. Whereas IDEA has strict, narrow definitions and guidelines for specific disabilities, §504, title 34 C.F.R. 104.3(j)(2)(i) provides a broader, more general definition of disability: “persons with a physical or mental impairment which substantially limits one or more major life activities.” High achieving students with ASD may qualify for accommodations under the broader definition of disability under §504 if they do not qualify for services under the strict guidelines of the IDEA.

Under §504, a student does not receive an IEP with individualized modifications to provide curricular benefit to the student. Provisions of §504 are designed to grant equal access to the curriculum via general accommodations in testing, programs, and building accessibility. They do not offer the same rights as the IDEA because accommodations under §504 do not fall under special education. The IEP and §504 documents are alike in that both documents are legal and enforceable under federal law. Both are informed by the findings of an assessment team of education specialists, and parents may file a dispute claim if they disagree with the committee’s findings, although dispute resolution procedures differ between the two provisions.

The same barriers posed by the eligibility process under the IDEA are also in place for accommodations under Section 504, because eligibility is determined using the same procedures. Education professionals who are not aware of the definition and

guidelines under Section 504 may not know to make this recommendation to parents and colleagues, especially if the student is found ineligible for services under IDEA.

### **Giftedness**

Just as the conception of autism spectrum disorder (ASD) has undergone an evolutionary process, the conception of giftedness has changed dramatically since Terman's seminal study of gifted individuals in 1925. The changing conception of autism has brought about controversy and uncertainty. Likewise, the dramatic changes in the complex construct of giftedness have brought about myth and misconception about how giftedness is identified.

#### **The Evolution of the Conceptualization of Giftedness**

Lewis Terman (1925) conducted the first formal study of giftedness and introduced the concept of IQ as a means of measuring intelligence. Since then, researchers have expanded, questioned, and contradicted Terman's findings, resulting in a better understanding of what giftedness is and how to meet the needs of this population. The conception of giftedness has evolved over the past century from a narrow view involving a single notion of superior intelligence, as in Terman's work (1925), to a dynamic and moldable developmental progression that does not end upon graduation from high school (Subotnik, Olszewski-Kubilius, & Worrell, 2011).

Myths and misconceptions are part of the evolutionary process. Just as myths arose from the changes made to the definition and diagnostic criteria of ASD, myths and misconceptions have arisen as to the nature and conceptualization of giftedness. In fact, there is currently no *single* conception of giftedness, and misconceptions about what it means to be gifted exacerbate reluctance by school districts to promote gifted education

(Subotnik et al., 2011). A discussion of the source of such myths elucidates how they act as barriers to meeting the needs of the gifted student with ASD.

**Intelligence as a single construct.** Terman (1925) asserted that intelligence is a quantifiable, heritable trait that remains constant throughout one's life. However, as he followed his participants throughout their lives, he discovered that differences in IQ were not distinguishing factors or predictors in success or failure among this population as adults (Terman & Oden, 1959). This finding suggests that more than a single factor, in this case, the IQ is a play in the conception of giftedness. Although some researchers recruit and identify gifted participants using a multiple-criteria method (Willard-Holt, Weber, Morrison, & Horgan, 2013), the IQ is the basis on which many researchers determine giftedness when studying students with disabilities where giftedness is a co-morbid condition (Assouline, et al., 2008; Assouline et al., 2009; Assouline, et al., 2012). This practice furthers the misconception that giftedness is a one-dimensional construct.

**Intelligence as areas of intellectual strength.** In his report to Congress in 1972, Commissioner of Education Sydney Marland offered the first federal definition of giftedness, establishing domains that schools are tasked with identifying and developing: general academic, creativity, visual/performing, kinesthetic-psychomotor, and leadership. This definition signified a shift from viewing giftedness as a static construct of intelligence, to a manifestation in a variety of domains, requiring individualized identification and programming approaches to meet the varying needs of gifted students (Marland, 1972; Stephens, 2008). The Marland (1972) definition serves as the basis for the current federal definition under NCLB (2002) and many state definitions of giftedness

are based on the federal definition (National Association for Gifted Children [NAGC], 2014).

In the years that followed, Gardner (1983) contributed to the idea of areas of intellectual strength by identifying (now) nine intelligences, including visual-spatial, bodily kinesthetic, musical, interpersonal, intrapersonal, linguistic, logical-mathematical, naturalistic, and existential. Sternberg (1984) found that successfully intelligent individuals make optimal use of strengths in the areas of analytic abilities, creative abilities and practical abilities while compensating for their weaknesses.

**Intelligence is not enough.** Growing out of a notion of different manifestations of intelligence in specific domains, Renzulli (1977) introduced the idea of psychosocial factors in combination with intelligence, suggesting that intelligence is necessary but not enough to adequately define giftedness. Renzulli's Three Ring Conception of Giftedness (1998) proposed that the equal interaction of the psychosocial elements of creativity and task commitment, with above average intelligence was present in individuals who made creative contributions to their fields. Similarly, Sternberg's (2003) Wisdom, Intelligence, Creativity Synthesized model (WICS) described giftedness as the development of expertise, and excellence is measured relative to one's peers in a given domain.

Tannenbaum (2003) viewed giftedness as developed talent, but stated that it is realized primarily in adults, and recognized giftedness in children in terms of potential. His talent development model consists of five factors, all of which must be present in the successful development of talent: general ability, specific ability, psychosocial factors, external factors and chance (Tannenbaum, 2003). The works of Sternberg (1984, 2003), Renzulli (1998), and Tannenbaum (2003) shifted the conception of giftedness from one

of interactive, albeit stationary intelligence and psychosocial factors, to one of developed expertise by way of a process.

**Talent development.** The talent development conception of giftedness is not new, and evolved from an interaction of components (Sternberg, 1984; Tannenbaum, 2003) to a developmental process building in intensity and complexity, as the individual grows from childhood to adulthood (Subotnik et al., 2011). Renzulli's Enrichment Triad Model (1977, 1998) introduced the idea of developing talent in a sequence that builds in intensity and complexity via appropriate educational experiences at school.

Gagné's (2003) Developmental Model of Giftedness and Talent (DMGT) defined general ability, specific ability, psychosocial factors, external factors and chance, but placed them in a sequence from natural ability, which he termed gifts, to high levels of expertise in a domain, which he called talent. Individuals' gifts are recognized in intellectual, creative, socio-affective, and sensorimotor abilities, as measured by performance in the top 10% of same-age peers in the same domain. The DMGT (Gagné, 2003) involves developmental learning and practice (LP), both formally and informally, suggesting that talent development occurs both in and out of school.

The scholarly productivity/artistry (SP/A) model (Subotnik & Jarvin, 2005) builds upon the Enrichment Triad Model (Renzulli, 1977) and the DMGT (Gagné, 2003) constructs of cultivating abilities into expertise by recognizing psychosocial elements that serve as catalysts propelling the individual from one stage of talent development to the next. Subotnik and Jarvin (2005) also assert that the individual builds on strengths and utilizes psychosocial skills more than technical skills when making significant contributions to the field.

The latest progression in the conceptualization of giftedness moves the idea of talent development as a process from potential to expert abilities to another level. A proposed Talent Development Megamodel (Subotnik et al., 2011, p. 29) builds upon earlier models and recognizes 1) giftedness as developed expertise (Sternberg, 2003); 2) the development of talent along a trajectory (Renzulli, 1998; Stanley, 1976); 3) the importance of psychosocial factors (Stanley, 1976; Sternberg, 2003; Subotnik & Jarvin, 2005); and 4) eminence (Bloom, 1985; Subotnik & Jarvin, 2005). The fifth principle, opportunity, moves beyond existing models by recognizing its interrelatedness with the individual, who must choose to take opportunities (Subotnik et al., 2011). Psychosocial factors determine the success or failure of talent development. Further, eminence is explicitly stated as the desired outcome of gifted education (Subotnik et al., 2011).

The conception of giftedness has evolved from Terman's (1925) narrow view of superior intelligence to the interaction of multiple ways of thinking with psychosocial variables, to a broad and comprehensive notion of developed talent resulting in eminence (Subotnik et al., 2011). Intelligence is no longer viewed as a static, lifelong construct individuals possess to varying degrees, determining the degree of future achievement. Rather, intelligence is seen as a set of dynamic and malleable abilities meant to be developed over the course of a trajectory defined by a given domain.

### **Gifted Education**

In theory, the conception of giftedness covers a wide range of abilities and strengths and can be found in many different domains. In practice, giftedness is closely associated with school (Cross & Coleman, 2005; Doobay, 2010; Renzulli, 1977). Giftedness is most often identified in the education setting, and although the latest



conceptualizations of giftedness call for talent development both in and out of school (Subotnik & Jarvin, 2005; Subotnik et al., 2011) the education setting is where the majority of services are delivered. There is no federal mandate for the education of the gifted. Consequently, decisions regarding definition, identification, and education are left to each state and vary greatly (Zirkel, 2005). The lack of a standard definition and identification measures causes uncertainty among parents and educators about the nature of giftedness, and how gifted children learn. This uncertainty inhibits the ability of educators to recognize giftedness in typically developing students and design curricula to meet their unique needs. When autism is added, the task of recognizing giftedness and customizing curricula is further complicated.

**Definition of giftedness.** The Marland report's (1972) federal definition of giftedness has been revised several times to reflect the latest conceptualization of giftedness at the time (Javits Act, 1988; Ross, 1994; NCLB, 2002). Although the definition offered by the authors of *National Excellence: A Case for Developing America's Talent* (Ross, 1994) is not the most recent, in the researcher's opinion, it is the most comprehensive and reflects more of the talent development conceptualization of giftedness:

Children and youth with outstanding talent perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment. These children and youth exhibit high performance capability in intellectual, creative, and/or artistic areas, possess an unusual leadership capacity, or excel in specific academic fields. They require services or activities not ordinarily provided by the schools. Outstanding talents

are present in children and youth from all cultural groups, across all economic strata, and in all areas of human endeavor.

Giftedness is often defined in the research literature by a person's *potential*; having an ability that must be developed, rather than an innate ability that remains constant throughout one's life (Gagné, 2004). Not all gifted students display the same degree of ability, or the same degree of potential. Gifted students also display different behaviors associated with giftedness, and to varying degrees, as described below. Giftedness, then, occurs along a continuum, and although it is most closely associated with school, the behaviors of the gifted exist both inside and outside the educational setting.

**Characteristics of Giftedness.** Certain behaviors are often associated with gifted individuals, are observable from a young age, and can be cognitive or affective. Gifted students learn at a faster pace and often display the use of higher-order thinking skills sooner than their same-age peers (Hoogeveen, van Hell, & Verhoeven, 2012). They may also form their own ways of problem-solving, show intense interest in a domain, deep curiosity, or think abstractly at an earlier age than their peers (Clark, 2002; Silverman, 2002; Winebrenner, 2001). Gifted students are often early readers, demonstrate high ability with numbers, and have a long attention span (Silverman, Chitwood, & Waters, 1986).

Gifted students may display a variety of socio-emotional behaviors. Underachievement, performing below one's abilities can indicate low self-esteem or low motivation; a poor match between the student and his or her environment; or a masked cognitive, physical or emotional issue in gifted students (Reis & McCoach, 2000; Siegle,

2001). Perfectionism in gifted students may appear as mastery, performance-goal or performance-avoidance behavior (Elliot, 1999). They may also display strong feelings of independence, non-conformity, and impatience with peers. Some gifted children have difficulty making friends, feel alienated, or struggle with social conventions (Beljan et al., 2006). Asynchronous development is apparent in some highly gifted children (Bailey, 2011; Silverman, 2002). Asynchrony means *out of sync* and is characterized by uneven intellectual and/or emotional development compared to physical development.

Some gifted students show social and emotional differences such as intensity or overexcitability, especially in areas of interest (Dabrowski, 1964). Greater show of emotion, deeper understanding of social themes, and a greater degree of socio-emotional development than same-age peers may be evident (Cross, 2005; Gross, 2002; Kane, 2009). On the other hand, gifted students share many affective characteristics and similar interests as their same-age peers (Cross, 2005), as well as the same range of expression of mental health concerns as same-age peers (Zeidner & Shani-Zinovich, 2011). In other words, they can be just as well-adjusted as any other group of students (Reis & Renzulli, 2009), and the needs of the gifted are as heterogeneous as their same-age peers.

Not all gifted students display all or even many of these characteristics. This can make identification of gifted students complicated. Tacit assumptions, misconceptions, and biases held by education professionals prevent many from recognizing characteristics of giftedness and making appropriate referrals (Neumeister, Adams, Pierce, Cassady, & Dixon, 2007; Siegle, 2001; Siegle & Powell, 2004). This, coupled with an over-reliance on norm-referenced, group-administered tests reduces identification to a population that is largely from the dominant culture, well-behaved, and easy to teach (McClain &

Pfeiffer, 2012). The result is that many gifted students go unidentified and their potential is not developed, especially if the students also have a disability such as ASD.

### **Twice Exceptionality**

A student who is gifted in one or more areas and also has one or more disabilities is considered twice-exceptional (Assouline Foley-Nicpon, & Huber, 2006; Assouline et al., 2009; Assouline & Whiteman, 2011; Cash, 1999; Eig, Weinfeld, & Rosenstock, 2014). The topic first appeared in the literature in 1977, and early writings focused more on the learning disability of the student than the giftedness (Assouline & Whiteman, 2011). Much of the empirical research on twice exceptionality addresses gifted students with specific learning disabilities (SLD). The research is descriptive in nature, and focuses on a variety of issues including cognitive and academic behaviors, identification issues, socio-emotional characteristics, and effects of interventions (Foley Nicpon et al., 2011; Neihart, 2008).

Twice-exceptional students often have gifts and talents unrelated to school, and have a very creative approach to problem-solving, often as compensation for a disability (Baum & Owen, 1988; Nielson, 2002). They exhibit high levels of abstract thinking (Ferri Gregg, N., & Heggoy, 1997) and use metacognitive skills to assist with reading comprehension (Hannah & Shore, 2008). They are often overlooked for gifted programming because educators focus on the student's disabilities rather than gifts (Assouline et al., 2006; Donnelly & Altman, 1994) or because their grades are not failing (Foley Nicpon et al., 2011). Behavior can be disruptive or combative, a sign of depression or low self-esteem, as a result of their unusual combination of strengths and weaknesses (Baum & Owen, 1988; Baum, Cooper, & Neu, 2001).

Many researchers agree that twice-exceptional students are underrepresented in gifted programs (Baum, Cooper, & Neu, 2001; Beljan et al., 2006; Cline & Schwartz, 1999; Tallent-Runnels & Sigler, 1995). Only 1% of students who receive services under IDEA participate in gifted programs, compared with 7% of the general education population (U.S. Department of Education, Office for Civil Rights, 2014). In addition, twice-exceptional students often receive services to address their disability, while their gifted needs go unaddressed (Gallagher & Gallagher, 2002; Little, 2001).

Within the group of twice exceptional learners are gifted students with autism. Very little empirical research has been conducted in this area. Also, the new DSM-5 (APA, 2013) diagnostic criteria for ASD are about one year old as of this writing, making it necessary to draw on empirical research conducted under the DSM-IV-TR (APA, 2000) criteria. This may impact the interpretation of research results. However, some researchers have cited extant literature to justify the practice of combining all three pervasive developmental disorders into a single category, naming it ASD (e.g. Foley Nicpon et al., 2009; Burger-Veltmeijer et al., 2010), as is done in this study.

### **Identification Issues of Gifted Students with ASD**

The identification of the gifted student with ASD is made especially difficult due to conflicting paradigms in the diagnosis of each condition, and the spectrum nature of each condition. Taken separately, each is an obstacle to the identification of either condition. Taken together, they present a barrier not only to the identification of either condition, but to the larger issue of combining the two into a single conception of the gifted student with ASD.

## **Conflicting Paradigms**

Giftedness and ASD are identified and diagnosed differently, but the “either-or” way in which determinations are made regarding each is similar. Diagnosis of a disability such as ASD is clinical, performed by a licensed professional, usually outside the school setting. By measuring performance deficits against a set of criteria and using a variety of tests and inventories, a diagnosis is given as a presence or absence (Burger-Veltmeijer, 2014). This is not consistent with the spectrum nature of ASD, where symptoms of the condition fall on a continuum from mild to severe and not all symptoms are presented by all individuals with autism.

Giftedness however, is not a disability, and therefore does not involve a clinical diagnosis. It is often identified by education professionals, not clinicians, and usually in a school setting. By measuring performance strengths against criteria that vary from state to state and indeed, district to district (NAGC, 2013), students are found eligible or ineligible for gifted services and/or programming. This too, is incompatible with the spectrum nature of giftedness, the degree of ability falls on a continuum and not all behaviors associated with giftedness are displayed by every gifted student.

**Merging paradigms.** Many researchers studying gifted students with ASD have reconciled this disconnect of strength versus weakness by defining giftedness as cognitive ability, based solely IQ score (see e.g. Doobay, 2010; Huber, 2007; Foley Nicpon et al., 2011), in an attempt to place giftedness into a clinical paradigm. Further, the purposes of the studies cited here were clinical in nature, focusing on cognitive function rather than academic achievement or talent development. Consequently, merging the paradigms in this way produces findings that do not tell us much about the

giftedness of the students being studied, nor about the conceptual nature of the gifted student with ASD.

Most empirical studies comparing ability profiles and academic achievement among students with ASD have not included studies of gifted students with ASD. Further, the results are conflicting (Assouline et al., 2012). For example, Eaves and Ho (1997) found that students with ASD show comparable achievement and IQ. However, they did not control for IQ. Estes, Rivera, Bryan, Cali, & Dawson (2011) found that ability-achievement discrepancies exist for nearly all of their participants with higher functioning ASD.

Two studies compare ability and achievement in gifted students with ASD, and the findings shed light on the uniqueness of this population (Assouline et al., 2009; Assouline, et al, 2012). Assouline et al. (2012) found that individual subtest scores of the *Wechsler Intelligence Scales for Children* (WISC-IV; Wechsler, 2003), and *Wechsler Adult Intelligence Test* (WAIS-III; Wechsler, 1997) were strong predictors of the academic performance of gifted students with ASD (Assouline et al., 2012). For example, Assouline et al. (2012) found that Working Memory and Processing Speed Indices, subtest measures of the WISC-IV (Wechsler, 2003), showed a significant correlation with reading, math, and written language scores. Difficulties with working memory and processing speed are common among students with ASD (Foley Nicpon et al., 2012). Therefore, these factors may indicate a negative effect on academic performance in students with ASD who struggle with working memory and processing speed. Further, these results support research findings that gifted students with ASD perform lower than their IQs predict (Estes et al., 2011).

The findings of this study can inform interventions that may increase academic performance. The drawback of the study is that the focus remains solely on academic achievement. Although all current conceptions of giftedness include above average intelligence as one component, none include it as the only component (Gagné, 2003; Renzulli, 1998; Stanley, 1976; Sternberg, 2003; Subotnik et al., 2011). Empirical research on gifted students with ASD has focused on the effect of autism deficits on cognitive function or intellectual performance, but none has examined the other aspects of giftedness, such as the impact of psychosocial functioning on talent development in gifted students with ASD, or the effects of competition on the development of talent in gifted students with ASD. We are left, then, with an incomplete conception of the gifted student with ASD.

### **The Spectra of Giftedness and ASD**

Complicating identification of giftedness and ASD are the spectrum natures of both conditions. Giftedness is conceptualized as a person's *potential*; having an ability that must be developed, rather than an innate ability that remains constant throughout one's life (Gagne, 2003; Sternberg, 2003; Subotnik et al., 2011; Tannenbaum, 2003). Not all gifted students display the same degree of ability, operate in the same domain, or demonstrate the same degree of potential, making identification difficult. Gifted students also display different affective behaviors of giftedness, and to varying degrees. Giftedness, therefore, occurs along a spectrum of ability, and manifests differently according to domain and from person to person.

ASD is likewise described as a spectrum condition. Individuals with ASD demonstrate a variety of behaviors and cognitive functions including delays in language



acquisition, communication deficits, difficulties with relationships, and dependence upon routine. These behaviors fall on a continuum, ranging from mild to severe (APA, 2013). Not all people with ASD demonstrate all, or even many of the behaviors, just as the gifted person may exhibit few or many of the behaviors associated with giftedness.

As mentioned previously, gifted students with ASD are diagnosed in each area in terms of the absence or presence of each condition. The danger of diagnostic criteria and procedures with only two dimensions is that students who are at one end of either spectrum may be misdiagnosed or missed in a diagnosis. This overlooked population is characterized as being in what Burger-Veltmeijer (2007) called the *grey zone*. She asserted that many students in school fall into this zone and suggested assessing gifted students with suspected ASD using a needs-based approach, measuring dimension and degree rather than presence or absence.

Burger-Veltmeijer (2007) designed the Dimensional Discrepancy checklist, which includes verbal, social, and perceptive behaviors. She suggested that it be used in educational settings to observationally assess the degree to which a student exhibits overlapping behaviors: associated with giftedness at one ends of the Likert-type scale, and with giftedness plus ASD at the other end. Although she supports the design with extant literature, the checklist has not been empirically tested. Further, an education professional with little or no knowledge of giftedness and/or ASD may produce suspect results.

### **Overlapping Behaviors of Giftedness and ASD**

Many of the behaviors consistent with giftedness overlap with those associated with ASD. These are behaviors that appear to be the same in both the gifted child and the

child with ASD. However, understanding why the behavior occurs is essential to differentiating the two conditions. Donnelly and Altman (1994) noted that although social skill deficits, verbal abilities, and sensory issues overlap, all of these are neurologically based for the child with ASD, and often more intense. This brings a clearer understanding of the underlying motivations of these behaviors.

Gifted children and children with ASD experience asynchronous development, that is, parts of their development occur at different, often conflicting rates (Assouline et al., 2009; Burger-Veltmeijer et al., 2014; Doobay, 2010; Foley Nicpon et al., 2011; Silverman, 1997). For example, a student with ASD may sound like a small adult when talking about an area of interest and may seem to interact well in a group of adults, but when placed among age-mates, he or she may have difficulty conversing or making friends. A gifted student may be able to explain the intricate workings of a watch, but lack the development of fine motor capacity to draw a schematic.

Both gifted students and those with ASD exhibit intensity of focus, especially in areas of interest, and can be obsessive and/or perfectionistic (Burger-Veltmeijer et al., 2014; Cash, 1999; Little, 2002). Both may spend very long periods of time focusing on an area of interest, and they have keen observational skills and an eye for details (Amend, Schuler, Beaver-Gavin, & Beights, 2009). The gifted child is demonstrating perseverance in attending to a task, but his or her attention can be diverted more easily than the child with ASD who is solitary, in his or her own thoughts, and is much less easily diverted (Kanner, 1943).

Both populations may also appear to daydream. This could be a sign of boredom in the gifted student (Lind, 2001). For the student with ASD however, this may indicate

the need for time to process language and focus (Assouline et al., 2009). Obsession or perfectionism may cause the gifted student to prolong starting or avoid a task altogether (Speirs Neumeister, 2004). For the student with ASD, the obsession is more concerned with sameness and routine, but may cause the same types of task avoidance in reaction.

The gifted child and the child with ASD demonstrate acute sensory awareness (Burger-Veltmeijer et al., 2014; Cash, 1999; Lind, 2001; Silverman, 1997). Unusually great appreciation for music, language, or art is an example of positive manifestations in both populations. Conversely, overstimulation can occur in both populations. Loud noises, textures, or smells may cause inappropriate or immature behavior in response. Additionally, both gifted and autistic children can exhibit difficulty with attention and focus (Amend et al., 2009; Foley Nicpon et al., 2010).

Both gifted and ASD populations can be highly verbal (Cash, 1999) and demonstrate extensive vocabularies. Both groups may talk incessantly about an area of interest. However, the gifted child can reciprocate and may allow the listeners to participate. The child with ASD is unaware of whether this topic is of interest to the listener. Both may find it difficult to remain seated during a lesson and may misbehave during transitions from one activity to the next. (Amend et al., 2009; Assouline et al., 2008; Foley Nicpon et al., 2010). The gifted student may act impulsively and/or display nervous, “quirky” habits under stress (Lind, 2001). The student with ASD exhibits stereotyped behaviors such as finger-flapping or complex body movements (Amend et al., 2009; Foley Nicpon et al., 2010).

### **The Masking Effect**

Part of the issue of overlapping behaviors involves the masking effect: the strengths of giftedness and limitations of ASD can mask either the disability or the giftedness (Burger-Veltmeijer, 2007; Burger-Veltmeijer et al., 2010; Foley Nicpon et al., 2011; Gallagher & Gallagher, 2002). For example, a student who is highly verbal and has an extensive vocabulary may be misdiagnosed as having ASD rather than being identified for giftedness, for the verbal precocity is mistaken for a deficit in reciprocal conversation, a symptom of ASD, rather than giftedness. These factors can result in identification problems for the gifted student with ASD (Cash, 1999; Gallagher & Gallagher, 2002; Foley Nicpon et al., 2011; Neihart, 2000; Webb et al., 2005). The second study comparing ability profiles to academic performance in gifted students with ASD illustrates this point. In a case study of two profoundly gifted girls, one with ASD and one without, three student types are discussed (Assouline et al., 2009). Type A is the gifted student with high cognitive ability and average to above average social skills. The type B gifted student has high cognitive ability, but demonstrates some behaviors consistent with social-emotional issues. The type C gifted student has high cognitive ability and severe social impairments. Type B students are at risk for misdiagnosis of ASD because their behaviors may be consistent with being highly gifted and not with ASD. The type C student is at risk for a missed diagnosis because his/her behaviors, although consistent with ASD, may be interpreted as being the result of having a high level of giftedness. Foley Nicpon et al., (2011), compared the two girls as Type B and Type C gifted students.

In comprehensive psychoeducational evaluation profiles of both the Type B and Type C student the two students revealed nearly identical academic and cognitive

functioning, suggesting that these factors alone are not enough to address the needs of the gifted student with ASD (Assouline et al., 2009). However, assessments specifically testing for ASD, the Autism Diagnostic Observation Schedule (ADOS), the Autism Diagnostic Interview-Revised (ADI-R) and the test for adaptive functioning, revealed marked differences resulting in ASD diagnosis for the Type C student. This finding indicates that, even among profoundly gifted individuals, social and communication issues can negatively impact functioning. Although the participants in this study are very rare, the findings underscore the importance of making appropriate recommendations for gifted students, autistic students, and gifted students with ASD.

### **Perceptions of Education Professionals**

The diagnosis and identification processes for gifted students with ASD are fraught with confusion, contradiction, and misconception. However, neither of these processes can begin unless someone recognizes behaviors consistent with both conditions and makes a referral. Although anyone can refer a student for assessment for gifted or special education, in many cases, this task falls to the education professional. Much of the gifted child with ASD's day is spent at school, placing education professionals in the best position to recognize behaviors and make such a referral. A misdiagnosis or a missed diagnosis can lead parents, teachers, and therapists toward inappropriate interventions that can potentially cause harm (Webb et al., 2005). Training in both giftedness and ASD, as well as school guidelines for serving this population are essential to meeting the needs of the gifted student with ASD (Assouline & Whiteman, 2011).

A nationwide survey of education professionals (Assouline & Foley Nicpon, 2007) revealed education professionals reported having little or some familiarity with

twice exceptionality. Specifically, less than 10% of school psychologists were familiar with gifted services guidelines, but 92% reported specifically knowing the guidelines for special education. Further, nearly half of classroom teachers reported little or no familiarity with twice exceptionality. Respondents ranked the gifted specialist as the professional in the best position to provide support for the twice-exceptional student.

Characterized as a “first step” Assouline & Foley Nicpon (2007, p.13), tested the pulse of educators’ familiarity with twice exceptionality. However, the respondents included in group comparisons were classroom teachers, gifted teachers and school psychologists only. Too few special education teachers responded to make group comparisons, and resource teachers, administrators and counselors were not included in the study. In addition, the survey did not ask specifically about subsets of twice exceptionality, such as gifted students with ASD.

A second, follow-up survey (Foley Nicpon et al., 2013) expanded the questions and the number of respondents. In this study, gifted education teachers reported knowing more about twice exceptionality, but not necessarily gifted students with ASD, than psychologists. Although overall, education professionals reported high levels of familiarity with twice exceptionality, of which ASD is a part, their reported experience with gifted students with ASD was far less. Further, education professionals reported fair confidence levels in their ability to make appropriate referrals for further evaluation of this population (Foley-Nicpon et al., 2011). Finally, respondents ranked performance on classwork and classroom behavior difficulties as the two most important factors to consider in making a referral for twice-exceptional students.

Foley-Nicpon et al.'s (2011) secondary study helped gauge improvement in levels of familiarity of education professionals with twice exceptionality. However, this study, too, is limited in that it used an online survey and participants were recruited via a gifted education list-serv. This may explain the disproportionate number of gifted educators among the respondents. Because the survey was self-reporting, respondents may have perceived greater knowledge than they actually possess. Finally, this study focused on giftedness and ASD as one lesser part of a larger study on twice exceptionality, making it difficult to glean specific perceptions of education professionals on this population.

Barriers to education professionals' ability to make appropriate referrals include teacher-held bias (Johnson, Karnes, & Carr, 1997; Siegle, 2001; Siegle & Powell, 2004) and a lack of training (Cline & Schwartz, 1999). Educators' low expectations of students with disabilities (Cline & Hedgeman, 2001) can also prevent a twice-exceptional student from receiving appropriate educational support. Teachers are particularly influenced by disability labels when making referrals for gifted programming (Bianco, 2005).

In a pair of studies (Bianco, 2005; Bianco & Leech, 2010), participants read identical vignettes. Treatment groups read vignettes where the student was labeled either learning disabled (LD) or emotionally disturbed (ED). In both studies, teachers overall were less likely to refer a student with a disability label for gifted programming, however referral decisions varied more by educational role. For example, the second revealed that gifted teachers were most likely to refer a student for gifted programming with or without a label, while special education teachers were least likely (Bianco & Leech, 2010). Reasons given by the special education teachers indicated a focus on the student's disability rather than recognizing gifted behaviors (Bianco, 2005) and the most cited

reason was a perceived mismatch between student's characteristics and the demands of the gifted program (Bianco, 2005).

While Bianco (2005) supports the need for training in special education and gifted education, there are limitations. The survey instrument in the second study included a description of a hypothetical twice-exceptional student and participants were asked to choose from a list of six recommendations. An open-ended question probing the participant's reasoning followed. This format limited the responses teachers could have given. In addition, the choice not to use a real student story for the vignette possibly lowered the accuracy of the behaviors described, even though the vignette was field-tested. The inclusion of school counselors and school psychologists may have added valuable insight into education professional's perceptions of twice-exceptional students. Finally, although teachers' perceptions about twice-exceptional students were examined, gifted students with ASD were not part of either study.

### **Conclusion**

The gifted student with autism has unique needs separate from other gifted students and from other students with ASD (Neihart, 2000). In order to meet their needs, both conditions must be recognized and evaluated. This process begins with a referral. The autism and gifted literature present a profile of the gifted student with ASD, but neither has addressed this population holistically, through the eyes of the education professionals who work with them, toward a conception of the gifted student with ASD.

Barriers prevent education professionals from recognizing behaviors unique to this population and making appropriate recommendations. The diagnostic criteria for ASD have undergone dramatic change as research has shaped how we diagnose and treat



it. However, change has brought misconception and misunderstanding about the nature of ASD, differential conditions within the diagnosis, and its association with giftedness. Much debate centers on the DSM-5 combining of AD, AS and PDD-NOS into a single diagnosis of ASD; the role of HFA and AS, and misconceptions regarding the intellectual functioning of students with ASD.

The conception of giftedness has undergone an equivalent evolution, leaving myth and misconception in its wake. The overreliance on IQ in defining giftedness in the autism literature leads to misconception about its importance in practice (Bianco, 2005). The research on gifted students with ASD in the gifted literature addresses issues of misdiagnosis and missed diagnosis, but has not provided standardized way of defining giftedness, especially as it pertains to the student with ASD. The talent development conception of giftedness has not been empirically tested at all with regard to students with disabilities. Consequently, no contribution can be made from this vantage point to the conception of the gifted student with ASD.

Finally, no empirical study to date has examined the perceptions of education professionals who successfully referred a gifted student with ASD for specialized services. Insight gained from these successes informs future research and practice by working toward a conception of the gifted student with ASD.

## CHAPTER 3

### METHODOLOGY

The present study examined the perceptions of education professionals who successfully referred a gifted student with autism spectrum disorder (ASD) for specialized services, observed characteristics and behaviors of the student prompting their referral, and training and credentials they perceived as important to their ability to make an appropriate referral. The overarching goal of this study was to better understand the gifted student with ASD by more clearly appreciating the perceptions of education professionals who recognized their behaviors and referred them for specialized services. Therefore, the objective of current study was to generate theory that would help to explain 1) successful referents' ability to recognize unique behaviors in the gifted student with ASD and make referrals for services; and 2) unique behaviors prompting successful referral of gifted students with ASD for services.

#### **Research Questions**

This study sought to answer the following research questions:

1. What are the characteristics of education professionals who have successfully referred a gifted student with ASD for specialized services?
  - a. What, if any, specialized training did referring education professionals

have that they perceive better equipped them to refer a gifted student with ASD for specialized services?

2. How do education professionals describe the gifted student with ASD?
  - a. Which observed behaviors of gifted students with ASD prompted successful education professionals to make appropriate referrals?
  - b. Which type(s) of evidence of student work do education professionals perceive as supporting the referral of a gifted student with ASD?

### **Study Design**

The goals and purpose of a study as well as the research questions, inform the methods by which data are collected and analyzed. The inductive and deductive nature of the goals and purpose of this study necessitated multiple methods of data collection and analysis to answer both research questions. A mixed-method, sequential, nested design, integrating both quantitative and qualitative methods of data collection and analysis were utilized.

Some researchers assert the incompatibility of the two paradigmatic views as support for the argument that quantitative and qualitative methods cannot be successfully integrated (Guba & Lincoln, 1988). A researcher cannot gather data through the philosophical lenses of induction and deduction, and provide a clear finding. Both methodologies assume different views of the world and the nature of knowledge, making data collection impossible.

Other researchers however, argue a more pragmatic approach to data collection and analysis. The search for solving the research problem outweighs the ontological and epistemological underpinnings of the two methodologies (Miles & Huberman, 1984).

Further, the inherent realities and truths of the methodologies allow for amalgamation of methods to arrive at the best solutions to research problems (Bryman, 2006; Reichardt & Cook, 1979). It is this argument to which the present study adhered.

A number of considerations inform the typology of a mixed-method study, the most important of which are the goals and purpose, and the research questions (Bryman, 2006; Creswell, 2003; Greene, Caracelli, V.J. & Graham, 1989; Morse, 2003). These factors dictate the theoretical drive (Morse, 2003), which is the inductive or deductive direction of the study. The theoretical drive informs the methods of data collection and analysis, allowing the researcher to identify primary and secondary foci (Morse, 1991). Another consideration involves the timing of each component; that is, whether data is collected simultaneously or consecutively. Finally, the researcher determines the purpose for the integration of the two methods (Creswell, 2003).

The present study is comprised of two components, one inductive and the other deductive. The primary focus, addressed by research question 2 is predominantly inductive in nature. Although both qualitative and quantitative methods of data collection and analysis were employed, this question was answered using chiefly qualitative methods. The secondary focus is primarily deductive in nature, addresses research question 1, and helps provide triangulation, depth, and dimension to the primary focus. Together, the two components provide a rich, comprehensive understanding of the perceptions and knowledge of education professionals who recognized and met the needs of the gifted student with ASD. It is this understanding that assists us in moving toward a conceptualization of the gifted student with ASD.

To address research question 1, the researcher sought to elucidate the characteristics of the education professional who successfully referred a gifted student with ASD for specialized services. Quantitative responses from the *Education Professionals Survey* provided the majority of data producing a profile, including gender, education, areas of study, training and credentials, and years of experience. Qualitative participant responses from semi-structured interviews provided a richer, more complete picture of this population's training, knowledge of, and experience with the gifted student with ASD.

Because data from one focus produced the participants for the other, the two study components were conducted sequentially. First, the Education Professionals Survey was administered. Survey participants were offered the option of participating in a semi-structured interview. Respondents who agreed to this option comprised the field of interview participants who engaged in one-on-one, semi-structured interviews. During the interviews, participants described their perceptions of the behaviors and characteristics prompting them to refer gifted students with ASD for specialized services, and the training they perceived as helpful in that endeavor.

One rationale of the mixed-method design of this study is triangulation (Bryman, 2006; Cohen, Manion, & Morrison, 2007; Patton, 2002). The examination of human behavior is more reliable when viewed from more than one point of view, particularly if these views are contrasting, such as those inherent in quantitative and qualitative methods. In other words, when two opposing paradigms view an object in roughly the same way, the researcher can be confident in his or her findings. Multiple data sources

and member checking are powerful techniques for triangulating data, and contribute to their credibility and reliability (Lincoln & Guba, 1985).

Utilizing quantitative and qualitative methods to focus on the same phenomenon is more powerful than the use of a single method (Bryman, 2006). Although different data sources may still produce different results, due in particular to the opposing lenses to which each of the qualitative and quantitative methods ascribe. Such differences should be viewed as deepening one's understanding of a given phenomenon rather than weakening of the study's credibility Patton (2002).

A second rationale for mixing qualitative and quantitative methods in this study is complementarity (Greene et al., 1989). The mixing of qualitative and quantitative methods to answer the research questions produced a richer, more clearly defined understanding of education professionals' perceptions, knowledge, and experience regarding the gifted student with ASD by using data collected from one method to clarify and elaborate the data collected from a different data source (Greene et al., 1989). The resulting understanding contributes to a better conceptualization of the gifted student with ASD.

### **Participants**

The primary focus of the present study was to examine the perceptions of education professionals who successfully referred a gifted student with ASD for specialized services. This is a very specific participant population, so purposive criterion sampling was utilized (Patton, 2002), informed by a roster of currently enrolled gifted students with ASD in *the District*. The roster included the names of the education professionals who referred them for special education evaluation.

The present study was conducted in a moderately large, urban school district in a mid-Atlantic state. The district enrolled just over 32,000 students in the 2014-2015 school year, the year for which the study was conducted. A more comprehensive description as well as a student demographic profile is discussed in Chapter 4. A total of 20 education professionals responded to the Education Professionals Survey, and included classroom teachers, gifted educators, a special educator, a support staff and a speech/language pathologist. Fifteen of these 20 participated in semi-structured interviews. Participants had similar levels of training, but varied levels of experience and familiarity with gifted and special education policies of the District, and of autism spectrum disorder.

The researcher collected from the District's Department of Assessment a listing of 35 currently enrolled students who were eligible for Special Education Services or accommodations under Section 504 of the Rehabilitation Act of 1973 (504 plan) for autism spectrum disorder, and were also identified gifted via the District's gifted identification process. The listing provided each student's current grade level, school, homeroom teacher, and birth date. The researcher requested and received further data from each student's current school, including student ethnicity, age/grade at the time of referral for ASD, and the name of the education professional who initially referred the student for special education services or 504 accommodations.

The District's Gifted Department provided gifted identification information for the 35 students who were identified as both gifted and receiving services for ASD by the Assessment Department. Data included the student's age/grade at the time of gifted identification, each student's area of identification, which evidence was required to identify the student, and the name of the education professional who referred the student

for gifted identification. Examination of this listing revealed surprising information about the identification of 18 gifted students with ASD in the District.

Seventeen students were identified gifted via a referral from an education professional. Eighteen gifted students with ASD were identified gifted as a result of an annual district-wide screening of all first grade students. The screening process in the District includes *a priori* completion of a *Gifted Behaviors Teacher Rating Scale* by each first grader's homeroom teacher. It was not known whether these teachers would have referred the student for gifted identification in the absence of the screening, particularly because the District does not accept referrals for first grade students due to the screening. Therefore, in addition to the classroom teachers of the 18 students, the researcher requested and received the name of each gifted resource teacher assigned to the respective students' schools at the time of identification.

The gifted resource teachers (GRT) who serve in the elementary school setting in the District play an integral role in both the annual first grade screening and the subsequent identification process. In addition to collaborating with first grade teachers to differentiate instruction when requested, they provide schoolwide professional development on the District's gifted identification process. GRTs train all first grade teachers in the administration of the Cognitive Abilities Test (CogAT, Lohman, Hagen, & Thorndike, 2001), and work directly with first grade students to prepare them for the screening.

During the identification process, the GRT conducts formal observations of and interviews with first grade candidates. Although not certain, a strong likelihood existed of the gifted resource teacher's *a priori* knowledge of the student's abilities. The researcher



included the GRTs of the 18 students identified via the screening due to the strength of this likelihood.

**Survey participants.** The listing of currently enrolled gifted students with ASD provided by the District revealed a total of 51 education professionals who successfully referred them for specialized services. The listing includes education professionals who referred the student for special education services; for gifted education services; and in some cases the gifted resource teacher of the students who underwent the District's annual screening. Some of the education professionals on the listing co-referred a student for specialized services, while others referred more than one student. A small group of education professionals made simultaneous referrals for the same student; one referral for gifted identification and the other for special education services for ASD. The 51 names comprised the field of education professionals eligible for invitation to participate in data collection for the secondary, primarily quantitative focus of this study, the Education Professionals Survey.

**Interview participants.** The results of the survey produced the population of potential participants in the primary, predominantly qualitative focus of this study. The final survey question invited the 20 respondents to participate in a semi-structured interview. Fifteen respondents accepted this invitation by responding affirmatively and providing their email addresses in an open response. An email message was then sent to each potential interview participant. The message included an overview of the study, the role of the participant, the *Research Participant Consent Form*, and the researcher's contact information so that their interview could be scheduled. Follow-up emails were sent as needed.

The text of the initial contact email message inviting professionals to participate in the Education Professionals Survey can be found in Appendix D. The text of the email thanking the respondent for agreeing to participate in the semi-structured interview, and instructions regarding how the participant should proceed can be found in Appendix E.

### **Data Sources**

Data were generated from four sources: The researcher collected data for the secondary, quantitative focus of the study by administering the Education Professionals Survey (See Appendix B). To address the primary focus, qualitative data were generated from: 1) semi-structured interviews with education professionals; 2) education professionals' analysis of a student artifact where appropriate, evidence produced by the student and used in support of the referral of the student; and 3) field notes the researcher recorded during and immediately following each semi-structured interview. Appendix A illustrates data sources, data collection, and the corresponding research questions and research foci addressed by these measures.

### **Education Professionals Survey**

The Education Professionals Survey is a researcher-constructed, quantitative measure designed to gather descriptive data from education professionals who successfully referred a gifted student with ASD for specialized services. Data collected by this tool addressed both the quantitative and qualitative foci of the study and assisted in answering both research questions (Table 2). The Education Professionals Survey asked participants for demographic information including gender, total number of years in the field of education, primary role in education, number of years in this role, population served, and credentials, endorsement, and areas of study. The participants also

were asked about observed behaviors in gifted students with ASD, evidence they saw as influential in identifying a gifted student, and obstacles to meeting the needs of gifted students with ASD. Finally, participants were asked to assess their knowledge, experience and efficacy in referring a gifted student with ASD for specialized services. The complete Education Professionals Survey can be found in Appendix A.

### **Semi-structured Interview**

Qualitative data were generated to address the primary focus of the study via a video-and audio-recorded, one-on-one, semi-structured interview. A portion of some interviews was dedicated to analysis of a participant-selected student artifact, discussed below. Both data sources addressed the qualitative focus of the study and data collected and generated using these tools assisted in answering both research questions (Appendix A). Each interview, lasting approximately 75-120 minutes, took place in a location chosen by the participant. Each participant was advised to choose a location where he or she felt at ease and could speak freely. Each discussion began with a query about the education professional's perceptions about his or her role in education. This question served as an ice-breaker, designed to build rapport with the participant, and set a relaxed tone for the interview.

Participants were then invited to share experiences with, and perceptions and beliefs about gifted students, students with ASD, and gifted students with ASD. Discussion segued into discussion of the participant's experiences with the student or students he or she referred, and reasons for making each referral. Some interviews concluded with the participant's discussion of his or her respective student's artifact.

A more comprehensive set of interview questions is found in Appendix B. The questions were broad and general in nature, providing the participant the opportunity to freely share experiences, perceptions, and impressions. In addition, the asking of general questions better avoided details that may tend to lead the participant toward a specific point of view. Follow-up questions for the purposes of clarification and elaboration were posed as they arose.

### **Participant Analysis of Student Artifact**

Where appropriate, participants provided perceptions, interpretations, and descriptions of an artifact he or she selected from the referred student's eligibility file, deemed by the participant as most influential in identifying the student for gifted education services. The participant explained his or her perceptions regarding the influence of this particular artifact on the eligibility of the student in question, as well as its support for the referral of the student. The qualitative data generated from the participants' interpretations not only assisted in answering research question 2 (observed behaviors, and supporting student evidence) but served a triangulating purpose in developing a conceptualization of the gifted student with ASD.

### **Field Notes**

Field notes were written during and immediately following each semi-structured interview. The researcher also made constant comparative notes during the interview, making connections to other participants' responses, and noting commonalities in discussions and responses that were significantly different from other responses heard. These notes assisted in identifying common ideas and emerging themes, and allowed formulation of follow-up questions during the same interview session.

The researcher's video-recordings captured non-verbal gestures and motions, including head nods and shakes, non-verbal references to the student artifact, and sketches and illustrations the participants made in the course of their interviews. Interview conditions, setting, atmosphere, and possible distractions affecting participant responses were also noted.

The field notes, which addressed the second research question, were used to triangulate the qualitative data generated from each participant. The researcher served as a confirming witness to the events of each interview, as described in detail in the field notes. Corroborating data, additional data and clarification of participant responses added to the credibility of the collected data.

### **Procedure**

Data collection and generation took place in two sequential stages. Quantitative data were collected and then analyzed in order to determine potential participants for the second stage of the study. Qualitative data were generated and analyzed in the second stage. Data collection and analysis for the quantitative stage of the study is discussed first, followed by discussion of the data collection and generation, and analysis for the qualitative stage of the study.

#### **Quantitative Data Collection and Analysis**

In the first stage of the study, the *Education Professionals Survey* was disseminated, collected, and analyzed. Responses to the final survey question indicated each respondent's decision whether to participate in a semi-structured interview. A description of the process for the quantitative stage of the study follows.

**Survey dissemination and collection.** The researcher acquired from the District email contact information for 25 of the 51 potential participants via the District's internal, personnel email system. To increase the total number of potential participants, the researcher conducted an Internet search for the remaining 26 education professionals utilizing the search engine Google, the professional network LinkedIn, and the social network Facebook. This search resulted in researcher sending seven private Facebook messages, and three private LinkedIn messages (See Appendix F). Three potential participants could not be searched due to incorrect or incomplete information available from the District. The search and subsequent contacts netted replies from four individuals, and three agreed to participate in the survey.

A total of 28 introduction messages were sent to potential participants. The email message provided an overview of the purpose of the study, the role of the participant, description of the risks and protections of participation, and a link to the survey, which the researcher created using Qualtrics Version 7 (2015) survey software. After 15 days, only two surveys had been completed. While preparing a follow-up reminder, sent to help maximize the return rate, the researcher noted the two surveys were completed by respondents netted from the Internet search. Further investigation revealed settings in the District's internal email system had prohibited delivery of the introduction email and survey link.

The researcher contacted each potential participant individually via email, providing a brief overview of the study, an explanation of the researcher's inability to send the survey link via the email address provided, and to ask each education professional for an alternate email address (See Appendix G). Twenty six emails were

sent, and the researcher received 18 responses. In toto, 28 surveys were disseminated, and 20 were completed.

**Quantitative data analysis.** In the present study, the collection and generation of data using quantitative and qualitative methods necessitated quantitative and qualitative methods for data analysis. Descriptive and correlational analyses were utilized for the quantitative focus of the study. The collection and analysis of these data assisted primarily in answering the first research question: What are the characteristics of education professionals who have successfully referred a gifted student with ASD for specialized services?

***Descriptive Statistics.*** Demographic comparisons of gender, race/culture, and labels of gifted, autism, and gifted plus autism were made of the currently enrolled students identified as gifted and receiving services for autism with the total population in the District. Data were collected from the listing provided by the District and from demographic information reported by the District to the State Department of Education in which the study was conducted. Information regarding the socio-economic status of gifted and of students receiving special education services was not reported to the state, and therefore not available for comparison. A demographic profile of gifted students with ASD in the District was created and provides a context through which the education professionals' experiences with them can be better appreciated.

Qualtrics Version 7 (2015) survey software and IBM-SPSS Version 22 statistical software (2013) were utilized to analyze the Education Professionals Survey responses, and to generate a demographic profile of education professionals in the District who successfully referred gifted students with ASD for specialized services. Characteristics

include gender, years of service, student population served, and the current or most recent educational role of each participant. Each education professional's role in the District provides a unique vantage point from which he or she views the gifted student with ASD. This role, in the context of the education professionals' demographic profile, assists in better appreciating the perceptions of the education professional.

Education degrees, licenses and endorsements held, and areas studied, were also collected and analyzed. These data assist in directly answering the second research question regarding training. Finally, level of understanding, familiarity, and experience with gifted students with ASD were reported. Answers to these final questions provide further insight into the perceptions of education professionals about the gifted student with ASD.

The survey results produced a description of the types of evidence education professionals deemed influential in gifted identification, obstacles in meeting the needs of gifted students with ASD as perceived by the participants, and observed behaviors of gifted students with ASD. These survey data served as triangulating sources for the semi-structured interview, the student artifact analysis, and the researcher's field notes to result in a thick description of education professionals' perceptions about giftedness and the gifted identification of students with ASD.

***Correlational analysis.*** During the coding of qualitative data, an interesting pattern began to emerge suggesting a relationship between the knowledge participants had regarding gifted students, students with ASD, and gifted students with ASD and their experience with each of these populations. A correlational test was conducted to determine if such a relationship exists within and across these special populations of



students. The results provided a richer description of the education professional who successfully referred gifted students with ASD for specialized services, and helped the researcher further explore the emerging theme of knowledge and experience.

### **Validity and Reliability: Quantitative Quality**

Quantitative methods utilize reliability and validity as a measure of their quality. Qualitative methods measure quality using trustworthiness, quality, and rigor. Each method in the present study employed the appropriate quality measures according to the dictates of their respective methodology.

To assure face validity and construct validity of the survey instrument, the researcher conducted a field test of the Education Professionals Survey. The researcher chose professionals from a variety of educational roles, levels of experience, training and education, and genders in the District. The purpose of the study, research questions, and field test instructions were explained to each field test participant prior to survey viewing. The field-test survey was administered via Qualtrics, the same method by which the survey was administered to participants in the study.

Field test participants were asked to *talk through* their understanding of each item on the survey, and indicate understanding of the wording, format, and answer choices. Observations and feedback about the ease of software use, clarity of instructions, and survey questions were recorded from each field test participant during and after survey completion.

Construct validity measures the degree to which an instrument measures what it claims to measure. As part of the field test exercise, field test participants were asked to relate survey items to research questions, concepts and constructs designed to be

measured by this tool. The *talk through* engaged in by the field test participant assisted in measuring the degree to which survey items would measure what they are intended to measure. Revisions included small changes in phrasing for clarity and the addition of School Social Worker to the list of most recent primary roles in education. The complete list of survey questions can be found in Appendix A.

Descriptive data were compiled and reported using the reporting feature within the Qualtrics survey software. The descriptive statistical analysis conducted in this project is intended to illustrate the properties of and add a different level of description to the education professionals, their conceptualizations of the gifted student with ASD, and the training they received regarding this population.

### **Qualitative Data Collection and Generation**

The researcher utilized a grounded theory approach to data generation, collection, and analysis for the qualitative portion of the present study. Quantitative research methods operate from a hypothesis made by researcher after a thorough review of existing literature. The hypothesis is then tested using a real-world application or treatment. Grounded theory however, is a qualitative method that begins with no a priori assumptions on the part of the researcher and uses a systematic set of procedures for generating and collecting, and analyzing data to formulate theory grounded in the data themselves (Charmaz, 2006; Strauss & Corbin, 1998).

**Data collection.** Data for the qualitative stage of the study were collected from two sources: 1) responses to selected survey questions designed to probe participant perceptions about giftedness and gifted identification (see Appendix A); and 2) a student artifact used in the gifted identification of the student each participant referred. These

data also served as a triangulating measure to help ensure credibility, adding to the trustworthiness of the study (Lincoln & Guba, 1985).

***Acquisition of student artifact.*** Permission was sought and granted for the interview participants to access the eligibility file of the student he or she referred, for the purposes of selecting a student artifact. In the presence of a designee from the student's school, the participant chose an artifact from the student's gifted eligibility file that in the participant's opinion, was most influential in determining the eligibility of the student for gifted identification. The participant made a photocopy, and removed all identifying marks from the artifact copy to maintain the confidentiality of the student. The participant wrote his or her pseudonym in the upper right-hand corner of the artifact, and the researcher placed it in a master file. The file was held in a secure location until the completion of the study, upon which the artifact was destroyed.

The gifted identification process in the District uses a tier system. Required evidence of giftedness varies and is based on the student's score on the Cognitive Abilities Test (CogAT, Lohman, 2001). It was not possible to know students' tiers at the outset of the study, and therefore impossible to predict whether a portfolio of student work was collected and presented for gifted identification purposes. Three of the 15 interview participants referred students whose identification tier required a portfolio of student work. Each chose a student artifact and offered their analysis, perceptions, and support for the referral of the student with ASD for gifted identification.

**Data generation.** Data for the qualitative portion of the study were generated in three ways: 1) participants engaged in a semi-structured interview; 2) where appropriate, participants analyzed a student artifact used as evidence in the gifted identification of the

student; and 3) the researcher wrote detailed field notes. As surveys were completed, the researcher recorded the email addresses of the respondents who volunteered to participate in the semi-structured interview. Then, an invitation was sent to the participant via email which included an overview of the study, the role of the participant, the *Research Participant Consent Form*, and the researcher's contact information.

***Semi-structured interviews.*** Each semi-structured interview was held at a location, day and time of the participant's choosing. Thirteen participants chose to engage in face-to-face interviews. Two participants chose to conduct their interviews using Skype video conferencing software (<https://secure.skype.com>). One of these participants had moved to another state and was unavailable for a face-to-face interview. The second participant was unable to meet face-to-face, and chose Skype as an alternative. Unfortunately, on the interview day and time, this participant's computer was not working properly, so the interview was conducted via phone.

At each interview, the researcher utilized a list of discussion topics, a copy of which was given to the participant and explained. The list served as a reminder to help the researcher remain focused on each topic, and to ensure each talking point was addressed thoroughly. Using a list of topics rather than specific questions enabled the researcher to generate conversation rather than adhere to a strict question-and-answer format. This interview strategy allowed participants to share stories and anecdotes, and to talk in detail about their experiences in a more relaxed fashion while staying focused on each talking point (Patton, 2002).

Each interview lasted approximately 90 minutes. First, participants were asked to talk about their favorite aspect of their current educational role. Next, they were asked to

elaborate on training they perceived as helpful in meeting the needs of gifted students with ASD. Participants then compared and contrasted observed behaviors between different populations of students. The researcher then turned the focus to the gifted student with ASD the participant referred.

Participants were invited to share a fond memory, and then a difficult memory. Next, participants described the behaviors prompting their referral of the student. Follow-up questions included asking the participant to compare the behaviors of other students he or she referred, and to elaborate on experiences with that student. Finally, participants were asked to discuss obstacles they encountered in meeting the needs of their gifted student with ASD. Discussion about observed behaviors of their gifted students with ASD, comparisons with other students, and obstacles they encountered when working with gifted students with ASD acted as a triangulating measure for responses given on the Education Professionals Survey.

The researcher conducted frequent member-checks during each of the interviews. The researcher summarized and then stated back to the participant statements he or she made in response to questions posed by the researcher. This strategy assisted in ensuring the researcher had understood the participant's responses accurately. In addition, the researcher kept field notes, particularly of responses or lines of reasoning that were similar to others', or distinct from the others. Follow-up questions were asked as they were generated by participant responses.

For example, one participant stated a misconception about the education of gifted students while telling a story. First, the researcher made a verbal member-check by paraphrasing the statements and repeating them back to the participant. Once

understanding was confirmed by the participant, the researcher noted the statements in her field journal. During subsequent interviews, the researcher tracked this unique response, checking for similar responses by other participants.

Nearly all of the interviews were audio- and video- recorded. Unfortunately, Skype's video recording mechanism malfunctioned during the Skype interview. The researcher immediately contacted the participant and explained the situation. Next, the researcher made a detailed summary of the interview in the form of an outline using the field notes she made during the interview, and sent it via email to the participant. The participant then made additions and clarifications and returned to the researcher.

To conduct the phone interview, the researcher sat alone in a quiet room in her home, placed the participant on *speaker phone* and recorded the interview using a digital audio recorder. Video was unavailable for the researcher to use for expanding field notes (described below) for either of these interviews. Instead, she used correspondence with the participant from the first interview, and the audio recording from the second interview to accomplish this task. All other interviews were audio- and video- recorded without incident.

***Student artifact analysis.*** When appropriate, the participant was invited to choose and analyze a student artifact. As explained above, three participants engaged in this exercise. One participant analysis was included as part of the interview session. Second appointments were scheduled for the acquisition and analysis by each of the other two participants. The procedure for acquiring the artifact was explained and executed. The participant then shared his or her impressions of the student's work: why he or she chose to present this particular artifact, and how the product supports the participant's referral,

and the student's giftedness. The analysis of student artifacts was an illustration and expansion of participants' survey responses regarding influential evidence in gifted identification. The analyses were transcribed and coded as separate data sources.

***Field notes.*** At the conclusion of each interview, the researcher wrote the interview location, duration, and atmosphere in her field notes. Initial reactions to participants' responses, and any unique ideas discussed as well as those similar to other participants were recorded. Next, field notes were expanded as the researcher watched the video recording of the interview, describing and interpreting non-verbal cues, body language, gestures, and any other non-linguistic movements made by the participant. Interpretations of participant responses were also made. Once all interviews were completed, transcribed and approved, the researcher transcribed her field notes. They were coded as a separate qualitative data source.

Then, as soon as practicable, the researcher transcribed each semi-structured interview verbatim. Although the participant analysis of the student artifact was treated as a separate data source, it was transcribed and sent as a part of the interview transcript to one participant. For the two participants who scheduled a second appointment to engage in this activity, the analysis was transcribed and sent as separate interview. Each transcript was emailed to the respective participant with a thank-you message and directions to carefully read the transcribed interview for accuracy.

Participants were encouraged to make additions, revisions, corrections, and/or comments to the transcript. This is another member-checking strategy used by the researcher to ensure credibility, adding to the trustworthiness of the study (Lincoln & Guba, 1985). Two participants made minor adjustments and additions, and returned the

revised transcripts to the researcher. Ten participants sent email messages approving the transcript and making no corrections or revisions. Three participants gave their verbal approval via phone, and did not wish to add information to their transcripts.

### **Qualitative Data Analysis**

Data for the qualitative portion of the present study were collected, generated, and analyzed using a grounded theory approach to data analysis (Strauss & Corbin, 1998). This strategy uses a structured series of coding techniques to sort and analyze statements made by participants, and produces theory grounded in the data themselves. The result is an explanatory, substantive theory of phenomena.

**Grounded theory.** First developed by Glaser and Strauss (1967) grounded theory is a qualitative research method in which data collection and analysis work hand in hand to generate theory, which is discovered in the data itself. The generated theory serves a specific context and is therefore substantive, is more simple than complex, and can be applied without the need to be an expert on the topic in which the theory applies.

The phenomena examined in the present study were 1) characteristics of education professionals who successfully referred a gifted student with ASD for specialized services; and 2) observed behaviors prompting education professionals' successful referral of a gifted student with ASD for specialized services. The objective was to generate theory that would explain these phenomena.

Data collected and generated in the present study were analyzed using a system of data analysis called coding (Strauss & Corbin, 1990, 1998). Coding is the systematic deconstruction, examination, reorganization, and reconstruction of data at increasing



levels of abstraction until a theory is generated. It is the process by which the grounded theory is produced. Stages include open coding, axial coding and selective coding.

Open coding is the breaking down of data into very small parts, in the present study, phrases and sentences, and assigning each a code according to dimensions of the phenomenon. The coded data are then grouped into categories.

In the axial coding stage, the data are reassembled in new ways according to their categories and subcategories. This stage utilizes an action paradigm model (Strauss & Corbin, 1990) as a means of systematically relating subcategories to their respective categories. Finally, in selective coding the core category, or theory, emerges and is developed by returning to the data and selectively coding data fitting the theory.

During the entire coding process, constant comparative analysis is taking place. New data are compared with existing data, and ideas are constantly formed, compared, sorted, categorized, and reassembled. The constant comparison of data necessitates free movement between data collection and analysis. The researcher moved back and forth between data collection and coding stages until no new information was being gathered, and condition known as saturation.

**Coding.** The researcher used Dedoose Version 7.0.21 (2015) web application software to code, sort, and categorize the interview transcriptions, artifact analysis transcripts, field notes, and survey data. The researcher took advantage of the security feature in Dedoose to protect the confidentiality of all uploaded data.

In the open coding process, close study of each transcription was conducted. Transcriptions were examined one chunk at a time for ease of handling. Data were coded according to dimensions, descriptions, and ideas about each of the phenomena:

characteristics of the education professional, and behaviors of the gifted student with ASD. Like a camera lens, the researcher zoomed in closely and data were broken down into phrases and sentences, and each was assigned a code. Dedoose allows the user to highlight any amount of text to create an excerpt, and assign a code. Similar phrases and sentences were sorted and coded. New codes were created as novel responses were encountered.

For example, participants were asked if they had worked with other gifted students with disabilities. Sophia, a gifted educator replied, "...I referred them....both of them were in second grade. They did have qualifying scores in the CogAT, but they didn't do well on their portfolio in the first grade. So, I had to go back in second grade and do another portfolio." The researcher highlighted this response as an excerpt and assigned it the code *advocacy*. All transcripts, artifact analyses, and field notes were coded using the same open coding process.

Next, categories were created. Dedoose allows the researcher to easily sort codes into categories by dragging and dropping the codes into appropriate categories. The researcher returned to the data and compared codes, examining them through a wider zoom of the camera lens. The researcher made connections between the codes, and sorted and grouped the codes into categories based on their commonalities. For example, the above excerpt, coded *advocacy*, was initially grouped with all other excerpts having the same code.

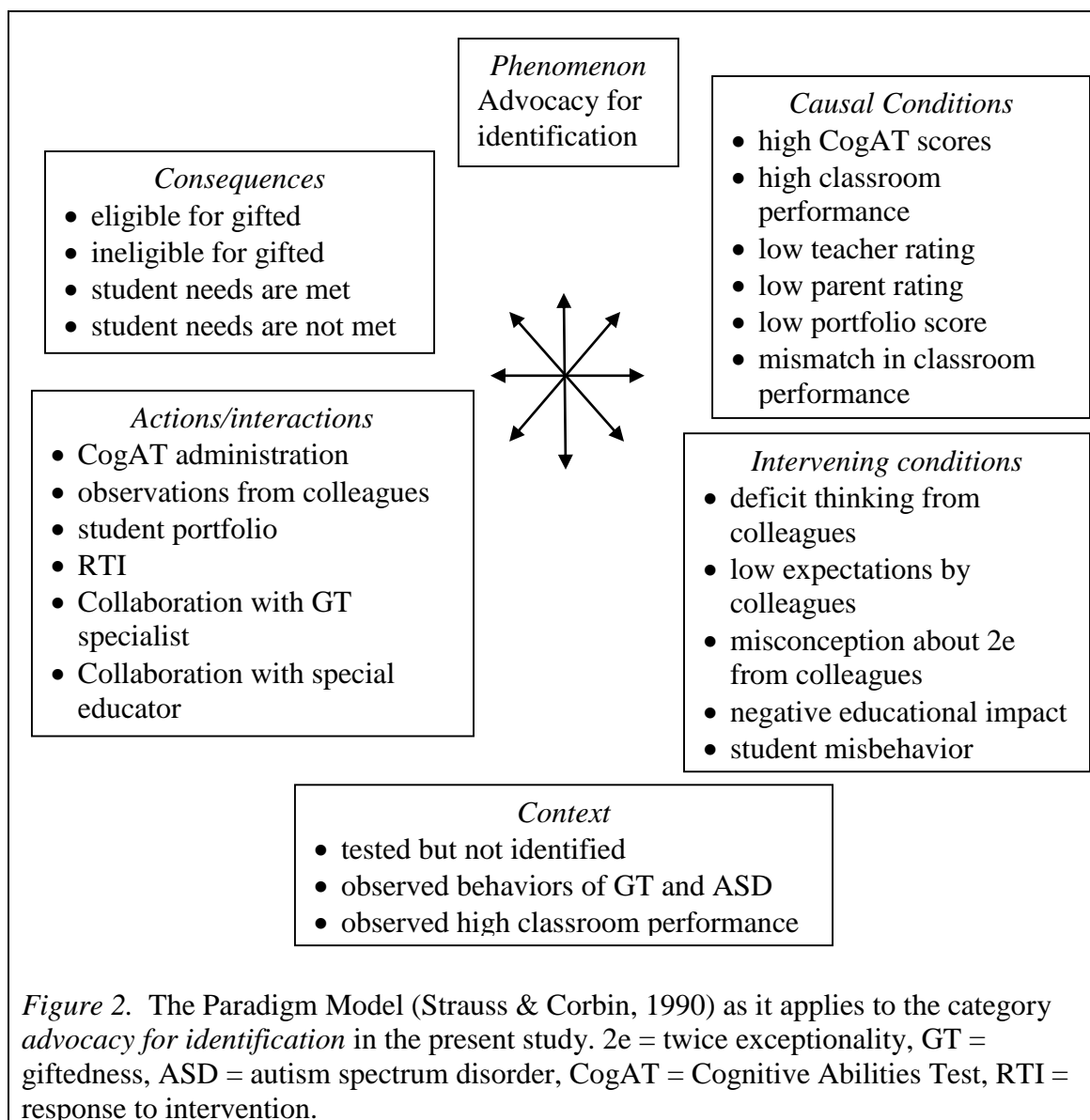
Then the researcher sorted the *advocacy* codes according to each code's shared attributes such as the context in which the advocacy took place, or the way in which the participant advocated for the student. Close examination revealed different types and

dimensions of advocacy among the codes. This particular advocacy code was dropped into the category *advocacy for identification/services*. Other excerpts assigned the code *advocacy* were sorted into categories titled, *advocacy for accommodation/understanding*, due to the context in which the idea was shared. Still other codes labeled collaboration were sorted and then dropped into a third category named, *collaboration as advocacy* due to their context. The researcher wrote a definition for each category.

The process of reassembling coded data into categories was performed for all open codes throughout the coding process. The researcher returned to the transcriptions often, sorting new codes into categories. Codes were added, moved, and rearranged as new codes and categories emerged. Sub-categories were identified and recorded as well.

In tandem with the open coding and categorization of data, the researcher made regular entries into her reflexive journal. For this stage of coding, reflexive journal entries included reactions to the codes combined into categories. Ideas about their dimensions and how they may be merged into larger concepts were explored. Finally the researcher checked ideas and decisions against potential biases recorded, to ensure assumptions and preconceived notions were bracketed when making research decisions.

During the next stage, axial coding, the researcher utilized an action paradigm model (Strauss & Corbin, 1990) as a way to systematically connect sub-categories to their categories. By continually returning to the data, the researcher made comparisons of the dimensions between and within the categories emerging from the codes. The six parts of the paradigm model add depth and dimension to the categories, and allow the researcher to identify larger concepts as they emerge from the data.



Using the advocacy code and its category, *advocacy for identification/services*, the researcher connected this category to its subcategories by examining and identifying the relationships between them using the six components (see Figure 2). The researcher identified the phenomenon first. Then, the data were examined to determine the causes for the phenomenon. The excerpts were studied to determine reasons for participants' advocacy. The context involved the location or the source of the participant's advocacy.

In this case, the participant advocated for specialized services due to observed classroom behaviors, a discrepancy in the student's identification scores, or observed high performance in the classroom

Intervening conditions included circumstances or factors contributing to or exacerbating the phenomenon. In this instance, conditions surrounding the need for advocacy by the participant were listed. As the data were examined and compared, the researcher thought about factors that may have increased the need for specialized services. Actions and interactions were measures taken by the education professional to advocate for their students. Aside from performing all or part of the gifted identification process, participants also collaborated or engaged with colleagues, and tried different instructional and behavioral accommodations. Consequences were the outcomes of the actions and interactions. In this case, some of the students were not found eligible, while others were. Participants also expressed opinions as to whether needs were being met.

Finally, the researcher examined the categories and selected a core category. This is the category into which all of the other categories will fold. The researcher returned to the data and examined it, as well as the open and axial codes. From this, a construct was chosen that directly relates to the researcher questions. Through selective coding, the researcher studies all data sources and selects codes and relates them to the core category.

In the examples given above, the construct of advocacy for identification is related to the first research question: What are the characteristics of education professionals who have successfully referred a gifted student with ASD for specialized services? From there a grounded theory statement is formulated. The relationships of the

categories and concepts to this grounded theory are reported as the findings of the study and appear in Chapter 4.

### **Trustworthiness, Quality, and Rigor**

The primary focus of this study was on the examination of the observations and perceptions of education professionals prompting them to refer gifted students with ASD for specialized services. It was therefore essential to consider the trustworthiness, quality and rigor of the study. Trustworthiness, quality and rigor in qualitative research are akin to validity and reliability in the quantitative portion of this study. Trustworthiness is measured by the rigor and quality of the study. In order to establish trustworthiness, four criteria must be met; credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985).

Credibility is a measure of the accuracy of the portrayal of the participants' perceptions, and the researcher's confidence in the truth of the findings. In other words, do the actual perceptions of the participants correspond with the way the researcher portrayed them? Dependability is defined by Lincoln and Guba (1985) as the degree to which the findings would be nearly the same if the study were repeated. This construct is inextricably linked to credibility in that, if the study is credible, it is also dependable (Lincoln & Guba, 1985).

To ensure credibility and dependability, the researcher conducted a series of member checks. First, she summarized and stated responses back to the participants during each interview. Then, each participant received a transcript of his or her interview and was encouraged to clarify responses and provide additional information. The researcher also utilized triangulation of qualitative data as a measure to ensure

dependability by using coded field notes, and quantitative data from the Education Professionals Survey.

Transferability refers to how well the findings apply to other contexts. This can be accomplished when the phenomenon is described in enough detail to allow the reader to apply the conclusions drawn to other contexts (Lincoln & Guba, 1985). To improve transferability, detailed field notes were recorded and analyzed, providing thick descriptions of the semi-structured interviews and artifact analysis, establishing patterns as they emerged. Further the field notes were transcribed, and used as a separate, triangulating data source. Triangulation of the quantitative and qualitative methods also improves transferability.

Confirmability refers to the degree to which the researcher has set aside his or her biases, and the findings are formed by the participants and not the interests or bias of the researcher. To ensure confirmability, the qualitative data were triangulated via the use of coded field notes. Further, the triangulation of the quantitative and qualitative data analysis was added to the confirmability of the study.

The researcher kept a reflexive journal during the entire research process (Lincoln & Guba, 1985). Regular entries were made and re-read often. Research decisions and the reasoning behind them were recorded, as well as reactions and reflections about the process in terms of the researcher's own interests and suppositions. The reflexive journal assisted in maintaining a systematic approach to controlling for bias and focusing on the participants' responses, adding to the trustworthiness of the findings.

Finally, the researcher reflected, and then publicly stated her position in a Researcher as Instrument Statement. This statement can be found in Appendix H. The

statement tells of the researcher's familiarity with the topic, and philosophical positions. Then, the researcher states assumptions, and any potential bias which may color his or her interpretation of participants' responses. The researcher listed assumptions, ideas, and potential biases in the reflexive journal so she could review them often, and bracket them when examining data.

### **Ethical Considerations**

First, this proposal was submitted to and approved by the Institutional Review Board (IRB) of the College of William and Mary prior to the start of the study. A study proposal, along with IRB approval was submitted to the Office of Assessment in the District for approval. Formal approval was granted by the Assessment Office prior to data collection.

To ensure confidentiality, the school district's name, and its departments were assigned pseudonyms. Additionally, all participants were offered the opportunity to choose a pseudonym for themselves, as well as all students to which they referred in the present study. The researcher chose pseudonyms for all participants who asked. The researcher kept a private listing of the names of the education professionals participating in the study, their corresponding pseudonyms, and their students' pseudonyms. A code key of each identified gifted student with ASD's identification number, and the education professional who referred him or her were also maintained. All lists were stored in a secure location known only to the researcher, and were destroyed at the conclusion of the study. Further, the Education Professionals Survey was completed electronically and anonymously, and participation in the survey did not oblige the participant to participate in the semi-structured interview.



The student listings consisted of student identification numbers. Only the given names of gifted students with ASD whose referring education professional participated in an interview were acquired for the purpose of referring to the student by name for the acquisition of the student artifact when appropriate. The strict and specific protocol for acquisition of the student artifact as described previously was followed to ensure student confidentiality. No identifying student information was shared or published in this study. Only the type of artifact and the education professional's interpretation of the artifact were analyzed and published.

All participants in the semi-structured interviews received a *Research Participant Consent Form* (Appendix C). This document described the study, how the participant was selected, what the researcher hoped to learn, and how the participant can contribute to the study. Further, the Research Participant Consent Form explained the participant's rights as they pertained to this study. Electronic signatures were accepted with accompanying email correspondence granting permission to accept, thus authenticating the electronic signature.

### **Assumptions of the Study**

The qualitative focus of this study examined the perceptions, beliefs, values, and understandings of education professionals. It is assumed therefore, that each participant was candid and truthful in discussing his or her lived experiences, perceptions, beliefs, and values. Because semi-structured interviews were conducted with education professionals who have referred a gifted student with ASD for specialized services, it was also assumed that each participant has at least a passing familiarity with gifted students, students with ASD, and/ or gifted students with ASD.

The quantitative focus of this study surveyed education professionals who referred a gifted student with ASD for specialized services. It is assumed that participants were truthful and candid in sharing their perceptions, beliefs and values. It is further assumed and was subsequently confirmed via the Qualtrics Version 7 (2015) survey software that each participant completed the survey only once.

This study accepts the positivist assumptions of quantitative research that reality is external, and truth can be discovered and explained. This study further accepts the interpretivist assumptions of grounded theory research. Grounded theory agrees with the positivist view in that reality can be explained, described, and predicted. Although reality is created by the values, beliefs, and biases of each individual, different observers see truth and describe it similarly (Charmaz, 2000). Grounded theory's strict protocol for generating theory and demand for researcher objectivity (Patton, 2002) complements the assumptions of the positivist view. A mixed method study requires that both sets of assumptions be preserved. Complementary paradigms added continuity and clarity of analysis.

### **Limitations of the Study**

Some limitations should be noted in this study. The participants were not generated via random sampling, and were limited to education professionals who successfully referred a student for specialized programming in one mid-Atlantic urban school district. Although every potential participant located by the researcher was contacted, the researcher had no way of knowing or controlling how many education professionals would complete the Education Professionals Survey. Although data were triangulated to control for threats to transferability, the findings may not be generalizable

to other populations. Further, this study was conducted in one Mid-Atlantic urban school district. This may limit the types of responses by participants that a larger, multi-district study may offer.

### **Delimitations of the Study**

This study was conducted in one moderately large, Mid-Atlantic, urban school district. The educational decisions made by the participants were pursuant to the laws of the state, the policies of the State Department of Education, and the policies of the school district in which the participants serve or served. The student artifacts chosen by the participants are documents used in determining the eligibility of a student for gifted education services in the District. Therefore the documents were determined to be in compliance with the District's local plan for the education of the gifted. Responses were analyzed in consideration of these delimitations.

Although state law allows anyone to refer a student for gifted identification, the researcher chose to limit this study to education professionals who successfully referred a gifted student with ASD for specialized services. The ultimate goal of this study is to inform research, policy, and pre-service and professional training. In the researcher's opinion, education professionals are in a position to make the largest contribution to this endeavor.

## CHAPTER 4

### FINDINGS

The present study examined the perceptions of education professionals who successfully referred gifted students with autism spectrum disorder (ASD) for specialized services. The study was informed by two major research questions: 1) What are characteristics of education professionals who have successfully referred a gifted student with ASD for specialized services; and 2) How do education professionals describe the gifted student with ASD?

The findings reported in this chapter are therefore presented in two main parts, each addressing one of the two major research questions. First, a demographic profile of the gifted student with ASD in the District is given. Then data addressing the first research question is reported. Data sources include responses from the Education Professionals Survey, semi-structured interviews, field notes, and artifact analyses. Group comparisons between survey responses given by classroom teachers and gifted educators also are presented where appropriate. Then, data addressing the second major research question are reported. Data sources also include responses from the Education Professionals Survey, semi-structured interviews, field notes, and artifact analyses. Much of the survey and interview data findings and are therefore merged where appropriate.

### **Student Demographic Profile**

The overarching goal of this study was to better understand the gifted student with ASD by more clearly appreciating the perceptions of education professionals who recognized their unique behaviors and made an appropriate referral. A demographic profile of the students identified by participants in this study assists this endeavor in two ways. First, it elucidates characteristics of the gifted student with ASD not described by the participants, and therefore adds to their rich descriptions. Second, it sheds light on gender and culture representation that may have affected participant perceptions, and whether the same trends exist elsewhere in the empirical literature.

The present study was conducted in a large, urban school district in a Mid-Atlantic state. As Table 2 shows, the District enrolled 32,290 students for the 2014-2015 school year, the year in which the study was conducted. The racial/cultural make-up was 60.8% African American ( $n = 19,681$ ), 22.3% Caucasian ( $n = 7,223$ ), 7.2% Hispanic ( $n = 2,356$ ), 6.1% Multiracial ( $n = 1,613$ ), and 2.2% Asian ( $n = 741$ ). There are similar numbers of male and female students within and across racial/ethnic groups.

Students with disabilities make up 13.2% of the total student population of the District, and 12.1% of total student population nationally for the 2012-2013 school year (U.S. Department of Education, 2016). Overall, African Americans are slightly overrepresented among students with disabilities in the District when compared with their representation among the total population. Caucasian student representation among students with disabilities is commensurate with their distribution among the total district population. Within this group, African American and Caucasian males are overrepresented by 12.8% and 3.8% respectively. African American and Caucasian

females are underrepresented by 9.9% and 4.1% respectively. Representation remains consistent among males and females of Hispanic, Multiracial and Asian students.

Students with autism spectrum disorder (ASD) represent 10.8% of students with disabilities in the District, and 7.7% of students with disabilities nationally in 2012-2013 (U.S. Department of Education, 2016). Within this group, males outnumber females across cultural groups in the District, and by a ratio of approximately 5:1. This ratio is consistent with the gender distribution of students with ASD in the United States; males are diagnosed at a rate of 1:42, while females are diagnosed at 1:189 (CDC, 2015). However, the gender gap is wider for Hispanic and Multiracial students in the District.

More students in the District are identified gifted than are diagnosed with disabilities, while the reverse is the case nationally (NAGC, 2016a; U.S. Department of Education, 2016). Compared with their respective representation of the total District population, African American students are underrepresented among the identified gifted population by 21.7% and Caucasian students are overrepresented by 18% among the identified gifted population. Representation is similar among Hispanic, Multiracial, Asian, and Native American/Pacific Islander groups (See Table 2).

The demographic make-up of gifted students with ASD in the District is markedly different from the other groups reported (Table 2). Although African American students are overrepresented among students with disabilities, they are grossly underrepresented among gifted students with ASD. Multiracial students are also underrepresented. Caucasian students are heavily overrepresented among gifted students with ASD. Hispanic students are evenly represented in all other sub-groups except gifted students with ASD, where they are overrepresented by 9.9%.

Table 2  
*Demographic Profile of Students in the District*

Student Population Totals			<i>n</i>	%	
Gifted Students			4821	14.9	
Students with Disabilities			4275	13.2	
Students with ASD			463	1.4	
Students with SLD			1569	4.8	
Gifted Students with ASD			35	.10	
Total Population in The District			32,290	100	

District Population (%)				SWD (%)			SWASD (%)		
Ethnicity	Male	Female	% of Total	Male	Female	% of SWD	Male	Female	% of ASD
African American	30.8	30	60.8	43.6	20.1	64.2	42.7	8.4	51.1
White	11.7	10.6	22.3	15.5	6.7	22.4	27.2	5.3	32.6
Hispanic	3.7	3.5	7.2	3.5	1.3	4.9	6.6	.2	6.9
Multiracial	3.1	3.0	6.1	3.0	.9	4.0	4.9	1.2	6.2
Asian	1.2	.09	2.2	.1	.1	.2			<i>n</i> = <10
NA/PI						<i>n</i> = <10			<i>n</i> = <10
Total	50.5	47.19	98.6	65.7	29.1	99	82	13	94

SWSLD (%)				Gifted (%)			Gifted + Autism (%)		
Ethnicity	Male	Female	% of SLD	Male	Female	% of Gifted	Male	Female	% of GTASD
African American	45.8	23.9	69.7	20.7	18.4	39.1	5.7	2.8	8.5
White	12.4	6.3	18.8	24.6	15.7	40.3	62.8	8.5	71.4
Hispanic	3.0	2.0	5.0	3.0	3.2	6.3	11.4	5.7	17.1
Multiracial	3.0	1.8	4.9	4.2	4.3	8.6	2.8	0	2.8
Asian	.3	.3	.3	2.0	2.5	4.5	0	0	0
NA/PI			<i>n</i> = <10	.4	.4	.9	0	0	0
Total	64.5	34.3	98.8	54.9	44.5	99.4	82.7	17.0	99.8

*Note.* SWASD = students with ASD, SWSLD = students with specific learning disabilities, SWASD = students with autism spectrum disorder, GTASD = gifted students with autism spectrum disorder, NA/PI = Native American/Pacific Islander

Overall gender representation reveals a slightly smaller number of females in the total student population (males = 51%, females = 49%) as shown in Table 2. However, females are underrepresented in every other subgroup when measured against the total student population of the District. The 5:1 male-to-female prevalence ratio of ASD diagnoses (CDC, 2014) may only partially mitigate the underrepresentation of females in the District among students with ASD and gifted students with ASD. Nevertheless, this statistic does not account for the underrepresentation of identified gifted female students.

Historically, African American students, particularly African American males are overrepresented among students with disabilities, and underrepresented among gifted populations (Kauffman, Hallahan, & Ford, 1998; Oswald, & Coutinho, 2001; Ford, 2010). Although epidemiological evidence shows the prevalence of ASD to be the same regardless of race or ethnicity (Fombonne, 2007), data suggest African American children are underdiagnosed (Morrier, Hess, & Heflin, 2008), and diagnoses are made as much as three years later than white children (Mandell, Listerud, Levy, & Pinto-Martin, 2002).

Historical underrepresentation of African American students in both ASD diagnoses (Fombonne, 2007) and gifted identification (Ford, 2010; Green, 2010) may be a compounding factor resulting in the large representation gap between African American and white gifted students with ASD in the District. Future research is needed to determine whether such a representation gap exists in other school districts.

In the sample of the present study, a total of 24 students were referred by 20 participants for specialized services. Examination of the eligibility dates in each area reveals three students were referred simultaneously for gifted education and for special



education. Four students were identified gifted prior to being diagnosed with ASD. Three students were diagnosed with ASD prior to entering school, seven students were diagnosed in Pre-Kindergarten, and two were diagnosed in Kindergarten. One student was diagnosed gifted in Grade 1 and diagnosed with ASD in Grade 8.

Representation of gifted students with ASD among the gifted population and among the ASD population were also compared. Gifted students make up 14.9% of the total District population, and students with ASD make up 1.4% of the total population. Among the students receiving services for ASD, 7.5% are identified gifted. Within the gifted population, .72% of identified gifted students are eligible for services for ASD.

### **Characteristics of Successful Referring Education Professionals**

The present mixed method study combined survey and interview data describing the gifted student with ASD as seen through the experiences and perceptions of the education professionals who worked with and successfully referred them for specialized services. To better understand the perceptions of the participants, it is important to have a clear understanding of who the education professionals are.

The Education Professionals Survey was designed by the researcher to answer primarily the first research question: What are the characteristics of education professionals who have successfully referred a gifted student with ASD for specialized services? Surveys were sent to individuals identified by the District as the education professional who referred a currently enrolled gifted student with ASD, either for gifted services or for services for ASD. A total of 28 surveys were disseminated via Qualtrics software, Version 7 (2015). Eighteen females and two males completed the survey (Table

3), and from this field, fifteen individuals agreed to participate in the semi-structured interview.

Table 3  
*Demographic Profile of Survey Participants*

Demographic	<i>n</i>	%
Gender		
Female	18	90
Male	2	10
Total	20	100
Total Years in education		
6-12 years	2	10
13-18 years	10	50
19-25 years	2	10
Greater than 25 years	6	30
Total	20	100
Years in current role		
1-5 years	4	20
6-12 years	9	45
13-18 years	2	10
19-25 years	2	10
Greater than 25 years	3	15
Total	20	100
Educational Role		
Gifted Educator	10	50
Classroom Teacher	7	35
Special Educator	1	5
Support Staff	1	5
Speech Pathologist	1	5
Total	20	100
Population Served		
Elementary school	18	90
Middle School	1	5
Elementary and Middle School	1	5
Total	20	100

Participants' primary roles in education are shown in Table 3 and include 10 gifted educators (50%), seven classroom teachers (35%), one special educator (5%), one support staff (5%), and one speech/language pathologist (5%) responding to the survey. Participants in the semi-structured interviews included nine gifted educators (60%), four classroom teachers (27%), one special educator (6%) and one support staff (6%). All participants worked with students in grades K-12, and most survey respondents ( $n = 18$ , 90%) served at the elementary level. One respondent (5%) worked with students at the middle school level (grades 6-8), and one respondent (5%) works at both the elementary and middle school levels (grades K-8). No participants reported serving at the high school level.

### **Licensure and Endorsement**

Survey respondents reported holding a number of education licenses and endorsements (Table 4). A license is defined by the state in which the study was conducted as “a license issued by the Board of Education for five years to an individual who meets the requirements specified in the Board of Education regulations” (8 VAC §22.1-298.1, 2007).

An endorsement is defined as certification issued by the state board of education added to an existing license held by the individual (8 VAC §20-22-70, 2007), and completion of an approved endorsement program is required. Additionally, the state Board of Audiology and Speech Pathology licenses all speech pathologists, rather than the state Board of Education (§ 54.1-26.3, 2015).

Table 4

*Education Professionals' Areas of Study, Licensures and Endorsements*

Category	Major Area of Study	G (n)	C (n)	SE(n)	SS(n)	SP(n)
Education	Curriculum and Instruction	2		1		
	Early Childhood Education	1	2			
	Education	8	4		1	
	Ed. Admin. and Supervision	1			1	
	Educational Leadership	1	1		1	
Behavioral Sciences	Brain Research in Education		1			
	School, Community Counseling		1			
	Psychology		1			
	Sociology		1			
Core Subjects	Interdisciplinary Studies	2		1		
	History/Social Studies	1				
	English	1				
	Linguistics	2				
	Biology		2			
Speech Pathology	Certificate of Clinical Competence, Speech-Language Pathology					1
Licenses	Collegiate- Elementary Education	9	6	1		
	Collegiate- Secondary Education	2				
	Postgraduate- Elementary	2	3	1	1	
	Postgraduate- Secondary	1				
Licensure endorsements	Gifted Education	10	1			
	Special Education			1		
	Administration and Supervision	1	1		1	
	School Counselor		1			
	Other- Library Media	1				
	Other- ESL	1				
	Other- Reading Specialist	1				
	Other- Board of Audiology and Speech Language Pathology					1

*Note.* G = gifted educator, C = classroom teacher, SE = special educator, SS = support staff, SP = speech pathologist, ESL = English as a Second Language

All education professionals participating in the present study were highly qualified as defined by the No Child Left Behind Act (NCLB, 2003). Each held a minimum of a bachelor's degree, and a large majority of participants ( $n = 16$ ) held a master's degree. Each was fully licensed in his or her respective area of service as specified by state regulations (8 V.A.C. §22.1-298.1, 2007). The majority of participants ( $n = 16$ , 80%) held a Collegiate Professional license in Elementary Education, qualifying them to teach grades K-6. Responses reveal 35% of participants ( $n = 7$ ) held Postgraduate Elementary Education licenses. Two participants (10%) held Secondary Education licenses, qualifying them to teach grades 7-12 and one (5%) held a Postgraduate Secondary Education license.

All 10 gifted educators held a licensure endorsement in gifted education, in accordance with the District's local plan for the education of the gifted (8 VAC § 20-40-60-A.11, 2012), as well as state regulations (§ 22.1-16, 2010). The special educator held a licensure endorsement in special education (8 VAC § 20-22-540, 2007). Additional licensure endorsements held by survey respondents include administration and supervision (8 VAC §20-22-590, 2007) ( $n = 3$ , 15%), school counseling (8 VAC §20-22-630, 2007) ( $n = 1$ , 5%), library media (8 V.A.C. §20-22-420, 2007;  $n = 1$ , 5%), English as a second language (8 V.A.C. §20-22-350, 2007;  $n = 1$ , 5%), and reading specialist (8 V.A.C. §20-22-620, 2007;  $n = 1$ , 5%).

### **Participant Areas of Study**

Survey respondents reported a variety of major areas of study when asked to describe their education, as shown in Table 4. Participants' areas of study fell into three

major categories: 1) education, 2) behavioral sciences, and 3) core subjects. The required training and certification of the speech pathologist are different from those of the other education professionals participating in the survey. Therefore, they stand alone as a separate area of study.

A majority of survey participants reported studying education at the baccalaureate and/or master's level ( $n = 16$ ). Nine respondents studied areas in core subjects including interdisciplinary studies ( $n = 3$ ), biology ( $n = 2$ ), linguistics ( $n = 2$ ), English ( $n = 1$ ) and history/social studies ( $n = 1$ ). Four areas of the behavioral sciences were studied, including sociology ( $n = 1$ ), psychology ( $n = 1$ ), school and community counseling ( $n = 1$ ), and brain research in education ( $n = 1$ ). The studies of brain research in education and school and community counseling overlap with the study of education because they focus on the function of humans in the educational setting. In the researcher's opinion however, these areas of study focus more on human behavior than education, therefore they are included in the study of behavioral sciences.

Although the number of areas studied is evenly distributed among the participants' educational roles, the areas, or topics, studied varied greatly by role (Table 4). Classroom teachers were the only participants whose major areas of study were the behavioral sciences ( $n = 7$ ). More than half (66%) of gifted educators majored in core subjects. Additionally, nine gifted educators studied at least one area of education at the undergraduate and/or graduate level. The support staff ( $n = 1$ ) studied educational leadership more than any other survey participant.

Additional specialized training reported by participants included creative problem solving workshops; reading recovery; curriculum design; and pre-IB training. The special

educator held a degree concentration in K-12 SPLD/ABA. This area addresses interventions for students with specific learning disabilities, as well as a widely-employed intervention strategy for students with ASD, Applied Behavioral Analysis (ABA). The focus of this area of study took place during coursework toward her master's degree.

The final survey question asked whether the respondent was willing to participate in a semi-structured interview during which the participant would elaborate on his or her experiences with gifted students with ASD. A total of 15 of the 20 survey respondents agreed to participate in a one-on-one, semi-structured interview. This group consisted of 13 females and 2 males. Nine gifted educators, four classroom teachers, one special educator and one support staff participated in the semi-structured interview portion of the present study. A profile narrative of each interview participant, listed by pseudonym, is provided in Appendix I.

### **Training Deemed Valuable**

To add clarification and support to the first research question, interview participants were asked two follow-up questions about their training: 1) What if any specialized training assists you in your experiences with students with giftedness and autism spectrum disorder; and 2) In what ways did you find this training helpful? Discussion regarding which training participants deemed helpful generated two sub-categories: 1) degrees, endorsements, and coursework; and 2) collaboration/mentorship.

**Degrees, endorsements, and coursework.** Overall, advanced degrees and/or advanced coursework was deemed helpful in experiences with gifted students with ASD by 60% of participants. Coursework toward their licensure endorsement in gifted education was considered helpful by seven of nine (78%) gifted educators. Frances, a

classroom teacher, said her BS in psychology and her master's degree in school and community counseling are helpful in understanding the needs of all her students. Lauren, a special educator, cited her master's degree in special education as helpful in meeting the needs of gifted students with ASD. Two education professionals also said special education coursework assists them in working with gifted students with ASD. Tanner, a gifted educator, said his training in the social and emotional needs of gifted students was valuable in working with this population.

**Collaboration/mentorship.** Eleven interview participants shared unique experiences in which collaboration and/or study under unique mentors were helpful in teaching gifted students with ASD. Five participants described teaching and collaborating with an education professional outside their particular discipline. Survivor, a gifted educator talked about studying under eminent scholars in gifted and special education when earning her master's degree in education. She was part of a cohort of educators studying to work in what is now the inclusion classroom. She also described team teaching with a special educator in one of the first inclusion classrooms in the District, and the positive impact it had on her ability to teach gifted students with ASD.

Bubbles, also a gifted educator talked about being able to better recognize twice exceptionality as a result of teaching gifted and special education students in the same regular education classroom. Regular collaboration with the special educator was helpful.

Mary, a gifted educator said immersion in a gifted magnet school was most helpful in understanding different types of gifted students. Although Mary had no formal training in gifted or special education, she said the structure of the school's unique program required faculty to plan collaboratively using a vertical (multi-grade) and multi-



disciplinary approach, which she found valuable. Mary said, “It was my training ground. It was almost like an apprenticeship: a whole school full of mentors. I wish every teacher could have an experience like that.”

While in graduate school, Lauren was, by happenstance, mentored by an eminent scholar in special education whose area of expertise was autism spectrum disorder and she finds their relationship beneficial. The mentorship was part of a larger clinical experience. Lauren described her mentor was an expert on ASD, and said her mentor had been in the field for many years. Learning multiple approaches to and strategies for students with ASD was especially helpful, according to Lauren.

Lauren and Sabrina said their experiences as mothers were helpful to them. Sabrina, a classroom teacher, said being a mother helps her to recognize when behaviors are “out of the norm.” Lauren, a special educator, said being the mother of twins who are identified gifted gives her insight into the thinking and behaviors of gifted students, enhancing her ability to work with gifted students with ASD.

### **Ways in Which Training Was Helpful**

Interview participants were asked to expand upon the training they found valuable by describing the ways in which it was helpful in meeting the needs of gifted students with ASD. Participants shared stories and gave specific examples to illustrate their responses. Two sub-categories emerged in participants’ responses: 1) teaching students, and 2) identifying behaviors.

**Teaching students.** The sub-category of teaching students, described by nine participants in all, focused mainly on curriculum development and differentiation. Four participants said their training enhanced their curriculum development. Lauren, Bubbles,

and Sophia talked about how their training improved their ability to differentiate instruction. Referring to her training in gifted education, Sophia, a gifted educator said:

I felt like it gave me a deeper understanding of the diversity in my classroom. I think before, I was that “teaching to the middle” teacher. That’s what I knew, and I think having the gifted training made me look at every kid more individually.

Lauren, a special educator, said her training and experiences alongside a mentor specializing in autism, combined with her experiences as the mother of two gifted children assisted her in differentiating instruction to meet the needs of gifted students with ASD:

...it helps to understand that everything you do has to be differentiated no matter where they are on the spectrum because they are unique and their learning style is very unique. It’s not going to always be what works for one is going to work for the other....And then also it cuts down on a lot of the behavior outbursts and meltdowns because when the academics can match the ability, a lot of times, you don’t get behavior.

Survivor, Sophia, and Victoria, all gifted educators, said their training helped them to combine gifted and special education strategies to better meet the needs of gifted students with ASD. Sophia and Victoria said they did not have formal training in special education, but gained knowledge through collaboration with special educators, where they recognized similarities in gifted and special education teaching strategies. Survivor was part of a grant-sponsored cohort of regular- and special educators who earned their master’s degree in education. Survivor talked about the program as being taught at the intersection of content and process:

It was a cohort of [special education] and regular education teachers and we went through a master's program with [Dr.] Steve Tonelson. We were the forerunners of inclusion. We learned special education, which is content empty, and this was my first exposure to teaching process. It was their first exposure to teaching content. So, it was a powerful dynamic.

Survivor went on to describe her training in gifted education from some of the world's foremost field experts including Dr. Joyce Van Tassel-Baska, Dr. Carolyn Callahan, and Dr. Howard Gardner; and how the combination of regular, special, and gifted education training assists her in meeting the needs of gifted students with ASD:

....for the first time in my professional education, it wasn't all content. It was process. How are we going to teach these children? So, looking at it from growth, from a regular student to looking at a low student's growth and at the same time, I the gifted kids in my class....I can't and I won't expect the same product. I will always ask them to contribute orally and wait for them because what they have to offer us is amazing!

Three participants said their training helped them ameliorate the ASD difficulties faced by their gifted students with ASD, and one said she did not have any training in those areas. Teresa said she became a better teacher, designing curricular strategies for teaching concepts in a progression from concrete to abstract. Frances described a strengthened ability to teach coping skills, self-regulation, and executive function to her student, John. Cathy said her Kagan strategies training combined with repeated-trial drills helped her student, Zack grasp concepts. She noted, however, that because Zack is gifted,

he did not need intensive strategies as often as non-gifted students with ASD with whom she has worked.

**Identifying behaviors.** The sub-category of identifying behaviors was cited by six participants. Bubbles, Sophia, and Teresa said their ability to recognize gifted behaviors increased. Gifted educators Grandma, Bubbles, and Victoria said their training helps them to better recognize learning diversity among their gifted and non-gifted students. Grandma explained that her training taught her to more closely examine behaviors that appear different or contrary to those typically expected of children in school. Through observation, student dialog, and identification of the underlying reasons for their behaviors, Grandma gained powerful insight into students' true abilities and potential, particularly in twice exceptional students. It is this insight that allowed Grandma to recognize and foster their giftedness.

Bubbles and Victoria specifically stated their training helped them to see beyond the masking effect, behaviors that hide the abilities and/or disabilities of twice exceptional students, often resulting in their being overlooked for appropriate services. Bubbles illustrated with an example using her experiences teaching both gifted students and students with special needs in the same classroom.

Bubbles recalls using flexible grouping that often highlighted gifted abilities among her students with special needs. She remembers thinking, "there's a lot more going on in there than LD." She also noted, "There's a lot of the same behaviors, but you've got to discern, that behavior is not 'because I can't do it' but 'because it's below my intellect and I don't want to do it.'" Victoria described how her thinking and perceptions about her students changed as her training progressed:

...as I began to work on my endorsement in gifted education, I realized that gifted strategies work for everybody, and that some of the behavior problems and academic issues that kids had weren't because they didn't know how to do it. It was because I wasn't providing the opportunity for them to show me what they know. Most often, I'm finding that autism masks that giftedness because we focus only on one end of the spectrum, and we forget that it's more than that...

### **Observing, Referring, and Identifying Special Populations of Students**

In a mixed methods study, multiple data sources are often used both separately and together to more fully answer the study's research questions. The present mixed methods study used the Education Professionals Survey to answer primarily the first research question, What are the characteristics of education professionals who have successfully referred a gifted student with ASD for specialized services?, and its follow-up question, What, if any, specialized training did referring education professional have that they perceive better equipped them to refer a gifted student with ASD for specialized services?

However, some questions on the Education Professionals Survey were designed to assist in answering the second research question, How do education professionals describe the gifted student with ASD; and its follow-up questions, Which observed behaviors of gifted students with ASD prompted successful education professionals to make appropriate referrals; and Which type(s) of evidence of student work do education professionals perceive as supporting the referral of a gifted student with ASD?

Four survey topics assist in addressing both research questions: 1) number of referrals; 2) knowledge of special student populations and identification procedures; 3)

experience with special student populations; and 4) confidence in making appropriate evaluation referrals. First, they illustrate the level of expertise of the education professional who successfully referred a gifted student with ASD, thereby addressing the first research question. Second, they add context to individual descriptions given by participants, and help to explain and add credibility to outlier responses and counter-stories regarding perceived behaviors and abilities of gifted students with ASD.

**Referrals for gifted identification.** Survey participants were asked how many students they referred for gifted identification from among the populations of regular education students, students with ASD, and students with specific learning disabilities (SLD). Participants selected the number of referrals they made from a list: 0, 1, 2, 3, 4, 5, 6-7, 8-10, and >10. The means and frequencies of participants' responses are reported in Table 5. Responses were also grouped according to educational roles including classroom teachers and gifted educators. Frequencies are reported in Table 5.

The results show that survey respondents referred far more regular education students for gifted identification than they did students with ASD and students with SLD. Eighty nine percent of participants referred five or more regular education students for gifted identification. Only 32% of participants referred five or more students with ASD, and 68% report referring three or fewer students with ASD. Thirty three percent of participants referred five or more students with SLD for gifted identification. Thirty three percent of participants report making no referrals for students with SLD for gifted services.

Table 5

*Referrals of Special Populations for Gifted Identification*

Referral #	Regular Ed. Students			Students with ASD			Students with SLD		
	All	GT	CL	All	GT	CL	All	GT	CL
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
0	-	1	-	2	2	-	6	2	3
1	1	-	-	5	1	2	2	1	-
2	-	-	-	3	-	3	3	1	2
3		-	-	3	2	-	1	1	-
4	-	-	-	-	-	-	-	-	-
5		-	1	4	3	1	1	-	1
6-7	2	-	2		1	-	1	1	-
8-10	2	-	1	-	-	-	1	1	-
>10	12	9	3	1	1	-	3	3	-
Total	19	10	7	19	10	6	18	10	7

*Note.* Ed. = Education, ASD = autism spectrum disorder, SLD = specific learning disability, GT = gifted educator, CL = classroom teacher

**Group comparisons of referrals.** Responses given by classroom teachers were examined and compared with those of gifted educators. Exploring the data in this way adds context and clarity to the responses given by all participants. The special educator, support staff and speech pathologist were each comprised of  $n = 1$ , and were therefore not compared. Although all classroom teachers and 90% of gifted educators referred five or more regular education students for gifted identification, all 90% of gifted educators reported having referred more than 10 students each.

A large majority of classroom teachers (83.3%) have referred one or two students with ASD for gifted services. Half of gifted educators have referred three or fewer students with ASD, but half have also referred five or more students from this population.

Two gifted educators report not referring any gifted students with ASD, and one gifted educator reported having referred more than 10 students with ASD for gifted services.

All classroom teachers reported referring five or fewer students with SLD for gifted identification, and half have not referred any. Two gifted educators (20%) also reported not referring any students with SLD for gifted identification, but 30% of gifted educators reported having referred more than 10 from this population for gifted identification.

**Knowledge of special student populations and identification procedures.** To gain a better grasp of the extent of education professionals' perceptions about special student populations, participants were asked to rate their knowledge about gifted students, students with ASD, and about gifted students with ASD, as well as their understanding of the District's identification procedures for each population. Participants rated their knowledge on a scale of 1 to 5 with 5 being highest (I know a great deal), and 1 being lowest (I don't know anything). Means and frequencies are reported in Table 6.

As Table 6 shows, survey participants reported knowing a Great Deal about gifted students ( $M = 4.3$ ,  $SD = .91$ ). By comparison, their knowledge about students with ASD was lower on average ( $M = 3.4$ ,  $SD = .99$ ), and participants' knowledge about gifted students with ASD was lower still, on average ( $M = 3.2$ ,  $SD = 1.06$ ).

Overall, participants reported knowing the same about gifted students as they know about how this population is identified in the district ( $M = 4.3$ ,  $SD = .97$ ). However, their understanding of the processes for identifying students with ASD ( $M = 3.5$ ,  $SD = 1.19$ ) and gifted students with ASD ( $M = 3.5$ ,  $SD = 1.05$ ) is lower than their knowledge about identifying gifted students ( $M = 4.3$ ,  $SD = .97$ ).



Table 6

*Knowledge about Special Student Populations and Identification*

Knowledge about Special Student Populations							
Population	Great deal				Nothing	<i>M</i>	<i>SD</i>
	5	4	3	2	1		
Gifted students							
All ( <i>n</i> =20)	10	6	3	1	0	4.3	.91
GT ( <i>n</i> =10)	7	3	-	-	-	4.8	.42
CL ( <i>n</i> =7)	2	2	2	1	0	3.7	1.11
Students with ASD							
All ( <i>n</i> =20)	3	6	7	4	0	3.4	.99
GT ( <i>n</i> =10)	0	3	5	2	0	3.1	.74
CL ( <i>n</i> =7)	2	1	2	2	0	3.4	1.27
Gifted Students with ASD							
All ( <i>n</i> =20)	3	4	7	6	0	3.2	1.06
GT ( <i>n</i> =10)	0	3	5	2	0	3.1	.74
CL ( <i>n</i> =7)	2	1	1	3	0	3.3	1.38
Understanding of the District's Identification Processes							
Population	Great deal				Nothing	<i>M</i>	<i>SD</i>
	5	4	3	2	1		
Gifted students							
All ( <i>n</i> =20)	10	7	1	2	0	4.3	.97
GT ( <i>n</i> =10)	8	2	0	0	0	4.8	.42
CL ( <i>n</i> =7)	1	3	1	2	0	3.4	1.13
Students with ASD							
All ( <i>n</i> =20)	4	7	4	4	1	3.5	1.19
GT ( <i>n</i> =10)	2	4	2	2	0	3.6	1.08
CL ( <i>n</i> =7)	1	2	1	2	0	3.0	1.41
Gifted Students with ASD							
All ( <i>n</i> =20)	4	6	6	4	0	3.5	1.05
GT ( <i>n</i> =10)	2	4	3	1	0	3.7	.95
CL ( <i>n</i> =7)	1	2	1	3	0	3.1	1.21

*Note.* ASD = autism spectrum disorder, GT = gifted educator, CL = classroom teacher

Comparison of group responses shows gifted educators know much more about gifted students and how they are identified in the District. Although classroom teachers report knowing slightly more about students with ASD ( $M = 3.4$ ,  $SD = 1.27$ ) than gifted educators ( $M = 3.1$ ,  $SD = .74$ ), they report knowing less about how they are identified ( $M = 3.0$ ,  $SD = 1.41$ ) than gifted educators ( $M = 3.6$ ,  $SD = 1.08$ ). Gifted educators report knowing more than classroom teachers about how gifted students with ASD are identified ( $M = 3.7$ ,  $SD = .95$ ) than their knowledge about this population in general ( $M = 3.1$ ,  $SD = 1.21$ ). Classroom teachers reported knowing roughly the same about gifted students with ASD ( $M = 3.3$ ,  $SD = 1.38$ ) as they do about how this population is identified ( $M = 3.1$ ,  $SD = 1.21$ ).

**Experience with special student populations.** The Education Professionals Survey asked participants to rate their level of experience with gifted students, students with ASD, and gifted students with ASD. All participants reported having at least Some Experience each of the special populations (see Table 7). On average, all participants report having more experience with gifted students ( $M = 4.2$ ,  $SD = .83$ ) than they did students with ASD ( $M = 3.2$ ,  $SD = .95$ ) or gifted students with ASD ( $M = 3.1$ ,  $SD = .91$ ). Although classroom teachers reported having more experience with students with ASD ( $M = 3.3$ ,  $SD = .95$ ) than gifted educators ( $M = 2.8$ ,  $SD = .79$ ), t-test results show statistical nonsignificance,  $t(15) = -1.15$ ,  $p = .27$ . Gifted educators reported having slightly more experience with gifted students with ASD ( $M = 3.1$ ,  $SD = .74$ ) than classroom teachers ( $M = 2.9$ ,  $SD = 1.07$ ),  $t(15) = .56$ ,  $p = .59$ . This result, too, was statistically nonsignificant.

Table 7

*Experience with Special Student Populations*

Population	Extensive				None	<i>M</i>	<i>SD</i>
	5	4	3	2	1		
Gifted students							
All ( <i>n</i> =20)	9	6	5	0	0	4.2	.83
GT ( <i>n</i> =10)	7	3	0	0	0	4.7	.48
CL ( <i>n</i> =7)	1	2	4	0	0	3.6	.79
Students with ASD							
All ( <i>n</i> =20)	2	5	8	5	0	3.2	.95
GT ( <i>n</i> =10)	0	2	4	4	0	2.8	.79
CL ( <i>n</i> =7)	1	1	4	1	0	3.3	.95
Gifted Students with ASD							
All ( <i>n</i> =20)	2	3	10	5	0	3.1	.91
GT ( <i>n</i> =10)	0	3	5	2	0	3.1	.74
CL ( <i>n</i> =7)	1	0	3	3	0	2.9	1.07
Group Comparisons							
Population	<i>t</i>	<i>df</i>	<i>p</i>	95% CI		Cohen's <i>d</i>	
				LL	UL		
Gifted Students	3.68	15	.002	.48	1.78	1.73	
Students with ASD	-1.15	15	.27	-1.37	4.2	.56	
Gifted Students + ASD	.56	15	.59	-.69	1.17	.26	

*Note.* ASD = autism spectrum disorder, GT = gifted educator, CL = classroom teacher

***A relationship between knowledge and experience.*** Visual inspection of the data show participants' knowledge decreases as the rarity of the population increases, in their knowledge of each population, in how each is identified, and in their experience with each population. A series of Spearman rank-order correlations were conducted to determine if a relationship exists between participants' knowledge of each population and their experience with them.

As Table 8 shows, 2-tailed test of significance revealed a significant positive relationship at the .01 level between knowledge of each of the three populations and experience with its corresponding population: knowledge of gifted students and experience with gifted students ( $r_s(18) = .72, p < .001$ ), knowledge of students with ASD and experience with students with ASD ( $r_s(18) = .85, p < .001$ ), and knowledge of gifted students with ASD and experience with gifted students with ASD ( $r_s(18) = .57, p = .008$ ).

In addition, knowledge of gifted students with ASD is significantly positively correlated with knowledge of students with ASD ( $r_s(18) = .84, p < .001$ ). Knowledge of gifted students with ASD is also significantly positively correlated with experience with students with ASD ( $r_s(18) = .63, p = .003$ ). Experience with gifted students with ASD is positively correlated with experience with students with ASD ( $r_s(18) = .63, p = .003$ ).

Table 8

*Correlations of Knowledge of and Experience with Special Populations*

Measure	Knowledge			Experience		
	Gifted	ASD	Gifted+ ASD	Gifted	ASD	Gifted+ ASD
Knowledge of Gifted						
$r_s$	1.0	.21	.46*	.72**	.034	.29
$p$		.37	.040	.000	.89	.36
$n$	20	20	20	20	20	20
Knowledge of ASD						
$r_s$	.21	1.0	.84**	.14	.85**	.53*
$p$	.37		.000	.55	.000	.015
$n$	20	20	20	20	20	20
Knowledge of Gifted + ASD						
$r_s$	.46*	.84**	1.0	.31	.63**	.57**
$p$	.040	.000		.178	.003	.008

<i>n</i>	20	20	20	20	20	20
Experience with Gifted						
<i>r<sub>s</sub></i>	.72**	.14	.31	1.0	.059	.49*
<i>p</i>	.000	.55	.18		.80	.028
<i>n</i>	20	20	20	20	20	20
Experience with ASD						
<i>r<sub>s</sub></i>	.034	.85**	.63**	.06	1.0	.63**
<i>p</i>	.89	.000	.003	.80	-	.003
<i>n</i>	20	20	20	20	20	20
Experience with Gifted + ASD						
<i>r<sub>s</sub></i>	.29	.54*	.57**	.49*	.63**	1.0
<i>p</i>	.36	.015	.008	.03	.003	-
<i>n</i>	20	20	20	20	20	20

*Note.* \* = Correlation is significant at the 0.05 level (2-tailed), \*\* = Correlation is significant at the 0.01 level (2-tailed), ASD = autism spectrum disorder

Statistically significant at the .05 level, knowledge about gifted students is positively correlated with knowledge of gifted students with ASD ( $r_s(18) = .46, p = .040$ ). In addition, knowledge of students with ASD is positively correlated at the .05 level with experience with gifted students with ASD ( $r_s(18) = .53, p = .015$ ), and experience with gifted students is positively correlated with experience with gifted students with ASD ( $r_s(18) = .49, p = .028$ ).

**Confidence in making appropriate evaluation referrals.** To garner a sense of education professionals' feelings of efficacy toward meeting their needs, survey participants were asked how confident they were that their current understanding of and experience with gifted students with ASD enabled them to make appropriate service and programming referrals for them. Participants rated their level of confidence on a five-point, Likert-type scale according to the following: 1- I am Not Confident At All; 2- I am

Not Very Confident; 3- I am Somewhat Confident; 4- I am Confident; or 5- I am Very Confident. Results show all participants have some level of confidence in making appropriate referrals. All participants report being confident in making referrals for gifted students with ASD ( $M = 3.4$ ). Approximately the same levels are also reported for gifted educators and classroom teachers (Table 9).

Table 9

*Confidence in Referring Students for Specialized Services*

Population	Very				Not at all		<i>M</i>	<i>SD</i>
	5	4	3	2	1			
All ( $n = 20$ )	3	5	8	4	0		3.4	.99
GT ( $n = 10$ )	0	5	3	2	0		3.3	.82
CL ( $n = 7$ )	1	0	4	2	0		3.0	1.00

*Note.* ASD = autism spectrum disorder, GT = gifted educator, CL = classroom teacher

### **The Gifted Student with Autism Spectrum Disorder**

The present study combined survey and interview data to answer the second major research question: How do education professionals describe the gifted student with ASD, and its follow-up research questions: Which observed behaviors of gifted students with ASD prompted successful education professionals to make appropriate referrals; and which type(s) of evidence of student work do education professionals perceive as supporting the referral of a gifted student with ASD? Three questions on the Education Professionals Survey were designed to complement, enhance, and support the interview questions addressing the second research question. The three survey questions address the following: 1) observed characteristics prompting the referral of the participant's student or students for specialized services; 2) evidence survey participants find influential in

determining eligibility for gifted services; and 3) survey participants' perceived obstacles to meeting the needs of gifted students with ASD.

During the semi-structured interview, participants were asked three types of questions to help elucidate their perceptions of the behaviors and abilities of the gifted student with ASD. The first question type explored participants' conceptualizations of student populations in general. Comparing and contrasting different populations of students based on their experience provided a clearer lens through which to view the participants' perceptions of the gifted student with ASD.

The second question type focused on participants' experiences with the student or students each referred for specialized services. Participants shared fond memories and struggles, classroom anecdotes, and stories of other twice exceptional students with whom they worked, as well as experiences with colleagues and parents. Their stories add context and depth, more clearly illustrating the third type of question, which asked participants about specific behaviors prompting their referral of a gifted student or students with ASD for specialized services. These stories and discussions combined with researcher field notes and survey data, creating a more complete description of the behaviors of gifted students with ASD.

Where possible, participants chose and analyzed a student artifact used as evidence in the gifted identification of the student or students they referred for specialized services. Analyses of specific student artifacts added authenticity to the general discussion of evidence of giftedness described in the survey responses. Merging the two data sources, along with researcher field notes helped to more fully answer the

final follow-up question: Which type(s) of evidence of student work do education professionals perceive as supporting the referral of a gifted student with ASD?

Interview participants also shared obstacles they encountered in meeting the needs of their gifted student or students with ASD. Through stories and narratives, the academic, social and emotional needs of gifted students with ASD are brought more sharply into focus. The survey data mixed with the interview data and field notes to further answer the second research question: “How do education professionals describe the gifted student with ASD?”

### **Conceptualizations of Student Populations**

To better understand education professionals’ perceptions of gifted students with ASD, participants were asked to compare and contrast different student populations. Their perceptions about different populations in general add depth and clarity to education professionals’ perceptions about gifted students with ASD in particular. Taken together, they address the second research question: How do education professionals describe the gifted student with ASD?

**Gifted students versus regular education students.** Participants were asked, in their experience, the primary similarities and differences in behaviors if any, between gifted students and regular education students. Participants focused mainly on the characteristics of gifted students. Common behaviors cited between the populations revealed two categories: 1) academic/intellectual behaviors; and 2) social-emotional behaviors. Only two participants noted academic/intellectual commonalities between gifted students and regular education students. Victoria, a gifted educator, said both



populations can earn good grades. Bubbles, also a gifted educator said both populations have areas of relative strength and weakness and both can be bright.

Students' needs for friendships, acceptance, and fitting in were described by more than half of interview participants (53%) when discussing social-emotional similarities between regular education students and gifted students. Jean, a classroom teacher noted both groups share the same social emotional characteristics as all students. They "...want to have friends, to fit in and be a part of things. You have gifted kids that want to please you, gifted kids who want to do their own thing. It's the same in the general population."

Tanner, a gifted educator, said both populations crave acceptance from adults as well as peers: "...they want acceptance, whether it's from a peer or an adult. They want to fit in somewhere." Ian talked about gifted adolescents, saying, "They are adolescents....Hormones are not any different with gifted students than with regular education students. They're all there." Grandma, a gifted educator, noted that all students are different, and she did not want to generalize, asserting, "Well, I'll say things but it's not 100% either way." Frances, a classroom teacher, asserted that both gifted students and regular education students share the same developmental age, stating, "Generally the developmental age is pretty much the same." Five participants did not report any common behaviors between the two populations.

Discussions of behaviors of gifted students versus regular education students produced the concept of *the gifted paradigm*. Participants said gifted students have a qualitatively different way of thinking about and viewing the world from regular education students. The gifted paradigm manifests in distinct ways: 1) intellectual

classroom characteristics, 2) classroom behavior and 3) social-emotional characteristics of gifted students versus regular education students.

Through stories and examples, eleven participants discussed the gifted student's different worldview, describing ways in which it manifests in behaviors distinct from their regular education classmates. Four participants stated explicitly that gifted students see the world differently and think differently than regular education students. Jean, a classroom teacher described gifted students' intellectual classroom characteristics, saying gifted students are more independent as thinkers, and will often extend their learning about a topic on their own. She noted keen observation and inherent curiosity as a manifestation of seeing the world differently:

Gifted students are often very good observers of the teacher. They'll apply something they've seen you do. Whether it's a technique like making a little flap with an index card to organize things. It's not even necessarily content, but little things they see you do that they apply. That's the kind of thing that makes me think, "She's seen me do that and now she's applying it in a different way...even with a different topic."

Manifestations of the gifted paradigm can have lasting negative consequences if not addressed, as noted by two participants. "When gifted students are not challenged," Bubbles said, "they never learn the strategies they needs to overcome academic obstacles." In other words, they do not know how to try. Often, ideas and concepts come easily to them, they do not learn how to learn." Survivor answered similarly:

They (gifted students) spend years in school not knowing how to learn. It just comes out. Whereas the regular (education) student....has HAD to learn how to

read, how to write, how to do all that. They develop sometimes, really strong habits of mind. They persevere.

The gifted paradigm can also manifest in negative classroom behaviors and discipline concerns. Five participants talked about boredom among gifted students in the classroom which can lead to behavior problems and underachievement. Grandma, a gifted educator said boredom can manifest as laziness. Cathy, a classroom teacher compared the boredom of gifted students to that of special education students saying, “Special education students get bored probably because they don’t know what you’re talking about, whereas gifted students seem bored because what you’re talking about is way below them; they already know.”

However, it is in gifted students’ behavior in response to boredom where the gifted paradigm manifests. Lauren, a special educator illustrated this phenomenon by talking about a student who built things from trash:

...creating little figurine pieces out of paper and erasers (laugh)...making a whole village of people...and making stories with them and they act out. And you’re like, “You’re really creative.” Stuff like that never upsets me. Sometimes I just shake my head and laugh. I’m like, “Obviously, I’m doing a poor job because you’ve created a whole village.” (laugh)

Bubbles, also a gifted educator said gifted students’ creativity stemming from boredom can lead to careless errors: “They’re just trying to figure out a more creative way to solve (problems they already know), and end up with the wrong answer.”

Sabrina, a classroom teacher shared that gifted students’ misbehavior due to boredom is often punished rather than remedied:

Gifted students are more singled out as being problem students. Most of the time, they are separated from the group and seated alone. They are the ones who receive the most (discipline) referrals. They....are overlooked because sometimes as classroom teachers, we focus on the interruption instead of trying to provide any intervention.

Survivor, a gifted educator, offers a different experience than Sabrina. She said gifted students are adept at manipulating the teacher, and gifted students' negative behavior is ignored or forgiven, and regular education and special education students' behavior is not:

I think gifted kids....in negative behavior are very creative, cunning....they get by with a lot of mess that other kids don't get by with because they're usually a perfect little child and you're going to believe them. The regular education students and the special education students are the ones with negative behavior that seems not to be as well-respected.

Participants said the gifted paradigm can also manifest in the social emotional behaviors of gifted students. Although participants agreed on the type of behavior, they described contrasting facets of it. For example, Stella, a gifted educator said gifted students are less mature than their regular education peers: "They seem to be a year or two behind regular education students." However, Ian and Sophia, also gifted educators remarked that gifted students prefer relationships with adults, implying that gifted students are more mature than regular education students.

Sophia observed, "The gifted kids would develop more of a relationship with me whereas the other kids were more focused in on socializing with their friends. That was

the big difference I noticed.” Similarly, Ian said, “...the desire among gifted students to be with adults and to discuss and interact on an adult level is very high.”

Frances and Tanner talked about social awkwardness among gifted students. Frances, a classroom teacher noted, “Gifted students may be a little more awkward sometimes, participating in social activities...” Tanner, a gifted educator said gifted students’ social awkwardness may be because, “they find themselves very different from their classmates.” He said gifted students seek out relationships with their intellectual peers, “people who could have a conversation intellectually with them.”

One participant talked about differences in the instructional needs of gifted students and regular education students. Referring to the completion of a problem-based instructional unit, Teresa, a support staff said:

So there’s a lot of research in that...the problem-based learning where I’m going to give you a real-world problem and you’re going to do your research and you’re going to find your answer and you’re going learn this concept through it. So, they (gifted students) don’t need that direct, explicit instruction. You give them a problem, they’re going to go solve it and they’re going to learn that concept and ten other ones through it.

When asked to compare this approach to that of her regular education students, Teresa responded, “Regular education students need that explicit direction. They need to know the objective. They need to know specifically, ‘What do I need to get out of this lesson.’”

As Teresa continued in her comparison of gifted students and regular education students, she shared some of her other instructional practices with gifted students:

My favorite part about giftedness is having them work with my struggling students and seeing how absolutely creative they can be with helping struggling students see it a totally different way. I tell teachers all the time, “You think your gifted is like thinking way above and beyond everybody else, but they just have another way of thinking of things and understanding things. They’re like your best coach in your classroom. Use them, and have them work with the kids and really feel the cooperative learning environment all around them.”

**Regular education students versus students with ASD.** Participants were asked to share similarities and differences in behaviors between regular education students and students with ASD. Overall, the focus centered mainly on the behaviors of students with ASD. Seven participants noted similarities among the two populations, and one concept emerged: children will be children. Four participants explicitly described this in their descriptions.

Lauren, a special educator shared that students have similar reasons for their behavior, stating, “...they want your attention or to avoid something...that is similar in every child, the reasons for the behaviors.” Participants also noted that regular education students and students with ASD can be difficult to reach and teach, but the desire to learn is present in both populations and they seek the approval of teachers. Jean noted, “They like incentives and rewards, they may like different incentives and rewards, but they want to be connected.”

Nine participants discussed behaviors of regular education students in contrast to students with ASD, which produced the concept of the ASD paradigm, the notion that students with ASD view the world differently than students without ASD. Although not

explicitly stated, participants described manifestations of the ASD paradigm in three ways: 1) social skills; 2) acting out; and 3) trust. Five participants discussed social skills, and focused on behaviors both inside and outside the classroom. Jean said regular education students generally place importance on understanding where they fit in socially whereas students with ASD do not. Tanner observed similar behaviors in that regular education students are more aware of unwritten social rules and tend to follow them better than students with ASD. Sabrina's experiences were similar. She said regular education students follow social norms better than students with ASD in their interactions with peers:

If (regular education students) are needing a pencil...they know to go to the next individual and say, "Hey, can I borrow a pencil?" And they'll go, "Sure you can borrow a pencil." But when you're looking at that child who has autism, it's not going to relate to him to ask, "Can I borrow a pencil?" He's just going to go ahead and take the pencil.

Sophia, a gifted educator said when interacting with peers, regular education students are more adept at using tact, and knowing when not to speak:

Some of the regular education kids, I think they have more of a filter, whereas sometimes the autistic students, they would say exactly what they were feeling regardless if it was the right thing to say at that moment....when it came in here (pointing to head), it came out here (pointing at mouth)."

Four participants shared experiences in which regular education students follow rules, and trust authority figures more readily than students with ASD. Mary said regular education students follow rules right away and without question, while students with

ASD must first internalize them. Teresa shared that regular education students follow rules and procedures almost automatically because rules are socially driven. Students with ASD must be reminded of them regularly:

“If you’re gonna ask a question or you need to say something, you raise your hand.” That’s a class rule. Regular education students are able to remind themselves of that before wanting to share out. (Students with ASD) have more difficulty focusing on rules and procedures and they may need their own personal little reminders.

Tanner and Frances observed that regular education students are socialized to know who the authority figures are in our society, and who they can trust, and begin school knowing these roles. However, students with ASD do not necessarily trust anyone right away. Frances said this about regular education students: “I think they’re more inclined to trust. They’re taught that there are certain people [and] situations that are safe: Teachers and police officers are safe. So, they come in generally, with that understanding....they come to it more quickly.” She, too, asserted that building trust between the teacher and the student with ASD is essential to meeting his or her needs.

Three participants also discussed regular education students in contrast to students with ASD in terms of acting out. Lauren said it can be more difficult to detect the reasons for a regular education student’s acting out because the behavior may start small and build over time, while the student with ASD displays a more immediate outburst, often in response to a known trigger. Lauren cited several examples, including, “...change in routine, change in schedule, [they] didn’t get something they wanted, [or] were asked to do a non-preferred activity over a preferred activity...”



Bubbles and Sabrina shared conflicting stories about how regular education students and students with ASD direct their anger. Bubbles shared, “When regular education kids get mad and act out, they’re really more violent toward other people, whereas autistic children are violent toward themselves.” Sabrina on the other hand, stated that students with ASD direct their anger toward objects rather than toward themselves. She said, “When he was ready to transition, he would go over and interrupt...the other students. And when those students wouldn’t respond to him, he would flip the desk over. He would throw things.”

Fourteen participants described behaviors present in students with ASD and absent or nearly absent in regular education students. Participants’ attention turned toward more severe manifestations of the ASD paradigm, fitting diagnostic criteria: 1) restricted, repetitive and stereotyped behaviors; and 2) difficulties with social communication and social interaction (DSM-5, APA, 2013).

Collectively, eight participants spontaneously described all four of the diagnostic criteria listed under the DSM-5 (APA, 2013) criterion of restricted, repetitive patterns of behavior. Sabrina and Survivor described students who displayed stereotyped behaviors of hand flapping, pulling their hair out, and playing with their fingers in unusual ways.

Six participants described insistence on sameness, and rigid, inflexible behaviors in the classroom. Cathy said students with ASD can appear more stubborn than regular education students: “When set on something, it’s a little harder to convince them of something different. They’ve got their set, ‘This is how it is,’ and it’s a little more difficult to convince them otherwise.” Victoria described observing a conversation in which a student with ASD appeared to argue with the teacher: “She would appear to be

defiant, when she wasn't being defiant, she was just trying to get her point across.”

Frances said students with ASD can be extremely resistant to change. She shared, “Sometimes autistic children do go off the deep end if things are not lined up exactly right...”

Cathy and Frances said students with ASD can be preoccupied with unusual objects such as a piece of string, a piece of an eraser, or small, shiny objects. Finally, participants said students with ASD can display negative reactions to sensory stimuli. Cathy said some students may cry a lot when they are overstimulated. Survivor shared that some students with ASD can be in survival mode saying, “You’re just getting down the hallway, you’re just eating lunch. You’re just doing things....” Trying to survive.

Teresa said students with ASD need self-soothing strategies to cope with overstimulation in the classroom, whereas regular education students do not. She shared:

If I want to keep getting up and standing up or rock in my chair, the teacher and student need to have a way of making this happen or not happen...Autistic students need a way to think through all of these coping skills or mechanisms to help keep calm and help stay focused.

Six participants described all three criteria listed under the DSM-5 (APA, 2013) criterion of persistent deficits in social communication and social interaction. When describing the demeanor of the student with ASD in class situations, Tanner said, “Even though they’re part of the group, they don’t necessarily see themselves as part of the group. They’re just kind of looking in to see what’s going on.” Bubbles made a similar observation: “The world is around them and they function in the world, but they’re separate from the world in some ways...”

Stella and Cathy observed pedantic speech in students with ASD, noting the very direct manner in which they talked. Stella said her student, "...spoke in short sentences, and seemed to list facts rather than talk about them conversationally." Survivor said students with ASD have a flat, expressionless affect to their faces.

Tanner and Stella, both gifted educators said students with ASD prefer friendships with adults rather than peers. Stella said, "Students with ASD have no friends and they do not socialize except with adults." Frances, Bubbles, and Tanner also observed deficits in social interaction, saying students with ASD often do not understand the actions of others, particularly if the behavior is out of context or misinterpreted by the student with ASD. Frances said, "...social ability is a big one....what we consider norms in behavior: not picking your nose in the presences of other people..." Lauren and Cathy observed that students with ASD can act more impulsively than regular education students. Cathy said when they blurt out answers, their actions say, "I've got to call out because I've got to say this right now."

Jean, a classroom teacher said students with ASD want to fit in, but they have difficulty understanding how they differ, and how to deal with it:

I think they're happy when they do have those moments where the other kids are very accepting of them and everything is going well, but I don't know if they've figured out how to deal with the times when they are different.

**Gifted students versus students with ASD.** Participants were asked to describe the primary similarities and differences if any between gifted students and students with ASD. This was the liveliest of the discussions, with more similarities noted than differences. Discussion of contrasting behaviors between gifted students and students

with ASD fell largely into two categories: 1) academic behaviors; and 2) diagnostic criteria. Also, two sub-categories bridged the similarities and differences: 1) degree of intensity, and 2) reasons for the behavior. When combined, the concept of synthesis emerged.

Seven participants discussed academic behaviors of students with ASD versus gifted students. Grandma and Survivor, both gifted educators noted that gifted students enjoy ambiguous, open-ended assignments with a large number of choices. Students with ASD however, struggle with these types of assignments and need parameters, or need the assignment broken down. Grandma said, “You really do have to tell them, ‘This is what I want.’”

Cathy, a classroom teacher discussed the need for layering or scaffolding of concepts for students with ASD. She described differences between the two populations like this:

The difference is the ability to grasp a concept. Whereas, gifted students grasp it very easily, and students with autism don’t. I could have taught the same thing all day long and it wouldn’t have sunk in.

Lauren, a special educator, observed that she often needs a tangible reward or reinforcement to motivate students with ASD, whereas gifted students are more intrinsically motivated, and are more willing to work independently. Teresa, Cathy, and Survivor noted that students with ASD require much more one-on-one time with the teacher than gifted students.

Survivor, a gifted educator and Teresa, a support staff emphasized following-up with students with ASD. Teresa said ensuring that connections are being made is

essential to learning for a student with ASD. Survivor said students with ASD are process-oriented, and need an appropriate forum to represent their thinking:

If you say, “Let’s make a poster,” they’re not going to do the same thing other kids do....Products don’t always show what autistic children know. If you talk to them, you’re going to get more knowledge. You’re going to understand how much they know.

Lauren, Bubbles, and Jean said grades may not make sense to students with ASD.

Lauren shared:

It’s funny because he’d actually ask, “Why didn’t I get an A?” Sometimes I’d have to say, “...Well, this is why your paper wasn’t an A paper....This was a multi-step problem...you worked it out in your head and there was a step that you missed and that’s why you didn’t get that problem right.” You really had to explain everything for it to make a connection in his mind.

Discussion surrounding the social emotional behaviors of students with ASD versus gifted students centered on the category of the diagnostic criteria for ASD: a) social communication and social interaction deficits; and b) restricted, repetitive patterns of behavior (DSM-5, APA, 2013). Tanner observed differences in the relationships students with ASD have with peers versus adults. He said students with ASD seek approval from teachers and parents, but they do not understand, or are not aware of, what their peers think of them. He also said, “It upsets him if he upsets the teacher, but if he upsets his classmate, he sometimes is not even aware of that fact.”

However, Jean told a story about one student with ASD who seemed more aware of what his classmates were thinking:

In the beginning, I didn't see a lot of the behavior (his mother) was concerned about because I think he had figured out to hide them. But then as he got comfortable in the room, I started seeing all these quirky behaviors she was talking about.

Participants said students with ASD also are less aware of social rules and conventions. Frances and Jean, both classroom teachers said students with ASD may behave in socially unacceptable ways, often unaware that they are committing a faux pas. Lauren said students with ASD may not care about the consequences of their behavior.

Participants also described restricted, repetitive patterns of behavior that gifted students did not display in reaction to stimuli. Nearly half (47%) of participants talked about rigid thinking or rigid behaviors in students with ASD. Ian said students with ASD have explosive tempers. However, Survivor observed some students with ASD will shut down in reaction to sensory stimuli.

Stella, Frances, and Mary noted the need for sameness among students with ASD. Mary said, "They get easily overwhelmed: lack of flexibility, changes....a fire drill, a change in routine, or a substitute teacher. There are ones who get upset if the substitute teacher doesn't do everything the way the classroom teacher does." Mary and Sophia said students with ASD are very rules-oriented, concerned with everyone following the rules.

When talking about restricted interests among students with ASD, Stella said they tend not to be interested in anything other than their narrow areas of interest. Jean talked about a student who struggled in every school topic, but excelled in his interest of space. Cathy said students with ASD may be obsessed with specific things, such as shiny objects they find on the floor.

Two sub-categories bridged the similarities and differences between students with ASD and gifted students. The first focuses on behaviors exhibited by both populations, but are more pronounced or more intense among students with ASD. In the second sub-category, participants describe common behaviors, but different underlying causes of the behavior.

Four participants described students' reactions to situations with which they disagree. They said both gifted students and students with ASD will vigorously argue their point. However, all four education professionals said gifted students will eventually relent, and comply with whatever was requested of them, whereas the student with ASD will not. Victoria, a gifted educator shared:

...to stop the argument, (gifted students) would often just conform to whatever they were being asked to do. And that was very hard for Fiona. She was very adamant about arguing her point each time. Gifted students do that too, but not to the extent of Fiona.....every time, she was willing to get in trouble in order to get her point across.

Grandma, also a gifted educator added, "Like, you see refusal in gifted children, but I think in them, they come around, 'I gotta do this or my mom's gonna kill me.' But in children with ASD, no, it's not happening."

When talking about the negative reactions to stimuli of gifted students and students with ASD, five participants described the reaction itself in terms of intensity, saying students with ASD have more intense negative reactions to the same stimuli. Ian shared a story about a misplaced assignment:

One day, I was going around talking to students who had not turned in assignments, and when I got to him I said, “I don’t have your assignment.” He immediately got very upset. I said, “Well, wait a minute. If you turned it in, then I accept that you turned it in.” He had great difficulty getting over that. Like, the rest of the day he was really upset. I didn’t come at him like, “Why didn’t you turn this in?” . . .the irritation a gifted student might have had became much more intense, at least in this one student.

Bubbles compared the social skills of gifted students and students with ASD, saying “they both have trouble fitting in with their peer groups,” but students with ASD have a more difficult time.

Six participants said some behaviors are common to gifted students and students with ASD, but the underlying reasons for the behaviors are different. Teresa and Frances said both populations may delay working on an assignment right away. Teresa said gifted students need to see the relevance, whereas students with ASD may need to connect the assignment to past learning. Frances explained the differences similarly:

Just not getting work started, for whatever reason. Autistic children may not get started because they’re not sure of the directions. Gifted children may not get started because they’re just thinking it through . . .figuring out the best way to go about it.

Tanner, Teresa, and Sophia discuss following rules. Sophia said students with ASD were concerned with everyone following the rules. Tanner said both populations tend to break rules often, but their reasons for breaking rules were different. He said, “I think with the gifted student, it may be more of a choice not to behave in a certain way,



where I think the student with autism may be a little bit less aware of his actions.” Teresa shared a similar observation, adding that rules are socially driven, contributing to the confusion for students with ASD.

Survivor noted the similar intelligence levels of gifted students and students with ASD, but said the way each population represents their knowledge is different:

The knowledge base is the same. Knowledge for both of them are the same. They have it intrinsically, or they’ve learned it, but the way they show it (is different) because of the way they behave. Like, doing a presentation for some of these kids would be totally....they couldn’t do it.

**Gifted Students with ASD versus students with other disabilities.** To better appreciate their experiences with gifted students with ASD, the researcher narrowed the discussion of student populations by asking participants to think about the student or students they referred for specialized services. Then compare and contrast behaviors seen in them with behaviors of other students with disabilities, if any, with whom they had interacted.

Eleven participants worked with other students with disabilities, and ten (66%) worked with multiple twice exceptional students. An overwhelming majority of these twice exceptional students had specific learning disabilities (SLD). Lauren, a special educator, worked with a gifted student who was visually impaired. Sabrina, a classroom teacher, worked with a gifted student who had emotional disturbance. Two participants worked with gifted students with ASD who were identified prior to entering their class.

Participant comparisons of twice exceptional students with whom they worked and the gifted student they referred focused primarily on behaviors associated with each

student's disability, and on descriptions of gifted behaviors. Contrasting behaviors were described by seven participants, and include primarily behaviors consistent with the masking effect in which their students' giftedness masked their ASD, when compared to their gifted student with SLD.

Victoria said her gifted student with ASD had more perseverance than her gifted student with SLD, as well as an ability to see things differently, which her gifted student with SLD did not. Teresa compared her students by discussing teaching strategies each required, saying that although teaching both students was a challenge, it was more challenging to teach her gifted student with SLD than her gifted student with ASD

I really had to work with him in different ways where I had to focus on the reading aspect in math. That was a lot of hands-on, a lot of building, so he could develop a concept. Where with Gigi, it wasn't a struggle to teach her anything. The struggle was in getting her to connect it.

Grandma, Bubbles and Victoria, all gifted educators focused on behaviors in reaction to frustration, saying their gifted students with SLD shut down when frustrated, but their gifted students with ASD act out. In her comparison, Grandma described the behavior of her gifted students with ASD as "erratic." Jean, a classroom teacher, talked about the affective behaviors of her twice exceptional students: "Larry was much more independent in his learning. He's very independent and confident."

Jean said Molly, her gifted student with ASD, would draw when she was under stress, whereas Larry, the student she referred, would break pencils and shred paper inside his desk. Molly also co-morbidly had ADHD and displayed hyperactive behavior

each day until her medication took effect. Jean remarked, “She was loud, boisterous. Just all out there. The moment she arrived in the morning, everybody knew Molly was there.”

Similar behaviors with varying degrees of severity or intensity were described by five participants. Sophia and Bubbles, both gifted educators, said teaching their respective gifted students with ASD was easier than their gifted students with SLD, due to their differing degrees of giftedness. Sophia said, “He was so strong academically, and he was able to pick up on things. His depth of knowledge was so strong.”

Frances, a classroom teacher compared a gifted boy with ASD she taught in a different school year than John, the student she referred. Although both were strong in language arts, John made better use of his superior writing vocabulary. Frances also contrasted similar behaviors associated with ASD. She said, “I think the biggest difference was the difficulty adjusting to change and the time it took to de-escalate when they got frustrated,” saying John adjusted more easily and took less time to de-escalate than her other student.

Sabrina, a classroom teacher described similar behaviors when comparing Jay, a gifted student she referred with emotional disturbance, with Sam, the gifted student she referred for ASD. She compared the behaviors of the two students, noting the degree of severity and direction in their anger in response to stimuli:

When...Jay would finish one assignment, instead of taking out the next assignment and working on it, he would get angry, and get very violent.

Sometimes, he would want to fight other students. Other times he would crawl underneath the desk. Sam would flip the desk over. He would throw things.

Similarities were discussed by just three participants. Mary, a gifted educator said her gifted students with ASD and SLD both have slower processing speeds. Teresa, a support staff made a general statement about her students' common behaviors, "Well, the commonality of it is just that, they're not gonna learn through traditional teaching." Lauren, a special educator, described her visually impaired student and Chris, her gifted student with ASD, as both intellectually gifted, but in different areas. Chris had "amazing" math ability, and her visually impaired student's vocabulary was, "just immense."

**Multiple referrals of gifted students with ASD.** The researcher further narrowed participants' discussion by asking two related follow-up questions: 1) Have you referred other students with disabilities for specialized services who were found eligible; and 2) Have you referred other students for specialized services who were found ineligible for services?

A total of eight participants referred an additional 10 students with ASD for specialized services, and seven were found eligible for gifted services. Although all eight participants described ASD behaviors and academic performance in this group of students, advocacy emerged as a concept. Sophia referred two students with ASD whom she discovered after the District's annual first grade screening. Both boys' CogAT (Lohman et al., 2001) composite scores were above the 90<sup>th</sup> percentile, but neither was found eligible for gifted services due to very low scores on the Gifted Behaviors Teacher Rating Scale, given by their shared first grade teacher as well as low teacher low scores on both students' gifted portfolios.

The following school year, Sophia asked each of the boys' second grade teachers to complete the Gifted Behaviors Teacher Rating Scale, and both were given high marks. New portfolios were assembled and both students were identified gifted. Referring to the poor ratings awarded by their first grade teacher, Sophia said, "...there was so much focus on what they couldn't do that it almost seemed like it was just, 'I don't even have to read this. They're not gifted. Check, check, check.'"

Survivor compared her gifted students with ASD saying she easily connected with Rebecca, but not with her other student, Markus. She said Markus resisted coming to her pull-out gifted class, often refusing to leave his seat. She described her sessions with him as, "...45 minutes of his rampage," whereas Rebecca did not resist. Rebecca however, shut down in reaction to certain sensory stimuli. Survivor questioned Markus' giftedness, predicting that if he were retested, he would not meet the District's 70<sup>th</sup> percentile benchmark.

Bubbles referred Davis, a fifth grade student with ASD whose large vocabulary and love for language she noticed by happenstance. The testing process however, was difficult for Davis, and Bubbles said she was glad she had the opportunity to build trust with him beforehand. She said, "...if he hadn't known who I was. If we hadn't worked together first, pulling him to test him would have been crazy."

When comparing Davis's behaviors with those of her other student, Dry Erase Board (DEB), Bubbles said Davis was not violent when frustrated. He rocked back and forth and displaying an unusual twitch, which Bubbles assumed were self-soothing strategies. DEB on the other hand, simply exploded into a rage had meltdowns and threw things. Bubbles said DEB's young age may have been a factor.

**Referred but ineligible.** Four participants referred a total of five students for specialized services who were either found ineligible, or were not evaluated. Advocacy again emerged as a concept from these discussions, as the focus was not on behaviors, but on advocating for their students. Grandma's student, referred for both conditions, was identified gifted but found ineligible for services for ASD, even though the school principal advocated for him.

Sophia followed up on a third student with ASD who had qualifying CogAT (Lohman, et al., 2001) scores after the annual first grade screening, but the student was found ineligible for gifted services. The student's parents and first grade teacher gave the student low ratings and the student portfolio did not receive high marks. In subsequent years, Sophia met with the student's second grade teacher, and then third grade teacher. Both teachers said they had not observed characteristics of giftedness in the student. Sophia said, "I followed through with him in second and third grade, and the teachers were on board with the first grade teacher, so he was not identified."

Jean described a third grade student she had 12 years ago with SLD. The student excelled when IEP accommodations were employed, and participated in gifted reading group discussions, and, "she could keep up with them, she could think and discuss." Jean described the conversation with the gifted specialist about making a referral:

I was told the district didn't do twice-exceptionality. I was told by the gifted specialist that it would be difficult to get her identified as dual exceptional at that time. I was a fairly new teacher, so I just kind of let it go.

Victoria referred two brothers for gifted services who had also been referred for evaluation for ASD. Their parents refused testing in both areas. Victoria explained that

the boys' parents feared the test results in gifted may reveal a need for services for ASD. Eventually, Victoria successfully advocated for the boys' gifted identification, but neither student has been evaluated for services for ASD.

### **Participant Experiences with Gifted Students with ASD**

Through a series of targeted questions, the researcher focused on different aspects of the academic, social and emotional lives of gifted students with ASD. Participants talked about events impacting teaching and learning, people who influenced their students, and the affect their students had on them. These descriptions reveal behaviors supporting the referral of their students for specialized services.

**Fond memories and struggles.** To activate memories and events of their work with the student or students they referred for specialized services, participants were invited to share a fond memory of working with that student. From the stories shared by the participants, two sub-categories emerged: 1) connecting with the student; and 2) intellectual accomplishments.

More than half (53%) of the participants shared a story which included making a personal connection with their student in some way. Each of these stories described their student's social communication and interaction. Grandma recalls an exceptionally difficult third grade year for her student, Annie. Grandma said she began to work one-on-one with her that year, connecting with Annie's love of drawing. Grandma said, "I felt like I could always talk to her and she was not bothered by me. She was receptive to me being with her."

Jean spoke of the first time her student, Larry showed affection toward her:

Last year, during *Meet-and-Greet*, his dad brought him to see me even though he was no longer my student. His dad said, “He would not leave until he saw you.” I said, “Well, I am so glad!” and we chatted a bit. Now he doesn’t like to be touched, and that’s in his records. So... I pulled back, and remembered that I can’t really hug him. I said, “You’re a big fifth grader now. I’m going to let you decide whether it’s okay to hug your teacher.” He gave me a big hug. After that, every time I saw the child, I had to get a hug.

Frances shared a unique story about her student, John making great progress in his social communication and interaction with other teachers:

One of my fondest memories was when he had developed his social skills to the point where before he would come into class, he would stop and talk to other teachers. He would come in late, and I would ask, “Where have you been?” And he would say, “Oh, I went to say hello to this teacher or that teacher.” More often than not, they would call and say, “Guess who just stopped by and said hello to me?”

Teresa described her student, Gigi as extremely shy and quiet when they first met. She remembers Gigi initially having a difficult time adjusting to a new school, and navigating the regular classroom without the assistance of a one-on-one aide for the first time. Teresa said Gigi made great progress in her social communication that year, and showed it in an unexpected way:

So, I guess my best memory, was that by the end of the year...at the end-of-the-year awards ceremony, the little girl who wouldn’t even look at another child, came up to the podium where I called her to get her award and she took the



microphone out of my hand and gave a speech in front of the entire school. She had me in tears from all the laughing and being so proud of her.

Survivor said the connection she made was also accomplishments for her. She shared a memory of one of the rare occasions her student, Rebecca smiled:

...If you know Rebecca, she's one who rarely, rarely smiles. When I praise her for something...she beams! Her whole face lights up. Rebecca was working with a small group to develop high-level questions for some fairy tales they were reading. I had explained, "You all have got to work together." And they did...a true collaboration. So this was a time she smiled....I think it was a banner day for her, but God knows....look, I'm crying now.....you do, you work so hard, and when you get this...

Rigid behaviors consistent with ASD were described by two participants in their fond memories of their students. Cathy found Zack's preoccupation with finding bright, shiny things on the floor endearing. Tanner fondly remembers Zack's greeting ritual of tying his shoes every time the two passed each other in the hall.

Six participants shared fond memories the intellectual accomplishments of their students. Bubbles, a gifted educator recalls using the game of Chess to connect with her kindergarten student Dry Erase Board. She placed him in her advanced Chess class, ordinarily reserved for fifth graders, and described how well he played against her older students. Sophia talked about an extraordinary, functional bridge her student made with toothpicks, strong enough to withstand the weight of a five-pound brick.

Ian told the story of a student who consistently earned perfect scores in his class, a class in which Ian initially proclaimed he never gave perfect scores:

When I was teaching that class, I told (the students), “No one makes 100% on any of my tests. If anybody makes 100%, then I haven’t tested how much you know.”

They reluctantly accepted that. Well, this was a kid who messed up the curve because he did get 100, and he got 100 on questions that were very difficult, and he had to put together concepts that were not specifically taught. He was a really bright kid.

Lauren shared a story about her student, Chris’ love of mechanics, and how one of his projects surprised even Chris:

He loves to take things apart and...make something new out of it. So, I had this clipboard and it had a calculator at the top. The calculator didn’t work. I didn’t think he was going to make it work by using the power from another calculator. Geez! So he took the wiring, hooked it up, and when it first came on it made this “Tzzzt” charge and he said, “Did you see that? Did you see it? I made it work!” It was so funny....I think he wasn’t expecting that reaction with the little *spark*. He was so excited about it. He was incredible

Participants were also asked to share a memory of a difficult time with their student or students. These stories focused almost exclusively on the category of rigid, restricted behaviors of students. Eight participants described meltdowns their students had either in their need for sameness or in reaction to sensory stimuli. A sudden change in classroom location upset Bubbles’ student where he was reluctant to attend gifted class until he was convinced they were going to the same location each time. Frances’ student, John struggled to make the adjustment from a self-contained classroom to a regular classroom, often needing to go for walks down the hall to de-escalate.

Ian, Sophia, and Victoria shared stories of their students becoming upset and arguing when things did not go as the student expected. Victoria's student, Fiona became agitated when her pencil became dull, and was instructed to use her spare, rather than sharpen her dull pencil. When Sophia's student, James returned from an elective class, he was so upset he was unable to participate in the gifted session that followed.

Rather than share a single memory, Grandma and Stella, both gifted educators told of frequent meltdowns, screaming and crying, on the parts of their students. Neither educator could remember what may have triggered the behaviors. Lauren, a special educator, and Sabrina, a classroom teacher, described memories of their students' violent outbursts, throwing chairs or overturning desks in the classroom. Lauren talked about her student, Chris:

A lot of times he had a hard time just regulating himself and knowing when to request a break. So he would throw things or run and hit his body into the wall in an effort to get that release that he needed for his body...it was hard for the students in the class because they would be afraid of him.

Although seen less often, some students with ASD show hyporeactivity in response to stimuli, as shared by Survivor when talking about her student, Rebecca's reaction to overstimulation:

She physically puts her head down and does this (lowering her head to her chest), folds her hands across here (drawing her fists up, side-by-side against her chest). She doesn't rock. She just does this until class is over. Even sitting next to her, even softly talking to her, I've tried everything.

Jean recalled a time when her student, Larry engaged in self-injury:

...He took some tacks off a bulletin board and was scraping his palms with them, and had bloody palms. His dad came up and dad was great. I did ask him, “Why did you do that?”...He backtracked and said the pins were in his desk, and that he didn’t intentionally do it, that it was an accident. But it was obvious that he had been scraping his hands with them.

### **Student Behaviors Prompting Referral**

Survey participants were presented with a list of behaviors and asked to select the behaviors they observed that prompted them to refer their gifted student or students with ASD for specialized services. Participants were also invited to add any observed behaviors not listed via an open-response panel. Responses to this question assists in answering the second research question: How do education professionals describe the gifted student with ASD? The frequencies of participant responses are reported in Table 10.

Survey participants overwhelmingly chose High Achievement in One or More Areas of Interest as an observed behavior prompting their referral (85%). In addition, 80% of survey participants reported observing Recognizes Patterns. Learns Quickly and Blurts out Answers were each chosen by 70% of participants as behaviors prompting their referrals for specialized services. Twenty percent of survey participants selected Is Bossy; 20% chose Earns Good Grades, and only 10% of survey participants chose Is Social with Intellectual Peers as a behavior prompting referral.

**Group comparisons of observed behaviors.** Responses by classroom teacher and gifted educators were made to add clarity and context to responses given by all participants. Group responses reveal that no gifted educators chose Earns Good Grades as

an observed behavior prompting referral, whereas 43% of classroom teachers chose this behavior. All classroom teachers chose High Achievement in One or More Areas of Interest as an observed behavior prompting referral whereas 80% of gifted educators chose this behavior.

Table 10

*Observed Student Behaviors Prompting Referral*

Behavior	Frequency of Participant Responses					
	All Participants		Gifted Educators		Classroom Teachers	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Learns quickly	14	70	6	60	5	71
Recognizes patterns	16	80	9	90	5	71
Understands concepts easily	11	55	5	50	4	57
Inflexible	7	35	4	40	3	43
Blurts out answers	14	70	7	70	5	71
Has difficulty making friends	11	55	7	70	4	57
Becomes upset	12	60	7	70	4	57
Is sensitive to social issues	11	55	6	60	4	57
Early, avid reader	7	35	3	30	3	43
Earns good grades	4	20	0	0	3	43
Is bossy	4	20	1	10	2	29
Resists changes in routine	11	55	7	70	4	57
High achievement- interest	17	85	8	80	7	100
Talk about area of interest	13	65	5	50	5	71
Social to intellectual peers	2	10	2	20	0	0

*Note.* All Participants  $n = 20$ , Gifted Educators  $n = 10$ , Classroom Teachers  $n = 7$

No classroom teachers chose Is Social toward Intellectual Peers as a behavior prompting referral of their gifted student or students with ASD for specialized services, and two gifted educators did choose this as an observed behavior prompting their referral.

Large majorities of classroom teachers and gifted educators observed their students' abilities to recognize patterns, and that they blurt out answers (see Table 10).

**Interview participant descriptions of student behaviors prompting referral.**

During the semi-structured interview, participants were directly asked to describe observed behaviors prompting their referral of their gifted student or students with ASD for specialized services. All participants made referrals for gifted identification. Four participants made simultaneous referrals for their student: one referral for gifted identification, and one for eligibility for special education services for autism spectrum disorder. The data fell easily into the categories of referral for gifted identification and referral for ASD because all four participants who made simultaneous referrals talked about each one separately.

Participant descriptions about behaviors prompting referrals for gifted identification produced three sub-categories: 1) intellectual/academic behaviors; 2) creative/novel thinking; and 3) task commitment. When describing intellectual or academic behaviors, seven participants discussed language arts ability in general, and five cited verbal precocity in particular. Five participants describe math ability in their students. Mary and Bubbles, both gifted educators said their students were WordMasters champions, a national analogy competition for elementary and middle school-aged students.

Verbal precocity was described by all five participants in terms of a very large vocabulary, and three participants talked specifically about their student's speaking vocabularies. Victoria described the large vocabulary and fluent conversation skills of her student, Fiona upon their first meeting:

Her vocabulary as very high for a third grader, her processing, the way she just diligently explained herself. She explained that she knew she was in trouble, why she was on a cool down session, [and] what she could have done to probably have avoided it.

Teresa and Frances, both classroom teachers said their students' writing skills were extraordinary. Frances said her student, John, initially resisted writing. However, Frances discovered that it was the multi-step writing process in the curriculum John avoided. She also found that John had a vivid imagination and was a talented artist. So, she allowed John to write freely and draw pictures. Stella, a gifted educator said her first grade student Courtney, had very strong comprehension skills and could remember minute details about the stories they read in gifted class. Stella said:

The Junior Great Books stories we read in class had highly developed characters and plots that Courtney understood. Stories that even made me stop and think, Courtney seemed to understand right away. She had keen insights to metaphor and analogy in stories.

Courtney also had an affinity for playing with language, and making puns. Stella told of a conversation she had with Courtney in which the student was celebrating her dog's birthday. Courtney said, "I made a 'pupcake' for my dog's birthday."

Five participants cited abilities in math as behaviors prompting referral for gifted identification. Three participants described very strong computation and mental math skills among their students. Lauren, a special educator described her student, Chris's math abilities, "Then of course his ability with math. Just no rhyme or reason for being able to just solve problems and do computation. He just could do it quickly, without

thinking about it.” Tanner shared a similar description of his student, Zack’s math abilities saying, “He is really, really good in math, like super-good with math numbers. He can look at 3-digit addition and subtraction problems and do it instantly in his head as quick if not quicker than I can...”

Cathy, Zack’s homeroom teacher shared a similar observation. She said:

I saw a definite discrepancy between reading and math, and I knew he didn’t have a disability in Reading. It wasn’t that. His quick ability to figure things out with almost no time, no thought process needed, “Oh, that’s easy. It’s...whatever.” I had to work hard to come up with that problem, and he just answered it so quick.

Sophia talked about introducing her student, James to algebra. She said, “We did some hands-on equations that year, and he had absolutely no problem with the concept of algebra and variables.” Bubbles described the math abilities of her younger student, Dry Erase Board (DEB) by explaining his eagerness to learn more and extend the task. Bubbles routinely accelerated his math tasks by three grade levels, and DEB enjoyed the challenge. Bubbles described his completion of a Math Exemplar, a real-world, critical thinking math scenario:

One of the things with Exemplars is very often, they just want to find the answer and that’s it. But he’d have a long conversation with you afterwards about how, “What if they did it five more times? What would happen?” He did that on his own. He was expanding it himself, and it was amazing. To be off level and doing that was amazing to me.

Of the creativity behaviors prompting participants’ referrals for gifted identification, the most talked-about area, critical thinking/problem solving, was



described by seven participants. Sophia, a gifted educator said, “I think he’s a really good problem-solver. He actually enjoyed any task where he had to come up with solutions or anything that was problem-based, he loved. He really enjoyed it.” Jean said often, her student Larry’s giftedness manifested in ways she could not concretely name saying, “He’s not traditionally your honor roll student, but there’s something about his thinking. He could connect things, you know.”

Lauren described her student, Chris’ visual processing ability:

...his visual processing: It was just different, not just in an autistic kind of different way. You know, like sometimes kids who are high functioning autism, they have a strength. Quite often it’s an interest...and then they’re really good at that because they’re interested in it. But it was more than that. It was his visual perception and being able to figure things out. It just kind of stood out...

Four participants specifically talked about regular conversations they had with their students that gave them clues as to their students’ giftedness. The descriptions of these conversations included the thinking processes and problem solving skills they saw in their students rather than the vocabulary the students used to communicate. Sabrina, a classroom teacher said:

When I could sit down and carry on a conversation with him, I was just impressed by his conversation, his way of thinking. It wasn’t a normal way of thinking. He thought outside the box, you know? And I was truly impressed with him.

Teresa said her student, Gigi learned by writing fictional stories to connect new learning to past knowledge. Teresa talked about spending time with Gigi, trying to

understand what the stories meant, and how they helped Gigi learn. She describes her discovery of Gigi's analogical thinking:

...a lot of metaphors, a lot of figurative language. And that's what I really picked up on and figured out with this whole writing piece of it. We were doing figurative language, and she just exploded with it. And I was like, "This is how she talks! This is how she thinks!" I was so impressed by how quickly she would catch onto things in her own way.

Participants also discussed task commitment when talking about referring their students for gifted identification. Gifted students and students with ASD can persevere through a lengthy task, particularly if it is in their area of interest (Neihart, 2000). Grandma, a gifted educator referred to this behavior as being persistent when describing the way her student, Annie worked. She said, "And then the persistence. She was not going to stop."

Keen observation skills can be found among both gifted students and students with ASD (Assouline, Foley-Nicpon, Colangelo, & O'Brien, 2008), and in the following descriptions, were employed as students persevered through tasks. Sophia, Bubbles, and Tanner, all gifted educators talked about their students' need to correct flaws in the details they noticed. Sophia said her student, James, "...always corrected the other students, his classroom teacher, and me." Tanner shared a conversation with his student Zack:

He's extremely observant. He seems to notice things that nobody else notices. I remember one day he came in to tell us the flag is upside-down. At this point

several hundred people had come into the building and nobody had noticed. “Why is it upside down? Maybe somebody should fix that.”

Jean, Grandma and Bubbles cited self-directed learning as a behavior prompting their referral of their students for gifted identification. Deep interest in an area, often associated with task commitment (Renzulli, 1978), is found in both gifted students and students with ASD (Gallagher & Gallagher, 2002). Grandma said her student Annie, “...had a great thirst for knowledge and deep curiosity.” Jean asserts that it is a clear indicator of giftedness. She described her student Larry:

He would get an idea and go off with it. He will teach himself if he’s interested in something. He’ll get books and read them and read them and read them. If I was teaching something that he wasn’t interested in, he had the book that he was interested in, in his desk.

Some of the students referred to in this study were identified gifted before they were diagnosed and found eligible for special education services for ASD. When the researcher asked Ian, a gifted educator to describe behaviors prompting his referral of his student for gifted identification, he stated he does not remember referring the student. He added, “I didn’t encounter one situation where I thought the student was on the autism spectrum. To my knowledge, I have never referred a student on the spectrum.” The researcher explained that this particular student was identified gifted in Kindergarten, but was not diagnosed with ASD until eighth grade.

***Simultaneous Referrals.*** Four participants referred a student simultaneously for gifted identification and for eligibility for special education services for ASD, and one participant referred her student only for ASD because he was in first grade and was

eligible to participate in the District's annual district-wide gifted screening of all first graders. When discussing behaviors prompting their referrals for ASD, all five participants noted restricted, repetitive patterns of behavior, interests, and activities (DSM-5, APA, 2013). However, no participants described deficits in social interactions and social communications, and no academic struggles were discussed.

Bubbles referred Dry Erase Board (DEB), a kindergarten student for services for ASD and for giftedness. She noted behaviors consistent with giftedness that seemed far more extreme than overexcitabilities (Dabrowski, 1964) or sensitivities. She said, "I told them, 'There's still something else. I think we need to find out. Yes, he's developmentally behind, and that could be just gifted. But his repetitive behaviors and his inability to take change at all....'"

Sabrina described similar behaviors when talking about her student Sam, whom she referred for ASD. She said Sam would flip desks over and throw chairs in the classroom. In addition to throwing furniture, Sam ran from the classroom. Sabrina observed, "When he would get angry, instead of staying in the classroom, he would leave the classroom and run down the hallway."

Cathy and Tanner talked about the preoccupations of their student, Zack. They both described the student's obsession with very small, shiny objects he found on the floor. Zack was compelled not only to pick these items up off the floor, but he felt as though he had to keep them. Tanner said, "He likes to collect anything he can find on the floor. I have some very messy gifted kids, but he is the only one I can think of that picks stuff up all day long and carries it around with him." Cathy shared a story about Zack's fixation:

He would build little treasures on his desk. It didn't matter if it was pencil lead, sequins...he would go so far as to find little pieces of glitter and erasers. One day, he found the little tiny top to a mechanical pencil, and some other sequined-type thing. He made a little flower from it and gave it to me.

Cathy and Sabrina both noted their students were already diagnosed with other conditions, and taking large doses of medication to manage them. Sabrina said Sam was evaluated for Schizophrenia, and “had like 4 or 5 different medications that he was taking....” Cathy observed that Zack’s medication was ineffective:

He’s also diagnosed with ADHD, and so he’s on all these medications and he’s on the highest dose of medication. So there was another red flag there. He’s on all this medication and it’s still not changing him. So there’s got to be some other issue going on.

***Behaviors supporting referral.*** Participants shared through stories and anecdotes, many different characteristics of their gifted students with ASD. Although not explicitly stated as behavioral factors in their decision to refer, their stories described behaviors that supported their referrals. These unique behaviors illustrate the individuality of the students, and the myriad manifestations of ASD. Sub-categories emerging from these stories are 1) visual and performing arts talent; and 2) understanding grades.

More than half of participants (53%) talked about their student’s talent in the visual and performing arts. Five participants described their student’s drawing ability. Three participants said drawing was a strategy used by their student for de-escalation. Victoria, a gifted educator said her student, Fiona filled notebooks with her *doodles*. Jean, a classroom teacher said one of her gifted students with ASD would draw intricate,

geometric designs when she was stressed. Grandma told about her student, Annie, whose area of passion was drawing, and used her desk as a canvas:

She would color all over her desk, and then she would just erase it...erase, erase, erase. I knew something was bothering her. I would try, "Let's don't color your desk today. You want to put this on paper." She carried around a supply box that was precious to her. It had all of her art supplies in it.

Four participants talked about their student's art abilities in terms of precision and spatial ability. For example, Survivor, a gifted educator said her student, Markus was adept at "picture design, which is his forte: drawing pictures, circles..." Bubbles, also a gifted educator shared her student, DEB's ability to draw accurate maps from memory. She said, "He could make them, he could interpret them. He would draw maps of anything. He drew maps of the classroom, the school. He drew me a map of how to get to his house from school.

Teresa and Frances, both classroom teachers shared their students' talent for storytelling. Both educators said their students' large vocabularies were reasons prompting their referrals, but later in the discussion, both also talked about their student's abilities to construct imaginative stories. Frances said her student, John, was a talented writer and artist:

Whatever was of interest to him, he had a huge vocabulary in place to not only express it, but explain it in detail. He was very explicit when he spoke about things he was interested in. And it was beyond his years. Once we got him to put it on paper and he could draw a picture with it, he wrote these wonderful stories that he illustrated.

Victoria, a gifted educator talked about the musical talent of her student, Fiona. She played the cello, and sang. When describing her impressions of Fiona after meeting her for the first time, Victoria said, “Even though we don’t identify at the elementary grades in the arts, she had a beautiful voice.”

Through their stories, five participants also talked about their referred students’ understanding of grades. Sophia told a story about how her student, James was concerned about project grades being awarded equitably. However, the other participants said they were unsure whether their referred students understood the concept of grades. Lauren, a special educator, used a social story to help her student, Chris understand grades. She said:

He needed to have an entire social story on it. I had to give him a spread sheet and put grades on it so he could track his grades... He needed to see that...it was too abstract for me to say to him, “Well, you know you’re not going to get a good grade.”

Tanner, a gifted educator said his student, Zack seemed to have no reaction at all to bad grades. He said, “I don’t know if he doesn’t understand grades or he just doesn’t associate any consequences with bad grades. But he didn’t really seem to care much one way or the other.” After assigning a project and explaining a rubric she was using to score it, her student, Larry came to her after class and, referring to the rubric said, “I think I’m gonna go for the C.” Jean asked him why he didn’t want to go for the A, he said, “I’m not that interested in the topic.”

*Unique stories.* Lauren, a special educator's stories about Chris were unique in that she described his passion for taking things apart to see how they work, and this topic often pulled his attention away from the lesson:

“How is it working? How does it do that? How is my Elmo talking? What makes him talk?” And he'd repeat it and he'd persevere over it all day. We'd be talking about fruit, and in the middle of the conversation, “What makes my Elmo talk?” “Well, I don't know because right now we're talking about fruit.” And then he'd talk for a minute, then yell back, “Well do you think it's because...does he have a voice box?” He took the speaker box out of this Elmo and hooked it up to some elephant. Geez. He was incredible.

Jean, a classroom teacher found Larry's gifted identification and special education eligibility results paradoxical:

His area of identification is in communication skills. Which is very interesting because also it's what his IEP addresses as his area of weakness. Traditionally, a child that is such a reluctant writer, we think it's because he's struggling at writing, not because they struggle with the task of holding a pencil and putting it on paper.

### **Influential Evidence in Gifted Identification.**

To gain a deeper understanding of education professionals' conceptualizations of what it means to be gifted, survey participants were asked which evidence they believed is most influential in determining eligibility for gifted services. Survey participants were asked to rate eight different factors on a five-point scale, with five being Essential and



one being Not Influential. Participants were also invited to add criteria not listed, but deemed influential. Responses are reported in Table 11.

Table 11  
*Influential Evidence in Gifted Identification*

	Essential			No influence		<i>M</i>	<i>SD</i>
	5	4	3	2	1		
Behavior	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>		
Classroom behavior	-	3	7	4	5	2.4	1.07
Classroom performance	5	8	4	2	1	3.7	1.13
Grades	-	2	11	3	3	2.6	.89
State-mandated tests	1	2	8	6	2	2.7	1.00
Standardized tests	4	10	2	3		3.8	.98
No IEP	-	-	3	1	15	1.4	.76
No 504 plan	-	1	3	-	15	1.5	.96
Observation- GTE	7	10	2	-	-	4.3	.65
Text- Learning style	1						
Text-self-directed learner		1					
Text -Creativity	1						
Text- Parent input	1						
Text- Teacher input	1						
Text- Anecdotal notes		1					
Text- Authentic artifacts	1						

*Note.* GTE = gifted educator.

Survey participants rated Observation by a gifted educator and the most influential evidence in the identification of gifted students ( $M = 4.3$ ,  $SD = .65$ ). A similar finding by Foley-Nicpon et al. (2013), showed gifted educators were rated the best choice to offer support for twice exceptional students. A majority of participants rated Classroom Performance ( $M = 3.7$ ,  $SD = 1.13$ ) and Scores on Standardized Tests ( $M = 3.8$ ,  $SD = .98$ ) as Very Influential evidence. The District uses the Cognitive Abilities Test

(CogAT; Lohman et al., 2001) for elementary students; the Iowa Tests of Basic Skills (ITBS; Hoover, Dunbar, & Frisbie, 2001) for students in grades 6-8; and the Iowa Tests of Education Development (ITED; Feldt, Forsyth, Ansley, & Alnot, 1993) for students in grades 9-12 as the norm-referenced testing measure for giftedness. Scores are used by the District to make decisions about the amount and type of additional evidence required for identification. This may explain participants' reasoning when rating the high influence level of standardized test scores.

Participants said the least influential factors in gifted identification were Does Not Have an IEP, and Does Not Have a 504 Plan. These two factors were each rated as Not Influential by 75% of survey participants.

**Group comparisons.** Group comparisons of gifted educators ( $n = 10$ ) and classroom teachers ( $n = 7$ ) regarding influential evidence in gifted identification were compared (see Table 12). Observation by a gifted educator was reported as the most influential evidence in gifted identification by both gifted educators and classroom teachers. Academic Performance in the Classroom was rated as the second most influential evidence by classroom teacher ( $M = 4.1$ ,  $SD = 1.07$ ), while gifted educators rated this factor lower ( $M = 3.2$ ,  $SD = 1.03$ ),  $t(15) = -1.83$ ,  $p = .09$ . Gifted educators rated Scores on Standardized Tests as the second most influential evidence ( $M = 3.9$ ,  $SD = .88$ ), while classroom teachers rated this factor lower ( $M = 3.6$ ,  $SD = 1.13$ ),  $t(15) = .68$ ,  $p = .51$ . However, neither rate comparison shows statistical significance. Gifted educators and classroom teachers rated the absence of an IEP and the absence of a 504 Plan as the least influential evidence in the gifted identification process.

Table 12

*Group Comparisons of Influential Evidence in Gifted Identification*

Evidence	Gifted Educators			Classroom Teachers		
	n	<i>M</i>	<i>SD</i>	n	<i>M</i>	<i>SD</i>
Classroom behavior	10	2.5	.97	7	2.3	1.11
Classroom performance	10	3.2	1.03	7	4.1	1.07
Grades	10	2.6	.97	7	2.9	.69
State mandated test	10	2.6	.84	7	3.0	1.16
Standardized test	10	3.9	.88	7	3.6	1.13
No IEP	10	1.5	.85	7	1.3	1.16
No 504 accommodations	10	1.7	1.16	7	1.3	.76
Observation by gifted educator	10	4.2	.62	7	4.3	.49

Group Comparisons						
Evidence	<i>t</i>	<i>df</i>	<i>p</i>	95% CI		
				LL	UL	Cohen's <i>d</i>
Classroom behavior	.42	15	.68	-.87	1.29	.20
Classroom performance	-1.83	15	.09	-2.04	.16	.98
Grades	-.60	15	.56	-1.17	.65	.31
State mandated test	-.83	15	.42	-1.43	.63	.40
Standardized test	.68	15	.51	-.71	1.37	.33
No IEP	.53	15	.60	-.64	1.07	.21
No 504 accommodations	.83	15	.42	-.65	1.48	.42
Observation by gifted educator	-.25	15	.80	-.81	.63	.16

*Note.* IEP = individualized education plan, 504 = accommodations under Section 504 of The Rehabilitation Act of 1973.

**Student artifact analysis.** Where appropriate, participants chose an authentic assessment from a portfolio of student work used as evidence in the student's gifted identification. Analysis of the student artifact provided insight into observed behaviors prompting participants' referrals for gifted identification. In addition, the artifact itself acted as an illustration of the type of evidence the participant considered influential in

identifying the student as gifted. However, only three students were required to complete portfolios as part of their gifted identification process. On the surface, this finding may seem confusing. An explanation of the District's gifted identification process will assist in elucidating this phenomenon.

***Gifted identification in the District.*** The District uses a tiered system for gifted identification, based on the scores of a standardized test. The District uses the Cognitive Abilities Test (CogAT; Lohman et al., 2001) for elementary students, and the Iowa Test of Basic Skills (ITBS; Hoover, Dunbar, & Frisbie, 2001) for middle school students. The present study includes one student who was identified gifted at the middle school level, and all other students were identified gifted in elementary school.

The CogAT (Lohman et al., 2001) is comprised of three batteries: verbal, quantitative, and non-verbal, and each measures a different cognitive process. Scores and national percentile rankings are assigned in each battery, and a composite rank score is given, which is determined by the publisher using a specific formula. The ITBS (Hoover et al., 2001) contains subject-specific batteries, each with more specific subtests.

National percentile rankings are assigned in each subtest, and in the total score for each of four subjects, English, math, science, and social studies. Students may be identified by the District in as many as four subjects at the middle and high school level, and in as many as two subjects at the elementary school level. National percentile rankings by age are the scores on which decisions are based at the elementary school level.

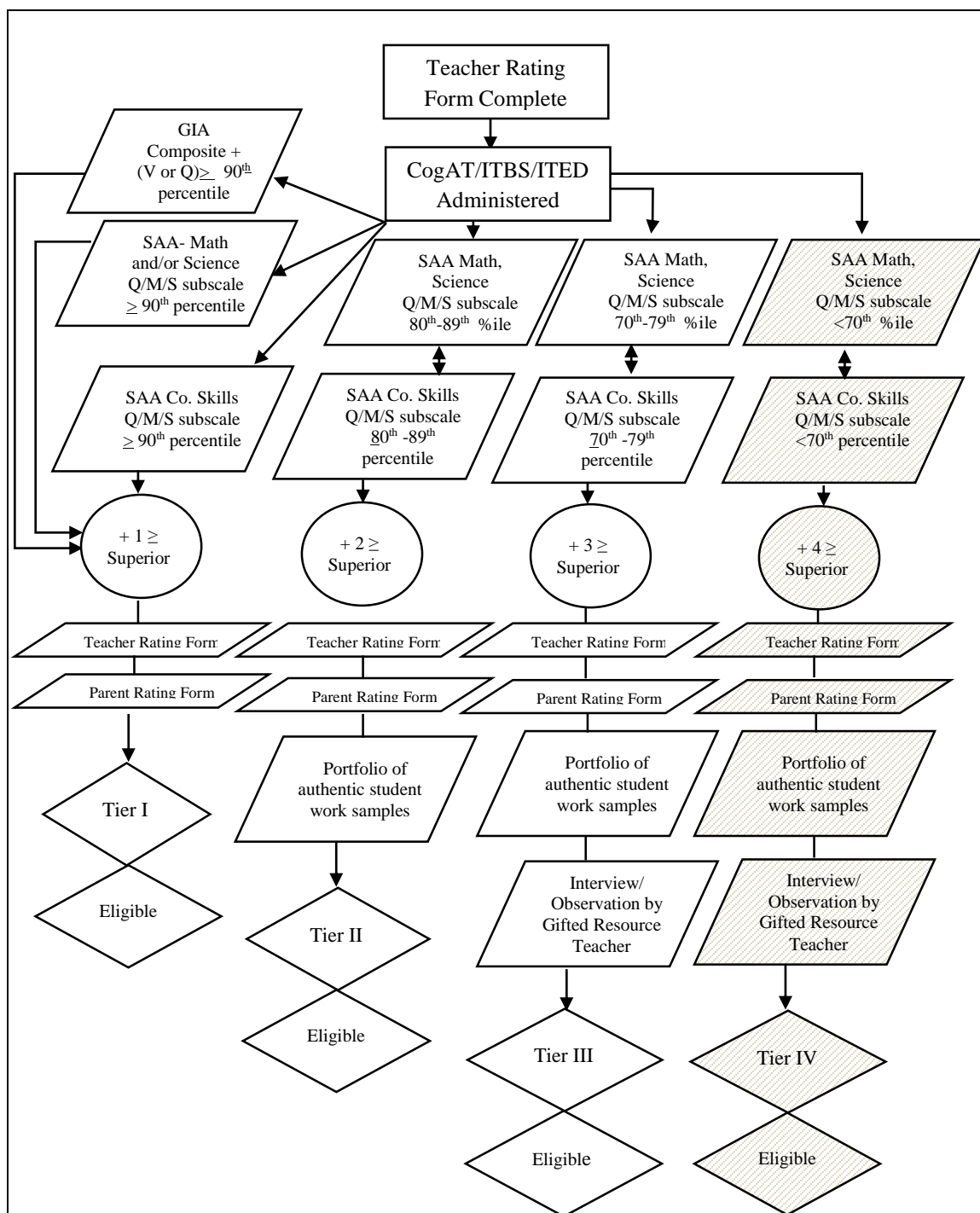


Figure 3. Flow of the screening and identification process for *the District*. Students scoring at or above the 90<sup>th</sup> percentile are nearly always identified gifted with only the score and rating forms from two stakeholders. CogAT = Cognitive Abilities Test. GIA = General Intellectual Aptitude. SAA = Specific Academic Aptitude. Adapted from “Local Plan for the Education of the Gifted,” Norfolk Public Schools, 2012. Lohman, D. F., Hagen, E. P., & Thorndike, R. L. (2001). *Cognitive abilities test*. Rolling Meadows, IL: Riverside Publishing.

National percentile ranking totals for each subject are used at the middle school level to assign each candidate a corresponding tier. As Figure 2 illustrates, elementary students with a composite score at or above the 90<sup>th</sup> percentile, plus one additional CogAT (Lohman, et al., 2001) score at  $\geq 90^{\text{th}}$  percentile in either the verbal or quantitative battery are assigned Tier I, and are eligible for the District's highest gifted designation of General Intellectual Aptitude, a designation only available at the elementary school level. Students scoring  $\geq 90^{\text{th}}$  percentile in the verbal or quantitative battery or both are assigned Tier I in a specific academic subject.

The CogAT (Lohman et al., 2001) scores, plus one additional piece of evidence scored at or above the Superior range, as measured a common rubric, are required to find the student eligible for gifted services at Tier I. Evidence accepted for consideration include a Gifted Behaviors Teacher Rating Scale, a Gifted Behaviors Parent Rating Scale, a portfolio of student work in the area or subject referred, and an observation or interview conducted by a gifted educator in the employ of the District.

Tiers II-IV require CogAT (Lohman et al., 2001) scores at progressively lower levels than the 90<sup>th</sup> percentile, and do not require the composite score to be above the designated cut-off. The composite score is not a factor unless the student is a candidate for the designation of General Intellectual Aptitude. It is possible for a student to score at the first percentile in a given battery or subject and be found eligible for gifted services. However, as the scores decrease, the number of additional pieces of evidence required for identification increases, and the student must answer enough questions on the standardized test to acquire a score.

It is important to note that Tier IV was not part of the District's gifted identification process at the time the present study was conducted, and is currently in effect for the District's annual first grade screening. Tier IV was added to the process beginning with the 2015-2016 school year. Therefore, all gifted students with ASD referred in the present study scored  $\geq 70^{\text{th}}$  percentile in their areas of identification. The same year, The District implemented the use of common, subject-specific tasks to compile all student portfolios. These authentic assessments are grouped by grade range; i.e. primary grades, upper elementary grades, middle school, and high school.

***The artifacts.*** A total of 20 students were referred by the 15 interview participants for gifted identification in the present study. CogAT (Lohman et al., 2001) test results placed them in all three tier designations (see Table 13). However, in 14 of the 20 cases, the student scored in the Tier I range, and portfolios of student work were not created. Additional evidence presented in all 14 cases consisted of either the Gifted Behaviors Parent Rating Scale, the Gifted Behaviors Teacher Rating Scale or both. In three cases, the student scored in the Tier II range, and participants chose an artifact from the student portfolio for analysis.

One student's gifted records were completely missing from the student's cumulative record. Further inquiry from the researcher did not result in obtaining the records. Additionally, one student scored at the Tier II range for communication skills and the Tier III range for math. However, the participant referred this particular student for special education services for ASD, and not for gifted identification.

Table 13

*Gifted Identification Tier Designations for Gifted Students with ASD*

Referring Professional Pseudonym	Student Pseudonym	Area of Identification	Year (grade) of Eligibility	Tier
Bubbles	DEB+	GIA	2012 (K)	II
Bubbles	Davis	Co. Skills	2013 (5)	I
Cathy	Zack	Mathematics	2015 (3)	I
Frances	John	GIA	2011 (3)	I
Grandma	Annie+	GIA	2007 (1)	I
Grandma	Anthony	-	-	-
Ian	Marshall	GIA	2005 (K)	I
Jean	Larry	Co. Skills	2015 (5)	II
Lauren	Chris	GIA	2012 (1)*	I
Mary	Caroline	GIA	2010 (1)*	I
Sabrina**	Sam	Co. Skills, Math.	2015 (4)	II, III
Sophia	James+	English, Math., Social Studies	2012 (6)	-
Sophia	Andrew	GIA	2012 (2)*	I
Sophia	Jayden	GIA	2012 (2)*	I
Stella	Courtney	GIA	2009 (1)*	I
Survivor	Rebecca+	GIA	2013 (1)*	II
Survivor	Markus	Mathematics	2013 (1)*	I
Tanner	Zack	Mathematics	2015 (3)	I
Teresa	Gigi	Co. Skills	2011 (5)	I
Victoria	Fiona	GIA	2015 (5)	I

*Note.* \* = student participated in *the District's* annual district-wide first grade screening, \*\* = participant referred student for special education services rather than gifted identification, + = main focus of interview, Co. Skills = Communication Skills, GIA = General Intellectual Aptitude, K = Kindergarten, DEB = Dry Erase Board

A total of three participants chose a student artifact from the student's portfolio presented as evidence in his or her eligibility. Each of the participants chose a different



artifact. However, all three pieces of evidence reveal critical thinking and problem solving, novel thinking, and planning in order to complete the task.

Bubbles chose to analyze a narrative of her Kindergarten student, Dry Erase Board's (DEB) behaviors exhibited during a Chess game against a fifth grade student. Survivor chose a Math Exemplar, a real-world scenario requiring Math problem-solving, and Jean chose to analyze an exercise in forced associations in which the student is asked to relate pairs of dissimilar words.

Bubbles opened the analysis by saying DEB's greatest downfall was his use of self-talk when determining his next move:

...he talked out loud the whole time he was doing it. And he would tell you. You knew which move he was going to make because he would say, "If I move there, that's gonna happen, then you're gonna do that, and I'm gonna do that, and then you're gonna move here, and that's not a good move."

Bubbles said this made it easy for her to observe and assess his thinking as evidence for gifted identification. She noted DEB was very calculated in his moves. He consistently thought four or five moves ahead as he worked out his next move. Her fourth and fifth grade gifted students, against whom DEB competed, usually think only about two moves ahead of their current move. Bubbles said thinking about the consequences of future moves in relation to his opponent's moves was evidence of critical thinking on a gifted level.

Survivor chose a first grade math exemplar in which students used representations of their choosing to determine how many students were in a class based on the number of mini-pizzas a teacher made. Survivor recalled her student, Rebecca did not want to draw

pizzas. Rebecca typically resisted writing. So, Survivor allowed Rebecca to talk through her solution while Survivor scribed the conversation. This was an accommodation Survivor made for all young students who were resistant to, "...traditional ways of showing their thinking. With Rebecca, it was all about her process, and she didn't like to put anything down on paper."

Survivor said Rebecca got the right answer, and was able to explain her mathematical thinking through the conversation. Survivor read Rebecca's words, "I could give two pizzas to each student until I ran out. That's how many. Ten." She also noted Rebecca's systematic way of approaching the problem by looking at the information she was given and then deciding how she would go about finding the answer.

Jean chose to analyze an activity called forced associations. Jean's first comment was, "What I am seeing here is much like those little instances where he would talk to me just as these little exchanges we would have." Jean noted the difference in the approach Larry took to analyzing each word pair. She said Larry's statement that a burden and a gift are both given to you shows his thinking is different from a later response in which he classifies the pair *fire and ice* as elements.

Jean said her favorite association was the similarity Larry drew between a rock and a person. She said, "...a person and a rock can both break, mentally and physically. So it shows a couple of different ways of approaching material." Jean asserted Larry's ability to think about topics in novel ways, and in multiple ways, was evidence of his giftedness

### **Obstacles to Meeting the Needs of Gifted Students with ASD**

To gain a clearer understanding of education professionals' experiences, survey participants were asked to rate obstacles they have experienced in meeting the needs of gifted students with ASD. Participants ranked listed obstacles on a scale of 1 to 5, with 1 being the most difficult and 5 being the least difficult obstacle to overcome. Frequencies of participant responses are given in Table 14. The listed obstacle choices, including the written response of Time to Collaborate, fell into two categories: 1) eligibility for services, and 2) coordination of services. Identification for gifted education services was perceived as being the most difficult obstacle among the first category. Coordination of services between support professionals who work with the student was seen as the most difficult obstacle to overcome in the second category. Overall, survey participants found obstacles dealing with eligibility for services to be a more difficult obstacles to overcome than those addressing coordination of services.

Table 14

*Obstacles to Meeting the Academic Needs of Gifted Students with ASD*

	Most difficult			Least difficult		<i>M</i>	<i>SD</i>
	1	2	3	4	5		
Obstacle	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>		
Identification for gifted education services	2	5	8	4	1	2.9	1.04
Identification for an IEP		4	4	3	8	3.5	1.48
Identification for 504 plan		3	4	3	9	3.9	1.17
Coordination of services between educators who work with the student		9	4	5	2	3.0	1.07
Coordination of services between support professionals who work with the student		8	5	5	1	2.9	1.04
Coordination between school personnel and parents		4	8	6	2	3.3	.92
Other- (please specify) time to collaborate				2			

Interview participants were asked to elaborate on perceived obstacles to meeting the needs of gifted students with ASD. Three major sub-categories emerged from the interview data: 1) student behaviors; 2) collaboration and support; and 3) lack of adequate training. Five education professionals said behaviors of their student prevented teaching and learning. Cathy's student, Zack had difficulty with self-regulation, particularly when transitioning from one activity to the next. This caused disruptions resulting in loss of instructional time. Four participants talked about difficulty connecting with their student as an obstacle, especially when the student was adjusting to a new routine such as going to the gifted resource room. Lauren talked about her student, Chris:

Once he was identified and was being pulled into the gifted class, initially...I needed to go in with him. He would not complete assignments, he'd blurt out answers, he wouldn't stay on task...He just wasn't being productive in there at all.

Survivor described working with Markus, a second grade student with ASD. He was very routine oriented and became frustrated easily. Survivor attempted several different approaches to help Markus acclimate to the gifted setting, including collaboration with the school's autism specialist. Markus responded well to the lessons, but not to Survivor. The autism specialist began accompanying Markus to the gifted classroom, but this was unsuccessful. Survivor laments:

So what we decided what was best for Markus, and I had to accept it was, I would plan it and his teacher would teach it. I would assess it, but he had success with him and I did not.

A lack of support from other educators was cited by eight interview participants as an obstacle to meeting the needs of their student. Victoria and Grandma, both gifted educators spoke of homeroom teachers who refused to accommodate their students' behaviors, and Bubbles said one of her regular education colleagues prevented access to the gifted classroom. Sophia said the classroom teacher with whom she worked held a deficit view of her student, not wanting to acknowledge his giftedness.

Sabrina, a classroom teacher said she lacked sufficient training, resources and support from her colleagues to meet the needs of her student, Sam. Teresa's school did not have a gifted educator, although she did receive the support she needed from her special education teacher. Teresa, said this was frustrating and made her job difficult.

The most talked-about obstacle in meeting the needs of gifted students with ASD by interview participants however, was their students' parents. Nine participants told stories of parents who were initially uncooperative, presented language barriers, were helicopter parents, or lacked training and knowledge about giftedness, autism, or both.

Victoria talked about Willie, whose parents refused IEP accommodations for their child due to a perceived stigma they attached to ASD. Further, they were reluctant to allow gifted identification for fear that gifted evaluation would reveal the child's ASD. Additionally, Victoria's student, Fiona, had supportive parents, but they, too were protective of her, and chose to delay the gifted identification process until fifth grade.

Cathy shared a story about meeting with Zack's parents to write his first IEP. The evaluation process had taken all of his third grade school year due to delays with outside health care professionals. As the meeting began, the parents informed the IEP team that Zack had been diagnosed with ASD in Kindergarten while living with his grandmother.

Zack's grandmother did not share this information because of a perceived stigma she associated with ASD.

Teresa and Frances, however shared stories of overcoming obstacles with their parents. Frances describes great effort by her and the parents of her student, Juan to overcome their language barrier:

They did not speak English very well if at all. Being able to connect with them and talk to them about what we're doing in class....we didn't want to necessarily use the older brother to interpret, but at times, we did have to do that....making sure we could communicate effectively with his parents so that we were all on the same page in getting him where he needed to be. We did get an interpreter. We tried to go into Microsoft Word and change a document into a different language and it turned out it was not the Spanish that he spoke. Then, as the year went on, the father became more proficient, so we were better able to communicate.

Interview participants also cited lack of adequate training as obstacles to meeting the needs of gifted students with ASD. Inadequate training was named by eight of the interview participants, and a lack of special education training was named specifically by five. Stella, Sabrina, and Survivor spoke of the frustration they experienced, unprepared to understand and accommodate their students' academic and behavioral needs. Sabrina said:

...not being knowledgeable myself on how to provide for his needs, as being a student with autism or Asperger's, not having the education that I need in order to really provide for the student...I didn't have the support I needed from the staff. Nor did I have support from home.

### **Strategies for Meeting the Needs of Gifted Students with ASD**

Although the question was not directly asked, participants shared strategies they found successful in meeting the needs of gifted students with ASD through their stories, comparisons, and anecdotes. This topic was helpful in answering both research questions. Participants' assessments of the needs of the student or students they referred illustrated the strengths and weaknesses of gifted students with ASD, answering the second research question: How do education professionals describe the gifted student with ASD? The strategies chosen, along with the ways they were implemented, helps to answer the first research question: What are the characteristics of education professionals who have successfully referred a gifted student with ASD for specialized services?

Three sub-categories emerged from these data: 1) instructional strategies; 2) social-emotional strategies; and 3) use of education professionals. A majority (73%) of participants described instructional strategies they found effective in meeting the needs of their gifted student with ASD. Seven participants made structural changes to their lessons, their small-grouping arrangements, or their requirements regarding work completion.

Lauren and Grandma discovered their students struggled with open-ended assignments because they contained too many choices, and were unstructured in their task order. Both participants said they added parameters to these assignments so their students could more readily access them. Lauren said:

So, he had a list. Whatever she'd say the assignment was, I'd write it down.

"Okay, first you're going to do this, this, this, and this." And he could check it off or scratch it off. That helped a lot. It was definitely more meaningful.

Cathy, Frances, and Sabrina changed the way they approached small-group instruction. Sabrina routinely worked with Sam in a small-group or one-on-one setting to help him with self-regulation. Frances gave John the flexibility to choose whether he wanted to work in a small group or alone. Cathy pulled Zack into a small group when she was conducting a whole-group lesson that was open-ended. She said, “I would need small-group-type things when we went off-tangent with it: when he took his own spin. Especially with word problems and those sorts of, ‘Create a scenario where....’”

Four participants devised alternate ways for their students to complete assignments or represent their learning. Survivor allowed her student, Rebecca, to orally explain her thinking if she was resistant to writing. Bubbles explained how her student, Dry Erase Board got his name:

...he kept always calling out. So I said, “I’ll give you a white board with a marker. You’re the only person who gets one. When you have the right answer, I want you to write it on your board. You can draw me a picture, you can use words, whatever, and I’ll let you know you got it right.”

More than half (53%) of participants talked about a strength-based approach to teaching and learning as an instructional strategy. The use of the student’s areas of interest was the most popular strategy among education professionals. Victoria gave her student, Fiona, an outlet for her drawing to help her stay more on task, and assigned an independent project for Fiona to write a story told in pictures. Ian described the District’s gifted middle school program. Operating as a school within a school, gifted students spend the entire day with their intellectual peers. Incorporation of the Autonomous



Learner Model (Betts, 1991) takes advantage of the strengths and interests of the gifted student with ASD.

Bubbles created a file of map-related tasks for DEB to complete when he finished his work early. DEB made maps for Bubbles as a result. Jean assigned a project for Larry to learn about space, his area of passion. Frances used John's interest in clouds as a de-escalation strategy, but then moved from there into allowing John to conduct research about clouds.

Social-emotional strategies were used widely by 14 of the 15 participants. Building trust and building student capacity were areas most described. Building trust with their student was discussed by 66% of participants. Bubbles, a gifted educator talks about using her student, DEB's love of Chess to build trust. She said as he became more comfortable with playing against her, he began to talk in longer phrases. Victoria, also a gifted educator, talked about using her classroom as a safe space for her student, Fiona, to de-escalate. She said, "I was her deceleration. I was her place to come and get herself back together."

Lauren worked with her students with ASD for multiple years, following them as they matriculated through elementary school. She viewed this an important way to build trust. Referring to her time with Chris, she said:

Chris is like my second child. I could tell you almost anything about him. If he's having a bad day I can say, "Did this...or that happen today?" ...It worked for us because it made it easy to figure out the function of the behavior. It made it easy to de-escalate a student if they were going into a meltdown. I enjoyed it and the parents did. I think the kids did as well.

Nine participants (60%) said allowing the student to develop coping strategies was another way to build trust with their students. Five participants allowed their students to draw when they were under stress. Grandma felt this was especially important because her student, Annie's homeroom teachers were not always as understanding of Annie's needs. She said, "...she marched to the beat of her own drum. But I think (her teacher) was more, 'This is my classroom. You're gonna march in my band, this way.'"

Frances allowed her student, John, to stand by the window and look out at the clouds to de-escalate. She also walked with him when he was having more difficulty calming himself. She would ask him about clouds as they walked down the hall. Cathy utilized her classroom seating arrangement and some products that can be purchased or made to help students with ASD self-soothe. She said, "He had two desks, one with access to a cubby and one without. A Thera-band inside this one helped him as well. She used a weighted vest to help with overstimulation, and lots of fidgets help him stay focused."

Another social emotional strategy, used by 66% of participants was building student capacity. They valued teaching their student coping skills including avoiding triggers, self-regulation, and self-evaluation. Frances and Grandma worked to remove their students from situations that were upsetting to them. Mary described how she taught her gifted student with ASD to cope with the change of having a substitute teacher:

I said, "Sometimes I'm not here, and a different teacher is here. Some rules they'll follow, but some rules, they have a different way of doing it. So, when there is another teacher here, you let them make up some of the rules." Then I said in my

plans, “Ask this student for information about how we handle this,” and let them take some guidance from the substitute.

Stella, a gifted educator and Sabrina, a classroom teacher employed the assistance of classmates to help their students avoid triggers. Stella assigned a buddy to remind her student Courtney about procedures and any changes to the schedule. Sabrina asked the entire class to help Sam remember proper classroom manners by modeling them for him. Cathy, also a classroom teacher asked her class to remind her student, Zack not to pick *trinkets* up off the floor and put them in his pockets.

Frances worked to teach self-regulation skills to her student, John. She worked to help him recognize when he was having difficulty and what to do. She said:

We talked about strategies to de-escalate when he began to recognize when that was coming on. And when he felt it coming, we’d say, “What can you do about it?” John would reply, “I can count. I can take deep breaths...” Because we can’t go out and watch clouds all the time. Sometimes, we just have to stay here and handle it.

Lauren described using video to help her student Chris better understand his behavior and others’ reactions to it. She helped him learn to recognize when his senses were overstimulated. She talked about his progress, “So he started learning to verbalize it more. He’d say, ‘I need pressure on my back. I need pressure on my head. Can you squeeze my hand? I need to go lay down.’”

Cathy, a classroom teacher and Bubbles, a gifted educator taught their students to self-evaluate and monitor their behavior. Cathy’s student, Zack was leaving the

classroom when he became overstimulated under the guise of needing to use the bathroom. She said,

There were times within an hour he would go to the bathroom three times. So, I thought, maybe it's, "I'm bored. I need to go stretch my legs. I need to go take a walk." So, I gave him bathroom tickets to see if it alleviated some of that.

Cathy limited his bathroom breaks in combination with providing other outlets for Zack to self-soothe. Bubbles collaborated with DEB's homeroom teacher to have him reflect on the events of his day and report them to Bubbles. She described it this way:

"How was your day?" And he'd say, "I got in trouble here." and we would look at his chart. And I'd say, "Well, do you think you deserve to come with me?"

Sometimes he would say no and sometimes he would say yes. And I didn't even make it contingent upon what was actually on the chart.

The final sub-category, education professionals, emerged as participants talked about changes in personnel, and collaboration with colleagues as helping to meet the needs of their gifted student with ASD. Bubbles, Survivor, and Sophia, all gifted educators, worked to change the classroom placement of their students. Bubbles had her student, DEB moved into the inclusion classroom when he was found eligible for special education services. Bubbles said the faculty and staff were better equipped to meet his needs, "That first grade classroom was a bad fit with the other kids, and with the teacher. So he was moved to the inclusion teacher. She had a really good behavior modification system with him."

Survivor and Sophia collaborated to bring in staff who were better able to assist with their students. When her student, James, was having difficulty, Sophia asked him to

spend extra time with his one-on-one assistant so he could de-escalate, knowing he may miss a whole day of instruction with her. She said, “He kind of needed that that day a lot more than he needed me.”

Survivor worked with her student Markus’ autism specialist to help him adjust to coming to her pull-out gifted math class. When Survivor could see this was not successful, she allowed the autism specialist to continue to enrich Markus without her because he was enjoying success in that setting. She continued to collaborate weekly with him to write engaging lessons, but the autism specialist taught the enrichment lessons.

Collaboration among education professionals was discussed by 73% of participants. Stella, a gifted educator collaborated with Courtney’s homeroom teacher to find more appropriate reading books on Courtney’s reading level. They also planned strategies to encourage Courtney to speak out in class more often. Teresa, a support staff, talked about her collaboration experience as essential to her success with her student Gigi. She said, “I think the reason that it worked so well with her was because of the relationship between myself, the special education teacher and her parents.”

Jean, a classroom teacher collaborated with her gifted educator to plan some behavior strategies for Larry to avoid injuring himself when he was upset, and to arrange a more comfortable seating arrangement for Larry. Frances, a classroom teacher, worked with a Spanish interpreter to help her overcome a language barrier between her student John’s parents and her. Frances also met with her special educator and paraprofessional each day to monitor John’s progress and plan strategies for his success.

### **Summary**

The present study focused on characteristics of education professionals who successfully referred a gifted student with ASD for specialized services, and observed behaviors prompting their referrals. Survey and interview data were combined to more fully examine both foci. Findings of the characteristics of education professionals produced several sub-categories that support a core category of advocacy. Participants' areas of study include education, behavioral sciences, and core subjects. Specialized training of participants encompasses graduate and postgraduate degrees; endorsements, and coursework; collaboration and mentorship; professional development; and participant experiences. Ways in which participants found their training helpful fall into two sub-categories, teaching all students; and identifying behaviors. Discussion of their support for the core category will take place in Chapter 5.

Participant knowledge of student populations suggests education professionals know more about gifted students than they do about students with ASD or gifted students with ASD. Survey participants reported having more knowledge about the identification of gifted students than they do about gifted students themselves. Half of survey participants know at least a good amount about how students with ASD and gifted students with ASD are identified in the District.

Survey participants referred more regular education students for gifted identification than students with ASD and students with SLD. Nonsignificant findings for referrals of regular education students and students with ASD are indicated, and statistically significant differences for referrals of students with SLD. All participants indicate some level of confidence in making appropriate referrals for gifted students with ASD.

The second focus, characteristics of gifted students with ASD also produced several sub-categories. Participant comparison of student populations produced a different main focus for each group compared. The comparison of regular education students and gifted students focused primarily on gifted students' differing paradigm from regular education students. Comparing regular education students and students with ASD focused mainly on clinical behaviors of ASD found in the DSM-5 (APA, 2013). Comparisons of gifted students and students with ASD focused on overlapping behaviors of the two populations, specifically, the degree of intensity of the behavior.

Comparison of the referred gifted student with ASD and other twice exceptional students participants encountered revealed nearly half of participants worked with other gifted students with ASD. Comparisons of these populations focused on their respective disabilities.

Most survey participants (85%) chose high achievement as an observed behavior prompting their referral of a gifted student with ASD for specialized services. Recognizing patterns, learning information quickly and blurting out answers were also chosen by at least 75% of participants. Interview data revealed three sub-categories: 1) intellectual/ academic behaviors in language arts or math; 2) creative/novel thinking; and 3) task commitment.

Behaviors supporting referral were discussed through stories and anecdotes and produced two sub-categories: 1) visual and performing arts talent; and 2) understanding grades. A unique story of prodigious mechanical ability was told, and the paradox of the same ability documented as a strength and as a weakness. These interview data support the characteristics of education professionals as well as behaviors supporting referral.

Observation by a gifted specialist was considered influential evidence in gifted identification by all participants. Additionally, most participants consider performance on a standardized test such as the CogAT to be very influential or essential. The absence of an IEP or a 504 plan were rated as not influential. The analyses of the student artifacts revealed the behaviors of critical thinking and problem solving; novel thinking; and planning for completion of the task.

Obstacles to meeting the needs of gifted students with ASD rated by survey participants were sorted into two types: eligibility and coordination of services. Eligibility type obstacles were ranked more difficult than coordination of services. Subcategories emerging from interviews include 1) student behaviors; 2) collaboration and support; and 3) lack of adequate training. Strategies for meeting the needs of gifted students with ASD arose in discussion with interview participants. Emerging sub-categories include: 1) instructional strategies; 2) social emotional strategies; and 3) use of education professionals. All of these sub-categories support the core category of advocacy, which will be developed in the next chapter.



## CHAPTER 5

### DISCUSSION

Schools in the United States have seen a dramatic increase in the number of students diagnosed with autism spectrum disorder (ASD). Some of these students are also intellectually gifted. Meeting the needs of gifted students with ASD begins when the student is referred to specialists for evaluation. Education professionals spend much of the day working with children, and are therefore in a position to recognize unique behaviors associated with gifted students with ASD and make a referral. Changes to diagnostic criteria in the DSM-5 (2013); difficulties in understanding the role of IDEA in schools; multiple conceptions about what it means to be gifted; and overlapping behaviors of ASD and giftedness may inhibit education professionals' ability to recognize behaviors associated with the gifted student with ASD, and subsequently refer the student for specialized services.

Although autism is one of the most studied disorders in the United States (Buitelaar, Van der Gaag, Klin, & Volkmar, 1999), and giftedness has been extensively studied since the seminal work of Terman in 1925, empirical study at the crossroads of ASD and giftedness has been largely ignored. Further, only four empirical studies focus on education professionals who work with this population, and no empirical study to date

has examined the perceptions of education professionals who successfully referred a gifted student with ASD for specialized services.

The present study explored the perceptions and experiences of education professionals who successfully referred a gifted student with autism spectrum disorder (ASD) for specialized services. Specifically, characteristics of referring education professionals, and the training they found helpful in meeting the needs of gifted students with ASD were examined. Also, observed behaviors prompting referral, and evidence of student work perceived as supporting education professionals' referral were investigated. The synthesis resulted in 1) a conception of the education professional who meets the needs of gifted students with ASD; and 2) a clearer conceptualization of the gifted student with ASD, as seen through the eyes of the education professionals who referred them for specialized services.

A total of 28 surveys were sent to potential participants, chosen via purposive criterion sampling. All potential participants successfully referred one or more currently enrolled gifted students with ASD for specialized services. Twenty surveys were completed, and 15 of the survey participants accepted an invitation to participate in an in-depth, semi-structured interview. Where appropriate, interview participants chose and analyzed an authentic student artifact used in the gifted identification of the student he or she referred.

In Chapter 4, findings were reported in two parts, each part addressing one of two major research questions. Discussion of the findings reported in Chapter 4 will be presented in the same manner here. However, each part will discuss findings in terms of support for the grounded theory that emerged from the data analysis. Discussion will

include ways in which the findings intersect with, and diverge from existing literature on gifted students with ASD, as well as the literature on education professionals' relationships with this population.

Also included are implications of the present study for research, pre-service teacher training, professional development, and identification of gifted students with ASD. Limitations of the present study as well as considerations for future research will be discussed. The chapter will conclude with a brief summary.

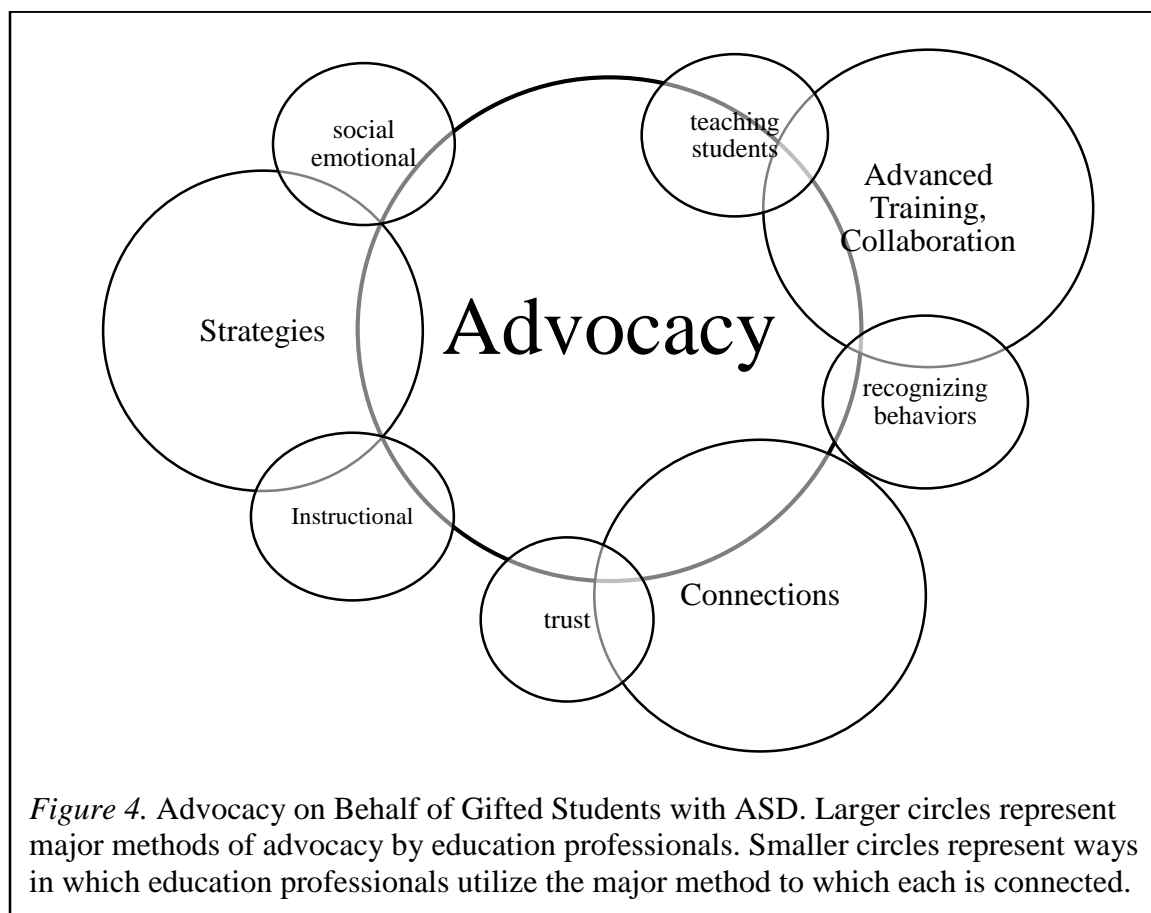
### **Characteristics of Successful Referring Education Professionals**

Bianco and Leech (2010) posed this question about gifted educators: "...what is it about their training that allows them to see beyond a student's disabilities and recognize his or her gifts and talents?" (p. 329). The present study sought to answer that question through examination of training and credentials, as well as the perceptions of education professionals who successfully referred gifted students with ASD for specialized services. In the present study, gifted educators, as well as classroom teachers, a special educator, support staff, and a speech and language pathologist saw beyond their students' disabilities. Through analysis of survey data and in-depth interviews, the first grounded theory emerged: Education professionals are advocates for their gifted students with autism spectrum disorder.

The advocacy of education professionals on behalf of gifted students with ASD took on three dimensions: 1) training and collaboration; 2) connections; and 3) strategies (see Figure 4). Although much of the survey data involves a reporting of factual responses from participant, these responses are brought to life through the interviews. Discussion of training and ways in which participants found it helpful led to descriptions

of strategies participants utilized. Discussion routinely turned toward the social and emotional aspects of their students.

Although these dimensions are distinct, they are inextricably linked to one another. Discussion of the dimensions therefore is overlapping and somewhat messy. However, they richly illustrate and add context to the advocacy of education professionals on behalf of their gifted students with ASD.



### **Advocacy through Training and Collaboration**

As required by federal education guidelines, all participants in the present study were highly qualified (NCLB, 2013) to teach in their respective educational roles.

Additionally, as required by the state in which the study was conducted, all participants

working in specialized fields held licensure endorsements in their respective areas of expertise: gifted education, special education, and speech/language pathology (Bianco and Leech, 2010). A large majority of total participants held master's degrees, and classroom teachers were the largest group with this credential. This is an interesting finding because it is unlike the demographic of education professionals focused upon in existing literature (Bianco, 2005; Bianco and Leech, 2010) where fewer than half of participants held master's degrees and the majority were gifted educators.

All but one participant in the present study held master's degrees and/or a licensure endorsement in gifted education. Both credentials require advanced coursework in human development and behavior. Although education research has examined relationships between teacher training and student achievement, little agreement has been reached on which training, if any improves teacher quality (Harris & Sass, 2010), and such research has not focused on correlations between training, and referral and identification of gifted and/or twice exceptional students.

Further, one of the few studies examining the effects of teacher training in gifted education found positive correlations between training in gifted education and skill in teaching students already identified as gifted (Hansen & Feldhusen, 1994). However, the researchers did not address referral and identification. Participants' studies in the behavioral sciences (i.e. brain research, psychology, sociology, counseling, etc.) may offer insight into coursework/training as factors in the ability to recognize unique behaviors of gifted students with ASD.

When asked which training they perceived as most helpful in meeting the needs of gifted students with ASD, a majority of participants referenced their advanced degrees

or specialized, advanced-degree coursework in their areas of expertise. Coursework toward a licensure endorsement and advanced degrees in specialized fields were most often cited. Frances, a classroom teacher said she returned to school to earn her master's degree in school and community counseling because:

...I started working with students who had special education needs, who were gifted, and a little unusual in their behaviors and nobody ever said to me, "Here's what you do with special education children and here's what you do with gifted children." It was sort of a, "figure it out" kind of thing. When I started to figure it out, I realized I wanted to know a lot more so I could help them more. So I did go back to get my degree in counseling.

Equally cited as helpful training were unique teaching experiences which included collaboration and mentorship. A majority of participants described experiences in which they team taught with or were mentored by a colleague outside the participant's discipline, or worked in a setting which required collaboration with professionals outside the participant's area of expertise (Morrison & Rizza, 2007; Nielson, 2002; Pereles, Omdal & Baldwin, 2009; Tieso, 2014; Weinfeld, Barnes-Robinson, Jeweler, & Roffman Shevitz, 2005).

Most participants reported more total years of experience in the field of education than in their present or most recent role, suggesting they have served in more than one educational role. Advanced training and service in multiple educational roles, combined with work settings and collaboration with colleagues outside their discipline support education professionals' ability to advocate for their students by recognizing unique behaviors of gifted students with ASD and making appropriate referrals.

Nearly half of participants said their training was helpful because it increased their ability to identify student behaviors, specifically the ability to better recognize giftedness and diversity among their students, and to see beyond the masking effect which often causes twice-exceptional students to be overlooked for appropriate services (Burger-Veltmeijer, 2007; Burger-Veltmeijer et al., 2010; Foley Nicpon et al., 2011; Gallagher & Gallagher, 2002). Although their perceptions are a significant finding, it is also noteworthy that only gifted educators in the present study credit their training with identifying the unique behaviors of gifted students with ASD.

Classroom teachers discussed the benefits of their training in terms of addressing the deficits of their gifted students with ASD, without mention of benefit regarding fostering their students' strengths (Bianco & Leech, 2010). Gifted educators and the special educator credited their training with improved ability to address both conditions in their gifted students with ASD. These are unusual findings because existing empirical literature found that special educators focused on deficits, and were least likely to refer a twice exceptional student for gifted identification, particularly if the student had a disability label (Bianco, 2005; Bianco & Leech, 2010).

The study of human behavior, whether in the course of acquiring an advanced degree, an endorsement in gifted education, or as a major course of study appears to be a factor in education professionals' ability to recognize behaviors of gifted students with ASD and make appropriate referrals. Collaboration with others outside their area of expertise, and learning through experiences in multiple educational settings also contribute to education professionals' advocacy for and meeting the needs gifted students with ASD.

**Self-assessment of education professionals.** To garner a more complete picture of the characteristics of education professionals who successfully referred a gifted student with ASD for specialized services, participants were asked to assess their knowledge, experience, and confidence in making referrals for and working with gifted students with ASD. This line of questioning was addressed primarily via the Education Professionals Survey. Participant responses help us better understand factors influencing their ability to advocate for their gifted students with ASD.

**Referrals.** Gifted students comprise 14.9% of the total District population, but only 7.5% of the ASD population. Students with ASD make up 1.4% of the total population of the District, but only .72% of the District's gifted population. Nationally, 7% of students without disabilities are enrolled in gifted programming, but only 1% of students receiving services under IDEA are enrolled in gifted programming. The adjusted percentage controlling for students identified as intellectually disabled is 1.08% (U.S. Department of Education, Office for Civil Rights, 2014). These figures reveal that gifted students with ASD are underrepresented in populations of gifted as well as students with disabilities nationally, but to a greater extent in the District. These figures underscore the importance of the advocacy of education professionals for the gifted student with ASD.

Participants in the present study referred nearly twice as many regular education students for gifted identification as they did students with autism spectrum disorder (ASD) or students with specific learning disabilities (SLD). Intuitively, this is a reasonable finding, because students with ASD and with SLD are rarer than regular education students both in the District and nationwide (U.S. Department of Education, 2016). Examination of the reported number of referrals of students with ASD and SLD



shows gifted educators referred more total students from each population than classroom teachers, special educators, or support staff (See Table 5).

Gifted educators also reported referring more students with SLD than students with ASD, which appears to be in keeping with their respective representation of the total population of the District. Participants' abilities to identify overlapping behaviors and define them, which is discussed later, suggests it was not a factor in the higher rate of referral. Determining whether perceptions about students with SLD was a factor is a topic for future research.

Although gifted educators referred more students from the three populations for gifted identification than their colleagues in other disciplines, they are the only participants who had members reporting referral of no students with ASD for gifted programming. Closer examination of the initial data provided by the District reveals both gifted educators who made this assertion were correct in their claims.

At the time each educator referred his or her respective student for gifted identification, neither student had been diagnosed with ASD. One student was identified gifted in Kindergarten, and found eligible for services for ASD in Grade 5. The other student was identified gifted in Grade 1, and found eligible for services for ASD in Grade 8. This finding suggests these students may have fallen victim to the masking effect; their giftedness masked their behaviors indicating ASD (Burger-Veltmeijer, 2007; Burger-Veltmeijer et al., 2010; Foley Nicpon et al., 2011; Gallagher & Gallagher, 2002).

***Knowledge of and experience with special populations.*** Participants reported knowing a Great Deal about gifted students ( $M = 4.3$ ,  $SD = .91$ ) and how they are identified ( $M = 4.3$ ,  $SD = .97$ ) in the District on average. However, their knowledge about

students with ASD ( $M = 3.4$ ,  $SD = .99$ ) and how they are identified in the District ( $M = 3.5$ ,  $SD = 1.19$ ) was lower on average than their knowledge of gifted students. Reported knowledge levels were lowest when reporting their knowledge of gifted students with ASD ( $M = 3.2$ ,  $SD = 1.06$ ) and how they are identified in the District ( $M = 4.3$ ,  $SD = .97$ ). Group comparisons showed statistical nonsignificance.

Participants also reported having a Lot of Experience with gifted students ( $M = 4.2$ ,  $SD = .83$ ). Again, participants' level of experience is lower when rating their experience with students with ASD ( $M = 3.2$ ,  $SD = .95$ ). Participant experience is lowest when rating their experience with gifted students with ASD ( $M = 3.1$ ,  $SD = .91$ ). Group comparisons were statistically nonsignificant.

Calculation of Spearman's rho ( $r_s$ ) revealed a significant positive correlation between knowledge of each student population and experience with its corresponding population. The more experience the participants had with each population, the more knowledge they had about that population (See Table 8). The strongest correlations were found in the knowledge of and experience with gifted students with ASD. Knowledge in this area is most significantly positively correlated with knowledge of and correlated with experience with students with ASD.

These findings reveal the interdependence of knowledge of giftedness, autism and how they interact; and experience with this special population. Although training in both areas is critical to meeting the needs of gifted students with ASD (Assouline & Whiteman, 2011), these findings support adding experience and training together to build knowledge as well. Further, the positive relationship between knowledge and experience

with each of the three populations of students supports the perceptions of participants in the present study who value experience equally with their advanced training.

***Confidence in referring gifted students with ASD.*** High levels of knowledge of and experience with gifted students is countered by participants reporting less knowledge about and experience with students with ASD, and even less with gifted students with ASD. However, participants still reported moderate levels of confidence in referring a gifted student with ASD for specialized services ( $M = 3.4$ ,  $SD = .99$ ). This finding agrees with those of Foley-Nicpon et al. (2011) whose participants reported fair confidence levels in making appropriate referrals.

Participants reported lower levels of knowledge and experience with gifted students with ASD than with gifted students. Their successful referral of this student population for specialized services however, supports their moderate level of confidence in their ability to make referrals. In addition, this finding supports the construct of advocate among this group of education professionals. Education professionals acted in the interest of their gifted students with ASD by referring them although they did not have a great deal of experience with them.

**Simultaneous referrals.** Four participants referred their students simultaneously for gifted services and for services for ASD, and one participant referred her student for ASD only. The simultaneous referral of the gifted student with ASD is the very quintessence of advocacy. Observed behaviors prompting referral were consistent only with restricted, repetitive behaviors associated with students with ASD (DSM-5, APA, 2013), and not in social communication and interaction.

It was impressive that one gifted educator described overlapping behaviors, and defined them as such in advocating for her student's evaluation. This finding illustrates the masking effect that often prevents gifted students with ASD from being referred for appropriate services (Burger-Veltmeijer, 2007; Burger-Veltmeijer et al., 2010; Foley Nicpon et al., 2011; Willard-Holt et al., 2013). In addition, two classroom teachers each recognized the co-morbid conditions in their students as insufficient to explain the developmental and behavioral difficulties they observed in their students. The comorbidity of a number of different conditions in students with ASD is both common and well-documented (Simonoff, et al., 2008).

The education professionals in the present study were able to recognize behaviors consistent with ASD and make appropriate referrals although their student demonstrated overlapping gifted behaviors. In addition, they recognized that the behaviors of co-morbid conditions did not tell the entire story. Reasoning for successful referrals of students with and without disability labels for gifted identification is supported by limited empirical study (Foley-Nicpon et al., 2013; Bianco & Leech, 2010). It is an exciting finding and opportunity however, to learn from education professionals who made successful dual referrals of gifted students with ASD.

### **Advocacy through Connections with Students**

One of the most exciting discoveries the researcher made in the present study emerged from the interview data. Many of the questions designed to answer the second research question, which focused on behaviors of gifted students with ASD, also illustrated advocacy among education professionals. Through their stories, perceptions, and descriptions, the theory of advocacy emerged.

One of the most powerful ways was in the way participants made connections with their students. Education professionals recognize that a large contributor to the success of their gifted student with ASD is for the student to feel in control of herself and her surroundings.

Trust is seen as the foundation of a supportive relationship, and leads to the success of students with ASD (Robledo & Donnellan, 2008). Students with ASD describe the need for supportive people who believe in them, understand their processes, respect them as competent human beings, and are willing to act in their best interest (Robledo & Donnellan, 2008). Participants in the present study built trust by engaging their students in one-on-one conversation about topics of interest, and creating an emotionally safe environment in which their gifted student with ASD could focus (Friedrichs & Shaughnessy, 2013).

### **Advocacy through Strategies to Meet Student Needs**

Although not directly asked, participant stories and anecdotes described successful strategies for meeting the needs of gifted students with ASD. Participants used a strengths-based approach to teach their gifted students with ASD (Assouline, Nicpon, & Huber, 2006; Bianco, Carothers, & Smiley, 2009; Friedrichs & Shaughnessy, 2013). Student strengths and interests were used as lesson extensions and research topics. Abilities in drawing were incorporated as strategies for achieving behavioral goals. Participants used small groups for differentiated instruction, social emotional support, and behavior modification. One participant described the use of the District's gifted middle school program as a strategy for meeting the needs of gifted students with ASD.

Participants also collaborated with their students to develop coping strategies as a means of building trust. Participants were willing to experiment with unconventional methods to help their students be successful (Willard-Holt et al., 2013). For example, one student drew pictures using her desk as a canvas, while another had more than one desk in the classroom. Space by the window was made available so that another student could self-soothe by looking at clouds. Additionally, a gifted student with ASD used a large yoga ball as a soothing strategy.

Three participants engaged their entire class in helping their gifted student with ASD to cope with the stress of school. Buddies helped the keep the student organized, and the students in the class helped to model appropriate behavior and remind the student of important classroom rules. Participants also observed antecedent events that triggered meltdowns, and worked with their student to avoid them. Self-evaluation skills were also utilized to help with self-regulation and self- advocacy.

### **Advocacy in Referral and Identification**

Participants in the present study were asked to rate influential factors in the gifted identification of twice exceptional students. Observation of the Student by a Gifted Education Professional was rated as the most influential evidence. Existing literature supports this finding (Foley-Nicpon et al., 2013). Participants also rated Scores on Standardized Tests and Classroom Performance as Very influential. Existing literature on the influence of these two factors is mixed. Some researchers found classroom teachers' relied more on IQ, which is a standardized test (Bianco & Leech, 2010), while others found teachers relied more on classroom performance (Foley-Nicpon et al., 2013) when making decisions about the gifted identification of twice exceptional students.

Gifted students with ASD often display a discrepancy between scores on tests of ability versus academic achievement and such discrepancies can be used as a measure for identifying disabilities in gifted students and vice versa (Assouline & Whiteman, 2011). Therefore, caution should be exercised in placing high importance on any one criterion. It may cause educators to overlook underserved populations, including gifted students with ASD (Baldwin, Baum, Pereles, & Hughes, 2015). Participants' opinions about the nearly equally high influence of standardized test scores and classroom performance support the use of multiple criteria in the gifted identification of students with ASD.

Having a disability label (i.e., an IEP or a 504 Plan) was rated as Not Influential by participants in the present study. These are compelling findings because they differ from the findings of Bianco and Leech (2010) which suggest that all teachers are less likely to refer a student with a disability label for gifted programming.

Participants were also asked to choose obstacles they encountered in meeting the needs of gifted students with ASD. Factors listed on the Education Professionals Survey fell into one of two categories: 1) eligibility for services, and 2) coordination of services. Issues of finding the student eligible for both conditions were perceived as the most difficult obstacle to overcome in meeting the needs of the gifted student with ASD (Willard-Holt et al., 2013).

A total of eight participants referred an additional 10 students for specialized services, and seven were found eligible for gifted services. The discussion with participants who referred more than one student with ASD for specialized services crystallizes the advocacy of the education professional. Examples of their training,

collaboration, strategies utilized, and their connections with their students are woven into the discussion that follows.

Participants described advocating for their students with parents, administrators, and colleagues. Sophia, a gifted educator consulted with classroom teachers to garner a second opinion regarding the giftedness of three students with ASD. Survivor, also a gifted educator consulted with the school's autism interventionist to learn new strategies for meeting her student's needs.

Bubbles, a gifted educator spent time building trust with her student with ASD, resulting in a reduction in test anxiety, and subsequent gifted identification. She talked about the standardized testing process saying, "...if he hadn't known who I was. If we hadn't worked together first, to pull him to test him would have been crazy... and he didn't go off, he didn't have any problems." These findings support researchers' calls for a collaborative approach to meeting the needs of twice exceptional students (Gallagher, & Gallagher, 2002; Morrison & Rizza, 2007; Pereles et al., 2009).

Participants' stories of unsuccessful referrals also support the grounded theory of advocacy. Determinations of ineligibility for gifted services gained credibility when education professionals collaborated, as participants in two cases accepted the ineligibility finding, agreeing with the expertise of their colleagues. However, advocacy does not always produce the desired result. Two examples emerged in the present study. In one case, parents were reluctant to proceed with evaluation due to misconceptions about giftedness, and the process for identifying it. They were concerned about the possibility of gifted assessment revealing autism.



The second case also addresses misconception. Although the interaction took place more than a decade ago, the participant trusted the gifted specialist to offer expertise on identifying twice exceptionality, and poor advice was given. These findings also support the assertion that myth and misconception about twice exceptionality may result in students being excluded from receiving appropriate services (Assouline et al., 2008; Bianco & Leech, 2010; Cash, 1999; Foley-Nicpon et al., 2010a; Gallagher & Gallagher, 2002).

### **Advocacy Continues**

During interviews, participants elaborated on the obstacles they encountered regarding the student they referred. Many found it difficult to effectively address negative student behaviors, resulting in a loss of instructional time. This finding may be linked to participants' assertions that their lack of adequate training, particularly in special education and ASD, is an obstacle in meeting the needs of their gifted student with ASD (Cline & Schwartz, 1999).

Education professionals are not confident in parents' abilities to offer support for their twice exceptional learners (Foley-Nicpon et al., 2013). A myriad of difficulties with parents described by participants made this the most-cited obstacle. However, two anecdotes were success stories. A classroom teacher and a support staff went to great lengths to overcome language barriers and programming adjustments to build strong positive relationships with their respective parents, a component both felt was essential to meeting the needs of their gifted students with ASD (Assouline & Whiteman, 2014; Coleman & Hughes, 2009; Friedrichs & Shaughnessy, 2013).

Participants also expressed frustration at the unwillingness of colleagues outside their disciplines to accommodate the behaviors of their students, suggesting bias toward the student (Siegle & Powell, 2004). Insufficient staffing of trained resource personnel in their buildings was also cited, suggesting some participants may have been unable to meet the needs of their students (Cline & Schwartz, 1999, Willard-Holt et al., 2013).

This is a somewhat ironic finding because a large majority of the participants who described a lack of support from their colleagues as an obstacle, also discussed positive collaboration with colleagues as a strategy. Although collaboration with education professionals outside their discipline was beneficial, it was incomplete. (Baldwin et al., 2015; Tieso, 2014; Weinfeld et al., 2005). For example, one participant praised a special educator with whom she worked, but said the fact that her building did not have a gifted educator with whom she could collaborate made her job much more difficult. Overall, participants found classroom teachers to be the largest group posing obstacles, saying they held a deficit view of the gifted student with ASD (Bianco & Leech, 2010).

### **The Gifted Student with Autism Spectrum Disorder**

The second research question, “How do education professionals describe the gifted student with ASD?” focuses on the gifted student with ASD through the lens of participants’ knowledge, perceptions, and experiences. Both survey and interview data were blended to create a more complete conceptualization of how giftedness and ASD intersect, and how this manifests in student behavior. The first smaller question, “Which observed behaviors of gifted students with ASD prompted successful education professionals to make appropriate referrals?” assists in bringing the picture of the gifted student with ASD more into focus, while the second, “Which type(s) of evidence of

student work do education professionals perceive as supporting the referral of a gifted student with ASD?,” helps to illustrate manifestations of giftedness in students with ASD.

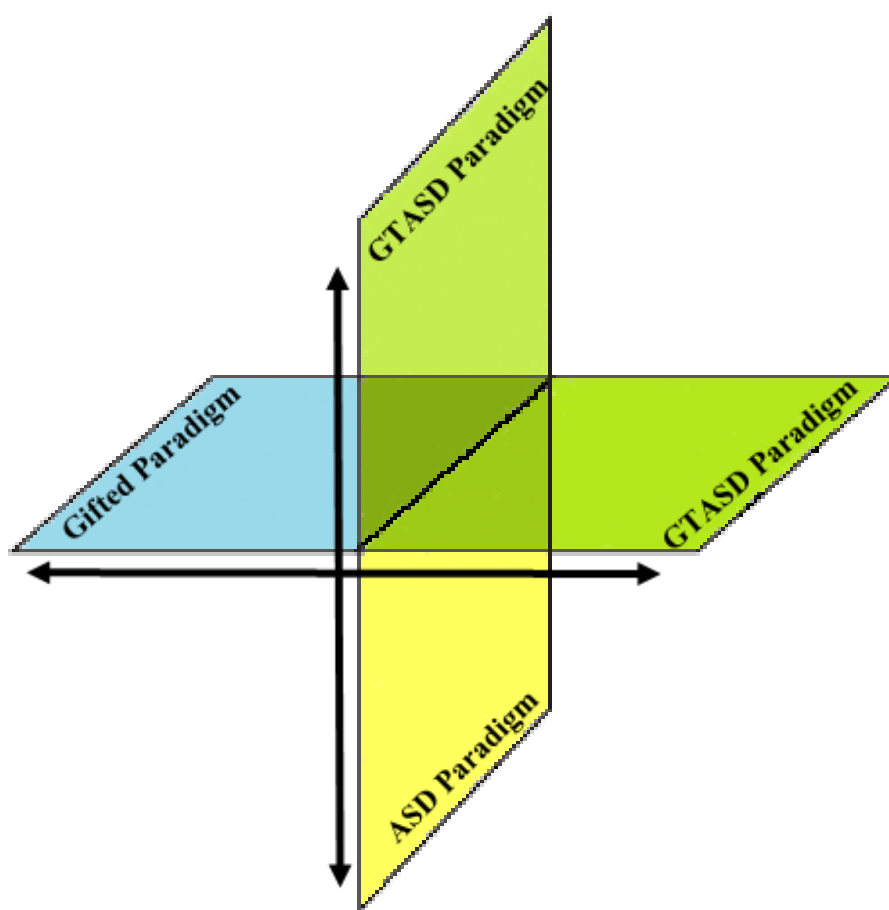
Through their stories, descriptions, and perceptions, participants recognized that gifted students see and interpret the world differently than their non-gifted peers. In fact, many participants explicitly stated this assertion. Particularly through their comparisons of student populations, participants also recognized that students with ASD have a different worldview from their neurotypical peers.

Finally, when discussing the behaviors that prompted them to refer their gifted student with ASD for specialized services, participants told stories and made comparisons describing behaviors that appeared to be a result of the collision between the gifted and ASD paradigms. Mixing analysis from survey responses with these rich descriptions, the second grounded theory emerged: Gifted and talented students with autism spectrum disorder (GTASD) experience the world in a way that is unique to GTASD.

As Figure 5 illustrates, behaviors of a gifted student with autism are not solely gifted/talented (GT) or autism spectrum disorder (ASD), but GTASD because both conditions are inextricable parts of the student’s make-up. When observing the behaviors of a GTASD student, one must simultaneously consider both conditions because their analysis will drive subsequent decisions, which cannot effectively address one condition and not the other. The GTASD lens is required for areas of strength as well as areas of weakness.

The second grounded theory of the GTASD Paradigm took on three dimensions: 1) the gifted paradigm; 2) the ASD paradigm; and 3) overlapping behaviors of giftedness and ASD (Figure 5). Participants’ perceptions of these behaviors as they manifest in their

gifted students with ASD illustrate the unique paradigm of this special population of student. First the gifted paradigm is discussed, followed by the ASD paradigm. Finally, the synthesis of the two is described, beginning with overlapping behaviors observed by participants. Participant stories illustrating manifestations of the GTASD paradigm conclude the chapter.



*Figure 5.* The GTASD Paradigm: Model of the synthesis of giftedness and autism spectrum disorder. Behaviors of each condition occur on a continuum, and therefore merge on a continuum, with variable degrees of giftedness, and variable degrees of autism manifesting in the gifted student ASD to create a new set of behaviors. GTASD = gifted student with autism spectrum disorder.

### **The Gifted Paradigm.**

Although the category of the gifted paradigm emerged in other comparisons and stories, it first emerged via the comparison of gifted and regular education students. A large majority of participants told stories to illustrate that gifted students have a unique way of thinking about and viewing the world that is distinct from nongifted students, and manifests in identifiable behaviors. In addition, participant descriptions revealed giftedness as a construct that combines intelligence with psychosocial factors (Bloom, 1985; Renzulli, 1998; Stanley, 1976; Sternberg, 2003). Recall from chapter 4, participants described the gifted paradigm in terms of intellectual, behavioral, and social-emotional factors.

High ability, the most common behavior to every conception of giftedness (Gagné, 2003; Renzulli, 1978; Sternberg, 1984; Tannenbaum, 2003), was cited most often by survey participants in the present study as a behavior prompting referral. However, when describing giftedness, few participants explicitly stated intelligence as a behavior. Rather, their stories and anecdotes provided examples of high intellectual ability. Other behaviors, described by all participants regardless of educational role, clearly described giftedness as more than intelligence alone. This finding differs from existing literature where classroom teachers showed an overreliance on IQ scores (Bianco and Leech, 2010) and misinterpretation of gifted behaviors (Copenhaver & McIntyre, 1992) when making recommendations about gifted programming.

Participant descriptions of gifted students' reactions to classroom boredom crystallized their collective understanding of giftedness, and captured the essence of their comparisons to regular education students. They said when bored in school, gifted

students may find creative ways to entertain themselves: they may build toys out of trash, extend their own lessons, adopt the behaviors of teachers, and study their areas of passion via a book hidden under their desk. These behaviors demonstrate high levels of intelligence, novel thinking, and engagement with themselves as the only intellectually stimulating entity at the time.

Victoria, a gifted educator, described manifestation of the gifted paradigm in terms of non-conformity, stating that gifted students are more inclined to adapt their environment to them than vice-versa:

Regular education students normally sit in their chairs and raise their hands and answer the question that is asked. They sort of conform to the school environment. Gifted children on the other hand, don't want to sit in their seats, they ask questions instead of answering just that basic question, or they'll answer and ask a question of the teacher. They're not usually ones to conform, but rather want to transform the environment in which they learn.

Victoria shared this example:

We have work stations and...there's the logic work station. They are supposed to work together to solve different logic problems. And each week, it would be something different. He no longer wanted to solve them, He wanted to create them. So, he said, "We can keep this station, but let's just add another station where we can create logic problems.

Grandma, a gifted educator, shared the story of a gifted student who created an organization for fairy tale princesses, and another who invented a workers' union for Snow White's seven dwarves. She said her gifted students enjoyed having the freedom to

create something new from their learning. Open-ended assignments allowed them to think outside the box, unencumbered by parameters that worksheets and practice drills often set.

Participants also said (in Chapter 4) gifted students can be less mature than their non-gifted peers, yet they crave relationships with adults. Tanner and Frances said gifted students tend to be socially awkward. The asynchrony of gifted students' level of social development, combined with their intellect may be an underlying cause of this particular worldview (Silverman, 2002).

Not every student exhibited the same behaviors. Further, students manifesting the same behaviors did not necessarily do so to the same degree. For example, the reactions students have to being bored in class varied in behavior and degree of behavior. Participants also described differing degrees of giftedness between their gifted students with ASD and gifted students with SLD, suggesting giftedness appears on a continuum (Gagné, 2003; Renzulli, 1978; Sternberg, 1984; Tannenbaum, 2003). The gifted paradigm plane in Figure 5 is mobile, illustrating this continuum.

Teresa, Cathy, and Sophia said their students with ASD learned concepts more easily than their other twice exceptional students. All three talked about the strong academic performance of their students. Teresa contrasted her twice exceptional students by describing academic interventions she tailored according to their individual needs (Bianco, Carothers, & Smiley, 2009; Nielson, 2002). She said her gifted student with ASD, Gigi used her wild imagination and storytelling to connect concepts in her mind.

Misconceptions among classroom teachers about gifted students are neither new nor uncommon (Winner, 1997). It is therefore not surprising that misconceptions

surfaced among classroom teachers during their comparisons of gifted students and regular education students. Frances, a classroom teacher said gifted students and regular education students have roughly the same developmental age. This is not an accurate statement, when one considers all the contributing factors of one's developmental age. Unlike chronological age, which measures the passage of time since the child's birth, the developmental age of a child considers physical, social, emotional, and cognitive function, and is different in gifted children compared with regular education children (Webb et al., 2006).

All children experience some asynchrony in their development, that is, the uneven pace at which these four factors may develop. However, as a child's IQ increases, so does the discrepancy between physical and cognitive growth, increasing his or her asynchronous development (Silverman, 2002). Twice exceptional students are vulnerable to this, as well as discrepancies between their areas of strength and areas of weakness, resulting in high levels of vulnerability to being overlooked for gifted identification.

While describing her affinity for teaching gifted students, Teresa, a support staff said she enjoyed that she could assign projects to her gifted students without giving them direct instruction. This is a common misconception about gifted students. All gifted students require instruction. It is unrealistic to think a musician can perform at Carnegie Hall without training. The same is true of intellectually gifted students. Their gifts must be developed as well (NAGC, 2016b).

Teresa also said she encourages other classroom teachers she coaches to use their gifted students as peer tutors. This is a fine practice in very small doses. However, reliance on gifted students to help struggling students on a regular basis can cause



boredom, underachievement, or even resentment between both populations of students (NAGC, 2016b).

### **The ASD Paradigm**

The discussion comparing and contrasting students with ASD and regular education students focused primarily on behaviors of students with ASD. All participants regardless of educational role, cited examples of the diagnostic criteria for autism (DSM-5, APA, 2013), although described behaviors were not stated as being so. From their descriptions of behaviors illustrated the unique way students with ASD view the world, the ASD paradigm emerged as a category.

When comparisons placed the regular education student at the fore, described behaviors of ASD involved social communications and interactions (DSM-5, APA, 2013). The most-described social communication observation described was the dynamic of friendships. Participants noted that regular education students and students with ASD both desire friendships. However, regular education students make friends with their classmates, while students with ASD either do not seem interested in their peers, or do not know how to make friends. Some participants observed that students with ASD, similar to gifted students, would rather make friends with teachers and other adults.

Also described was the student with ASD's inability to understand the actions of others, and may be related to understanding the social rules of taking turns, waiting to speak, and raising one's hand in class, practices at which regular education students are adept. The social communication differences described above suggest the student with ASD views the world differently than his or her neurotypical peer.

Participants compared rigid behaviors and reactivity to sensory input in students with ASD versus regular education students by describing how each population directed their anger. Students with ASD direct their anger toward objects by throwing desks and chairs, whereas regular education students direct their anger toward other students when they are under stress. Some students with ASD, participants said will injure themselves when under stress.

When comparisons placed students with ASD at the fore, participant described severe behaviors among students with ASD mainly addressing restricted, repetitive patterns of behavior (DSM-5, APA, 2013). Participants also described students who exhibited stereotyped behaviors such as hand-flapping, lining up objects, rocking, and pulling out their hair. Most participants discussed stubbornness or rigid, inflexible ways of thinking in students with ASD versus regular education students. Some described these behaviors as egocentrism, or an inability to empathize. Most participants also noted resistance to change in their students with ASD. However, Cathy said she has never had a student with ASD who was resistant to sudden changes in routine.

Similar to descriptions of the gifted paradigm, not all students with ASD exhibited the same behaviors, nor *all* of the behaviors described by participants. Likewise, not all students with ASD exhibited behaviors to the same degree. The DSM-5 (2013) outlines levels of support to indicate the degree to which people with ASD exhibit certain behaviors, supporting the spectrum nature of ASD. Like the gifted paradigm plane, the ASD paradigm plane in Figure 5 is also mobile, illustrating this continuum.

### **Overlapping Behaviors**

The main focus of discussion comparing and contrasting gifted students and students with ASD was on overlapping behaviors of the two populations. Differences discussed by participants focused largely on the academic needs of gifted students versus those of students with ASD, and behaviors fitting the diagnostic criteria for autism (DSM-5, APA, 2013). Overlapping behaviors of giftedness and ASD are also woven into participants' stories, experiences, and observations.

Participants said gifted students can grasp concepts very quickly, but students with ASD take much longer to do so. Students with ASD are process-oriented, whereas gifted students are more product-oriented. Gifted students enjoy open-ended assignments in which they are offered a variety of choices, but students with ASD need specific parameters and explicit expectations with their assignments. Finally, participants described the extrinsic motivation of students with ASD, whereas gifted students are more intrinsically motivated, and can work more independently. Although students with ASD prefer to work alone, they require more time with the teacher.

Participants described common behaviors, largely with one of two distinctions: 1) the behaviors are the same, but the underlying reason for the behavior differed; or 2) behaviors are the same but the degree of intensity is higher among students with ASD. In other words, they recognized the behaviors as overlapping rather than common, and defined their differences. Participants explained reasons for the two populations delaying work on an assignment. Gifted students may find the assignment irrelevant or may be planning, whereas students with ASD may not know how to begin. Reasons for following and breaking rules were also discussed. Students with ASD may not understand the social

nature of rules or the implications of their actions, whereas gifted students may choose to break rules that disagree with their view of the world.

Survey participants chose Recognizes Patterns nearly as often as High Ability as a behavior prompting their referral. The ability to recognize patterns can be viewed as an overlapping behavior of giftedness and ASD. Gifted students may recognize patterns due to strong spatial and critical reasoning ability coupled with keen observational skills. People with ASD may easily recognize patterns as a stereotyped behavior, akin to lining up objects, and possibly related to their need for sameness (DSM-5, APA, 2013).

Participants also described differences in the degree of intensity of the common behaviors between gifted students and students with ASD. When they disagree, both populations will argue their point, but gifted students will eventually relent, whereas students with ASD are far less willing to do so, even in the face of severe consequences. Gifted students may display emotional overexcitability, but students with ASD are far more intense in their reactions, which were described as outbursts or meltdowns.

Some participants said both populations can feel socially awkward and have difficulty fitting in, but this is far more difficult for the student with ASD. Others noted social awkwardness among both populations, but they said gifted students' awkwardness stems from a lack of intellectual peers, and students with ASD feel awkward because they are unsure about how to make friends and interact with peers. The recognition of the existence of overlapping behaviors is consistent with existing literature on overlapping behaviors as a foundation upon which the gifted student with ASD is built (Burger-Veltmeijer, 2011; Doobay, 2010; Gallagher & Gallagher, 2002; Little, 2002; Neihart, 2000; Webb, et al., 2005).

## **The GTASD Paradigm**

During the semi-structured interview, participants elaborated on specific student behaviors they observed prompting their referrals. Those who referred their students for gifted identification described student behaviors similar to Renzulli's (1978) Three-Ring Conception of giftedness: 1) intellectual/academic behaviors; 2) creative/novel thinking; and 3) perseverance. This broadened idea of what it means to be gifted agrees more with how gifted and twice exceptional students are identified in schools, than the clinical, IQ-related conception which defines gifted students with ASD in the existing literature (e.g. Assouline et al., 2009; Doobay, 2010; Foley-Nicpon et al., 2012; Huber, 2007). The Three-Ring Conception of giftedness (Renzulli, 1978) shows that giftedness does manifest in a variety of ways, can be developed, and involves far more than an IQ score.

The Three Ring Conception of giftedness (Renzulli, 1978) is a good launching point to describe behaviors prompting participants' referral of gifted students with ASD. However, there appears to be an undercurrent of paradoxical behaviors that do not quite fit. This disconnect is illustrated by Jean's story of Larry, whose area of giftedness was identified as English/Communication Skills. However, it was documented as his area of weakness on his IEP. Additionally, Lauren's student, Chris could disassemble broken toys and use their parts to create new ones, but he could not grasp the concept of grades.

These questions point to the notion that the intersection of giftedness and ASD is more a merger than an intersection (see Figure 5). Gifted students with ASD should not be viewed as one person possessing two distinct conditions requiring separate strategies to address them (Foley-Nicpon et al., 2011; Willard-Holt, Weber, Morrison, & Horgan,

2013). Rather, this population must be viewed as having one condition with unique behaviors manifested as a synthesis of two separate, yet overlapping conditions.

**Student behaviors prompting referral.** Although participants recognized this line of questioning as a crucial part of the study, many appeared reluctant to answer. Every participant began by listing behaviors. It became apparent to the researcher that participants were more comfortable telling stories about their students. Consequently, behaviors were described in terms of examples through stories and anecdotes. Storytelling was an effective way for participants to elaborate on behaviors that were easier to discuss than to label.

***Intellectual/academic behaviors.*** Examination of each of the three sub-categories reveals behaviors of giftedness and ASD within each component. Verbal precocity and extensive speaking vocabularies were described behaviors in the gifted students with ASD they referred. Although high verbal skill can be seen in many students with ASD, it is not immediately associated with this population due to inherent delays in language development (DSM-5, APA, 2013) and difficulty with oral expression (Myles, Barnhill, Hagiwara, Griswold, & Simpson, 2001). However, verbal precocity is a widely recognized characteristic of gifted students.

Large writing vocabularies, a behavior found in many gifted students was also cited. Written expression was found to be a deficit by some researchers (Mays & Calhoun, 2003), and a strength by others (Foley-Nicpon et al., 2010a). One participant described her gifted student with ASD's affinity for playing with words, and using puns, behaviors often seen in gifted students, but rarely seen in students with ASD, due to

deficits in executive function and divergent thinking (Craig & Baron-Cohen, 1999; Mays & Calhoun, 2003).

Precocious math abilities can overlap, masking giftedness or ASD (Foley-Nicpon, Assouline et al., 2010). Strong abilities in computation and problem-solving skills were a described behavior consistent with some findings in the literature (Foley-Nicpon, Assouline, et al., 2010). Other studies however, found average ability in reading and math (Chiang, & Lin, 2007; Mayes, & Calhoun, 2003) among children with high functioning autism ( $IQ \geq 85$ ). Further, reading and math were the lowest scores on ability tests among gifted students with ASD (Foley-Nicpon et al., 2012). Participants also observed the use of mental math, and the ability to solve problems quickly, behaviors more associated with gifted students.

The Three-Ring Conception of Giftedness (Renzulli, 1978) details above-average ability in broader terms than intellectual ability, cognitive function, or schoolhouse giftedness. It encompasses abilities such as drawing, singing, playing a musical instrument, creative writing, and electrical and mechanical ability. These abilities, described through participants' stories and anecdotes, illustrate the depth of this component. Many of the gifted students with ASD referred to in the present study possessed more than one of these abilities.

***Creative/novel thinking.*** Creativity is a difficult construct to define. It cannot be seen, and even when its manifestations are apparent in the behaviors of others, one still struggles to put it into words (Torrance, 1988). This may explain the difficulty of five participants to state definitively an entire set of observed behaviors prompting their referral. All five stated characteristics for which they had no name. Descriptions included

novel ways of looking at a problem, metaphorical thinking, and enjoyment of problem-solving tasks.

Creativity as defined by Renzulli (1978) includes fluency, flexibility, and originality of thought, an openness to experience, sensitivity to stimulations, and a willingness to take risks. Further, it is viewed as an integral part of many gifted models (Renzulli, 1978; Sternberg, 2003). However, researchers assert deficits in creative ability among student with ASD (Craig & Baron-Cohen, 1999), citing deficits in executive function, fluency, and flexibility on Torrance Tests of Creative Thinking (1966). However, newer research suggests people with autistic traits produce more unusual, rare responses, on the divergent thinking tasks within creativity tests (Best, Arora, Porter, & Doherty, 2015). Divergent thinking employs some of the cognitive processes used in creative problem solving. Therefore, this new finding does not fully explain the creative abilities described in the present study.

Another example of creativity among the students in the present study lies in participants' descriptions of creativity as a deficit when discussing their students' understanding of grades. This understanding can be viewed as an overlapping behavior of giftedness and ASD. Many gifted students are not grades-driven for a variety of reasons: boredom, lack of challenge, or underachievement. The gifted student with ASD may also ignore grades for these reasons. However, participants described the difficulty their students had with grades as a lack of understanding of the criteria on which their grades are based.

Participants said their gifted student with ASD based his or her idea of grading on the process and amount of effort expended rather than an analysis of work quality. Some



participants talked about comparing work samples with their students to illustrate the construct. Others used grading rubrics to help their students better understand grades. This finding illustrates the rigid thinking pattern of many students with ASD (DSM-5, APA, 2013).

***Perseverance.*** A key factor in Renzulli's (1978) Three-Ring-Conception of giftedness, task commitment was described by participants in terms of self-directed learning in areas of interest, keen observation skills, and perseverance. All three of these facets of task commitment are present in the gifted student with ASD (Neihart, 2000), as well as the student with ASD. Students with ASD may show a preoccupation with objects, and this may be the source of their keen observation. Rigid, narrow interests may explain the perseverance of the student with ASD. The survey selection, *Is Bossy*, may explain the animated reaction to being asked to stop a preferred task and begin another. This may be due to a deficit in self-regulation rather than intense interest or focus in an area.

Jean described her student, Larry's perseverance when wanting to learn more about a topic they had discussed in class. She said Larry, "...would get an idea and go off with it. He can teach himself if he's interested in something. He'll get books and read them and read them and read them." She said Larry would often sneak these books under his desk and read them while she was delivering direct instruction.

Sophia described her student, James' affinity for problem-solving, "I think he's a really good problem-solver. He actually enjoyed any task where he had to come up with solutions or anything that was problem-based, he loved. He really enjoyed it." Grandma

noted her student, Annie's perseverance in terms of sheer grit saying, "She was not going to stop. She would not give up on something."

**Student artifact analysis.** Although this exercise involved only three participants, their analysis was exceptionally powerful because a tangible example of authentic student work illustrated the behaviors participants observed in their students. It also provided the researcher an opportunity to observe the participant applying his or her skills in analyzing the gifted student with ASD. Each participant described the analytic process of each of their students. These processes again reveal the behaviors of above average ability, creative thinking, and perseverance alongside dichotomous behaviors of autism spectrum disorder: the GTASD paradigm.

The kindergarten student who was thinking multiple steps ahead of his current move in Chess showed remarkable spatial reasoning and strategic planning ability. At the same time, the student seemed unaware that his self-talk was audible, and that revealing his thinking placed him at a disadvantage in the game. The participant pointed out the irony of the student's ability to analyze the consequences of a Chess move, but not the consequences of his audible self-talk.

The student who thought about word associations in novel ways illustrates the student's creativity. The participant observed that her student connected five different word pairs in five different ways, and was able to connect some of the pairs in multiple, novel ways. The participant asserted his unusual way of connecting concepts was the strongest evidence of his giftedness, which provides examples of his divergent thinking abilities (Best et al., 2015). However, the participant pointed out that written expression is indicated as an area of concern on the student's IEP.

A first grade student's explanation of each step in her process of solving an exemplar illustrates her task commitment. The participant shared the student's methodical achievement of a correct answer, and subsequent explanation of her process, that is, how and why she arrived at her answer. However, the student refused to write or draw a representation of her thinking, which illustrates a common behavior among students with ASD: resistance to writing. The participant did not focus on this factor; instead allowing the student to explain her thinking orally. But for this accommodation made by the gifted educator, the student's true ability may have been overlooked.

**Participant Stories Illustrating the GTASD Paradigm.** Participants told many stories of the successes and frustrations of their gifted students with ASD. Some of the stories offering an illustration of the GTASD paradigm follow.

Victoria, a gifted educator, gave this description to illustrate the synthesis of giftedness and ASD in her student, Fiona:

I would say she walked the line because there were instances where you could see her giftedness and you knew that she belonged in that gifted group. And there were other instances where you saw she needed some additional support, because at times, depending on what it was, it wasn't that she didn't know the answer or didn't know how to arrive at the answer. There was something impeding that getting to the answer. And she didn't know what it was, and she didn't know why she thought that thought...

Sophia, also a gifted educator, said her student, James was "so strong academically and that he was able to pick up on things," and at the same time, unable to

complete a project someone was not following the rules properly. She told this story illustrating James' need for sameness in rule-following:

...they had to build a bridge out of toothpicks that could withstand the weight of a 5-pound brick, and it had to be a working bridge that a toy car could travel over and a toy boat could travel under....at the last stage, they were allowed to take it home and decorate it. James pointed out...how am I going to ensure that his grade is going to be primarily given compared to someone who may get help at home because he was NOT going to get help. And I thought, "Good point, maybe I'm a little too trusting." So we had to have that discussion...

Jean, a classroom teacher, shared a story about her student, Larry's love for the scientific process, but his aversion to working in small groups. She described his clever ways of attempting to work alone:

I would have to say, "Science is a very collaborative process, Larry."...he had been watching me pass out the materials. He would wait and see, and if he saw there was an extra set of materials in the basket [he would ask], "Why can't I just do it by myself?" I would say, "Well, we have to share materials." and he would say, "You have an extra set." That was very much him! He would try [to work with a partner], and then something would happen that would irritate him....

Usually, it was that he quickly saw the way to do it and maybe the partner didn't or the partner saw a different way, and once Larry saw his way, there was NOT a different way!

Lauren, a special educator, said she often needed to use extrinsic motivation to coax her student, Chris into completing his work. At one point, she rewarded him with strips of duct tape for work completion. She included a story of Chris' use of his reward:

...for a while he had duct tape as an incentive to do work because he liked duct tape. And he'd duct tape things together. Like, he may duct tape this recorder to that *Altoids* box, put like an antenna on it and some wheels on it, and then take the wires out of something to get the wheels to turn. He would just do things like that. He was curious about how he could use something to power something else or make it work.

Ian, a gifted educator, talked about a middle school gifted student with ASD whose facial affect was one of constant anger. Further, the child rarely participated in class, and preferred to work alone. Ian described the transformation of the student's affect when engaged in an intense area of interest:

Every student had a project in what was called, "The Night of the Notables." They were supposed to take on a character and learn as much about that person as possible, even dress like the person. They had tri-fold boards, and people would walk around and talk with them as the students performed in character. I could not believe the difference in the student's demeanor. He suddenly turned on and was very excited. He was a different person, and very happy about it.

### **Summary**

Understanding the gifted student with ASD through the perceptions and experiences of the education professionals who successfully referred them involves examining the referring education professional. Results of the present study suggest

graduate-level coursework in human development and behavior is a factor in education professionals' ability to recognize the behavioral synthesis of giftedness and autism, prompting referral. Further, results suggest service in multiple educational settings and roles and experience serving with education professionals outside one's discipline are factors related to advanced training in abilities to make appropriate recommendations for gifted students with ASD.

Significant positive relationships between participants' knowledge of and experience with gifted students, students with ASD, and gifted students with ASD support these findings. In particular, participants' knowledge about gifted students with ASD is significantly positively related to both knowledge of and experience with students with ASD. To a lesser degree, participants' experience with gifted students with ASD is significantly positively correlated with their knowledge of and experience with students with ASD.

Support for advanced training combined with experiences with education professionals outside their areas of expertise also came from interview data in which participants award these tools equal credit, citing increased ability to recognize unique behaviors in gifted students with ASD. Classroom teachers credit their advanced degrees and experience in addressing the deficits of their students. Gifted educators and the special educator credited their advanced training in gifted and special education respectively, along with mentorship and experiences with increased capacity to recognize and address students' giftedness and their ASD.

Despite reporting a great deal of knowledge of and experience with gifted students, participants' lower levels of knowledge of and experience with gifted students

with ASD appear to have negatively impacted their confidence in their ability to make appropriate referrals for gifted students with ASD. This, too is a surprising result because District data reveal participants in the present study referred high rates of students with ASD for gifted identification, supporting their abilities to recognize unique behaviors and make appropriate referrals.

Participant comparisons of student populations each described a different aspect of the gifted student with ASD. Gifted behaviors dominated comparisons of gifted students and regular education students. A different worldview, or paradigm was described, suggesting a conception of giftedness more broad and encompassing than high levels of intelligence alone. Misconceptions by two classroom teachers were noted. One participant said the developmental ages gifted students and their nongifted peers was the same. Another participant said gifted students did not need explicit instruction; and they should be made tutors for their struggling classmates.

Comparisons of students with ASD and regular education students focused on behaviors of students with ASD. When regular education students were the focus, mild behaviors, primarily deficits in social communication and interaction, were described. When the student with ASD was the focus, more severe behaviors in the rigid, repetitive category were described. Participant comparisons of gifted students and students with ASD described overlapping behaviors of the two populations. An intriguing finding is that participants recognized overlapping behaviors of giftedness and ASD, and differentiated between behaviors they had in common, and behaviors that overlapped.

Observed behaviors prompting participants' referrals were similar to the three main components in Renzulli's (1978) Three-Ring Conception of giftedness. They were

1) intellectual/academic behaviors; 2) creative/novel thinking; and 3) task commitment. However, the synthesis of these components with manifestations of ASD, suggest a conception of the gifted student with ASD as a single condition, characterized by unique behaviors, rather than two mutually exclusive conditions co-occurring in the same person. Student artifact analysis supports this conception in that each participant described the three components synthesized with manifestations of ASD.

Participants described obstacles to meeting the needs of the gifted student with ASD including difficulty assembling the necessary experts to address all of the student's needs. Lack of support from colleagues and parents, and insufficient staffing of qualified resource staff were the most-cited obstacles.

This finding is supported by participants' assertion that collaboration is a strategy they used, along with a strengths-based approach for meeting the needs of their gifted student with ASD. Participants also asserted that building trust and connecting with their student is their most powerful strategy in meeting the needs of the gifted student with ASD.

### **Implications of the Study**

Findings of the present study join a growing body of research on the gifted student with ASD. The perceptions and experiences of education professionals who interact with gifted students with ASD offer unique, and much needed, insight into how the synthesis of giftedness and ASD manifests in students, and the impact it has on the academic, social and emotional development of the gifted student with ASD. Some recommendations for research, teacher preparation, and professional development are offered here.



## **Implications for Research**

Empirical literature on giftedness and ASD cite diagnostic confusion, misunderstandings about the role of IDEA in serving students with ASD, multiple conceptions about what it means to be gifted, and overlapping behaviors of giftedness and ASD as barriers to diagnosing, identifying, and meeting the needs of the gifted student with ASD. Participants in the present study all successfully referred a gifted student with ASD for specialized services. Throughout their interview descriptions, survey responses, and student artifact analysis, no participants described behaviors inconsistent with the clinical presentation of ASD (DSM-5, APA, 2013). Further, their stories and anecdotes included descriptions of behaviors often found in students with ASD. The fact that the majority of students referred to in the present study were diagnosed with ASD before they were identified gifted may have been a factor in their ability to accurately describe ASD behaviors.

Four participants made simultaneous referrals for giftedness and ASD, and one participant referred her student for services related to ASD. A more in-depth examination of the perceptions of education professionals who successfully referred an identified gifted student for ASD may provide greater insight into the synthesis of giftedness and ASD in students. A follow-up study comparing the perceptions of education professionals making the two types of referrals could be very informative in further detailing this synthesis.

Participants in the present study included only one special educator. Her insights and perceptions were powerful, and often ran contrary to existing empirical literature focusing on special educators' perceptions of twice exceptional students. Future research

about special educators' experiences with gifted students with ASD is essential to moving the body of research forward. Similarly, men were underrepresented in the present study, and education professionals serving at the high school level were absent from the study. Although no education professionals serving at the high school level qualified for the present study, their perceptions of the gifted adolescent with ASD would add depth to the body of research. In a larger study, more men may fit the criteria. Their knowledge, experience, and perspective would make a valuable contribution to the body of research.

Graduate-level studies in human behavior and development were the lone commonality in the coursework of all participants in the present study. Such a vague finding opens the door for further examination of the types of coursework and training of education professionals who successfully refer, identify, and educate the gifted student with ASD. Such exploration may reveal more specific training shared by education professionals in their pre-service and advanced degree training. Then, follow-up research is needed to empirically test the impact of the coursework and training on gifted students with ASD.

The high referral rates of students with SLD by participants in the present study supports their ability to recognize the unique behaviors of this population and make appropriate referrals. Replication of the present study, with the focus on successful referents of gifted students with SLD is recommended, as well as separate foci on other disabilities such as ADHD. Results may bring to light clearer explanation of training that allows this population of education professionals to successfully refer twice exceptional students.

A large majority of the participants cited an incomplete interdisciplinary team as an obstacle to meeting the needs of their gifted students with ASD. A multidisciplinary approach is advocated by researchers, clinicians, and education professionals (Baldwin et al., 2015; Tieso, 2014; Weinfeld et al., 2005). Adding a gifted specialist to the student's diagnostic/IEP team is insufficient in assessing and addressing all of the gifted student with ASD's needs. Research is recommended to design a team similar to the special education team, but customized for twice exceptional students (Morrison & Rizza, 2007), and measure its effectiveness.

The events before and after the assemblage of a multidisciplinary team are critical. A multidisciplinary team will not even meet a student who is overlooked for referral or improperly referred. Advanced, specialized training, and experience with professionals from other disciplines was cited by participants as most helpful in meeting the needs of their gifted students with ASD. These perceptions are supported by the significant positive correlations between knowledge and experience with gifted students, students with ASD and gifted students with ASD. Research is recommended to more closely examine the correlations between specific training and experience with education professionals from specific disciplines with successful referrals of gifted students with ASD.

Likewise, a plan for acceleration, enrichment, and accommodation must follow proper identification. Such a plan must be effectively implemented, monitored, and regularly evaluated. A multidisciplinary team must have time to collaborate in order to fully implement and maintain the plan and thus meet the student's needs. Future research is recommended to empirically test the design, effectiveness, and feasibility of utilizing a

core *maintenance team* to implement and maintain a learning plan for the gifted student with ASD.

Finally, longitudinal studies are recommended to follow the gifted students with ASD as they matriculate through the K-12 education system. Education, behavior, and social and emotional progress can be measured in terms of efficacy of strategies, curriculum design, and self-concept of the students. There are many possibilities for monitoring the progress of the student population attached to the present study. Following education professionals longitudinally is recommended as well. Examining the impact of their increased expertise through advanced training and experience on the directions of their careers, job satisfaction, and longevity in the field of education may offer powerful directions forward for the field.

### **Implications for Preservice Training and Coursework**

Twice exceptional students, and in particular gifted students with ASD are a largely misunderstood and grossly underrepresented population in schools. Participants in the present study valued their advanced training equally with their experience with other education professionals outside their discipline. In addition, strong, positive correlations between knowledge and experience support the need of both of these components in the preservice training of future educators.

Preservice coursework should be re-examined and amended to include advanced studies in typical and atypical human growth and development. This would increase educators' knowledge about populations of students outside the regular education population. More than a single course, or a topic within a course, study of the full

spectrum of ability, achievement, and its many mitigating factors will better equip educators to meet the needs of all students.

Educator preparation must also include a dramatic increase in field experiences for preservice teachers, regardless of his or her intended discipline. Preservice coursework should not be limited to classroom experiences. Practicum experiences during every stage of coursework and training will allow theory to be more closely joined with practice. Intern-type rotations through multiple educational disciplines, much like the field preparation of medical interns and residents before they become physicians, is recommended. Opportunities to collaborate and learn from experts in the field will increase the capacity of preservice teachers to recognize, refer, and meet the needs of the gifted student with ASD.

Finally, time spent student teaching must also be increased. Included in the experience should be a requirement to actively participate in the evaluation process of a special, gifted, and/or twice exceptional student. Preservice teachers would benefit greatly by participating in the process by which the student is referred, evaluated and assessed for specialized services. Finally, the preservice teacher would gain much by taking part in the formulation of an individualized, strengths-based plan that was created through the collaboration of a multidisciplinary team.

### **Implications for Professional Development**

Gifted students with ASD are underrepresented among the gifted population and among the ASD population, both nationally and in the District. The identification process for both conditions begins with a referral. Although all participants in the present study successfully referred a gifted student with ASD for specialized services, they reported

low levels of confidence in making referrals for this population. These findings call for building the capacity of education professionals to recognize behaviors of gifted students with ASD and make appropriate referrals for their identification. Professional development must include training in the areas gifted and ASD. However, it is essential to include training in how the two conditions synthesize in the gifted student with ASD.

Participants' low levels of experience with students with ASD and gifted student with ASD indicates a need for specialized training in curriculum and differentiation strategies for meeting the needs of this unique population. Strategies must include an approach to learning that recognizes the synthesis of giftedness and autism within the student, and addresses this as a single entity rather than two disconnected sides of the same coin (Willard-Holt et al., 2013).

A multidisciplinary approach to referring, identifying, and educating the gifted student with ASD is recommended. Therefore, ongoing professional development training is essential for all education professionals. Specialists in specific disciplines such as educational psychology, speech pathology, and special and gifted education offer expertise, and assist with initial assessment and identification within their domains. However, education professionals must have an understanding of how the disciplines interact so that a multidisciplinary plan can be designed and implemented.

### **Limitations of the Study**

There are multiple limitations to the present study. The sample of participants for this study was not obtained in a random manner. It was limited to education professionals who successfully referred a gifted student with ASD for specialized services, and yielded a small sample size. A larger study may yield a larger, more heterogeneous sample.

However, the researcher asserts several reasons supporting the decision against doing so.

First, the spectrum of autism is vast and manifests differently in every student. The spectrum nature of giftedness also has complex manifestations. When the two conditions synthesize, a new set of unique behaviors, strengths, and weaknesses is presented, and must be addressed as a single entity, rather than as separate conditions (Foley-Nicpon et al., 2010a; Willard-Holt et al., 2013). A study that includes additional areas of twice exceptionality, may limit the ability of the researcher to effectively examine how behaviors uniquely synthesize in the gifted student with ASD. This may affect diagnosis, identification, and intervention practices.

Second, conceptions of giftedness and the processes by which students are identified gifted in schools varies greatly from state to state, and even from district to district. Although a federal definition of giftedness appears in the Elementary and Secondary Education Act (2004) state and school districts are not required to use it. The absence of shared meaning about giftedness compromises the generalizability of research findings (Foley-Nicpon et al., 2011).

Another limitation in the present study is the demographic distribution of the participants. Although the study was conducted in an urban school district, cultural representation included twice the number of Caucasian professionals as African Americans, and only two men. No Asian or Hispanic professionals participated. In addition, the study included 18 women, but only 2 men. This figure is lower than the national gender distribution of educators (US Department of Education, 2012). Perceptions of additional males, and culturally diverse education professionals may have added unique insight to findings that could not have been acquired elsewhere.

One final limitation is the educational level at which the participants served. The present study included 18 education professionals who served at the elementary level. Only one participant served at the middle school level, and one serve students in grades K-8. Therefore, perceptions of education professionals serving at the high school could not be explored. Although giftedness is often identified in elementary school, and ASD is typically diagnosed in early childhood, it was nevertheless impossible to examine the potentially powerful perceptions of education professionals working with gifted adolescents with ASD.

### **Conclusion**

Gifted students with ASD manifest two exceptional conditions, giftedness and autism, making them a rare group indeed. Results of the present study support the manifestation of giftedness and ASD as a unique combination of behaviors requiring strategies to address both conditions together rather than separately. To accomplish this task, this unique marriage of giftedness and ASD must first be recognized and then referred to a multidisciplinary team who can adequately assess their needs and design a plan for success. Results of the present study suggest graduate-level study of human behavior and development in combination with experience in multiple educational settings, and mentorship and collaboration with education professionals outside their disciplines are factors in the ability to recognize the unique behaviors of the gifted student with ASD and make appropriate referrals.

Further, participants described collaboration and support as both an obstacle and a strategy in meeting the needs of gifted students with ASD. This finding suggests collaboration is effective, but can be a source of frustration of the collaboration team is



incomplete. Results support the need for a complete multidisciplinary team approach to referring, identifying and educating the gifted student with ASD.

Interesting findings emerged in participant comparisons of student populations. Behaviors were grouped in strikingly similar ways. Gifted behaviors were described when comparing gifted with regular education students. Social interaction and communication of students with ASD emerged when comparing regular education students with students with ASD. In the same discussion, it seemed as though a switch was flipped and rigid, repetitive, stereotyped behaviors were described in relation to regular education students.

The most fascinating discussion of all was in participant comparisons of gifted students and students with ASD. Their initial hesitation as they struggled with where to place an overlapping behavior, as a similarity or as a difference, was intriguing. Finally, *each* participant created a new category of description when discussing overlapping behaviors. Behaviors were recognized, differentiated, and defined as common or overlapping. Their ability to describe the ways in which overlapping behaviors merged and separated was an exciting finding.

Another exciting finding was in the observed behaviors prompting the referral of gifted students with ASD. Participant descriptions were very similar to behaviors and abilities in the Three-Ring Conception of giftedness (Renzulli, 1978): intellectual/academic behaviors, creative/novel thinking, and task commitment. However, these features were not embedded in the social capital described in Renzuli's model (1978). This set of characteristics was instead embedded in manifestations of ASD. This

suggests gifted students with ASD should not be thought of as GT and ASD, but GTASD.

In closing, the present study was the first to empirically examine the gifted student with ASD through the eyes of the education professionals who successfully referred them for specialized services. Results of this study have implications for future research, and significant implications for preservice teacher training as well as for professional development.

## APPENDIX A

**Research Questions Addressed by Data Sources and Analyses**

Research Question	Type	Data Source	Data Analysis
1. What are the characteristics of education professionals who have successfully referred a gifted student with ASD for specialized services?	deductive	Education Professionals Survey <ul style="list-style-type: none"> <li>• Please select the descriptor that is most appropriate (male/female)</li> <li>• How many years have you been in the field of education?</li> <li>• What best describes your current primary role in education?</li> <li>• How many years have you served in your current role?</li> <li>• Which best describes the school population you currently serve?</li> <li>• Which licensures and/or endorsements do you currently hold?</li> <li>• Please describe your level of education by indicating your major areas of study.</li> <li>• Please list any other specialized training that you have received.</li> <li>• Please indicate the number of students from the following populations that you have referred for gifted identification (regular education students, students with ASD, students with a specific learning disability).</li> <li>• How would you characterize your knowledge about the following: (gifted students, students with ASD, gifted students with ASD)</li> <li>• How would you characterize your understanding of how the following populations are identified in our school district? (Gifted students, Students with ASD, Gifted students with ASD)</li> <li>• How would you characterize your experience in working with the</li> </ul>	descriptive analysis

		<p>following populations (gifted, autistic, gifted and autistic)</p> <ul style="list-style-type: none"> <li>• How confident are you that your current understanding of and experience with gifted students with Autism Spectrum Disorder enables you to make appropriate evaluation referrals of this population?</li> </ul>	
1a. What, if any, specialized training did referring education professionals have that they perceive better equipped them to refer a gifted student with ASD for specialized services?	inductive	<p>Semi-structured interview</p> <ul style="list-style-type: none"> <li>• What if any specialized training assists you in your experiences with students with giftedness and autism spectrum disorder?</li> <li>• In what ways did you find the training helpful?</li> </ul> <p>Researcher's field notes</p>	<p>constant comparative GT analysis</p> <p>GT analysis</p>
2. How do education professionals describe the gifted student with ASD?	deductive	<p>Education Professionals Survey</p> <ul style="list-style-type: none"> <li>• In your experience, what are the most difficult obstacles in meeting the academic needs of gifted students with ASD?</li> <li>• Please indicate the number of students from the following populations that you have referred for gifted identification (regular education students, students with ASD, students with a specific learning disability)</li> </ul>	descriptive analysis
	inductive	<p>Semi-structured interview</p> <ul style="list-style-type: none"> <li>• In your experience, what are the primary similarities and differences in behaviors if any, between gifted students and regular education students?</li> <li>• In your experience, what are the primary similarities and differences in behaviors if any, between gifted students and students with autism spectrum disorder?</li> </ul>	constant comparative GT analysis

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		<ul style="list-style-type: none"> <li>• In your experience, what are the primary similarities and differences in behaviors if any, between regular education students and students with autism spectrum disorder?</li> <li>• What if any obstacles did you observe and/or encounter in meeting the needs of the student you referred?</li> <li>• Have you referred other students with special needs for gifted identification? What was the outcome? (Was the student found eligible for gifted services?) Compare and contrast the behaviors of this student with those of the student with ASD that you referred</li> <li>• Do you know of students with special needs who were referred for gifted identification and were not identified? In what ways if any did this/these student(s) differ from the student with ASD that you successfully referred?</li> </ul>	
2a. Which observed behaviors of gifted students with ASD prompted successful education professionals to make appropriate referrals?	inductive	Semi-structured interview <ul style="list-style-type: none"> <li>• Tell me about your experience with ____ (referred student).</li> <li>• Describe one of your fondest memories about ____</li> <li>• Describe a memory of a difficult time with ____.</li> <li>• What behaviors if any did you notice about ____ that prompted you to refer him or her for gifted identification? In what way, if any did these behaviors support your referral?</li> <li>• In what ways if any did these behaviors differ from other students with special needs, both gifted and non-gifted?</li> </ul> Participant analysis of student artifact	constant comparative GT analysis

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		<ul style="list-style-type: none"> <li>Take a few moments to look at this document. In what way if any does this support your referral of ____for____?</li> <li>Tell me more about how this artifact represents the thinking and performance of the student.</li> </ul>	GT analysis
	deductive	Researcher's field notes Education Professionals Survey <ul style="list-style-type: none"> <li>Thinking about the student with autism spectrum disorder that you referred, what characteristics did you observe that prompted you to make the referral?</li> </ul>	GT analysis descriptive analysis
2b. Which type(s) of evidence of student work do education professionals perceive as supporting the referral of a gifted student with ASD?	deductive	Education Professionals Survey <ul style="list-style-type: none"> <li>In your opinion, which evidence is most influential in determining whether a student is identified gifted?</li> </ul>	descriptive analysis
	inductive	Participant analysis of student artifact <ul style="list-style-type: none"> <li>Take a few moments to look at this document. In what way if any does this support your referral of ____for____?</li> <li>Tell me more about how this artifact represents the thinking and performance of the student.</li> </ul> Researcher's field notes	constant comparative GT analysis  GT analysis

## APPENDIX B

**Education Professionals Survey**

Please answer as many of the following questions as you are comfortable answering. This information will be used for purposes of this study only, and is completely confidential.

- 1) Please select the descriptor that is most appropriate:
  - a) Female
  - b) Male
- 2) How many years have you been/were you in the field of education?
  - a) 1-5 years
  - b) 6-12 years
  - c) 13-18 years
  - d) 19-25 years
  - e) More than 25 years
- 3) What best describes your current or most recent primary role in education?
  - a) Classroom Teacher
  - b) Gifted Educator
  - c) Special Educator
  - d) Resource Teacher
  - e) Administrator
  - f) Support Staff
  - g) school counselor
  - h) school psychologist
  - i) school social worker
  - j) Other (please specify)\_\_\_\_\_
- 4) How many years have you served or did you serve in your current role?
  - a) 1-5 years
  - b) 6-12 years
  - c) 13-18 years
  - d) 19-25 years
  - e) More than 25 years
- 5) Which best describes the school population you most recently serve(d)? Choose all that apply.

- a) pre-kindergarten/pre-school
  - b) elementary school
  - c) middle school
  - d) high school
  - e) higher education
- 6) Which licensures and/or endorsements do you/did you most recently hold?  
(Please select all that apply)
- a) Elementary Education
  - b) Secondary Education
  - c) Post-graduate Elementary Education
  - d) Post-graduate Secondary Education
  - e) Gifted Education
  - f) Special Education
  - g) School Administration/Supervision
  - h) School Counseling
  - i) Psychologist (School, Clinical, Counseling)
  - j) Other (please specify)\_\_\_\_\_
- 7) Please describe your education by indicating your major areas of study (Please complete all that apply):
- a) Bachelor's Degree: Area of study:\_\_\_\_\_
  - b) Master's Degree: Area of study:\_\_\_\_\_
  - c) Education Specialist degree:\_\_\_\_\_
  - d) Doctoral Degree: Area of study:\_\_\_\_\_
  - e) Other (please specify)\_\_\_\_\_
- 8) Please list any other specialized training that you have received. This includes but is not limited to cohort classes, certifications, workshops, and seminars. (text response)
- 9) How many students from the following populations you have referred for gifted identification: (drop down box to indicate numbers 0- 10 or more)
- a) regular education students
  - b) students with ASD
  - c) students with a specific learning disability



- 10) How would you characterize your knowledge about the following populations:  
(Likert-type responses include: I know a great deal, I know a good amount, I know a fair amount, I know a little, I don't know anything)
- a) Gifted students
  - b) Students with Autism Spectrum Disorder (ASD)
  - c) Gifted students with Autism Spectrum Disorder (ASD)
- 11) How would you characterize your knowledge and understanding of how the following populations are identified in your school district: (Likert-type responses include: I know a great deal, I know a fair amount, I know a little, I don't know anything)
- a) Gifted students
  - b) Students with Autism Spectrum Disorder (ASD)
  - c) Gifted students with Autism Spectrum Disorder (ASD)
- 12) How would you describe your experience in working with the following populations?
- (Likert-type responses include: extensive experience, a lot of experience, some experience, little experience no experience at all)
- a) Gifted students
  - b) Students with Autism Spectrum Disorder (ASD)
  - c) Gifted students with Autism Spectrum Disorder (ASD)
- 13) How confident are you that your current understanding of and experience with gifted students with autism spectrum disorder (ASD) enables you to make appropriate service and programming referrals for this population?
- a) I am very confident
  - b) I am confident
  - c) I am somewhat confident
  - d) I am not very confident
  - e) I am not confident at all
- 14) In your opinion, which evidence is most influential in determining whether a student is found eligible for gifted education services? (Likert type responses include: essential, very important, important, somewhat important, not important)
- a) classroom behavior
  - b) academic performance in the classroom
  - c) grades
  - d) performance on state mandated tests

- e) performance on standardized, norm-referenced tests such as CogAT or ITBS
- f) does not have an IEP
- g) does not have a 504 plan
- h) student observation by a gifted education professional
- i) other (please specify)\_\_\_\_\_

15) In your experience, how do these obstacles rate in meeting the academic needs of gifted students with autism spectrum disorder (ASD)? Please rank each on a scale of 1 through 5, with 1 being the most difficult and 5 being the least difficult obstacle.

- a) identification for gifted education services
- b) identification for special education services
- c) identification for accommodations under Section 504 of the Rehabilitation Act of 1973
- d) coordination of services between educators who work with the student
- e) coordination of support services between support professionals who work with the student
- f) coordination between school personnel and parents
- g) other (please specify)\_\_\_\_\_

16) Thinking about the gifted student with autism spectrum disorder you referred for specialized services, what characteristic(s) did you observe that prompted you to make the referral? Please select all that apply.

- |   |   |
|---|---|
| <input type="checkbox"/> learns quickly                                   | <input type="checkbox"/> early avid reader  |
| <input type="checkbox"/> recognizes patterns                              | <input type="checkbox"/> earns good grades  |
| <input type="checkbox"/> understands ideas and concepts easily            | <input type="checkbox"/> is bossy   |
| <input type="checkbox"/> inflexible toward alternate ways of doing things | <input type="checkbox"/> resistant to change  |
| <input type="checkbox"/> blurts out answers                               | <input type="checkbox"/> demonstrates high achievement in one or more areas of interest |
| <input type="checkbox"/> has difficulty making friends                    | <input type="checkbox"/> will talk at length about topics of interest                   |
| <input type="checkbox"/> becomes upset when things do not go as planned   | <input type="checkbox"/> is social toward intellectual peers                            |

☐ is sensitive to social issues

☐ other (please specify)\_\_\_\_\_

17) Is there any other relevant information about gifted students with autism spectrum disorder that you would like to share? (text response)

18) Would you be interested in participating in a brief interview on this topic? If yes, please provide your email address in the box below. (text response)

## APPENDIX C

### Interview Questions

#### About the Participant

Tell me a little about yourself.

- What is your favorite part about being a \_\_\_\_\_(education professional)
- What if any specialized training assists you in your experiences with students with giftedness and autism spectrum disorder?
  - In what ways did you find the training helpful?

#### Conceptualizations of giftedness, ASD, and the twice exceptional child

- In your experience, what are the primary similarities and differences in behaviors if any, between gifted students and regular education students?
- In your experience, what are the primary similarities and differences in behaviors if any, between regular education students and students with autism spectrum disorder?
- In your experience, what are the primary similarities and differences in behaviors if any, between gifted students and students with autism spectrum disorder?

#### Experiences with Students

- Tell me about your experience with \_\_\_\_\_ (student referred for specialized services).
- Describe one of your fondest memories about \_\_\_\_\_.
- Describe a memory of a difficult time with \_\_\_\_\_.
- What behaviors if any did you notice about \_\_\_\_\_ that prompted you to recommend gifted identification?
  - In what way, if any did these behaviors support your referral?
- In what ways, if any, did these behaviors differ from other students with special needs, both gifted and non-gifted?
- What if any obstacles did you observe and/or encounter in meeting the needs of the student you referred?
- Have you referred other students with special needs for gifted identification?
  - What was the outcome? (Was the student found eligible for gifted services?)
  - How did the behaviors of this student differ from those of the student with ASD that you referred?
- Do you know of students with special needs who were referred for gifted identification and were not identified?
  - In what ways if any did this/these student(s) differ from the student with ASD that you successfully referred?

#### Analysis of Artifact

- Take a few moments to look at this document. In what way if any does this artifact support your referral of \_\_\_\_\_for \_\_\_\_\_?

- Tell me a little more about how this artifact represents the thinking and performance of the student you referred.

## APPENDIX D

**RESEARCH PARTICIPANT CONSENT FORM****WHAT DO I HOPE TO LEARN FROM YOU?**

This investigation, entitled “*Toward a Conceptualization of the Gifted Student with Autism Spectrum Disorder*” is designed to explore your experiences, perceptions, beliefs and values about students with autism spectrum disorder.

**WHY IS YOUR PARTICIPATION IMPORTANT TO ME?**

Studying your experiences, perceptions, reactions, beliefs and values will help me to better understand education professionals’ perceptions of behaviors that prompted them to refer gifted students with autism spectrum disorder for specialized services and programming; and to better understand education professionals’ perception of the role of specialized training in their ability to recognize behaviors unique to gifted students with ASD and make an appropriate referral.

**HOW WERE YOU SELECTED?**

I compiled a list of education professionals who successfully referred a gifted student with autism spectrum disorder for services between school years 2009-2010 and 2013-2014 inclusive.

**WHAT WILL I REQUEST FROM YOU?**

I ask you to participate in one face-to-face video-recorded interview, lasting approximately one hour. This time frame will allow me to better comprehend your experiences, perceptions, beliefs and values about gifted students with ASD. A portion of the interview will be devoted to your perceptions of a student artifact. I ask that prior to the interview, you select one artifact of the student you referred from his or her eligibility file. Details about acquisition of the student artifact will follow.

**ADDITIONAL INFORMATION:**

Please know that:

- The confidentiality of your personally identifying information will be protected to the maximum extent allowable by law.
- Your name and other identifying information will be known only to the researchers through the information that you provide. Neither your name nor any other personally identifying information will be used in any presentation or published work, or on any document associated with the study, without prior written consent.
- The video recordings of the interviews described above will be erased after the study has been completed.

- You may refuse to answer any questions during the interviews if you so choose. You may also terminate your participation in the study at any time. (To do so, simply inform the interviewer of your intention.) Neither of these actions will incur a penalty of any type.
- Your participation in this study is completely voluntary. If you decline to participate, this decision will not in any way affect your standing with your school, nor your school division.
- A copy of the manuscript generated from this study will be sent to you electronically once they are complete.

### **HOW CAN YOU CONTACT ME?**

If you have any questions or concerns before, during or after this study, please contact the interviewer, Patricia Costis at pacostis@emil.wm.edu , (XXX)XXX-XXXX. If you have additional questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact, anonymously if you wish, Dr. Tom Ward at 757-221-2358 (EDIRC-L@wm.edu) or Ray McCoy at 757-221-2783 (rwmcco@wm.edu), chairs of the two William & Mary committees that supervise the treatment of study participants.

By checking the “I agree to participate” response below, then signing and dating this form, you will indicate your voluntary agreement to participate in this study, and confirm that you are at least 18 years of age.

☐ I agree to participate.

A copy of this consent form will be given to you to keep.

### **SIGNATURES:**

You may sign using your initials only, or your signature.

Participant: \_\_\_\_\_ Date: \_\_\_\_\_

Interviewer: \_\_\_\_\_ Date: \_\_\_\_\_

THIS PROJECT WAS FOUND TO COMPLY WITH APPROPRIATE ETHICAL STANDARDS  
AND WAS EXEMPTED FROM THE NEED FOR FORMAL REVIEW BY THE COLLEGE OF

WILLIAM AND MARY PROTECTION OF HUMAN SUBJECTS COMMITTEE (Phone 757-221-3966) ON 2016-01-01 AND EXPIRES ON 2017-01-01.



## APPENDIX E

**email Message to Survey Participants**

Dear \_\_\_\_\_,

My name is Patty Costis and I am a PhD candidate at The College of William & Mary. I am conducting a research study about education professionals' perceptions regarding gifted students with autism spectrum disorder (ASD) for the purpose of writing my dissertation. I received your name as an education professional who referred a gifted student with ASD for specialized services.

I invite you to complete a brief survey, lasting about 5-10 minutes, which will ask you to share your perceptions, understandings, and experience with gifted students with ASD. Participation is completely voluntary, you do not have to give your name, and all information is confidential.

Please consider following the link below to participate in my study:

[Internetlinkgoeshere.com](#)

If you have any questions or concerns, please feel free to contact me at [pacostis@email.wm.edu](mailto:pacostis@email.wm.edu) or at (XXX)XXX-XXXX. Thank you for your consideration.

Sincerely,

Patty Costis  
Ph.D. candidate, Educational Policy, Planning & Leadership  
The College of William & Mary  
Williamsburg, VA

## APPENDIX F

**email Message to Interview Participants**

Dear \_\_\_\_\_,

Thank you for expressing your willingness to participate in an interview about your experiences with gifted students with autism spectrum disorder (ASD). I am interested in learning more about perceptions of education professionals who referred gifted students with autism spectrum disorder (ASD) for specialized services.

The study will involve participating in a face-to-face interview, lasting about an hour. I am also asking that you choose, and offer commentary on a student artifact in the eligibility file of the student(s) with ASD that you referred. Participation is completely voluntary, and all information, including your name will be kept confidential.

Please reply to this email to confirm your interest in participating in the interview, and to schedule an appointment. If you have any questions or concerns, please feel free to contact me at pacostis@email.wm.edu or at (XXX)XXX-XXXX. Thank you for your consideration, and I look forward to hearing from you.

Sincerely,

Patty Costis

Ph.D. candidate, Educational Policy, Planning & Leadership  
The College of William & Mary  
Williamsburg, VA

## APPENDIX G

**Private Messages sent via Professional and Social Media**

Hi. My name is Patty Costis and I am currently working on my dissertation toward my PhD in Educational Leadership at The College of William and Mary. My study focuses on education professionals who referred students with autism spectrum disorder (ASD) for gifted identification. You are listed as the first grade teacher of a student with ASD who was identified gifted through NPS' annual district-wide screening. I would like permission to send you a survey, and to also invite you to participate in an interview during which you will have the opportunity to talk about your experiences with this student. Participation in both the survey and the interview are voluntary, and you do not have to agree to participate in both (you can opt for only one if you wish). If you have any questions or concerns, I can be reached via email at [pacostis@email.wm.edu](mailto:pacostis@email.wm.edu) and by phone at 1-(XXX)-XXX-XXXX. Thank you for your consideration, and I look forward to hearing from you soon. Sincerely, Patty Costis

Hi. I am hopeful that I have the correct \_\_\_\_\_. My name is Patty Costis and I am currently working on my dissertation toward my PhD in Educational Leadership at The College of William and Mary. My study focuses on education professionals who referred students with autism spectrum disorder (ASD) for gifted identification. You are listed as a first grade teacher who may have referred such a student. I would like permission to send you a survey, and to also invite you to participate in an interview during which you will have the opportunity to talk about your experiences with this student. Participation in both the survey and the interview are voluntary, and you do not have to agree to participate in both (you can opt for only one if you wish). If you have any questions or concerns, I can be reached via email at [pacostis@email.wm.edu](mailto:pacostis@email.wm.edu) and by phone at 1-(XXX)XXX-XXXX. Thank you for your consideration, and I look forward to hearing from you soon. Sincerely, Patty Costis

## APPENDIX H

**Personal Email Sent to Survey Participants**

Dear \_\_\_\_\_,

My name is Patty Costis and I am a PhD candidate at The College of William and Mary. I am conducting a research study about education professionals' perceptions regarding gifted students with autism spectrum disorder (ASD) for the purpose of writing my dissertation. I received your name as an education professional who referred a gifted student with ASD for specialized services.

I sent you an invitation to participate in a brief survey and interview. Unfortunately, the email was not properly delivered due to limitations with (name of school district removed by researcher)'s email server. I would be grateful if you would please consider allowing me to re-send you the survey to an alternate email address. You do not have to participate in both the survey and the interview, but I am hopeful that you will consider doing so. All information related to this study is confidential.

Simply reply to this email, giving me your alternate contact. If you have any questions or concerns, please feel free to contact me at [pacostis@email.wm.edu](mailto:pacostis@email.wm.edu) or at (XXX)XXX-XXXX. Thank you for your consideration, and I look forward to hearing from you.

Sincerely,

Patty Costis

Ph.D. candidate, Educational Policy, Planning & Leadership  
The College of William & Mary  
Williamsburg, VA

## APPENDIX I

## Researcher as Instrument Statement

One of the most valuable lessons I learned from my parents is to be open and accepting of everyone and everything until I have reason to think otherwise. This lesson has served me well because it has allowed me to learn about and understand many different people, ideas, and ways of thinking. However, my parents probably taught me that lesson in an effort to minimize the stigma accompanied by having a *hyperactive* daughter. My diagnosis at age 5 was called hyperkinetic reaction of childhood (DSM-II, APA, 1968). Later, it came to be known as ADHD.

Depending upon the generation in which you were born, I can be compared to Ramona the Pest or Junie B. Jones, each a quirky character created by children's book authors Beverly Cleary and Barbara Park respectively. I was a child who could simultaneously incense and endear most adults. My parents tirelessly advocated for me in school, trying to explain ADHD to my teachers. They also educated our entire neighborhood, and every member of my gigantic Catholic family about understanding and managing my *condition*. More importantly, they taught me how to understand and manage my behavior.

Elementary school was difficult. My teachers were neither understanding nor accepting of my incessant talking, strange way of dressing, irresponsible behavior, and brutal honesty. I spent a lot of time on the receiving end of the teacher's paddle, and my parents spent a lot of time meeting with my teachers. High school was somewhat easier because I had learned coping strategies which helped me function better at school. I graduated with honors and a special commendation for community service. I assumed I

had outgrown my ADHD. I often felt misunderstood or prematurely judged however, and this reinforced the lesson of acceptance taught to me as a young child.

I graduated from Elon College (now University) with a bachelor's degree in music, and launched a career in songwriting, recording, and performing. I was the leader of my own band and I traveled much of the East Coast for fifteen years. I made a living at playing music, but I knew the industry had a very short talent trajectory. So, I enrolled in Old Dominion University and earned a master's degree in Early Childhood Education. My husband and I gave birth to beautiful twin girls the same spring, and I retired from music to pursue a career in education.

Like most new teachers, I may have learned more from my students than they learned from me my first year. The next year however, I was intrigued by two of my students who seemed to know the content before I even taught it. They were often finished with a task before I finished giving directions. I wanted to know what made them different from my other students. My school's gifted resource teacher (GRT) brought me some resources, and she collaborated with me on differentiating their lessons. I worked with the GRT often, asking questions and gathering resources. She suggested I join a cohort of teachers earning a licensure endorsement in gifted education. I was accepted and began coursework the following fall.

Meanwhile at home, I was becoming concerned about the growth of our twins. My *beta* twin (second-born) was talking non-stop and seemed to have a motor inside of her that never slowed down. My *alpha* twin (first-born), among other behaviors, was not talking at all and hardly ever answered to her name. As much as I tried to remain open to their different rates of development, I grew skeptical. We had also given birth to a third

daughter. She was beginning to walk, and I wondered if she too, was meeting all of her developmental milestones.

Our pediatrician ordered batteries of tests for our alpha twin. Six months and dozens of tests later, autism was her diagnosis. I was relieved knowing our daughter was not suffering a life-threatening illness, but devastated as I worried that I *gave her this disease*.

Soon after, our beta twin and then later our youngest daughter were each diagnosed with two differing types of ADHD: hyperactive-impulsive type and inattentive type respectively. Initially I struggled with acceptance of these diagnoses, feeling I had failed my children in some way. The struggle quickly faded as my primary focus became raising happy, healthy children. I set out on a quest to learn as much as I could about these conditions.

I started reading more about ADHD first, since I had the condition as a child. After reading several articles and books about it, I recognized I had not outgrown my ADHD. I consulted with my doctor to design a plan for better managing my behaviors. I then met with our pediatrician to create a plan for my two children. He was a wonderful resource in helping me to understand the differences between the two types of ADHD.

Next, I began to read everything I could find on autism spectrum disorder (ASD). Eventually, I began to read about the concept of neurodiversity. Neurodiversity is the infinite, natural variation of human neurocognitive functioning. I began to realize that all human brains, including those of people with ADHD and autism, function differently. This understanding led me to conclude that ASD was not a disease to be cured, but a difference to be understood and celebrated. Likewise, ADHD was a neurodivergent way

of viewing the world. In our house, *normal* came to mean a dryer setting more than a state of human functioning.

Understanding my children and myself as neurodivergent allowed me to recognize neurodivergence among some students in my classroom. The courses I took toward my gifted education endorsement supported my openness to different ways of thinking and seeing the world. I examined how my students learned by looking at factors contributing to their struggles, and more importantly, to their successes. This approach made me a more effective teacher.

During the final semester of coursework toward my gifted education endorsement, I met Justin, my first twice-exceptional student. I was teaching a pull-out class of fifth grade gifted and high-ability students for their Language Arts block each day. Justin had dyslexia, but was identified gifted in general intellectual aptitude, our school district's highest gifted designation. I met with his special education teacher who was very resistant to Justin's placement in my class. After meeting with Justin and his parents, he was allowed to stay on a trial basis.

I met regularly with the special educator and the GRT to plan strategies, and monitor Justin's progress. He remained in my class until the end of the school year, winning the district-wide science fair and going on to a special middle school for gifted students. I was proud of Justin and his accomplishments. I was also interested in learning more about twice exceptionality.

I completed the coursework for my endorsement in gifted education and the next year, began work as a gifted resource teacher. I was eager to collaborate with my colleagues the way my GRT collaborated with me when I was a classroom teacher. I



introduced myself to each teacher and asked to observe the students in their classes.

Some of the teachers were receptive, but most were not. Building a rapport with many of the classroom teachers with whom I worked became an ongoing effort which continues to this day.

I held regular professional development sessions, working to build the capacity of the school's faculty in referring students for gifted identification, and in differentiating instruction. Many teachers threw my handouts into the trash before they left the room, while others lingered, asking questions and scheduling student observations. So, as I observed their students, I also observed how these teachers interacted with them. During our debriefing sessions, I brought resources and activities based on the styles I observed. This proved to be effective for the students and successful with the teacher.

Occasionally, an observation session resulted in my noticing other students who demonstrated unique abilities and behaviors. Some of the students had learning disabilities or ASD. I once observed a student who was being evaluated for ASD. His special education evaluation revealed he did not have ASD, but his IQ-157 measured by the WISC-IV (2003) showed he was profoundly gifted. My queries about these unusual students were often met with surprise or comments asserting the student could not be gifted because he or she had an IEP.

As I have begun to work with and advocate for more twice exceptional students (including gifted students with ASD), I have experienced resistance from classroom teachers and special educators who were reluctant to *allow* twice exceptional students to participate in gifted enrichment sessions. Further, their twice exceptional students were not included in differentiated activities in their areas of giftedness. Teachers' reasoning

typically revealed low student expectations and in some cases, skepticism about the student's gifted identification.

On many occasions, twice exceptional students under my charge were prevented from participating in enrichment sessions. Rationale always referred to a perceived student deficit such as an incomplete assignment. Many of my gifted students with ASD have been absent from my enrichment sessions due to behavior resulting in their removal from the classroom. Teachers have viewed their outbursts as choices rather than manifestations of their ASD, and mistaken their tantrums as ploys to escape completion of classwork.

At times, I have wondered how students with ASD manage to get identified gifted when their teachers do not recognize their abilities. However, they are being identified, as evidenced by their names on my rosters. I became curious about how gifted students with ASD were referred. Who was making the referrals? Were they classroom teachers or special educators? Were they school psychologists or counselors? I wondered what it was about this group of education professionals that they recognized behaviors prompting them to refer the student for specialized services.

In this study, I sought to understand the gifted student with ASD more clearly by understanding the educators who referred them for specialized services. I discovered advanced training they received assisting in their ability to meet the needs of this special population of student. Moreover, I learned about the training they found most useful in teaching gifted students with ASD.

Then, explored the behaviors prompting their referral of gifted students with ASD. I wondered if their observations were similar. Did they have unique experiences

with their students that support their successful referral? By examining the answers to these questions, I hoped to move toward a conceptualization of the gifted student with ASD that may serve as an exemplar for educators in recognizing and serving this special population of student. The results have implications for improving teachers' pre-service coursework in the areas of giftedness and twice exceptionality, particularly in addressing the needs of gifted students with ASD.

While conducting this study, I was careful to heed the lesson taught me as a child: to be open and accepting of all participant responses. I was mindful to keep my questions confined to the research topic. In particular, I worked to monitor the impulsivity I often experience with my ADHD when I am nervous or excited. In order to remain on task, I made field notes of participant responses, and kept my written question topics close at hand. I frequent member-checked, repeating responses back to participants for verification, which also helped to ensure I remained focused on the topic.

I am currently a gifted educator, and I conducted the current study in the school district in which I am employed. This involved interviewing my building co-workers, as well as my fellow gifted educators. The result was a positive experience with some participants due to a previously established rapport. I worked to all participants at ease by meeting them in a setting in which they could speak freely, without fear of judgment or reprisal. I asked each participant to choose the setting for their interview, asked each to choose his or her own pseudonym, and offered each the opportunity to read all transcripts and manuscripts pertaining to their responses as part of a system of member-checking.

I firmly believe autism to be a form of neurodivergence; that is, a way of thinking that diverges significantly from typical (or *normal*) ways of thinking. I do not believe it is

a disease or illness in need of a cure, but a difference needing to be understood. I am also very aware that this view of autism is not shared by all people, and was not necessarily shared by my participants. Therefore, I was careful to bracket my views so I could remain open to all opinions posed by my participants. This was accomplished by making regular entries in my reflexive journal, and by re-reading journal entries during data analysis.

The exploratory nature of this study left me open to discovering anything in the course of my research. I hoped to make a contribution to the field of gifted education, and in particular twice exceptionality, by adding to the knowledge base about this unique population of student, and the professionals who work with them. Therefore, all participant responses were viewed as pieces to the puzzle that is the current study. Misconceptions, negative views, and even frustrations were all seen as valuable data, for we often understand what a phenomenon is by appreciating what it is not. I am confident the outcome is toward a conceptualization of the gifted student with ASD and the educators who successfully meet their needs.

## APPENDIX J

### Interview Participant Profiles

**Bubbles.** Bubbles, a Caucasian female, has been in the field of education for more than 25 years, and is currently a gifted educator at the elementary school level, a position she has held for 6-12 years. She has a bachelor's degree in elementary education and a licensure endorsement in gifted education. Bubbles said her favorite part about being a gifted educator is, "watching them grow creatively and becoming good problem solvers."

When asked for an example of creative growth, Bubbles talked about a design project she assigned her fifth grade gifted students. She tasked her students with creating the perfect classroom. Bubbles changed one aspect of the design parameters every time a student neared completion of his or her project. The objective was to figure out how to accommodate the change while keeping all of the other design components. Bubbles described one of the presentation and remarked, "It was just so neat to see some child who never would have done this before, really get into it."

**Cathy.** Cathy, a Caucasian female, has been in education for 6-12 years, all as a classroom teacher at the elementary school level. She has a bachelor's degree in Sociology. Cathy said her favorite part about being a teacher is, "They make connections to things from a long time before that they held onto...They were just floating and didn't know what to do with them. But they start putting all the little pieces together. That's what I like." When asked to tell a story about an *ah-ha* moment a student had, she described a reading lesson in which students were asked to draw conclusions:

I don't know how many different ways they had heard it, and from how many different people they had heard the same thing. Maybe it was a particular

scenario. But one of them last year... and he was like, "OH! Well, that was so easy. I get it now!" And I was like, "Okay. Alright! There we go!" And it's one of those things that you don't expect to all come together when it does kind of come together.

**Frances.** Frances, an African American female, has been in the field of education for 13-18 years, and is currently a classroom teacher at the elementary school level, a position she has held for 6-12 years. She holds a bachelor's degree in psychology and a master's degree in school and community counseling. Frances said her favorite part about being a classroom teacher is, "The way that students light up when they get it, especially those students who have been struggling and who have gotten frustrated. When it comes to them and they have that revelation moment, it's really awesome."

Frances cites an example by telling the story of an underachieving student with severe behavior problems. After months of positive reinforcement, the student finally earned her first perfect score on a paper she had written, followed by another perfect score on a quarterly exam. Frances recalled the student's reaction, "I get it! All I did was this, this, and this. It was great, and she was so proud of herself."

**Grandma.** Grandma, a Caucasian female, has been in the field of education for more than 25 years, and is a gifted educator at both the elementary and middle school levels, a position she has held for 6-12 years. She holds a bachelor's degree in education and a licensure endorsement in gifted education. Grandma said her favorite part about being a gifted educator is "having the freedom to go beyond the curriculum."

She illustrated by describing an activity her fourth grade gifted students completed using the S.C.A.M.P.E.R. technique, an acronym for seven different strategies

to change an idea or concept, thus creating something new. The activity raised an interest in acronyms, so Grandma asked them to think of an organization to which their fairy tale characters might belong, and then create an acronym to describe its purpose. Finally, the students designed advertisement posters using their acronyms. She said, “I saved them. I have them, too. They were so cool!”

**Ian.** Ian, a Caucasian male, was in the field of gifted education at the middle school level for more than 25 years before semi-retiring. He holds a bachelor’s degree in history and social studies education, and a master’s degree in administration and supervision. Ian also holds licensure endorsements in library media and gifted education. When scheduling the semi-structured interview, Ian stated he did not remember referring a student with ASD for gifted identification. I explained that the student was identified gifted five years before being diagnosed with ASD.

Ian then talked about the nature of his position as director of the admissions process for a gifted middle school specialty program in the District, a position he continues to hold although he is retired. He expressed concern about his ability to contribute to the current study because he was not an instructor. The researcher explained the process for working with human subjects, offering him the opportunity to participate in all, part, or none of the interview, and left the decision to Ian. The researcher is grateful to Ian for choosing to participate because his role in education offered a unique perspective not often shared in studies focusing on education professionals.

Ian said his favorite part about directing the application, interview, and selection process for the Future Leaders program, a specialty school for gifted students in the

District, was having the opportunity to be part of the team that developed and then implemented the program. He describes the experience:

I never thought I would see the District adopt a program such as the *Future Leaders* because specialty programs for gifted students were considered elitist....But it just came up as an opportunity, and I went to every meeting in the planning of the *Future Leaders* thinking, “Well, we’re gonna talk, but nothing’s ever gonna happen.” But sure enough, it did. Working out the details and creating a program from scratch was very gratifying.

**Jean.** Jean, a Caucasian female, has been in the field of education for 13-18 years, and is currently a classroom teacher at the elementary school level, a position she has held for 6-12 years. She holds a bachelor’s degree in biology and a master’s degree in educational leadership and administration. Jean said her favorite part about being a classroom teacher is collaborating with other teachers to plan for instruction. In particular, she enjoys the process of working together to figure out how to differentiate and engage her students. Jean elaborates:

Planning ideas, strategies...everything. We’re all over the place. (My teaching partner) and I do everything as a team, so that’s the part I really like. We get together, bounce ideas off of each other, and we finally have to say, “Okay, this is done. This is good.”

**Lauren.** Lauren, an African American female, has been in the field of education for 13-18 years and is currently a special educator at the elementary school level, a position she has held for 1-5 years. She holds a bachelor’s degree in interdisciplinary studies and a master’s degree in curriculum and instruction. In addition, she holds a



licensure endorsement in special education with a concentration in K-12 specific learning disabilities (SPLD) and Applied Behavioral Analysis (ABA), a highly effective behavior modification technique used with people with ASD and other developmental disorders.

Lauren said her favorite part about being a special educator is the diversity among students. She likes the fact that no two students are the same, even though they may appear similar on the surface. Lauren gave an example by describing two students who both lacked confidence, but for very different reasons:

So I have a student, *D*, who is extremely smart, but the family doesn't put a big emphasis on education, so she's resistant to learning...she fought me in learning anything new. So, a lot of times, she came in with this defeated attitude. I had to really push her to get her to see she had potential.

Then I have another student, *M*. She is extremely bright and she is used to always being right. Sometimes it is hard when she doesn't succeed, when she's not right. She has a lot of parental support, but she's really critical of herself. Getting her to step out of her comfort zone can be difficult. They're very different, but in some ways alike. And they both add to the dynamics of the class in their own way.

**Mary.** Mary, a Caucasian female was in the field of education for 19-25 years before retiring in 2012. She was a gifted educator at the elementary school level for her entire career. She holds a bachelor's degree in English and a master's degree in Linguistics. In addition, she holds licensure endorsements in gifted education and English as a Second Language (ESL). Mary said her favorite part about being a gifted educator was having the opportunity to work with students without the having constraints of state-mandated tests their classroom teachers had. Mary elaborated, saying:

....developing projects and working with the groups of kids...being able to develop something that was an ongoing project that was long-term, not having to stick to somebody else's proscribed schedule, and having some latitude to use my own judgment about what was appropriate for a particular time.

**Sabrina.** Sabrina, an African American female has been in the field of education for 19-25 years, and is currently a classroom teacher, a position she has held for 13-18 years. She holds a master's degree in elementary education. Sabrina said her favorite part about being a classroom teacher is being able to teach the whole child. She explained further:

And when I say meet the child as a whole, that means being able to provide on an educational aspect, being able to provide as a nurturer, being able to provide as a sometimes counselor by giving good direction , helping the kid understand what is right and what is wrong. And then I love to receive excellent feedback the next year..."Oh, I remember when Mrs. (*Smith*) said..." or "I remember what Mrs. (*Smith*) did..."

**Sophia.** Sophia, an African American female, has been in the field of education for 13-18 years, and is currently a gifted educator at the elementary school level, a position she has held for 6-12 years. She holds a bachelor's degree in elementary/middle education, a master's degree and an education specialist degree in curriculum and instruction. In addition, she holds a licensure endorsement in gifted education.

Sophia said her favorite part about being a gifted educator is being able to teach students that have been overlooked. She explained that much of education focuses on

teaching students in the middle of the ability spectrum. She feels it is her job to bring rigor, higher thinking, and challenge to the students who are outside that middle zone.

**Stella.** Stella, a Caucasian female was in the field of education for 13-18 years before leaving. Her last position was a gifted educator at the elementary school level, a position she held for 1-5 years. She holds a bachelor's degree in interdisciplinary studies with an emphasis on early childhood development, and a licensure endorsement in gifted education. Stella said her favorite part about being a gifted educator was spending time with students, and working in a coaching capacity with teachers. In particular, Stella enjoyed sharing resources, strategies, and information with her colleagues. She said, "I liked being free to adjust my teaching to meet the needs of students and their teachers. I didn't have all the pressures of being a classroom teacher."

**Survivor.** Survivor, a Caucasian female has been in the field of education for more than 25 years and is currently a gifted educator at the elementary school level. A position she has held for 19-25 years. She holds bachelor and master's degrees in education, and a licensure endorsement in gifted education. Survivor said her favorite part about being a gifted educator is the fact that she does not grade, she assesses. When asked to explain, Survivor said she grading involves quantifying a student's product or performance. She assesses by using her expertise to provide oral or written feedback to a student who then improves upon the product or performance. Survivor said:

I assess the performance, or the child's product and give them oral feedback, written feedback and it's not done just because the grading period is over. It's done when it is right, when they have success. Being an assessor, I think I teach better and I think children learn more.

**Teresa.** Teresa, a Caucasian female, has been in the field of education for 13-18 years, and is currently a support staff as a math intervention specialist at the elementary school level, a position she has held for 1-5 years. She holds a bachelor's degree in elementary education, a master's degree in administration and supervision, and an education specialist degree in math leadership. Teresa said her favorite part about being a support staff is working with teachers, demonstrating varying strategies for teaching specific skills.

Teresa explained that teachers don't generally have time to research multiple strategies and how to best implement them in the classroom. She enjoys building teachers' capacity by demonstrating effective ways of teaching difficult skills to struggling students.

**Tanner.** Tanner, a Caucasian male, has been in the field of education for 6-12 years, and is currently a gifted educator at the elementary school level, a position he has held for 1-5 years. He holds a bachelor's degree in elementary education and linguistics, a master's degree in elementary education. In addition, Tanner holds a licensure endorsement in gifted education. Tanner said his favorite part about being a gifted educator is working with students who think differently than other students.

Tanner cites an example by describing a simple lesson on magnetism. One of his fifth grade students liked the idea and wanted to build a levitating system using polarity. The class caught on to the idea like a virus, and they ended up with a workable system Tanner saved. He used it for a visual demonstration for the researcher. Tanner remarked, "And this all started with his idea because we were talking about polarity one day and they just kind of take an idea and run with it."

**Victoria.** Victoria, an African American female, has been in the field of education for 13-18 years, and is currently a gifted educator at the elementary school level, a position she has held for 6-12 years. She holds a bachelor's degree in interdisciplinary studies, and a master's degree in educational leadership. In addition, she holds a licensure endorsement in gifted education.

Victoria said her favorite part about being a gifted educator is not feeling as though she must teach to a test. She enjoys being able to challenge what a child knows and then extend his or her thinking beyond the challenge. Victoria illustrated by describing a project her third grade gifted class completed:

The students had a project making a family crest. I told them what a crest was and what usually was on the crest. One little girl wanted to know what each quarter of the crest meant, what went where, and why you picked those things. So, she went back to medieval times to figure it out. She really ran with the project, and was adamant about presenting that to the class before they did their crests.

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