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EDUCATING GIFTED STUDENTS WITH ASPERGER'S SYNDROME:
A CASE STUDY OF THREE STUDENTS AND THEIR CLASSROOM EXPERIENCES

by

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A dissertation submitted in partial fulfillment of the requirements
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at the University of Central Florida
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ABSTRACT

Much research has focused on students with Asperger's Syndrome (AS), and much research has also been done on gifted students with special needs, yet very little has been published that looks at the characteristics of students who have been identified as both Gifted and as having Asperger Syndrome (G/AS), and what teachers are doing in the classroom to meet their needs. This is an important topic because this group of twice exceptional students has characteristics of both exceptionalities, and trying to meet the special needs of both groups in the same classroom would likely be a challenge for the teacher. Without understanding what these students are like, and how classroom teachers are trying to meet the needs of this special population, little can be recommended that will help the students succeed. This study examined the academic, social, and behavioral characteristics of three students with G/AS through observations and interviews of students, as well as interviews of their teachers and parents, and records reviews. Using an individual case study approach, information was gathered that was designed to understand the behaviors of specific students with G/AS and what their teachers were doing to meet their needs. By examining characteristics of students with G/AS and their teachers' practices, information pertinent to an improved understanding of the varying profiles of students with G/AS can be described that may improve decision making and planning when attempting to meet the needs of this population of students.

Keywords: *gifted, Asperger's Syndrome*

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CHAPTER 1: EDUCATING GIFTED STUDENTS WITH ASPERGER'S SYNDROME; A CASE STUDY OF THREE STUDENTS AND THEIR CLASSROOM EXPERIENCES

In the last several years there has been an increase in the population of students identified with Autism and with Autism Spectrum Disorders (ASD), including Asperger's Syndrome (AS) (Rice, 2009). Much research on Autism and AS has appeared in the literature, with a focus on classroom recommendations that will meet the special social and academic needs of this population. A specific group of students with AS has also been identified as Gifted, which places them in a somewhat difficult situation.

Gifted students' Educational Plans usually focus on developing their strengths. Educational plans for students with AS usually focus on providing supports to help the student improve classroom functioning. Gifted students who have also been identified as having AS (G/AS) are in the unique position of having a dual exceptionality. Building on the strengths of gifted characteristics while supporting the challenges of AS characteristics in the classroom may appear to be a difficult task.

Without a clear understanding of the common characteristics of students with G/AS, recommendations for classroom strategies will not be well supported by research. What are these students like? How do they see themselves? What are their peer relationships like? How do they view themselves in comparison with their peers? What are their strengths and areas of concern? These questions are important because the characteristics and needs of the students will determine what teachers must do in their classrooms in order to provide a successful learning

experience for these students; therefore a clear understanding of those characteristics and needs must be arrived at before teachers can plan how to meet these needs.

The classroom teachers of students with G/AS may be well aware of their special needs and may have developed or discovered strategies to help the students succeed. By talking to and observing these teachers we may be able to ascertain what practices in the classroom are successful for these students with G/AS, or at least what their teachers are trying in the classroom.

The current study was designed to examine students with G/AS in the classroom environment through interviews, observations, and record reviews, in an attempt to understand the characteristics of these students and how their teachers attempted to meet their needs. Students' perceptions of their classroom experiences, both positive and negative, were examined through interviews and classroom observations. The students' views of academic, emotional, and social situations were examined, as well as parent, teacher, and observer views of the same issues. Interviews with teachers addressed their perception of student progress and what, if anything, they were doing to encourage success by the student with G/AS. Parent interviews addressed the students' progress inside and outside of the educational setting, with attention to descriptions of the child's characteristics, and what worked for this particular child and what didn't work, with an eye toward discovering strategies that were successful for these specific students with G/AS.

Statement of Problem

Background.

Hans Asperger described a group of children with unique behaviors and advanced intellects in 1944. Translated by Frith in 1991, that description matched what is now recognized as AS. Although considered to be part of the Autism Spectrum of Disorders (ASD) in DSM-IV, AS is now recognized as a separate diagnosis in the World Health Organization's International Classification of Diseases 10 (International Classification of Diseases -10, 2010) and the Diagnostic and Statistical Manual of Mental Disorders –IV (American psychiatric Association, 1994). In a 2002 study in the U.S., Autism prevalence rates were approximately 1:150 children. The Center for Disease Control reported in 2007 that, using then current diagnostic criteria in studies from multiple countries, the prevalence of ASDs ranged from 1:500 children to 1:166 children. The most current data from the CDC indicates the ratio as 1:110 (Rice, 2009). Klin and Volkmar (1997) listed the prevalence of AS at 7.1:1000 and the male: female ratio for AS at 2.3. The National Institutes of Neurological Disorders and Stroke (2011) reported that, although there were still some questions, there was a conservative estimate of 2:1000 children with AS, with males being three to four times more likely than females to be given the diagnosis. Included in these numbers were students with AS, and included in this population were children who had also been identified as gifted. In a 2000 study of students with AS over 20% of the participants obtained Verbal IQ scores on the WISC-III in the Superior or Very Superior range, a percentage which exceeded the scores of the general population and would qualify many of these students for gifted programs, depending on the identification requirements of the specific gifted program (Barnhill, Hagiwara, Myles, & Simpson, 2000).

This population of students with G/AS would likely have very special needs which do not fit easily into the usual recommendations given for classrooms with gifted students, nor for classrooms with students with AS. But what are these needs? How can we describe students with G/AS? How are teachers attempting to meet those needs?

Problem.

The number of students with ASDs in the United States, including AS, has risen sharply (Frombonne, 2003), and it may be expected that the number of gifted students diagnosed with AS has also increased. Many classroom teachers have had limited experience with students with AS. Most teachers of the gifted have little or no experience with this special group of students and, like regular classroom teachers, are often at a loss as to how to meet their academic, emotional, and social needs.

Because the number of students with G/AS is small, and little research has been done describing these students, there is need for a better understanding of what these students are like. How do they function in their classrooms? What behaviors and characteristics do they exhibit? Are there commonalities among students with G/AS, or is each student markedly different? How do they perceive their place in their classrooms? How do their peers and teachers perceive them?

Existing research has much to contribute to classroom strategies for students with Autism, students with AS, and gifted students. What it does not seem to address are the classroom strategies and accommodation techniques that work best for students with G/AS. What are the classroom teachers of students with G/AS doing to help their students? Are their strategies working? Because the current research actually suggests what might appear as seemingly opposite classroom management for gifted students and for students with AS, there is

a need to identify classroom practices teachers are implementing to try to meet the multiple needs of these students and whether they seem to be helping or hindering these unique students.

Purpose.

Therefore, there is a need for research that will add to the limited body of knowledge we now have that describes students with G/AS and what is being done in the classroom to help them succeed. The purpose of the current study was to better understand the complex characteristics of, and interactions between, students with G/AS, their teachers, and their peers, and to discover what works and what doesn't work for these students in a classroom setting.

By examining these relationships in light of the unique characteristics of students with G/AS, information pertinent to appropriate classroom accommodation strategies for these students may be described that could provide options in planning by classroom teachers when attempting to meet the needs of this population of students. By examining student, teacher, and parent perceptions of positive and negative experiences and situations in the classroom, it was hoped that some understanding would evolve as to what special needs students with G/AS might have, and how teachers were trying to meet those needs, which would allow the current study to contribute to the improvement of classroom practice for these students.

Theoretical Framework

Because the interaction of student, teacher, and classroom strategies was examined in this study, a modified version of Stage-Environment Fit theory, based on Person-Environment Interaction theory, framed the analysis of the data. All three units are important, but the relationships and interaction between the units are the more important topics to address.

David Hunt (1975) presented a defense of Person-Environment Interaction (PIA) which he felt was undervalued and underused by educational psychologists. He recommended PIA in order to “characterize the forms of educational environment likely to be most appropriate for different persons,” (p. 213) and that they “...must be understood in terms of the complexities of person-environment interaction, not simply as behavioral similarity across all situations” (p. 213.). He felt strongly that it was the interaction of the components which resulted in specific behaviors, teaching approaches, and environments. Thus appropriate “matching” of the units resulted in positive outcomes for all concerned, while a “mismatch” among units resulted in poor outcomes.

Hunt proposed using B-P-E analysis which required first identifying the three units in the specific situation. B (the behaviors) would be jointly determined by P (the kind of student) and E (the way of teaching). Hunt (1975a) also described “student pull” – the student’s influence on the behavior of the teacher - and proposed that this interaction between P and B affected E. In each situation he was focused more on the interaction between the units than on describing the units themselves.

For the purpose of this study, B represents the classroom behaviors of the student with G/AS – their learning success, verbalizations, peer relations, reactions to various stimuli in the classroom, etc. P represents the students with G/AS participating in the study. E represents the classroom strategies enacted by the teacher – seating arrangements, style of instruction, response to student behavior, classroom community, etc. I looked at how E might be jointly determined by P and B, as well as “student pull” and how it might affect the teacher and thus the classroom environment. Based on Hunt’s proposal, I predicted that an appropriate match between the

student, behaviors, and environment would result in classroom success for students with G/AS, while a mismatch of these components would result in poor outcomes for all involved.

Person-Environment Interaction is the basis for Stage-Environment Fit (SEF) theory. SEF theory focuses on the matching of students and teaching styles and has been used to address success for young adolescent students. The researchers propose that some of the difficulties connected with adolescent development come from a mismatch between the needs of the young adolescents and the social environment of their classrooms (Eccles et al., 1993): Hunt's interaction between P and E. They state

According to person-environment fit theory, behavior, motivation, and mental health are influenced by the fit between the characteristics individuals bring to their social environment and the characteristics of these social environments. Individuals are not likely to do well, or be motivated, if they are in social environments that do not meet their psychological needs. (p. 91)

Wigfield , Eccles, MacIver, Reuman, and Midgles (1991) believed that changes in perception and self-esteem in early adolescence could be attributed, in part, to a mismatch between the junior high school environment and the developing needs of the students. Gutman and Eccles (2007) stated, "Some of these negative changes may result from a mismatch between the needs of developing adolescents and the opportunities afforded to them in their various social environments" (p. 522).

While SEF theory has been developed specifically to explain behaviors in adolescents, it can be applied to other age levels. It would reason that, if the P and E are mismatched, it would result in poor outcomes regardless of the age range. If a student with G/AS had specific needs

that were not being met by the E – because the E had been designed for gifted students with a very different set of reported behaviors and needs – then the resulting mismatch would not have positive outcomes. On the other hand, if the E had been designed by the teacher to meet the needs of the student with G/AS, then there would have been no mismatch and outcomes should have been positive.

Therefore, within the framework of SEF and PIT, I will look at the interactions between all components of the study in order to determine matches, or mismatches, and the results of those relationships, as well as looking closely at the description of the students.

Significance of the Study for Practice

The classroom implications of identifying students with G/AS are another issue to consider. The emphasis in special education recently has been to “push in” rather than “pull out” students in need of special services. This has resulted in many self-contained Exceptional Student Education (ESE) classrooms being dissolved, and those students placed in regular classrooms with an ESE teacher providing occasional instruction and consultation, or possibly a self-contained ESE student being placed in a regular classroom for part of the school day. This is not always popular with classroom teachers. The general feeling is that they do not have the training required to deal with exceptional students on a regular basis (Emam & Farrell, 2009). Sometimes an ESE co-teacher is brought into the classroom to assist the regular education teacher and provide their expertise in meeting the needs of the exceptional students (Friend & Cook, 1995) .

Gifted teachers have, in general, been immune from these “push in” programs due to the nature of identification of gifted students. If students with AS are to be taught in gifted classes,

the situation may well be the same as with regular classroom teachers – a feeling that a lack of training has not prepared them to deal with students with G/AS. To be certified to teach gifted students in Florida one must take a course on special populations of gifted students which includes AS, but it is a minimal part of the curriculum at best. For example, in the Florida Department of Education approved course on Special Populations of Gifted Students, only one out of the 65 objectives specifically addresses AS (Eriksson, Faivus, Kysilka, & Moeller, 2008).

By examining the unique characteristics of students with G/AS in the classroom, information pertinent to appropriate classroom strategies for these students could be described that may improve planning by teachers of gifted students when attempting to meet the needs of this increasing population. By an in-depth examination of student, teacher, and parent perceptions of positive and negative experiences for select students with G/AS in the middle school classroom, it was hoped that some understanding would evolve to help describe these students and to identify successful classroom strategies for students with G/AS which would allow this study to contribute to the improvement of both identification and appropriate classroom practice for these students.

Research Questions

In order to address these issues the following three research questions have been developed.

1. How can students with G/AS be described in academic, emotional, and social terms?
2. How do teachers of students with G/AS attempt to meet the academic, social, and behavioral needs of these students?
3. Does there appear to be an appropriate match between students and teaching styles?

Definition of Key Terms

Gifted.

The definition used by the county in which this study was conducted will be utilized: identification will be based on a score two standard deviations above the mean on an individually administered IQ test, a majority of positives on a gifted characteristic checklist, and a statement of need for a differentiated program. This definition follows that of the state of Florida as stated below.

A student is eligible for special instructional programs for the gifted if the student meets the criteria under paragraph (2)(a) or (b) of this rule.

(a) The student demonstrates:

1. Need for a special program.

2. A majority of characteristics of gifted students according to a standard scale or checklist, and

3. Superior intellectual development as measured by an intelligence quotient of two (2) standard deviations or more above the mean on an individually administered standardized test of intelligence.

(b) The student is a member of an under-represented group and meets the criteria specified in an approved school district plan for increasing the participation of under-represented groups in programs for gifted students.

1. For the purpose of this rule, under-represented groups are defined as groups:

a. Who are limited English proficient, or

b. Who are from a low socio-economic status family. (Florida Department of State, 2012).

Autism.

The definition from the DSM – IV will be used which includes six or more items under the headings of qualitative impairment in social interaction, qualitative impairments in communication, and restricted repetitive and stereotyped patterns of behavior, interests and activities (American Psychiatric Association, 1994).

Asperger's Syndrome.

The definition used by the county in which this study was conducted will be utilized: The definition from the DSM-IV was used which includes a specific number of items under the headings of qualitative impairment in social interaction; restricted repetitive & stereotyped patterns of behavior, interests and activities; and the following requirements: The disturbance causes clinically significant impairments in social, occupational, or other important areas of functioning, There is no clinically significant general delay in language, there is no clinically significant delay in cognitive development or in the development of age-appropriate self help skills, adaptive behavior (other than in social interaction) and curiosity about the environment in childhood, and criteria are not met for another specific Pervasive Developmental Disorder or Schizophrenia (American Psychiatric Association, 1994). The definition for the state department of education includes the following information on Autism which specifically includes AS:

Criteria for eligibility. A student with Autism Spectrum Disorder is eligible for exceptional student education if all of the following criteria are met:

(a) Evidence of all of the following:

1. Uneven developmental profile as evidenced by inconsistencies across or within the domains of language, social interaction, adaptive behavior, and/or cognitive skills; and

2. Impairment in social interaction as evidenced by delayed, absent, or atypical ability to relate to people or the environment; and

3. Impairment in verbal and/or nonverbal language or social communication skills, and

4. Restricted repetitive, and/or stereotyped patterns of behavior, interests, or activities; and

(b) The student needs special education as defined in paragraph 6A-6.03411(1)(kk), F.A.C. (Florida Department of State, 2009).

Students with G/AS.

Students who have been identified as meeting the requirements for identification for both AS and gifted programs will be identified as students with G/AS. Although this term is used in various ways in this study in order to improve readability, the understanding should be that it is always to be applied in a “student first” order rather than an “exceptionality first” order.

Summary

In recent years there has been an increase in the identification of students with ASDs, including AS. Some of these students who have been identified with AS also meet the qualifications for inclusion in the gifted program. Although much is known about the characteristics of students with AS, and much is also known about the characteristics of students with gifted identification, the literature does not have a significant amount of information concerning the characteristics of students who qualify for both of these programs; students with G/AS This is an exploratory study designed to provide thick description of the characteristics of these students in reference to their academic, emotional, and social needs.

While exceptional student education teachers usually have some training to prepare them to work with students with ASDs, most regular classroom teachers and teachers of the gifted have little if any training in this area. This study will address how teachers of students with G/AS attempt to meet the academic, social, and behavioral needs of these students while they are in their classrooms. It will also look at whether there appears to be an appropriate match between these students and the teaching styles found in their classrooms.

The remainder of this study is organized by chapters. Chapter 2 is a review of the literature about AS, gifted, students with G/AS, and related topics. Chapter 3 outlines the research design and methodology. Chapter 4 describes and analyzes the results of the data collection. Chapter 5 presents findings, conclusions, and implications of the study. An appendix follows which includes copies of interview and observational protocols.

CHAPTER 2: REVIEW OF RELATED LITERATURE

The purpose of this literature review is to state what we already know about these issues and to point out what information is lacking in the literature. In this review, I first examine AS, then giftedness, then students with G/AS. I will look at characteristics and classroom and instructional recommendations that have been made for AS, giftedness, and students with G/AS, followed by a review of the section.

Asperger's Syndrome

History.

As reported by Lyons and Fitzgerald (2007), in 1944, in Vienna, Austria, Hans Asperger described a group of four children with unique behaviors and advanced intellect in his thesis "Autistic Psychopathy in Childhood." In 1943, unknown to Asperger, Leo Kanner, in Baltimore, USA, described 11 children with very similar characteristics in his paper "Autistic Disturbances of Affective Contact." Both researchers adopted the term Autism in recognition of the disconnect between the participants and other people. While Kanner's paper was published in English and quickly became well known, Asperger was relatively unknown outside his German professional community until translated by Frith in 1991. Asperger considered the syndrome he described as different from that described by Kanner and noted that Kanner was the first researcher to describe infantile Autism (Lyons & Fitzgerald, 2007).

Kanner described children with obsessive and repetitive behaviors and social deficits, which seems consistent with the present diagnosis of Autism. Kanner was the director of the children's psychiatric service of the Johns Hopkins Hospital where he came into contact with a

pattern of characteristics with which he was unfamiliar. In his follow-up study to the original report (Kanner, 1979), Kanner noted two clear characteristics of his 11 participants: an early onset of extreme difficulty relating to people and situations and an obsessive need for sameness. He emphasized that this appeared to be an innate disability the participants were born with. He also noted that all participants' parents were very intelligent. There was a predominance of males to females (8:3), a difficulty with gross motor skills, and strong ability with fine motor skills. Although Kanner emphasized that the developmental patterns of all participants were extremely similar in the first several years of life, he noted the extreme range of eventual occupational and social development.

Autism was listed as a diagnosis separate from schizophrenia in the DSM-III with the title Infantile Autism (American Psychiatric Association, 1980). Asperger described similar children. However, he found no qualitative impairments in communication and noted some strong skills in mathematics and verbal abilities. Lorna Wing (1981) described Asperger's work and included information from her own observations. Her report brought AS to the attention of many researchers.

Wing (1981) presented Asperger's descriptions of 4 participants as well as her descriptions of her own 34 participants from five to 35 years of age. Asperger's description of the syndrome closely parallels current descriptions, as will be seen in the section addressing characteristics of AS. Asperger reported that milestones in speech were generally achieved at normal developmental times with proper grammar eventually being achieved. Some difficulty in the appropriate use of pronouns was noted while speech was described as pedantic and monotone with long explanations of topics of personal interest. Stereotypical word repetition was noted, as

well as difficulties with subtle humor. Nonverbal communication was awkward with a lack of facial expression, limited or inappropriate gestures, and a tendency to misinterpret nonverbal signs of other people.

Yssel, Prater, and Smith's (2010) presentation of Asperger's descriptions continued by noting a difficulty with social interaction caused by an inability to understand the unspoken rules of social interaction. Difficulties in developing appropriate relations with the opposite sex were described. Asperger described behaviors as peculiar, naïve, and inappropriate because the participants did not appear to have the intuitive understanding of social norms that helps when navigating personal interactions. Motor coordination was described as clumsy with 90% of the cases performing poorly at games requiring motor skills. A difficulty in writing or drawing was also mentioned.

Asperger's work went on to describe skills such as an excellent ability to retain information acquired through rote memory. Intense interest in one or two topics with an impressive accumulation of facts on the topic was listed; however, there was often little understanding of the importance of those facts. Wing (1981) continued to describe Asperger's impressions of his participants' experiences at school. The participants were often bullied for their eccentricities yet sometimes were given some recognition for their advanced abilities.

Wing (1981) disagreed with Asperger on two points: sophisticated linguistic skills and creativity in a chosen field. While Asperger's participants apparently developed speech before walking, Wing found that just less than half of her participants walked at a normal age but were slow to talk while half talked at a normal age but were slow to walk. She also noted that although

the participants eventually developed fluency and a large vocabulary, much of the speech was inappropriate or appeared to be learned from books and inappropriately applied in conversation.

Asperger believed his participants were capable of creativity and innovation in their area of interest, yet Wing (1981) disagreed. Wing believed that the participants developed their thinking in a logical, orderly manner, but usually began their thinking from an unusual starting point. Occasionally, this logical thought process developed into a useful innovation, but more often than not it was an ultimately useless thought progression. Additional descriptions addressed a lack of common sense, rote memory based special abilities, and a lack of imaginative pretend play.

Craig and Baron-Cohan (1999) examined four groups of 15 children each: children identified as autistic, children identified as having AS, children identified as having Moderate Learning Disabilities, and 15 children in the control group. Using the Torrance Tests of Creative Thinking, the researchers looked at a variety of creativity skills. Groups with Autism and with AS both demonstrated overall impairment in creative abilities. While children in both groups could produce novel changes to items they could produce less novel changes than could the control group, and all of those were reality-based rather than imagination-based. When asked to describe foam shapes, both groups provided more reality-based descriptions of the actual shape rather than the animacy descriptions of the control group, indicating a reduced executive function in the students.

Wing (1981) summarized Asperger's participants as demonstrating a cluster of early childhood difficulties: problems with reciprocal social interactions, lack of or difficulty in comprehension and multiple uses of language, and lack of or difficulty using imagination.

Although it was noted that all individuals exhibited a range of behaviors, the participants identified by Asperger displayed marked difficulty in all three areas.

Reflecting on her seminal 1981 paper, Wing (2005) reported that, in her opinion, AS should be included in the Autism spectrum; ASDs are collectively defined based on the absence or impairment of social skills. She listed several positive results of her previous paper: positive publicity of historical characters identified as having AS, an understanding by individuals of their exceptionality, an increase in research on the topic, and the development of specialized services.

Definition.

Currently, the DSM-IV defines AS based on three major diagnostic criteria as presented in Table 1. Criterion I and II address impairment in social interaction and restricted repetitive patterns of behavior, interests, and activities. Note that there is no clinically significant general delay in language, cognitive development, development of self-help skills, curiosity about the environment, or adaptive behavior other than social interaction. The World Health Organization defines AS as follows:

A disorder of uncertain nosological validity, characterized by the same type of qualitative abnormalities of reciprocal social interaction that typify Autism, together with a restricted, stereotyped, repetitive repertoire of interests and activities. It differs from Autism primarily in the fact that there is no general delay or retardation in language or in cognitive development. This disorder is often associated with marked clumsiness. There is a strong tendency for the abnormalities to persist into adolescence and adult life.

Psychotic episodes occasionally occur in early adult life. (International classification of

diseases: ICD-10, 2010). Note that the ICD-10 definition cites similarities between AS and Autism in that they share similar difficulties with reciprocal social interaction. It notes the difference between the two disorders by the lack of delay in language and cognitive development.

Table 1: DSM-IV Definition of AS I

DSM-IV Diagnostic Criterion I

A. qualitative impairment in social interaction, as manifested by at least two of the following:
(1) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
(2) failure to develop peer relationships appropriate to developmental level
(3) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g. by lack of showing, bringing, or pointing out objects of interest to other people)
(4) lack of social or emotional reciprocity

DSM-IV Diagnostic Criterion II

B. restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:
(1) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
(2) apparently inflexible adherence to specific, nonfunctional routines or rituals
(3) stereotyped and repetitive motor mannerisms (hand or finger flapping or twisting, or complex whole-body movements)
(4) persistent preoccupation with parts of objects

DSM-IV Diagnostic Criteria III

C. The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.
D. There is no clinically significant general delay in language (e. g., single words used by age 2 years, communicative phrases by age 3 years).
E. There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior (other than in social interaction), and curiosity about the environment in childhood.
F. Criteria are not met for another specific Pervasive Developmental Disorder or Schizophrenia.

Note: From American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC, p77.

High functioning Autism versus Asperger's Syndrome.

As previously noted, the ICD-10 definition includes clumsiness while the DSM-IV makes no reference to motor skills. Wing (2005) considered AS to be on the Autism spectrum, but a separate condition. Utilizing the National Autistic Society's Database, Wing reviewed multiple abstracts comparing Autism and AS. She found 15 authors who believed the conditions were distinct from each other, 29 authors who did not find notable differences, and 20 authors who ultimately could not state a conclusion.

The Autism Society of America distinguishes AS from Autism based predominantly on the lack of speech delay and the level of difficulties experienced (Asperger's Disorder, 2007). While children with Autism are often viewed as distant and not interested in interaction with others, children with AS have the desire to interact but do not seem to have the ability. While children with autism usually display a delay in speech development, there is by definition no delay in speech development in children with AS. Cognitive ability is also a defining factor when discussing Autism and AS. While many children with Autism exhibit cognitive delays, there is again, by definition, no clinically significant cognitive delay in students with AS. In fact, many students with AS have average to above average intelligence.

High functioning Autism.

There has been considerable debate about a substantial difference between High Functioning Autism (HFA) and AS. HFA can be used to describe children who in very early childhood displayed characteristics of Autism. However, as they matured their cognitive development appeared to progress at a higher level than expected, resulting in better than projected social and communication skills (Atwood, 2007). Generally, students identified as

having HFA must have a full-scale IQ greater than a specific score. The cutoff score varies between 70 and 85, depending on the source. Atwood noted that HFA and AS were sometimes used interchangeably. Studies have presented evidence both supporting and contradicting the difference in diagnosis between HFA and AS.

Sanders (2009) discussed the historical considerations of a qualitative or quantitative difference between HFA and AS. Some research displaying differences was cited, but cautions were issued based on a lack of formal diagnostic procedures and differences in abilities caused by the definition of the DSM-IV. Full-scale IQ scores of children with both diagnoses are often similar, but subtests could be very different. The verbal strength of children diagnosed with Autism may cause clinicians to consider reclassifying the diagnosis because of the strong negative perceptions surrounding Autism and verbal ability. Based on these and similar considerations, Sanders concluded that HFA and AS are not qualitatively different diagnoses but are different manifestations of the same diagnosis.

Macintosh and Dissanayake (2004) reviewed the empirical evidence on the similarities and differences between HFA and AS. They reviewed databases, book chapters, reference lists, and journals to determine if research supported a differentiation. Their study looked at multiple comparative studies addressing multiple topics including epidemiology, language and communication, cognitive profiles, processing, and social behaviors. Noting that even though identified differences appeared to be more severe earlier in life, AS appeared to be on a continuum of ASDs. They concluded that it was premature to state that the evidence either established or refuted the issue conclusively at this time.

Another study looked at language, motor, and cognitive profiles of individuals with AS and HFA (Noterdaeme, Wriedt, & Hohne, 2010). Comparing 57 children with AS and 55 children with HFA, the authors found clear differences between the two groups but explained why the results could be questioned. A significant difference in Full-scale IQ scores (AS 104.1, HFA 94) and Verbal IQ scores (AS 113.3, HFA 97.6) between the two groups was found, however the authors attributed this to the sample size, mean age, and the actual definition of the syndrome rather than a true difference. The differences on the Performance IQ were not found to be significant. More language problems were found in students with HFA but, again, the authors attributed the difference to the definition of the criteria used in the diagnosis of the individuals. Their conclusion was that both HFA and AS should be considered as a single grouping on the Autism spectrum.

The conversations of 29 young people with ASD and 26 typically developing young people were evaluated for atypical behaviors (Paul, Orlovski, Marcinko, & Volkmar, 2009). The individuals with an ASD identification were divided into AS and HFA/PDD-NOS groups. Findings demonstrated similar low levels of conversational behaviors and prosody in both groups. The group with AS displayed a use of excessively formal language and pedantic speech and differed significantly from the normally developing group on four other topics. The HFA/PDD-NOS group displayed significantly more problems with gaze management. It should be noted that in this study HFA and PDD-NOS were combined into a single group.

Social perception and cognitive performance in adolescents and adults with AS and Autism were compared by Holdnack, Goldstein, and Drozdick (2011). Sixteen participants with HFA and 27 participants with AS were evaluated with the WAIS-IV and a social perception

subtest. Individuals with HFA showed lower cognitive function on both the Full-Scale score (HFA 76.3, AS 95.8) and General Ability Index (HFA 80, AS 100.4). The authors noted that in multiple comparisons of sub scores within the IQ test, there appeared to be no significant difference between the participants with AS and the control samples. The participants with AS performed lower than the control participants only on processing speed activities. The conclusion was that there was a significant difference between individuals with AS and those with HFA.

Cognitive differences in pictorial reasoning between the two groups have also been described. In one 2009 study (Sahyoun, Soulieres, Belliveau, Mottron, and Mody) the two groups showed no difference in accuracy during pictorial reasoning activity but did show different response times, resulting in a conclusion that supports linguistic rather than visuospatial tasks in differentiating between the two diagnoses. Koyama, Tachimori, Osada, Takeda, and Kurita (2007) used the Japanese version of the Wechsler Intelligence Scales and Childhood Autism Rating Scale Tokyo Version to compare AS and HFA. They found that participants with AS scored higher on Verbal IQ, vocabulary, and comprehension, and significantly lower on coding. The total Childhood Autism Rating Scale Tokyo Version scores did not differ between the two groups, but participants with AS did score significantly better on verbal communication and nonverbal communication than did the participants with HFA.

While the previous studies addressed psychological descriptors, several studies have addressed biological differences between HFA and AS. One study mapped white matter in the brains of 36 children with ASDs (McAlonan et al., 2009): half were identified through delayed speech as having HFA and half were identified through a lack of speech delay as having AS. The amount of white matter volume was higher in the ASD groups than in controls and higher in

individuals with HFA than in individuals with AS. Individuals with HFA had less white matter in their left hemisphere when compared to controls, while individuals with AS had less white matter in the right hemisphere and more white matter in the left parietal lobe. The authors concluded that etiological factors for the two disorders are likely distinct.

Another study looked at grey matter in the brains of 33 children with either AS or HFA and compared them to 55 typically developing children (McAlonan et al., 2009). The group with HFA displayed less gray matter in four specific regions than the group with AS. Participants with HFA had less gray matter in the fronto-pallidal region while participants with AS had less gray matter in bilateral caudate and left thalamus regions. The authors concluded that there is a neurobiological difference between HFA and AS. As can be seen by these studies, there is evidence to both support and refute the separate diagnosis of HFA and AS. This controversy may make it difficult to define AS in a manner acceptable to most researchers and practitioners in the field.

Asperger's work matched what is now recognized by the DSM-IV as Asperger Disorder. Originally considered to be part of the Autism Spectrum of Disorders, AS is recognized as a separate diagnosis in the ICD-10. In the DSM-IV it is considered one of five Pervasive Developmental Disorders (PDDs) also known as Autism Spectrum Disorders (ASDs). There was a proposed revision to the fifth edition which would have subsumed AS into the existing disorder of Autism Spectrum Disorder (DSM-IV Proposed Revisions, 2010). However, it appears AS will stay as a separate diagnosis (DSM-IV Proposed Revisions, 2010,. The reasoning behind the debate was that, other than the absence of communication difficulties and cognitive delay, AS and Autism are nearly identical (Sanders, 2009). At this time, the DSM-V publication date has

been moved to May of 2013 (American Psychiatric Association, 2009). As that debate has not been concluded and the current DSM-IV does differentiate between Autism and AS, AS will be treated as a distinct condition in this study.

Prevalence.

Wing and Potter (2002) looked at the prevalence of Autism to discern whether there was a rise in the rate of the disorder. By looking at international studies of age-specific rates from 1966 through 2008, a table was developed which noted a low rate of 0.7:10,000 in Wisconsin in 1972 and a high of 60:10,000 in Sweden in 1999. The criteria used for Autism or other ASD diagnoses included Kanner's early infantile Autism, DSM-III, ICD-10, and DSM-IV. The two studies which gave combined rates for AS and HFA showed rates of 36:10,000 in Sweden, 1993, and 20:10,000 in 2000 in Wales. The authors looked at a variety of reasons for the increase in incidence and prevalence, including changes to the criteria, differences in methods, increased awareness, recognition of co-morbid conditions, development of specialist services, age of onset, and a possible true increase in numbers. Their conclusion was that most, if not all, of the rise in ASD diagnoses can be explained by changes in diagnostic criteria and greater awareness in parents and professionals, and therefore does not demonstrate a true rise in prevalence.

Frombonne (2003) reported a rate of 34:10,000 ASD identification in Atlanta, Georgia, although this was considered likely to be an underestimation of the true rate. Suggested rates varied from 41:10,000 to 60:10,000. Based on a comparison of estimates of ASD prevalence in the late 1970s at 20:10,000 to the current studies, it was concluded that rates are possibly three to four times higher than 30 years ago. Frombonne states that 18% of the children identified in the study as having ASD had not been diagnosed or even been suspected of having a problem before

the study, which lead him to suggest that nearly 20% of children with an ASD have not yet been identified. Reasons for this increase included differences in definitions and methods for finding cases. It was also noted that while the prevalence of Autism increased during a given time period, the prevalence for mental retardation decreased, indicating that previous diagnoses of mental retardation were being replaced with diagnoses of Autism.

Frombonne (2005) looked at the range of prevalence estimates for Autism and other related ASDs. Forty-three international studies from 1966 through 2004 were reviewed. Prevalence estimations for autistic disorders ranged from 0.7:10,000 to 72.6:10,000 with small-scale studies reporting higher prevalence. Prevalence rates for PDD-NOS reported at 20.8:10,000 and combined PDDs as at least 36.4:10,000. This study also reported one of the few incidence rates of AS as 2.6:10,000. The authors noted this was difficult to establish from existing data, especially considering that it had only recently been identified as a separate diagnostic category in the DSM-IV and ICD-10. It was reported that a conservative estimate would be that the rate for AS is approximately 1/5 that of Autism.

The CDC (2007) released a report on ASDs in eight-year-olds from 14 communities in a 2002 study in the United States. In 2000, six communities were assessed with the prevalence rate of 6.7:1,000 while in 2002 fourteen communities averaged a prevalence rate of 6.6:1,000. The study noted that for several decades the best estimates for Autism prevalence were between four and five per 10,000 children, while recent international studies show a range of ASD between 1:500 and 1:166. It was also noted that they were not able to determine if there was a true increase in ASDs or if the prevalence rate increases were due to better identification and better studies. The conclusion was that one in 150 children had been identified as having an ASD.

A CDC report by Rice (2009) concerning the same study found an overall prevalence of 9:100 eight-year-olds with ASDs ranging from 4.2 in Florida to 12.1 in Arizona and Missouri. Male to female ratio ranged from 3.2:1 to 7.6:1. In 2006, the ratio was approximately 1:110 which showed an increase of 57% from the 2002 surveillance with a range of 27% to 95%.

The CDC (2007) reported that all 10 communities participating in the study observed an increase in rate. Between 1:80 and 1:240 participants, with an average of 1:110, individuals were recognized as having an ASD. No single explanation of the changes could be pinpointed. Nine of the 11 reporting communities found increases among boys and four of the reporting communities found an increase in girls with an ASD average rate increase for boys of 60% and girls of 48% in 2000. Forty four percent of children with an ASD also were diagnosed with an intellectual disability in 2004 while the percentage in 2006 was 41%.

While prevalence rates of AS are very difficult to find, The National Institute of Neurological Disorders and Stroke (2011) reported that boys were much more likely to be diagnosed with AS: three to four times more likely. While pointing out that the incidence of AS has not been well established, a conservative estimate was given at 2:10,000. This compares with Frombonne (2005), who estimated the rates at 2.6: 10,000. These were the only prevalence rates found in the literature.

Causes.

Some genetic and biological causes for Autism and AS have been suggested. Comparative minicolumnar morphometry of a small number of eminent scientists was conducted (Casanova, Switala, Trippe, & Fitzgerald, 2007). Minicolumns are the smallest unit in the brain that can process information. It was found that the descriptions of these minicolumns in three

eminent scientists were similar to the minicolumnar descriptions for AS. Casanova, Switala, Trippe, and Fitzgerald stated, “A mini-columnar phenotype that provides for discrimination and/or focused attention may help explain the savant abilities observed in some autistic people and the intellectually gifted” (p. 557).

Mirror neurons, which may be the key to our ability to empathize and imitate, have been linked to Autism, as brain imaging studies have shown that there is a significant difference between neurotypical participants and participants with Autism (Dingfelder, 2005.) A study by Dapretto et al. (2005) looked at mirror neuron dysfunction in children with ASDs. Functional magnetic resonance imaging was used to look at 10 high functioning children with ASDs and 10 typically developing children matched by age and IQ. Participants were shown faces expressing different emotions while being asked to either imitate or observe the faces. Neurotypical children displayed activity similar to expected adult brain activity. Participants in the ASD group did not display activity in the expected areas but showed greater activity in other areas. The authors proposed that a malfunctioning mirror neuron system could explain the social deficits found in ASD.

In a review of the genetics of Autism (Muhle, Trentacoste, & Rapin, 2004), it was reported that in twins studies there was a 60% concordance for Autism in identical twins compared to 0% in fraternal twins, which indicated that genetic factors are the main cause. When a broader range of characteristics were evaluated for, which included communication and social disorders, the numbers increased. Rates in identical twins increased from 60% to 92% and fraternal twins increased from 0% to 10%. The authors suggest that this indicates interaction between multiple genes could cause what they refer to as “idiopathic” Autism, but that

epigenetic issues and environmental modifications can affect Autism-related traits. The authors suggest that at least 10 genes interact to affect the creation of Autism.

Silverman et al. (2002) found evidence for familiarity in Autism and ASDs. Studying 212 cases where there were multiple cases of ASDs reported among siblings demonstrated that specific symptoms tend to run in families. Participants were assessed using the Autism diagnostic interview and symptom and language scores were used to determine similarity among siblings. The specific symptoms included repetitive behavior, nonverbal communications, phrase speech, and age at onset of phrase speech. The authors reported variations in the level of difficulties within the symptoms.

Gillberg and Cederlund(2005) studied AS by looking at familial, prenatal, and perinatal factors. The records of 100 Swedish males diagnosed with AS were reviewed based on the original descriptions found in Asperger's 1944 paper. In the study population, a syndrome or chromosomal abnormality was found in 8%, prenatal or perinatal risks were found in 13%, a combination of prenatal or perinatal risk and family history was found in 11% participants, and family history was found in 55% of the youth. Seventy one percent had one or more first or second-degree relatives who had, or were suspected of having, some form of ASD. The conclusion states that there were clinically strong indicators of familial or prenatal and perinatal risk factors in 87% of the cases and that this indicated familial loading for autistic disorder.

Silberman (2001) looked at the possibility of a genetic basis to the increase of Autism in Silicon Valley. In 1993, California listed 4911 cases of Autism and in 2001 they listed 15,441 cases. Silberman hypothesizes that the increase was due to the large number of high-tech workers concentrated in a small area, many of which according to Silberman had AS. Previously,

it likely was difficult for a person with AS to locate a mate with similar characteristics, but the boom in high-tech jobs had made it easier to come in contact with many other people sharing similar behaviors who then may have children who exhibit the same characteristics.

Warner (2011) discussed the situation of Simon Baron-Cohen, director of the Autism Research Centre at the University of Cambridge. Baron-Cohen's common cognitive profile is found in people with Autism, including systematizing which is focusing on systems and how they work. He believed that systematizing along with empathy deficits create a profile that would create clusters of individuals with strong math, science, and technology skills. His "assorted mating theory of Autism" describes the process by which people are attracted to a mate based on their own personality traits. Due to the genetic component, assorted mating of persons with ASD would likely produce children with ASD. He has also stated that all of us have systematizing traits and that Autism is simply an extreme case of this. Baron-Cohen attributes the high percentage of students with ASDs in an area of the Netherlands known as the Dutch Silicon Valley to this concentration of high-tech workers with the cognitive profiles of systematizing.

In the first few years of this century there was a great deal of press over an association between Autism and the vaccination against measles, mumps, and rubella. Special panels were created, United States House Government Reform Committees were created (Subcommittee, 2003), and studies both supporting and rejecting the connection were reported. In 1999 The Lancet issued a commentary stating that there was a negative association between the vaccine and Autism (DeStefano & Chen, 1999). Although bowel abnormalities were reported by some to be connected to Autism, the information available from multiple reports and the Working Party

of the UK Radical Research Council found that there was not enough evidence to support a causation effect. It is now commonly accepted that the vaccine does not cause Autism.

Characteristics.

Characteristics of AS have been well documented in multiple studies since its recognition. The definitions from the DSM-IV and ICD-10 provide the basic characteristics: impairment in social interactions and unusual patterns of behaviors and interests. The DSM-IV describes impairment of social interaction by noting difficulty with the following: nonverbal behaviors such as eye to eye gaze facial expression, postures, and gestures; difficulty developing peer relationships; a lack of spontaneous sharing with others; and a lack of social or emotional reciprocity. It describes patterns of behavior by including preoccupations or patterns of interest that are abnormal in intensity or focus, inflexible adherence to routines, repetitive or stereotyped movements, and preoccupation with parts of an object. The ICD-10 states that AS displays abnormalities with social reciprocity similar to those found in Autism, unusual interests or activities, and motor clumsiness.

Cognitive/academic.

The 2000 study of the cognitive profiles of 37 youths with AS (Barnhill, Hagiwara, Myles, and Simpson) analyzed scores on the Wechsler Intelligence Tests: WPPSI-R, WISC-III, or WISC-R, depending on their age. Participants were 35 boys and two girls ranging in age from three years to 14 years old. The Full-scale IQ mean score was 98.2, the Verbal IQ mean score was 99.32, and the Performance IQ mean score was 96.72, all of which fell in the average range. Sixty four percent of the youth scored higher on their Verbal than on their Performance IQ, and

33% scored higher on their Performance than on their Verbal IQ. Of the total group 21.64% of the participants scored in the superior or very superior range on their Verbal IQ and 16.67% scored in the same ranges on their Performance IQ. The verbal subtests in information, similarities, and vocabulary had the highest mean scores, while the arithmetic and comprehension subtest resulted in the lowest verbal scores. The study demonstrated cognitive patterns of participants with AS that were typical of individuals without ASDs.

In an overview of characteristics of individuals with AS (Myles & Simpson, 2002), cognitive characteristics included relative strengths in nonverbal reasoning, spatial visualization, and perceptual organization, while visual motor coordination and visual memory were found to be areas of weakness. The authors noted that to date no single cognitive profile could be described for AS.

Myles et al. (2007) looked at 156 young people with AS to identify multiple profiles including cognitive areas. Participants were 12 to 18 years of age with 33 females and 123 males who received their diagnosis based on the DSM-IV. Their mean Full-scale IQ score on the Wechsler Intelligence Scales was 102.63 with a standard deviation of 22.25. Ten percent had IQs greater than 130 and three percent had scores in the 60s. It was found that participants had a significantly higher Verbal IQ than Performance IQ (verbal-109.28 SD-19.62, performance-99.42 SD-19.78). Full-scale, Verbal, and Performance mean IQ scores fell within the average range. It was noted that three participants had either a Performance or Verbal IQ score in the average range but did not have a Full-scale IQ in the average range.

Academic achievement in individuals with AS has been looked at in both general context and in specific academic areas. Griswold, Barnhill, Myles, Hagiwara and Simpson (2002) noted

that 21 individuals with AS were given a battery of tests in order to develop a profile of academic achievement. Verbal IQ scores on the WISC-R ranged from 55 to 146 with a mean of 99.07, performance IQ scores ranged from 59 to 137 with a mean of 101.14, and full-scale IQ scores ranged from 66 to 144 with a mean of 100.14. Scores on an academic achievement test and problem solving/language-based critical thinking tests showed an exceptional range of abilities. The mean language composite academic achievement score was within the average range, but the critical thinking test scores were an average of two standard deviations below the mean. As this test is designed to measure problem solving and critical thinking, these are areas in which the students demonstrated great difficulty. Participants demonstrated relatively low scores for numerical operations and listening comprehension while demonstrating relative strengths in oral expression, basic reading, decoding words, problem solving, and language-based critical thinking. A key point made by the authors was the extraordinary range of academic achievement scores.

The reading performance of 16 students with AS was examined by administering a classroom reading inventory (Myles et al., 2002). Ages ranged from six years six months to 16 years nine months and included 14 boys and two girls. Full-scale IQ scores ranged from 66 to 133. Reading levels of students were compared to actual grade placement to determine if significant differences existed between grade level placement and various reading levels. Significant differences were found between actual grade level and independent reading level and between grade level and silent reading level. With the exception of frustration reading level, students' reading levels were lower than their actual grade level placement. There was a statistically significant difference in types of questions answered, as students were able to

correctly answer a higher percentage of factual/literal questions (mean 60.33) than inference questions (mean 38.71).

The narrative ability of 28 students with HFA and AS was compared with 22 neurotypical students to determine the ability to formulate narratives as a primary means of communication (Losh & Capps, 2003). When compared with students with HFA, the students with AS showed no significant differences for any measure, therefore both groups were combined into a single group for analysis. Verbal IQ was not found to be correlated with any of the measures of narrative, Theory of Mind, or emotional understanding. The HFA and AS students compared similarly to the controls on length, number of personal narratives, and topics of personal narratives. A difference was noted in themes regarding children's favorite activities, where neurotypical children related narratives concerning sports more frequently and children with HFA or AS focused on computers. Compared to the controls, students with HFA or AS performed fairly well in the storybook task, which is highly structured, yet had difficulty in narrating personal experiences in a less structured task. The authors noted that even highly intelligent participants with HFA or AS had difficulty narrating integrated and elaborate personal experiences and demonstrated less use of causal language. Actual performance on all measures varied considerably.

Chiang & Lin (2007) reviewed the literature on the mathematical ability of students with AS and HFA. In this study there was no distinction made between students with AS and HFA. Standardized achievement tests were used to compare this population with a normed population. The mean from eight studies on mathematics scores of 332 students was 92.5, which is in the average range, indicating that most students with AS and HFA have average mathematical

abilities. By comparing single subtest scores to an average of subtest scores on the WISC, it was determined that students with AS and HFA have a relative weakness in mathematics, though it is relatively small. Some participants' scores were above the 99th percentile, which suggested that some of the participants were mathematically gifted.

Social.

Difficulty in social skills is an identifying characteristic of AS; it is the first characteristic listed in both the DSM-IV and the ICD-10 definitions of AS. Qualitative abnormalities in social interactions often define AS. Atwood (2007) goes so far as to say that in solitude children do not display the identifying characteristics of AS; when they are alone there is no qualitative impairment in social interaction. Social interaction and social understandings require empathy and the ability to read social cues, skills which in students with AS are not considered areas of strength.

Klin and Volkmar (1997) describe individuals with AS as socially isolated. They are aware of other people but are not able to relate appropriately. Pedantic speech on narrow topics of interest tends to bore listeners and the individual with AS does not pick up on the nonverbal cues shown through gestures, body language, and facial expressions. Although they want to interact with others, they simply do not have the skills to do so. Insensitivity, lack of empathy, overly formal speech, and literal comprehension impede success. Individuals with AS want to interact with others, whereas individuals with Autism are often withdrawn and do not desire social relationships.

In a large-scale study that described characteristics of 156 students with AS (Myles et al., 2007), adaptive behavior scales indicated that individuals with AS did not show significant

difficulties in adaptive behavior with the exception of social interaction. The Vineland Adaptive Behavior Scales indicated that participants had low to moderately low scores on adaptive behaviors including communication, daily living skills, socialization, and maladapted behavior. The Behavior Assessment System for Children is composed of three sections addressing leadership, social skills, and study skills. A statistically significant difference was found between perceptions of parents and teachers in the areas of leadership and social skills. Parents indicated their children were at risk in the areas of anxiety and depression. All teachers indicated the students were average in all subscales.

Difficulty in perceiving nonverbal communication in facial expression is a common characteristic of individuals with AS (Atwood, 2007). A study was conducted by Lindner & Rosen (2006) to examine how students with AS decoded emotion through facial expression, prosody, and verbal content. Fourteen youths with AS and 16 neurotypical peers were evaluated through The Behavioral Assessment System for Children, Peabody Picture Vocabulary Test, Asperger's Syndrome Diagnostic Scale, Perception of Emotion Test, and a demographic questionnaire. Scores on the Asperger's Syndrome Diagnostic Scale confirmed the AS diagnosis with a mean score for the AS group of 102.29 and mean score for the comparison group of 43.50. With the exception of Aggression and Somatization, statistically significant differences were found between groups on all of The Behavioral Assessment System for Children Scales. The students with AS scored lower than the control group in areas which indicate adaptability, leadership, and social skills. The Peabody picture vocabulary test scores did not differ significantly between groups. The perception of emotion test results showed that the group with AS correctly identified fewer emotions for static facial expression, dynamic facial expression,

and prosody than did the control group. There were no group differences for the verbal content modality or the combined modality. As students' ages increased, their number of correct identifications of emotions also increased. There was no statistically significant difference in the performance of the two groups in identifying happy, angry, sad, and neutral. Conclusions found that both groups had higher than average receptive languages. Students with AS experienced more difficulty identifying emotions when there were fewer verbal cues; they selected neutral in these situations more often than the control group. In summary, the author stated that adolescents with AS experienced difficulty in understanding emotion conveyed through facial expressions and tone of voice, possibly because students with AS rely much more heavily on verbal cues in social situations than do their neurotypical peers.

A 2010 study looked at a variety of measures in children with several diagnoses, including AS (Semrud-Clikeman, Walkowiak, Wilkinson, & Minne, 2010). The research examined direct and indirect measures of social perception, behavior, and emotional functioning. The participants were 342 children from age 9 to 16, with 240 males and 102 females. Five groups of children were identified for the study: control, AS, nonverbal learning disorder, ADHD, and ADHD predominantly inattentive, with the AS group composed of 52 individuals. The diagnosis of AS was confirmed using DSM-IV criteria. The AS group displayed markedly higher numbers of symptoms on the DMS-IV compared to all of the other groups. Children with AS had difficulty identifying emotional and nonverbal cues on a measure of direct social perception. Students with non-verbal learning disabilities and AS groups showed many similarities in social perception and related social disorders. The higher the number of AS symptoms displayed, the lower the performance on a measure of adolescent social perception.

Students in the AS group also showed more difficulty in the areas of externalizing behavioral problems, symptoms of sadness, withdrawal at home and school, and demonstrating signs of sadness. While the authors concluded that nonverbal learning disorders and AS were related social disorders, the demonstrated characteristics of AS students differed in severity and focus.

Stokes (2008) described the social relation difficulties children with AS display.

According to Stokes, there is a lack of effectiveness in social interactions rather than a simple lack of interaction. Situations are misread, resulting in difficulties with social reciprocity; if the child doesn't understand what the other person means, they cannot respond appropriately.

Students with AS can initiate conversations, yet often did not understand that the conversations weren't just about them; they needed to listen and respond to the other person's interests, not just their own. Sometimes the need for quiet and a reduction in stimulation led the child to separate themselves from their peers. Stokes noted that social rules which most people learn without direct instruction were not easily acquired by the student with AS. The social rules they did learn may be applied very narrowly to specific situations and the student may not be able to generalize the rule to new situations. Because of the lack of response to peer pressure, a student with AS may not be concerned about appropriate dress, hairstyles, hygiene, etc., which makes social acceptance more difficult.

Polirstok and Houghteling (2006) discussed behavioral interventions for students with AS. A weak Theory of Mind kept the student with AS from viewing situations from the point of view of another party. This resulted in an inability to develop reciprocity with others. Students with Theory of Mind deficits would often come across as egotistical, insensitive, and lacking empathy. Theory of Mind has been connected to the ability to read facial expressions, an area in

which individuals with AS find difficulty. Many individuals with AS considered themselves social failures but did not recognize why this was so. Theory of Mind can be taught to individuals with AS yet even those who learned seemed to still have difficulty applying it appropriately in order to accomplish their goals. The authors noted that Theory of Mind did develop in individuals with AS, but it was often developed much later than in typical children.

Theory of Mind was evaluated in adults with HFA and AS (Spek, Scholte, and Van Berckelaer-Onnes, 2010). The participants were adults with HFA (32), AS (29), and a neurotypical control group (32) in the Netherlands. Ages ranged from 18 to 60, and Full-scale IQ means were HFA 110.2, AS 114.5, and neurotypical 115.9. The Dutch version of the Autism diagnostic interview was used to determine placement. Three assessments evaluated Theory of Mind: Reading the Mind in the Eyes Test, Strange Stories Test, and Faux-Pas Test. The group with HFA and AS performed significantly lower than the control group on the Eyes test and the group with AS performed significantly lower on the Faux-Pas test. Empathy quotient scores were lower for the AS group than for the control group. The AS group also self-reported more Theory of Mind problems than the control group. Conclusions drawn were that persons with AS have more difficulty with Theory of Mind than do neurotypical individuals.

Myles and Adreon (2001) described behavior problems of adolescents with AS. High levels of stress and anxiety were common and depression was prevalent; 70% of the participants in one study were taking antidepressant medications. Failure to understand expectations, feeling like a social failure, excessive sensory input, and teasing or bullying contributed to behavior problems. Many teenagers with AS were highly distracted by their environment and could appear to be inattentive. Motor skills may be weak which resulted in negative peer comments and low

self perception. Frequent sudden mood swings were not uncommon. The authors noted that not all adolescents with AS had behavior problems, but many students did indeed experience inappropriate behaviors.

In *The Oasis Guide to Asperger's Syndrome: Advice, Support, Insight, and Inspiration* (2005), Bashe & Kirby included a chapter describing what AS looked like. Headings included: preoccupation with a special interest, noticeably awkward one-sided conversations, poor social use of language, inability to correctly interpret or express nonverbal communication, lack of empathy, negativistic worldview, and difficulty relating socially. The authors went on to list several other documented characteristics such as general anxiety, emotional volatility, sensory integration problems, auditory integration problems, motor clumsiness, atypical responses to stimuli, problems with executive function and organization, difficulty with transitions, and an inability to generalize. Bashe and Kirby (2005) gave descriptions and examples of each of these characteristics. An interesting note was made that, individually, any of these characteristics may not be considered a serious problem. However, mixing several characteristics in the already documented identification characteristics of AS, the situation could become untenable for the individual with AS.

Preoccupation with a specific area of interest is an identifying characteristic of children and adults with AS. In a survey of parents of children with AS, 100% reported that their child had at least one special interest, as did 99% of the parents of adults and teenagers diagnosed with AS (Bashe & Kirby, 2005). Some of these interests were typical for the age – dinosaurs and trains for children, computers and video games for adults. However, some interests were not peer-accepted – bleach bottles, road signs, and telephone books for example. In the study, 57%

of the parents interviewed had tried to curtail, or in some way control, their child's special interest because of unpleasant experiences connected to the child's special interest.

When given the choice, the person with AS will focus their learning time on their areas of interest, to the exclusion of almost everything else. Naturally, a great storehouse of information on the topic would evolve and the person with AS may feel compelled to share their interest with others. "Walking Encyclopedia" and "Little Professor" would be appropriate descriptions in this case (Atwood, 2007; Bashe & Kirby, 2005). This special area of interest can fill multiple roles for persons with AS, including fun, security, stress reduction, interest, relaxation, facilitation or avoidance of social interaction, and development of a special talent or skill (Atwood, 2007; Bashe & Kirby, 2005). When a child with AS talks about their interest it typically is a very one-sided conversation with little input from the other person who will often find the monologue uninteresting (Bashe & Kirby, 2005; Myles & Adreon, 2001). On the other hand, these same special interests can be used to help a student with AS learn needed skills in the classroom and may lead to a fulfilling career in the area of expertise (Atwood, 2007; Betts, Betts, & Gerber-Eckard, 2007; Grandin, 2006).

Comorbidity.

Part of the difficulty in correctly identifying AS is that many other conditions may mask or confuse a diagnosis (Henderson, 2001). Wing (2005) pointed out that there were many similarities between the DSM-IV and ICD-10 identification criteria for AS and for schizoid personality disorders. Also, a psychiatric condition may mask the AS. Some motor and posture disorders can resemble catatonia and occur in roughly 10% of individuals with ASDs. Other comorbid conditions include schizotypal and obsessive-compulsive disorders. Wing (1981)

described how other personality issues could be confused with or interfere with a diagnosis of AS. Paranoid psychosis, obsessional neurosis, and depression may be present and require a dual diagnosis.

Bashe and Kirby (2005) list several learning disorders commonly found with AS. Dysgraphia is a difficulty with written language which may result in messy handwriting or a painstaking effort to make perfect letters, thus requiring an exorbitant amount of time to complete assignments. Dyscalculia is a difficulty in solving or understanding mathematical calculations, and a significant number of children with AS have difficulty with mathematical problem solving. Dyslexia is a language difficulty which results in poor understanding of words and difficulty decoding. Nonverbal Learning Disability is a learning profile with cognitive, physical, language, and emotional components. Hyperlexia is an ability to read words at a level far beyond the grade placement, yet there may be difficulty understanding and retaining what has been read. Central Auditory Processing Disorder is a difficulty in listening to or comprehending auditory information. These learning disorders can complicate both the identification of and the treatment of AS symptoms. Care should be taken that both the underlying diagnosis of AS and the comorbid learning disorders be considered when evaluating a student with AS (Bashe & Kirby, 2005).

When studying psychiatric comorbidity in individuals with, 37 individuals with AS were evaluated (Mukaddes and Fateh, 2010). The Turkish participants included 32 males and five females with an age range of six to 20 years. Psychiatric disorders which arose after the study during follow-ups were also included. The Turkish version of the WISC-R was used and all participants were followed for one to five years with regular visits that varied between every

week to every two months. Ninety-four percent of the participants had at least one additional psychiatric disorder and 70% had two or more additional diagnoses. Fifty-four percent were identified with anxiety disorders, 48% with disruptive behavior disorders, and 37% with new disorders. The disorders were categorized as anxiety disorders, mood disorders, disruptive behavior disorders, tics, suicidal behaviors, and other psychiatric disorders. The authors concluded that the high rate of comorbidity in AS and psychiatric conditions suggest that individuals with AS have a high risk for developing psychiatric disorders. It was noted that the percentages may be artificially high because only individuals with serious impairments may come to the attention of clinicians in non-Western developing countries.

Studies of adolescents with AS have found a relationship between social attribution and depression (Barnhill, 2001). Thirty three participants identified with AS included 30 males and three females ranging in age from 12 years to 17 years old. IQs ranged from 71 to 144 with a mean IQ of 99.19 for 32 participants. Four of the participants had IQ scores of 130 or greater. Twelve participants were in psychotherapy, two received speech or language services, four were in occupational therapy, and 31 were being treated with physician-prescribed medications for behaviors related to their AS. The student social attribution scale was used to determine attribution for social failure. The study found that the more intelligent the participant was, the less they attributed social success to chance and task difficulty factors, probably due to increased cognitive awareness of the many issues needed for social success.

Geller (2007) found that ADHD is a common diagnosis in individuals with AS. She noted that occupational therapists may diagnose sensory integration disorders or motor problems and speech language therapists may diagnose language difficulties. Anxiety and depression may

be present. Nonverbal learning disability was listed as a diagnosis that had considerable overlap with AS. Cedarlund and Gillberg (2004) studied 100 males with AS and found that 51% of the participants had a nonverbal learning disability which they defined as a Verbal IQ greater than 15 points higher than Performance IQ.

A 2010 study of measures of social perception, behavior, and emotional functioning compared participants with AS, ADHD, and nonverbal learning disability (NLD) (Semrud-Clikeman, Walkowiak, Wilkinson, & Minne, 2010). NLD characteristics include deficits in understanding facial expressions and gestures, social inferences based on emotion, and understanding social cues. Individuals with NLD often have difficulty with math calculation and problem solving, along with reading comprehension difficulties. Visual spatial skills are also impacted. Generally, children with NLD do not feel the need to adhere to rules or routines and do not generally have stereotyped interests. This study of 342 children used multiple diagnostic tools to look at social perception. Results suggested that NLD and AS are very similar in many, though not all, areas.

Adolescents with AS.

Although much of the recent research on AS has been focused on very young children, adolescence brings on special problems for students with AS. Myles and Adreon (2001) wrote in depth about AS and adolescence. Their premise was that the difficulties of having AS were magnified by the additional difficulties that come with being an adolescent. They felt the greatest impact for adolescent students with AS was in the areas of cognition, language and social issues, sensory issues, behavior, and motor skills. Most students with AS have average to above average intelligence. Unfortunately, many educators believe that IQ is the best predictor of school

success and do not understand why a student with the mental ability to do advanced work is unable to handle a schedule change, keep his backpack organized, or write legibly. The authors cautioned that this adds to the stress students with AS already are dealing with.

As stated earlier, AS students often have lower emotional maturity, Theory of Mind deficits, and a lack of generalization skills. Add this to the already difficult hormonal and peer situations in adolescence, and the difficulties for middle school students with AS can become extremely challenging. (Myles & Adreon, 2001). While rote memory can appear very impressive, it may mask lower-level comprehension skills which teachers may find difficult to understand. The authors also point out that many adolescents with AS struggle with executive function, which keeps them from being able to plan, organize, multitask, and handle multiple classroom expectations. Because middle school is the time when workload and complexity increase substantially, students with AS are at a serious disadvantage.

Grandin (2008), a well-known professional with AS, reported that as a child she was hyperactive, but as she reached puberty she felt “nervous” and her behavior became much worse. She described anxiety attacks which began shortly after her first menstrual period that included a pounding heart, sweaty palms, and a feeling of restlessness. Medications did not help, and her nervousness seemed to progress in cycles. She described her feelings during puberty as feeling like she had a constant sense of stage fright. Grandin noted that she was desperate for relief which she usually found through physical pressure or activity.

Language and socialization issues are another area for which Myles and Adreon (2001) express concern. Weak pragmatic communication affects socialization, which is a major focus of many adolescents’ lives. Not being able to recognize the teacher’s stern look, the inability to

smoothly carry on a conversation with a peer (especially one of the opposite sex whom you are interested in), and difficulty understanding the hidden agenda complicates the lives of many adolescent students with AS.

Myles and Adreon (2001) also described the sensory overload found when changing classes, going to the cafeteria, and dressing out in physical education class – all difficult areas for students with AS. Between the excessive smells, touching, multiple conversations, noise level, and the need to physically navigate a crowded area, many students with AS who were progressing in elementary school may begin struggling once they enter middle school.

According to Myles and Adreon (2001), high levels of anxiety and stress, often leading to depression, are prevalent for these students in middle school. Add to that the distractibility and inattention that many students with AS display, coupled with possible fine and gross motor skill deficits, and it becomes apparent why middle school can become an extremely anxious time when the usual turmoil of adolescence is exacerbated by the special needs of students with AS.

Autism and AS are currently popular topics in the media. The New York Times ran an article entitled “Finding Out: Adults and Autism; An Answer, But Not a Cure, for a Social Disorder” (Harmon, 2004.). “The Big Bang,” a television program whose main character is a brilliant scientist with all the characteristics of AS, is hugely popular. CNN (Rowe, 2003) programmed a week-long series on Autism in spring of 2007. Celebrities are speaking out about their children with Autism, and the general public is becoming more aware of the issues involved with Autism. AS has, as a by-product of Autism’s increased visibility, also become better known. Self-proclaimed “Aspies” have websites, books, support groups, and social clubs. Recognition of successful individuals with AS has taken some of the stigma associated with

Autism away from the condition. Whether this carries over into the classroom, and whether these students feel less antagonism directed towards them than before, remains to be seen.

Teaching implications.

Temple Grandin (2002) has published a list of 28 teaching tips for children and adults with Autism. Having lived with Autism, she can provide personal insight into what works and what doesn't. She found that structure was necessary, as well as teachers who were firm but gentle. Her suggestions included teaching tips (remember that many students with ASDs are visual thinkers, avoid long verbal instructions, use concrete visual methods, remember to enunciate, using black print on colored paper to reduce contrast), sensitivity issues (protect from sounds that hurt, visual distractions and fluorescent lights are problems, some children can see the flicker on monitors), motor issues (type rather than handwrite, sensory input issues, kinesthetic learning of vocabulary, difficulty using a computer mouse), and other tips.

Bashe and Kirby (2005) provided an extensive list of suggested solutions for school problems connected with AS. Suggestions dealt with the areas of expressive language, receptive language, insistence on sameness routines, problems with transitions and change, impaired social interaction, excessive focus on restricted range of interest, poor concentration, poor organizational skills, poor motor coordination, emotional vulnerability, sensitivity to sound, sensory sensitivities, and difficulties with school related physical activities and sports. Some suggestions were very specific, such as teaching turn taking, while some were more general, such as considering that the student's resistance to change may be an indication of stress. As the recommendations were extensive, specific teachers and adults working with students with AS

could access the suggestions in the manner of a handbook. Many of the suggestions required one-on-one instruction and intensive assistance.

Atwood (2007) reported that individuals with AS needed guidance in understanding and producing conversation. There must be explanations of social context and conventions such as those found in Social Stories developed by Carol Gray (Gray Center, 2012). Social Stories are needed to provide guidance for existing situations and for learning new information. An important advantage of Social Stories was that the individual with AS could practice the new conversational skill in a safe and controlled environment before having to apply it in an unknown situation. Care had to be taken to identify the specific needs of the student and work must proceed to meet those needs. Teaching the conversational cues to let students know there's been a change in the direction of the conversation was an essential aspect of Social Stories. It was noted that rescue questions might be needed to help repair or clarify conversations. Working in pairs to practice newly learned conversations was also recommended. The author noted that teenagers may be reluctant to practice Social Stories unless integrated into drama of some kind. Comic Strip Conversations, also by Carol Gray, could be used to put thoughts and feelings into a pictorial or visual context. Applying the newly learned skills in context was very important (Atwood, 2007).

Atwood (2007) also provided suggestions for working with students on improving literal interpretation by specifically teaching common idioms and metaphors. He suggested that prosody could be developed by teaching both grammatical function and how tone of voice affects meaning. Auditory perception distortion issues may require the teacher to repeat,

simplify, or reword instructions and information. Allowing time between comments for students to internalize information was also helpful.

Supports for students with AS in middle and high school are essential to help the student with the difficulties faced in middle school. Myles and Adreon (2001) provided extensive information and tools to be applied flexibly as students required them. The authors suggested that goals for students with AS should include learning social skills and engaging in social interactions, daily living skills, problem solving skills, academic content, and developing an understanding of self. To do this, multiple steps would likely be required. Social supports are critical for students with AS. They must be made aware of the hidden curriculum, try to develop a circle of friends, and receive social skill instruction, possibly through acting lessons and social stories. Academic modifications should provide the routine needed to make students with AS more comfortable and less stressful during the day. Modifications can be made in classroom assignments, note taking, graphic organizers, and homework as needed. Providing help with areas of school that are unstructured was a priority. Some environmental supports that have been effective for adolescents include preferential seating, organizational strategies, a safe person or place, and visual supports. School situations like bus, lunch, and changing classes were also listed as difficult times for youth with AS.

Giftedness

History and definitions.

Various political, social, and economic factors have affected the growth or decline of gifted education in the U.S. since the mid-1800s. These factors, combined with research and

personal opinions of prominent figures, have resulted in a mercurial path for the evolution of gifted education. Prior to the mid-1800s, most education was for sons of wealthy families. Davis and Rimm (2004) described the early evolution of gifted education in America. In 1868, St. Louis started the first systematic effort to provide differentiated education for gifted students. In 1884, Massachusetts provided a type of acceleration for first and second graders: complete the first half of first grade and go directly to the second half of second grade. In 1891, they instituted a type of double tracking that provided special tutors to work with those capable of acceleration. In 1886, multi-tracking and a faster pace were allowed for advanced students in New Jersey. There was no federal program or organized group working for gifted education. The definition of giftedness varied depending on the program available, but in general there was very little available to gifted students across the country. At this point, the term “gifted” was not in use.

In 1901, the first special school for gifted students was started in Massachusetts. In 1916, Los Angeles and Cincinnati were providing special classes for gifted children (Clark, 2002; Davis & Rimm, 2004). By 1920, about two thirds of all large cities had some provision for gifted learners, although suburbs and rural areas had not caught up yet. 1970 brought the entry of the U.S. into World War I and introduced intelligence testing to over 1 million recruits (National Association for Gifted Children, 2005). By familiarizing the public with these tests, Americans became more comfortable with the idea of IQ testing. The 1920s was sometimes referred to as the age of the common man with a focus on equity rather than excellence (Davis & Rimm, 2004; Delisle, 2006).

However, the 1920s also brought Louis Terman's longitudinal study of gifted children, which changed the way Americans looked at gifted children (Davis & Rimm 2004). Contrary to

popular belief at the time, Terman's longitudinal study of 1,528 gifted children provided evidence that gifted students were superior in nearly every quality examined; they were better performers in school and psychologically, socially, and physically healthier than average children. Terman also found that family values and parents' education were strong factors when looking at the differences between the least successful and the most successful gifted individuals. A downside of Terman's study was that educators ignored the social/emotional needs of gifted students based on Terman's descriptions of superior mental and social health. Also, the participants in the study were limited to the dominant culture, included only middle and upper class children.

During the same timeframe, Leta Stetter Hollingworth began a study of highly gifted children which ultimately resulted in considerable insight into the minds and emotions of children with IQs above 180 on the Stanford Binet. Some of her more noteworthy findings were that this group of students not only displayed extremely advanced intellectual achievement, but that they also displayed difficulty in social and emotional development; ordinary school was basically a total waste of time. Many highly gifted children were isolated and alienated because they were functioning at a level that far surpassed even their gifted peers. In 1942, Hollingworth published her study which generated some interest in gifted students (Desisle, 2006).

Harris (1990) completed a follow up study of Hollingworth's participants. Of the 123 identified students, 80 were located and 64 agreed to participate in the study. There was a trend among male participants to marry women of lower educational levels while the female participants married men of higher educational levels. A majority of the males were professionals. Many of the females felt they were not allowed to progress as high as they were

able in their professions due to sexual bias or because of familial obligations. When asked about their achievements, the participants reported a variety of achievements with a focus on helping roles and a recognition of service to society. The participants also reported an overall high degree of satisfaction in all areas of their lives.

In the 1930s, the Great Depression also depressed gifted education as education was a luxury few could afford (Clark, 2002; Delisle, 2006). Acceleration of students through high school was looked down on because no one wanted more people looking for work. Students were encouraged not to advance their schooling (Colangelo, Assouline, & Gross, 2004). In the 1940s, World War II brought about a focus on education and accelerated high school programs because there was a need for more skilled workers with so many men in the war. During the war, colleges encouraged bright students to accelerate their programs in order to get into the workforce or the Army as soon as possible. Due to women's entry into the workforce as a result of the war, more money was available and enrichment for the masses was available. Gifted students were allowed to skip grades or ability grouped within their classes.

In the 1950s, television shows like “Quiz Kids” and “The \$64,000 Question” brought gifted individuals into many people's homes. In 1954, the National Association of Gifted Children (NAGC) was founded based on increased interest in gifted education (Clark, 2002; National Association of Gifted Children, 2005). In the middle of the decade, the Ford Foundation established the College Board Advanced Placement Program to encourage bright students to accelerate their education by earning college credit while in high school (Colangelo, Assouline, & Gross, 2004). Guilford proposed in his speech as the president of the American Psychological Association that creativity be considered a part of intelligence and that research be conducted on

how to identify and foster the skill (Clark, 2002; Delisle, 2006). Prior to this time, the definition of intelligence was usually considered to be single function as measured by IQ tests. Guilford looked for an expanded definition of intelligence from which he eventually created the Structure of the Intellect which proposed the definition of intelligence as fluid and multifaceted.

1957 put gifted education in the forefront of politics due to the launching of Sputnik (Clark, 2002; Delisle, 2006). America was shocked and embarrassed that the Soviet Union had launched a satellite into space before us. Our national pride and identity as the top nation in the world was suddenly shattered and everyone from politicians to parents demanded that something be done to restore our supposed supremacy. Suddenly there were demands for better provisions for bright students, especially the ones who would help us advance technologically. Therefore, advanced programs for math, sciences, and languages were created to meet this need (Davis & Rimm, 2004).

Curriculum reform in the guise of acceleration, curriculum compacting, college courses in high school, teaching foreign languages in elementary school, and new math and science program developments were a direct result of Sputnik and the National Defense Education Act (Clark, 2002). In 1964, the Civil Rights Act was passed which brought attention to equal opportunities, including those in education (Delisle, 2006). This concern highlighted low socioeconomic ills, the poor quality of education for low income students, and a move against elitism or privilege of any kind. This focus on equity diminished the support for gifted education (Clark, 2002). In 1968, President Johnson created a White House Task Force on the Gifted and Talented to survey gifted education across the country; the surveys were completed but never published. One bright spot in the 60s for gifted education was the 1965 Elementary and

Secondary Education Act which created support for the development of model gifted programs, as well as the placement of state personnel in gifted education, which established federal recognition of gifted and talented programs (Clark, 2002).

The early 1970s brought a resurgence of interest in gifted education. 1971 brought the establishment of the Talent Search in Baltimore. Identifying gifted youngsters by having them take the ACT in junior high school was a step toward finding children in need of services (Colangelo, Assouline, & Gross, 2004). 1972 brought a milestone in the publication of “Education of the Gifted and Talented.” More commonly known as the Marland report after the author Sidney Marland, then the U.S. Commissioner of Education (Clark, 2002; Delisle, 2006; National Association of Gifted Children, 2005), the report gave the first federal definition of gifted children which described them as being capable of high performance in general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual and performing arts, or psychomotor ability. Psychomotor ability was removed from subsequent revisions of the national definition. The Marland Report gave data-based rationale for educating the gifted and talented and reported that only 4% of an estimated two million gifted children were served by specific programs while 57% of administrators stated that there were no gifted children in their school or district.

In 1975, Public Law 94-142 established the federal mandate to serve special needs children but did not include gifted children (National Association for Gifted Children, 2005). In the same year, the Federal Office of Gifted and Talented was established, along with grants for gifted education with a Congressional appropriations budget of \$2.5 million. The late ‘70s and early ‘80s held problems for Americans which ultimately affected gifted education. Inflation was

rampant and Americans had been taken hostage in foreign countries (Delisle, 2006). The national focus shifted to economics and defense and schools fought for scarce dollars. The Reagan administration supported cuts in gifted funding which negatively impacted gifted at the federal level by decreasing funds to gifted and talented education by 40% and putting it into a block grant with 29 other programs to be distributed at the discretion of the states (Clark, 2002). The federal office of Gifted and Talented was dissolved and grants were canceled, which effectively put a stop to direct federal involvement in gifted education (Davis & Rimm, 2004)

Renzulli (1998) developed the Three Ring Conception of giftedness to address his belief that giftedness could not be determined by a single score, nor a single concept. Rather, he believed it was determined by the interaction between three interlocking traits which, applied to a specific problem for a specific audience, then resulted in gifted behaviors. The three traits are above average ability, task commitment, and creativity. He felt equal emphasis should be placed on the three traits in order to identify all possible students who may develop gifted behaviors. Renzulli suggested using the Three Ring Concept and a variety of other information not to identify a 'gifted' group, but to identify a Talent Pool of the top 15 to 20 percent of the general population to receive additional services based on their exhibited behaviors. Renzulli noted that "Our orientation must be redirected toward developing "gifted behaviors" in certain students (not all students), at certain times (not all the time), and under certain circumstances" (Renzulli, 1998, "Are People Gifted or," para. 7) .

The triarchic theory of intelligence was developed by Sternberg (2002). His theory of giftedness was based on three sub-theories of intelligence: analytical, creative, and practical abilities. The analytical ability addresses analysis, critique, and evaluation of present knowledge.

The creative ability concerns inventing and creating new knowledge. The practical ability addresses the implementation and use of knowledge in real world situations. Sternberg stated:

An individual is successfully intelligent by virtue of developing the skills needed to achieve success as she or he defines it. People who are gifted are those who are particularly well able to achieve such success. They do so by combining analytical, creative, and practical abilities. People may be gifted with respect to any one of these abilities or with respect to the way they balance the abilities in order to succeed (p. 266).

Both Renzulli and Sternberg helped to broaden the concept of giftedness and were instrumental in introducing a new attitude toward gifted abilities.

Howard Gardner's Theory of Multiple Intelligences gave new focus to the definition of gifted students when he proposed that there were at least seven (later to be changed to eight) distinct ways to be intelligent, which happened to include many listed in the federal gifted definition. He noted that it "Becomes crucial that intelligences be assessed in ways that are "intelligent-fair," that is, in ways that examine the intelligence directly rather than through the lens of linguistic or logical intelligence (as ordinary paper-and-pencil tests do)."(p. 203.)

In 1988, the Jacob K. Javits Gifted and Talented Student Education Act was passed (Clark, 2002). In this act, the Federal Office of Gifted and Talented was reinstated with a \$7.9 million appropriation for funding the office, cooperative grants, and the establishment of The National Research Center on Gifted and Talented. In the Javits Act, the new federal definition for gifted was given:

The term gifted and talented student needs children and youth to give evidence of higher performance capability in such areas as intellectual, creative, artistic, or leadership

capacity, or in specific academic fields, and to require services or activities not ordinarily provided by the schools in order to develop such capabilities fully. (National Association of Gifted Children, 2005)

In 1990, the National Governors Association adopted a report that urged the states to remove tracking and grouping, which was another threat to special education of all types, especially gifted children (National Association of Gifted Children, 2005). In 1993, the U.S. Department of Education's report "National Excellence: the Case for Developing America's Talent," reported that gifted students were still receiving inadequate attention in America's public schools (Delisle, 2006). It cited a "quiet crisis" in education and emphasized below-level achievement of gifted students compared to national and international criteria. Of interest was that in the report the word "gifted" was not used; terms like "outstanding talent" and "exceptional talent" were substituted (Delisle, 2006). In 1994, the Javits Act was reauthorized and the \$9.51 million was cut in half as control of Congress changed and a different political party and philosophy took power in Washington (Clark, 2002).

In 2002, the No Child Left Behind Act (NCLB) was signed into law as a preauthorization for the Elementary and Secondary Education Act. The Javits program was included and competitive statewide grants were added. The definition of gifted students was modified to add achievement-based definitions to include youth who gave evidence of high achievement, capability in specific areas such as intellectual, creative, artistic, leadership, specific academics, and the need for additional programs not usually provided by the regular school. In the year 2004 "A Nation Deceived: How Schools Hold Back America's Brightest Students," was written (Colangelo, Assouline, & Gross, 2004). Published by the NAGC, the report, also known as the

Templeton Report, pointed out how bright children were discouraged from accelerating their education. The 2010 NAGC website gives the following definition:

Gifted individuals are those who demonstrate outstanding levels of aptitude (defined as an exceptional ability to reason and learn) or competence (documented performance or achievement in top 10% or greater) in one or more domains. Domains include any structured area of activity with its own symbol system (.e.g. mathematics, music, language) and/or set of sensory motor skills (e.g., painting, dance, sports). (National Association of Gifted Children, 2005).

Currently there is recognition on the state level that acceleration is a viable service method for some students, and bills has been presented in the Florida House and Senate addressing the provision of acceleration options for some students (Florida Gifted Network, 2012). While acceleration comes in many forms, the bills do not clearly present objective criteria to determine readiness for grade skipping, and there is no option for parents to opt-out of an acceleration decision. Due to these issues there is some concern among gifted proponents about thee bills.

Characteristics.

Silverman (2012) developed a scale to identify giftedness based on observable characteristics. Some of the scale items focusing on academic abilities included good reasoning, rapid learning, extensive vocabulary, excellent memory, long attention span, wide range of interests, early or avid reader, facility with numbers, and skill with puzzles. Scale items associated with emotional characteristics included being sensitive, compassionate, intense, strong curiosity, a concern with justice and fairness, and mature judgment. Some scale items dealing

with social characteristics included feelings, being easily hurt, showing compassion, morally sensitive, preferring older companions or adults, sense of humor, keen observer, and questioning of authority.

Davis and Rimm (2004) added to these characteristics by including the use of complex grammar, superior analytic ability, thinking that is abstract and complex, and greater metacognition. Additional emotional characteristics included good personal adjustment, self-satisfaction, internal control, independence, overexcitabilities, and intellectual honesty. Looking at social terms, Davis and Rimm added empathy, moral thinking, self actualization, sensitivity to values, awareness of social issues, leadership, altruism, strong communication skills, and less egocentrism.

Clark (2002) included several pages in his textbook listing characteristics of gifted learners along with examples of the related needs and possible concomitant problems. Some additional academic characteristics included unusually varied interests, unusual capacity for processing information, flexible thought processes, early ability to delay closure, ability to generate original ideas and solutions, integration of ideas and disciplines, and an evaluative approach toward self and others. Some of the social characteristics included heightened self-awareness accompanied by feelings of being different, idealism, unusual emotional depth and intensity, strong need for consistency between abstract values and personal actions, and high expectations of self and others. Social characteristics listed by Clark include motivation provided by self actualization, advanced ability to conceptualize and solve societal problems, and involvement with the meta-needs of society (e.g., justice, beauty, truth).

Lovecky (2011) identified five traits of gifted children which resulted in social and/or emotional vulnerability; divergent thinking, excitability, sensitivity, perceptiveness, and entelechy. She observed 92 children who scored over 130 IQ on a multi-score test similar to the Wechsler Scales, 23 of whom scored over IQ 150. Ages ranged from four to 22 years with 40% female and 60% male. Divergent thinking resulted in responses the average person would not normally produce initially which could cause gifted students to deal with being different but without understanding why they were different. Excitability caused strong arousal of the central nervous system which resulted in a high energy level and emotional reactivity. This may have resulted in a strong desire to explore the environment and enjoy new experiences, causing a need for novelty in individuals. Sensitivity produced strong feelings which could cause intense bonding with others (humans, animals, nature). Both passion and compassion were displayed within sensitivity which causes many gifted children to be highly empathic to the feelings of others. Perceptiveness is the ability to view a situation from several vantage points simultaneously or to understand several layers of meaning or ability present in a single unit. Entelechy is a type of motivation resulting in a strong need for self determination and inner strength. These children are strong-willed and very determined to accomplish the goals they set for themselves.

Tieso (2007) looked at patterns of overexcitabilities (OE) in gifted students in a population of 143 individuals ages five to 15. OE is a term derived from Dabrowski's concept of development potential (Mendaglio, 2006). OE is a specific intense way of responding to or perceiving one's environment. The five dimensions are psychomotor, intellectual, imaginal, sensual, and emotional. The students in the study produced the highest mean score on the

psychomotor subtest and also demonstrated high emotional and intellectual OE scores. The author suggested that this would likely explain why gifted students may be seen as more insightful while still experiencing tension between how the individuals see themselves and how they wish to be perceived. High psychomotor and emotional OEs that were reported may lead to misdiagnosis of ADHD in gifted children.

Assouline, Colangelo, Ihrig, and Forstadt (2006) examined attributional choices for academic success and failure by gifted students (Assouline, Colangelo, Ihrig, & Forstadt). A total of 4,901 gifted students in grades three through 11 answered a mailed questionnaire to examine six main choices for attribution of academic progress. These students were identified for the study based on their participation in a university-based academic talent search or summer residential program for gifted students. The study found that the individuals tended to attribute failure to the long-term effort of not working hard enough rather than the ability-based response of not being smart enough. All students had been publicly recognized for their abilities and therefore recognized that they were academically advanced, but it appeared the application of that ability was more important than the ability itself. Males more frequently attributed their success to ability while females more often attributed theirs to hard work.

The connection between perfectionism and gifted adolescents was examined by Schuler (2000). A total of 112 gifted adolescents in a rural middle school were measured on tendencies of perfectionism based on the Goals and Work Habits Survey, interviews, and documentation. In the study 87.5% were described as perfectionistic. The majority of individuals (58%) were in the healthy range of perfectionism where order and organization were considered important in order for the student to achieve their goals. However 29.5% of the individuals were in the neurotic

range of perfectionism. For these students, the emphasis was on their mistakes, which resulted in a constant state of anxiety. The conclusion was drawn that while perfectionism is found on a continuum in most gifted students, the majority of those students fall in a healthy range.

A commonly identified characteristic of gifted students is sensitivity. Mendaglio (2003) looked at heightened sensitivity of secondary gifted students in terms of heightened multifaceted sensitivity (HMS). While sensitivity is usually thought of as another way to say “being emotional”, the author stated that being sensitive is actually a source of emotion as, in gifted individuals, heightened sensitivity can create extreme negative emotions. HMS was viewed as a matrix with the four facets of perspective taking, empathy, self-awareness, and emotional experience. By examining HMS as a cognitive process, gifted individuals could examine their feelings objectively in order to understand and work through any difficulties.

Bickley (2002) looked at the social and emotional patterns of gifted children who were experiencing asynchronous development, a common situation with gifted children. The author looked at 12 individuals, ages five to 16, in order to describe their characteristics and abilities. The participants displayed intellectual characteristics of strong verbal expression, desire to learn, avid interests, awareness and abilities, quick understanding of topics, and the ability to grasp deeper meanings. Bickley also identified four personality characteristics of emotional intensity, high levels of sensitivity, strong will, and a tendency toward introversion. The students were experiencing difficulties due to their uneven development across characteristics. Several coping strategies were found, which included recognition of abilities and social/emotional needs, provision of a safe haven, and counseling.

Cognitive/academic.

As gifted children are most often identified based on high academic ability, an analysis of the cognitive profiles of gifted children can be compiled looking at the scores on the Wechsler Intelligence Scale for Children. Sweetland, Reina, and Tatti (2006) looked at the Full Scale, Verbal, and/or Performance IQ scores of 161 elementary and middle school students as part of a screening for an enrichment program. All participants had at least one IQ score of 130 or higher and were drawn from the population of a suburban school district in Long Island, New York. The amount of discrepancy between the Verbal and Performance IQ was significantly different than that reported in the test itself. Score discrepancies between the Verbal IQ and Performance IQ ranged from zero points to 51 points with a mean of 18.5 points, median of 19 points, and mode of 21 points. In total 68.9% of the participants had a discrepancy of 13 points or more. In the study 54.7% of the participants obtained a discrepancy of 18 points or more compared to 17% of the standardization sample and 26.7% of the participants obtained a discrepancy of 25 or more points compared to 40.9% of the standardization sample. While the verbal scores were usually higher, the majority of the performance scores were at least average. Conclusions were that large discrepancies appear to be quite typical in gifted students, which indicate highly developed skills in some areas with average or slightly above average skills in other areas. This supports the characteristic of asynchronous development in gifted students.

Akin (2005) examined academic asynchrony in gifted students by reviewing literature and observing students in an elementary self-contained gifted classroom. Asynchrony could be applied in several situations when discussing gifted children: between social, physical, emotional, and cognitive development, between gifted students and age peers, between the gifted

students and components in the classroom, between content areas, and within a single content area. The author described students who were well above grade level in one area while being on or even below grade level in another area. Having skill gaps within a single subject area was a form of asynchronous development wherein students may be highly advanced in one aspect of a specific subject area, say memorizing multiplication facts, yet on or below level in another area of the same subject, say lack of foundational concepts of multiplication. Flexible grouping and individualization could help address these difficulties and no set formula would work for all gifted students with asynchronous development.

In a review of literature, O'Boyle (2008) looked at neuroscience literature relating to mathematically gifted children. Many of the studies reviewed looked at 10 to 15-year-olds scoring at the 99th percentile on the SAT Math Exam or the Australian School College Abilities Test-Numerical Reasoning. Students gifted in math demonstrated a right hemispheric bias in the performance of a task to identify visuo-spatial capacities, which demonstrated greater involvement and processing reliance in that hemisphere, indicating enhanced right hemisphere functioning in the mathematically gifted. These students relied on mental imagery and showed a high degree of neural connectivity between the right and left hemispheres, indicating that mathematically gifted children most likely did not utilize the same cognitive strategies in solving math problems as did students of average mathematical ability. O'Boyle (2005) also reported that in 14 mathematically gifted boys, functional magnetic imaging was used to monitor activation in a mental rotation task. Activation was found in areas not typically noted in studies of other young adults, indicating a tendency to enhance spatial attention, working memory, and executive functions.

Reading.

Advanced reading ability is another hallmark of many gifted students. Fehrenbach (1994) evaluated the cognitive styles of 30 gifted readers compared to 30 average readers in eighth, 10th, and 12th grade. The participants were from rural and small-town areas of Kansas. The author looked at reading strategies and field independence/dependence between the two groups. Field independence is defined as the ability to identify visual or auditory patterns embedded in a background of distractions. Individuals with field dependence cannot identify the pattern and hence have difficulty making sense of unorganized information. Of the average children, three were field independent, 14 were field dependent, and 13 had mixed field choice. Of the gifted readers, 16 were field independent, five were field dependent, and nine had mixed field choice. The hidden figures test was used to examine cognitive style while reading strategies were assessed using a think-aloud protocol. Gifted students used the following strategies significantly more than did average readers: rereading, inferring, analyzing structure, predicting, evaluating, and relating to content area. Average students used word pronunciation and summarizing significantly more than did gifted readers. There was no significant difference in reading processing strategies between gifted readers who were field dependent and field independent. Mean scores on the hidden figures test for gifted readers was 14.83 and for average readers was 8.50, indicating that gifted readers tend to be more field independent and average readers appear to be more field dependent. Students with field independence reread significantly more than did those with field dependence. Gifted readers reread significantly more than average readers, related information text to content area knowledge and personal knowledge more, made more evaluative statements about information, made more predictions, and analyzed the structure

or content significantly more than did average readers. Findings indicated significant differences in the cognitive styles of gifted and average readers.

In a review of the literature on precocious readers (Olson, Evans, & Keckler, 2006), several aspects of early readers were discussed. Average to superior levels of intelligence might be required for early reading but did not necessarily result in spontaneous reading skill. Few patterns were found when looking at personality correlates, play toy preference, amount of television, or television preferences. Economic status had not been identified as a primary factor of early reading skills. Home environment factors which contributed to early reading included parents or siblings reading to the child regularly, exposure to a variety of reading materials, taking children to the library, early interest in writing skills, parental provision of a rich linguistic environment, and the parents' positive attitude about their child's ability. Phoneme analysis appeared to have a reciprocal relationship with advanced reading. Correlations between early reading had been found in visual memory, reading speed, letter naming, auditory discrimination, right hemispheric functioning, left frontal functioning, and peak frequency of alpha waves. Findings indicated that several factors can indicate early reading.

Collins and Kortner (1995) reviewed the literature on gifted readers. They found that gifted readers often mastered basic reading skills early and were ready for complex teaching at an early age. They displayed an internal locus of control and required reading instruction that was different than a regular classroom program. It was reported that reading instruction should address higher-level comprehension skills and provide more than a skills-oriented approach. Books that use complex language structure should be a primary source of cognitive growth and should be based on the present needs of the student, not their age or grade level.

Yates, Berninger, and Abbott (1995) compared 120 gifted and average children in grades one through six to determine whether gifted children exhibited writing disabilities. Specific areas studied included higher-level cognitive writing processes such as quality of text generation and lower-level writing processes such as transcription. Participants were from five urban and suburban schools and 20 students from each grade, one through six, were identified as gifted (n - 10 per grade) or average (n - 10) with equal representation of male and female. Giftedness was determined by a verbal IQ on the WISC-R of 122 or greater and average children were selected for having verbal IQs as close to 100 as possible. Gifted students' mean verbal IQ was 132.8 and the average student mean IQ was 100.1. The writing battery assessed six competitive writing skills and also developmental skills related to writing. The results indicated that gifted students did not perform significantly higher than average students in low level compositional fluency in either number of words or number of clauses. There was no statistical significance between generation of low level syntactic complexity in gifted and non-gifted readers. Gifted students did demonstrate more vocabulary sophistication and higher level compositional quality than did average students.

Social/emotional.

As evidenced by the characteristics previously described in this section, social/emotional characteristics of gifted students cover a wide range of abilities from highly advanced social skills to overexcitabilities. In a special issue of *Gifted Child Quarterly* which addressed myths of gifted education, Peterson (2009) challenged the myth that gifted and talented individuals do not have unique social and emotional needs. While noting that the early work of Terman and Hollingworth helped develop the impression that high ability infers mental and emotional health,

they noted that students displayed asynchronous achievement in many areas, including social/emotional. Many positive characteristics associated with giftedness could be developed into negative characteristics when the degree of the characteristic was also accelerated. Factors such as sensitivity, intensity, and overexcitabilities could lead to anxiety, depression, underachievement, and career development difficulties due to both the nature of the characteristics and the fact that those characteristics could reach high levels of intensity. Unique characteristics of this population included stress levels related to over-involvement in activities and high expectations, perfectionism, lack of acceptance by non-gifted peers, and empathy related to social fairness. Sometimes there was a lack of understanding by adults who did not realize that asynchronous development may result in a student with extremely high academic levels but with age-appropriate emotional levels.

The NAGC presented a position paper on the social and emotional development of gifted children (2009a). Noting that gifted students differ greatly from each other and their peers, it was also noted that as that level of difference increases, it was likely that social difficulties would also increase. Gifted students often are required to fit the program rather than the program fitting the student, which could leave the student without appropriate support for social/emotional needs. Gifted students tend not to ask for help when they are experiencing difficulties in order to preserve the perception of competence and to avoid disappointing others who have high expectations of the student. Many adults feel that because the student is academically advanced, they should be able to handle anything that comes their way. An area of concern is that when an adult is in awe of a highly advanced student they may not recognize difficulties the student may be dealing with.

Sayler and Brookshire (1993) compared three groups of students on social, emotional, and behavioral adjustments in eighth grade. Three identified groups were gifted students who skipped a grade or started school early, students enrolled in eighth grade gifted classes, and regular eighth-grade students. Information was gathered from a survey and achievement tests. Overall gifted students felt their peers saw them as good students, popular, and important more often than regular or accelerated students did. Accelerated students had the highest level of internal locus of control and reported being seen as troublemakers less than the control group. Global self-concepts of the gifted and accelerated groups were higher than those of the regular sample and the accelerated group had higher achievement scores than the other groups. Accelerated and gifted students felt better about their social relationships and emotional development than did regular students.

Gyles and Shore (2009) reported that the proportion of introversion in gifted children was higher than that found in the general population. The question of why the gifted student may prefer to work alone in a quiet environment might be answered by looking at the difference between the student and their peers. Gifted students tended to be very perceptive of other people's feelings and attitudes and they may have been able to pick up on a lack of support by others or may have felt that their high abilities were being taken advantage of by their peers. Gifted students tended to be more task-oriented in competitive goals, which allowed more stability in friendships because the competition focused on the task rather than the individual. Recognizing self-improvement rather than a final result allowed gifted students to maintain friendships.

A student sample was given the Minnesota Multiphasic Personality Inventory-Adolescent as a self-report instrument to look at aspects of gifted adolescents' personality profiles (Cross, Cassady, Dixon, & Adams, 2008). 567 individuals participated, all being 16 or 17 years of age, including 320 females and 247 males. All participants were enrolled in a public residential school for academically gifted 11th and 12th grade students in the Midwest. Results showed no significant difference in genders on various scales. Small to moderate differences were found between gifted and general participants in the areas of hypochondria, psychopathic deviate, paranoia, schizophrenia, and social introversion with all gifted sample scores being lower than the general population. For 14 of the 15 content scales in the Harris Lingoes subscale, the gifted participants scored significantly lower than the general population, indicating no support for the idea that gifted students are more likely than the general population to show higher rates of personality disorders.

Martin, Burns, and Schonlau (2010) conducted a literature review looking at mental disorders among gifted and average youths. Among their findings were the fact that most literature reviews, both full reviews and background reviews of research articles, did not directly compare gifted and average youth and little effort had been made to reconcile the differences in definition of both gifted and mental health outcomes in the studies. The review found that, in general, gifted youth had approximately the same or lower risks of depression, anxiety, and suicide ideation as did average youths. Depressive symptoms did not significantly differ between gifted and non-gifted youths, no studies compared bipolar disorder between the two groups, and anxiety levels in gifted students were statistically lower than in control groups. Conclusions

indicated that there was no support for the belief that gifted students were at greater risk of these disorders than the general population.

Twice exceptional.

Initially, many gifted students with a second exceptionality were not identified or placed into a gifted program. When considering the fact that giftedness can mask areas of difficulty and vice versa, it becomes apparent why this is an area that has been difficult to address (Kay, 2000). However, the recognition that a student can be both intellectually advanced and have an identified challenge in another area has resulted in a great many research studies in the areas of ADHD, learning deficits, and social and emotional issues (Beljan, Webb, Amend, Web, Goerss, & Olenchak, 2006).

Being able to identify learning disabilities among the gifted population has been made more difficult by the fact that the gifted students have the ability to consciously compensate for some of their deficiencies (Silverman, 2000). One characteristic of gifted students is their ability to reason and solve problems which allows them to deal with many problems so efficiently that their challenges may not become apparent until they are much older, if at all. Compensation may be conscious or unconscious, but if it is unconscious, the student may be unable to articulate their difficulties. Silverman listed five reasons why twice-exceptional children are often misdiagnosed: their scores mask both strengths and weaknesses, they are compared to the norms for the general population rather than their own ability, their lowest scores may not be sufficiently low to cause concern, their high ability may actually inflate their low scores, and the magnitude of the discrepancy between scores is often not taken into account.

The NAGC position paper on twice-exceptionality (2009b) reported that approximately 50% of all students with disabilities can be identified as having a specific learning disability (SLD) which traditionally has been identified as a specific discrepancy between ability and achievement. A gifted student may not be identified as having an SLD because their average classroom performance is seen as acceptable, although in reality it is far below their actual ability. ADHD overlaps some characteristics with gifted students which can confuse diagnosis. Best practices require comprehensive evaluation with as much information as possible in order to identify the student so that an appropriate diagnosis can be made and the best possible academic treatments designed for the specific situation

The NAGC also produced a position paper on gifted students with learning disabilities (1998). In the paper, three categories of gifted students with learning disabilities were identified: those with subtle disabilities, those with a disability who have not been identified as gifted, and students who had not been identified with either learning disabilities or giftedness. Identification should be based on discrepancy analysis rather than actual classroom achievement because both strengths and weaknesses may be masked by one or the other of their exceptionalities. Individual subtest scores and patterns on tests, as well as performance based assessment, can assist in identification. These students require both attention to their strengths and support for their learning weaknesses. Without attention to both areas, the students will likely never meet their potential.

By focusing on strengths rather than weaknesses, students can be provided appropriate methods to ensure their development in all areas (Yssel, Prater, & Smith, 2010). Based on a survey completed by parents of summer enrichment camp participants, 56% of the 18 students

were identified as twice-exceptional, yet only 28% of the students received the recommended interventions. The parents reported difficulty with handwriting, organizational skills and study skills, and social-emotional needs. Collaboration among all invested parties as well as teacher education was crucial to implementing a successful program to help the twice-exceptional student succeed in all areas.

Neihart (2006) looked at underachievement in relation to affiliation conflicts in a social context. Beginning in early adolescence, many gifted students begin dealing with the difficulty of solving a conflict between personal achievement and loyalty to a group. They might associate certain behaviors or levels of achievement with a betrayal of their group, whether social, racial, ethnic, or gender-based. This conflict contributed to underachievement in school and a possible lowering of career and life expectations. It is important to teach students to manage these conflicts as soon as they become evident. This can be done by both recognizing the validity of the conflict and providing the student with specific tools to address the problem.

Barber and Mueller (2011) investigated the self-perceptions of twice-exceptional gifted adolescents. Data was retrieved from the first wave of the National Longitudinal Study of Adolescent Health. Four groups of students were identified: gifted only, LD only, gifted and LD, and a control group. Giftedness was determined as being in the top 10% of students in the nationally representative AddHealth sample. Learning disability identification was based on parent report. Ninety students were identified as being gifted and LD. There were 360 participants with 90 in each group. The study reported that twice-exceptional students differed from control students in their perception of their social interactions as well as family interactions. In general, twice-exceptional students' social and self perceptions closely matched those of

students with learning disabilities. The study also suggests that twice-exceptional students may receive less support at home than do other students.

Chae, Kim, and Noh (2003) looked at the correlation between intelligence and ADHD. One hundred six children enrolled in the Educational Institute for Gifted Children and 71 control students were identified in an elementary district in Seoul, Korea. The mean gifted IQ was 138.4 and the mean control group IQ was 109.1. The Test of Variables of Attention was given to all students. Statistically significant differences were found in omission errors, response time, response period, ability, and response sensitivity between the gifted and control groups. The gifted group performed better than the non-gifted children in attending the target stimuli, avoiding errors, consistent response, pattern targets, and discriminating target from non-target stimuli. The higher the intelligence score, the fewer omission and commission mistakes. Overall 9.4% of the gifted students were identified with ADHD.

Little (2001) pointed out that gifted children with disabilities go against the commonly held belief of global giftedness in which it is believed that if you are identified as gifted you are gifted in all areas. While this is true for some students, it is not true for all. Approximately 10% of high IQ children are reading at a level two or more years below grade level and approximately 30% show a substantial discrepancy between reading achievement and mental age. Little believes that self efficacy is the main issue to be addressed with gifted students with learning disabilities. Professionals can focus on the development of the gift, provide nurturing environments that value individual differences, teach and accept compensation strategies, and encourage students to be aware of their own strengths and weaknesses. The earlier the disability is diagnosed, the more likely that appropriate programming can be implemented.

Educational implications for gifted adolescents.

Middle school is a difficult time for nearly every student: problems are found in peer relations, budding independence, hormonal changes, physical growth spurts, difficulty dealing with the other sex, and the beginnings of career goals, all of which can be quite difficult for an adolescent. According to Clark (2002), the gifted may be able to handle the stresses of this developmental stage better than most. It does not mean that they will sail through this time period, but their skills at conceptualizing, synthesizing, problem solving, and evaluating may help them better deal with the situation. However, other characteristics like sensitivity, empathy, and overexcitabilities can exacerbate the difficulties. Dealing with the physical, intellectual, social-emotional, and intuitive transitions at this time in their lives can be excessively difficult.

Developmental issues affecting all adolescents also affect gifted students, yet may be further complicated by gifted characteristics (Buescher & Higham, 1990). Ownership, dissonance, taking risks, competing expectations, impatience, and premature identity are issues which present obstacles to many gifted adolescents. Questions about ownership of their gifts may cause problems because of patterns of disbelief, lack of self-esteem, the “imposter syndrome”, and peer pressure toward conformity resulting in a denial of gifts. Dissonance between what the students expect to do and what they actually accomplish can cause tremendous problems, especially for students with perfectionistic qualities. A decrease in risk taking can keep the student from academic challenges where success is less predictable, for example taking advanced placement courses or applying for awards. Competition exposes adolescents to criticism and possibly unreal expectations. Impatience and intolerance of fuzzy situations or unresolved issues may result in reliance on a poorly developed sense of wisdom. Academic and emotional

acceleration sometimes causes students to attempt to reach an adult level of identity long before they are actually ready to do so. All of these difficulties present major challenges to gifted middle school students and must be addressed through the teaching of coping strategies in order to allow the students to successfully navigate the middle school years.

Three points of common concern between middle school professionals and gifted education professionals are apparent (Tomlinson, 1995). First, instruction should be theme-based, interdisciplinary, relevant, student centered, and based on student interest in order to promote self direction, independence and group interaction. Secondly, middle school should foster small communities of learning while providing a solid academic core, ensuring success for all students, leading health and fitness, involving families as educational partners, and connecting schools with communities. Third, cognitive and affective welfare is extremely important and there is a large variability in development of these areas in early adolescence. However, while middle schools focus on equal opportunity to succeed, gifted education focuses on advanced performance and/or potential. While middle schools dislike homogeneous grouping it may be the best possible placement for gifted students. Middle schools often reject labeling, yet without identification students may not receive appropriate programming. Some believe middle schools focus on a basic skills approach or enrichment for all students, thereby reducing the appropriate education of the students who do not fit the norm. Cooperative learning is a major tenant of heterogeneous learning communities and middle schools, yet most gifted students receive little benefit from working in heterogeneous groups, especially when they become the student responsible for doing most of the work in the group. Because of these

differences, some problems exist for middle school gifted students in the philosophy behind middle schools.

In a joint statement, the NAGC and the National Middle School Association presented areas of focus for gifted middle school students (NAGC, 2008). Recognizing that during the middle school years students are involved in wide-ranging growth rates in several areas and that gifted students may differ from their peers in these areas, it is important that their educational needs be met through differentiated programs. Formal and informal diagnoses of strengths and weaknesses are important in order to allow the students to reach their full potential. Assessment should be ongoing and the data from these assessments should be used to inform instruction, even for students who have already met and perhaps exceeded expectations. All students should be exposed to curriculum which requires higher-level thinking skills, including gifted students who may have already mastered the curriculum. Gifted students need assistance both in attempting to do their personal best and in belonging to an accepting peer group. Staff development should focus on high-quality curriculum which meets both group and individual needs with the recognition that success of the student is dependent upon the joint effort of all invested adults.

Cross, Neumeister, and Cassady (2007) assessed the psychological types of 931 academically gifted adolescents using the Myers-Briggs type indicator. The 524 female and 407 male students attended a public residential academy for academically gifted students. The Myers-Briggs type indicator assesses four dimensions of extroversion/introversion, sensing/intuition, thinking/feeling, and judging/perceiving. Compared to adolescents in the general population, gifted adolescents tended to be intuitive, introverted, thinking, and

perceiving. Gifted males tended to be identified as introverted more often, whereas females tended to be identified with extroversion. Males affiliated with thinking with females slightly preferring feeling. It is suggested that matching personality types of faculty and students can result in positive instructional fit to the student learning styles. In general, gifted adolescents had a preference for intuition perceiving types. Therefore, professional development training should focus on matching instruction to these preferred learning styles of gifted adolescents.

Rayneri, Gerber, and Wiley (2006) looked at how environment and learning style preferences impacted performance of gifted middle school students. The study sample consisted of 80 gifted students (26 sixth-graders, 34 seventh graders, and 20 eighth graders) from two middle schools in Georgia and included 42 males and 38 females. Gifted identification was determined by state law and students were served in three gifted academic classes daily, mostly in the areas of reading, social studies, and math or science. The learning styles inventory was administered in order to look at preferences in the four areas of environment, emotionality, sociological needs, and physical needs. Results indicate that gifted participants demonstrated a preference for dim lighting, informal seating design, responsibility, tactile and kinesthetic modalities, mobility, eating or drinking while learning, and evening and/or afternoon learning times. Grades in all areas showed a positive correlation with persistence and light. Students who achieved in the school setting did differ from students who did not achieve based on persistence to stick with and complete assignments: there was a statistically significant connection between students' academic performance and a persistent learning style. A flexible environment and mobility in the classroom were also preferences of the gifted students. An unexpected result was that gifted students did not appear to have a preference for learning alone. Results also indicated

that although the students did not feel that their classroom environments matched their learning preferences very well, they were more concerned with a personal desire to consistently achieve.

A pervasive area of frustration for gifted middle school students is bullying, which may be experienced by gifted students because of their marked difference from peers (Peterson & Ray, 2006). In a survey of 432 gifted eighth-graders, which included 57 structured interviews, it was found that experiencing a single incident of bullying could be extremely stressful for students. Peer problems are connected to bullying and students with supportive peer groups were less likely to experience the problem. Five major themes were identified from the research: giftedness is associated with a unique vulnerability to bullying, gifted victims understand that external factors cause the bullying but feel responsible for not being able to stop it, they can be highly stressed by non-physical bullying, coping strategies have shown improvement with age and emotional recovery can occur after time, and gifted bullies can change their behaviors. While the differentness found in gifted students can produce vulnerability to bullying, the advanced problem solving abilities and coping mechanisms gifted students possess can help them deal with the situation. An important note was that victims of bullying tended not to report the problem to adults. Educators and parents should be careful not to marginalize reports of bullying.

Gifted Students with Asperger's Syndrome

The literature on students with G/AS is less copious. The number of quantitative studies is limited, although there are a few empirical studies addressing biology-specific academic skills. Bonnycastle (2006) compared descriptions of the childhoods of exceptional engineers to the parents' descriptions of characteristics of their own children who were able to precociously complete complex constructive activities. These characteristics included male gender, lack of

pretend play, strong interest in computers and strategic games, intense focus on tasks of interest, and possibly a lack of social focus: all characteristics related to Asperger's Syndrome. Chiang and Lin (2007) observed mathematical test scores of students identified with AS as being above the 99th percentile, suggesting that the students were mathematically gifted. Casanova, Switala, Trippe, & Fitzgerald (2007) found that the brain structure of three eminent scientists who displayed creative genius were very similar to the minicolumn structure found for AS. Many of the published articles are single case studies.

Identification.

The definition of Giftedness has long been a matter of discussion among researchers, with no common definition accepted at this time. This lack of consensus causes even more difficulties when discussing Gifted students with AS.

Donnelly & Altman (1994) looked at the gifts of autistic savants who she identified as being a low incident gifted subgroup. Donnelly and Altman's utilized definition of autistic savant referred to individuals with Autism who have above average general intelligence, gifted abilities, and subtest IQ scores that fall in the gifted range. Areas of savant abilities included exceptional auditory memory, photographic memory, hyperlexia, and mechanical abilities. The author noted that while the gifts and talents of autistic savants may be amazing, the student was not always able to apply their skills in appropriate or practical situations. According to the author, these students should be included in gifted programs in order to develop their gifts.

On the other hand, Miller (2005) defines savants as individuals who exhibit exceptional skills along with general and sometimes severe intellectual impairment. Skills are observed in music, art, and calculations. Many of these skills are manifested very early in life, which

sometimes makes their skill appear even more exceptional. Savant skills are usually not associated with the more general context of gifted ability and their application in a meaningful way is often weak or nonexistent.

In the reviewed literature where gifted students with Asperger's Syndrome have been identified, the usual procedure is to apply both the rules for identification of Asperger's Syndrome and a specific definition of giftedness; giftedness is usually defined by an IQ score approximately 2 standard deviations above the mean. Myles et al. (2007) described 156 youths who had been identified as having AS based on the DSM-IV or DSM-IV-TR criteria. IQ was measured by the Wechsler Intelligence Scales. Ten percent of the sample was found to have IQs greater than 130, which is higher than the statistical norms for the Wechsler Intelligence Scales. The authors concluded that giftedness appears to be a characteristic of many individuals with AS.

Characteristics.

Many of the characteristics of individuals with Asperger's Syndrome are shared by individuals who have been identified as gifted, causing a noticeable overlap of characteristics which can confuse diagnosis. Webb et al. (2005) listed several ways that gifted students and students with AS were similar. These included excellent memory, verbal fluency, overly formal speech patterns often at an early age, special interests, concern with justice and fairness, attention problems, albeit for different reasons: an unusual sense of humor, hypersensitivity to stimuli, and uneven development. The authors also listed several ways to differentiate between the two situations. One way was to observe the child with their intellectual peers: gifted students may fit in easily, but students with AS will not. Another way was to look at the student's self-

perceptions: gifted students were usually very clear about how others see them, while students with AS generally did not have insight into their own social situation. If the child displayed a lack of empathy sometimes but displayed solid empathy at other times, a diagnosis of AS was very unlikely.

Gifted students with AS tend to over-respond emotionally (Atwood, 2007), may have extreme asynchronous development (Bashe & Kirby, 2005; Neihart, 2000), high intensity (Bashe & Kirby, 2005; Webb et al., 2005), a lack of shared interests with other students (McPartland & Dawson, 2005), a lack of understanding from peers, and difficulty in appropriate dialogue, including lack of emotional intonation along with literal interpretation of speech (Little, 2002; McPartland & Dawson, 2005). Other characteristics may include difficulty in interpreting non-verbal behavior and difficulty in taking turns during conversations (McPartland & Dawson, 2005). Shaunessy and Farmer (2006) stated:

Although adolescence is marked by increased interest in identity, sexuality, and depth of relationships, gifted children with AS often experienced challenges adapting that are even more obvious than those of their peers, especially since they may not filter social cues. (p. 9)

According to current research, gifted students with AS may be weak in speech with pedantic and monotone patterns but have good verbal fluency (Neihart, 2000), difficulty with abstract thought (Schuler, 2009), and display a good memory, especially for factual information and in areas of interest or preference like math and science (Bonnycastle, 2006; Fitzgerald, 2002; Little, 2002). They may display good attention to details, strong focus (Bashe & Kirby, 2005), and intense interest in a specific area of knowledge (Bashe & Kirby, 2005; Neihart, 2000).

Neihart (2000) presented a list of seven characteristics shared by Asperger's Syndrome and giftedness: verbal fluency and precocity, excellent memories for factual information, attainment of a broad knowledge base at an early age, absorbing interest in specific topic, excessive talking which may annoy others, hypersensitivity to sensory stimuli, and developmental asynchrony. Neihart noted that these similarities indicated that AS may not be properly identified in gifted children because the unusual behaviors may be attributed to advanced cognitive abilities. Educational strategies should focus on sensory sensitivity, social skills, and coping with change.

Gallagher and Gallagher (2002) described distinctions between the behaviors of highly gifted students and students with AS. Highly gifted students are socially isolated, independent of age mates, and have a highly focused interest: students with AS are socially inept, unskilled with age mates, and also have a highly focused interest. Highly gifted students have an advanced and sophisticated vocabulary, complex cognition, and advanced understanding; students with AS may have hyperlexia, simple cognition, and advanced memorization. The authors also provide a comparison of characteristics of academically gifted students and academically gifted students with AS. Academically gifted students usually follow routines, know they are different and why, receive and return humor, and are coordinated; students with G/AS have a low tolerance for routine, know they are different but not why, cannot reciprocate humor, and display motor clumsiness. Academically gifted students display empathy, know how to make friends, and have an extensively deep and complex knowledge base; students with G/AS display a lack of social insight, difficulty with empathy, unawareness of how to establish friendships, and an extensively

deep and sometimes complex knowledge base. Noting the relatively subtle differences between the characteristics will aid in an accurate diagnosis.

The strength in rote memory that many students with AS have allows them superior factual recall and can be very impressive (Myles & Adreon, 2001). This is often seen as indicative of gifted characteristics. Many gifted students do indeed have strong rote memory skills, but they also usually display advanced comprehension skills. However, many students with AS often comprehend only at the factual level, which can cause great confusion to teachers and students alike in advanced classes. Gifted students have excellent memories for information on a variety of topics, while students with AS have excellent memories for information on specific selected topics of special interest (Amend, Schuler, Beaver-Gavin, & Beights, 2008.)

Students with AS often exhibit hypersensitivity to sensual stimuli, for example odors, touch, sound, and taste. Many students with AS find the loud bells needed to change classes in middle school and smells of cafeteria food to be overwhelming and the cause of great distress (Myles & Adreon, 2001; Webb et al., 2005.) A common characteristic of gifted students is intensity or overexcitabilities (Davis & Rimm, 2004; Webb et al. 2005). This characteristic manifests itself in many of the same ways that students with AS manifest their hypersensitivity to stimuli. Cash (1999) describes students with G/AS as having hypervigilant synthesis. Dabrowski's theory of overexcitabilities in gifted children addresses the intense alertness of the nervous system which allows them to perceive more detailed and intense stimuli from their environment.

Another area which may appear to be similar for both students with AS and gifted students is apparent emotional extremes. In students with AS, these extremes may manifest themselves as meltdowns or outbursts, often for no reason apparent to the untrained eye. Students with AS often have difficulty making sense of their world and when they become too frustrated or confused and don't know how to express themselves or solve the situation, they act out (Atwood, 2007; Barnhill, 2001). Gifted students also exhibit meltdowns or outbursts, again, often for no reason apparent to the untrained eye. Although the result may appear the same, the causes for the emotional extremes are very different. Bianco, Carothers, and Smiley (2009) noted that while boredom may cause frustration for gifted students, it is unlikely that the student will react with the severity or prolonged outburst that is apparent in AS. Because of a heightened sensitivity to their environment and to feelings, other people's and their own, gifted students experience situations at a deeper level than many people. This can lead to extreme reactions to situations where adults have developed immunity, for example seeing a homeless person on the street, or watching a murder on a TV show.

Special interests, often esoteric, can be an overpowering aspect in the life of the student with AS. As they gather copious details and minutiae on the topic, they come across in conversations as very knowledgeable on their specific topic (Webb et al., 2005). Gifted students too can become deeply involved in specific interests or talents, even to the point of borderline obsession, sometimes referred to as selective affinity (Dai & Renzulli, 2008). Dai & Renzulli define maximal grip as, "A tendency or action (mental or physical) toward mastery of knowledge, skills, and dispositions to an optimal level. In other words, the person strives toward a maximal grip on task constraints and demands of a domain," (p.119). Webb, et al. (2005)

believe that there is a qualitative difference between the special interests of students with AS and gifted students in that the gifted student is likely to find a peer group with similar interests (Star Trek, works by Charles Dickens, computer games) with whom they can communicate and socialize, whereas students with AS will probably not locate a peer group where they can discuss Clorox bottles, birth dates of the members of Congress, or the passenger list of the Titanic. The area of interest may be just as strong, and the student may gather just as much information, but the topics students with AS are interested in are harder to translate into meaningful conversation with the general population.

Misdiagnosis.

Myles and Simpson (2002) warn that the special academic needs of students with AS often fail to be identified because of the strengths of the students: large vocabularies, strong memory skills, and occasionally hyperlexia fool adults into believing that the students know and comprehend more than they actually do. This masking of deficits may result in the incorrect diagnosis of giftedness. Early advanced language development may be the focus of attention for many years while the social deficits of AS are viewed as “quirks” of a bright student (Gallagher & Gallagher, 2002). According to Myles & Adreon (2001) many adults will report that students with AS have good conversational skills, partly because they are impressed with the high levels of knowledge the student exhibits. What they may not take into account, however, is that adults tend to compensate and make exceptions for the peculiarities found in the speech of students with AS, whereas their adolescent peers do not. Gifted students tend to have an extensive, advanced vocabulary that can be applied accurately in many situations, yet students with AS display an advanced use of words with a lack of comprehension for all language used (Amend,

Beaver-Gavin, Schuler, & Beights, 2008). Sorting out which characteristics apply to which diagnosis can be further complicated by the masking of weaknesses by the display of strengths.

By developing a checklist to differentiate between giftedness and AS, Amend, Schuler, Beaver-Gavin, and Beights (2009) have attempted to assist in the differentiation of the two diagnoses. The checklist directly compares the areas of memory and attention, speech and language, social and emotional, behavioral, and motor skills. Each area requires a forced choice between two characteristics: one identifying gifted characteristics and one identifying characteristics of AS. In the area of memory and attention, gifted characteristics include excellent memory for facts and information about a variety of topics and typically accurate recall for names and faces while the AS characteristics list superb memory for facts and detailed information related to selected topics of special interest and poor recall for names and faces. Under speech and language, gifted characteristics include extensive and advanced vocabulary, the ability to communicate distress verbally, and communicating understandings of abstract ideas. AS characteristics include advanced use of words with a lack of comprehension for all language used, communicating distress with action rather than words, and thinking and communicating in concrete and literal terms with less abstraction. Social/emotional gifted characteristics list awareness of social norms, keen awareness that he/she is different from peers, and engaging others in conversation. AS characteristics list indifference to social norms of dress and behavior, limited recognition of differences with peers, and significant difficulty initiating or engaging others in conversation. Gifted characteristics under the category of behavioral include passively resisting but often going along with change and questioning rules and structure. AS characteristics list actively or aggressively resisting change, rigidity, and adhering strictly to

rules and neat structure. Motor skills for gifted list good coordination, interest in team sports, and demonstrating appropriate development of self-help skills. AS characteristics list a lack of age appropriate coordination, avoidance of team sports, and delayed acquisition of self-help skills. In total, there are 34 characteristics to compare to help professionals determine if the students behaviors indicate giftedness or AS.

There is the very real possibility that some students who are both gifted and have AS are overlooked. Amend (2001) noted that individuals who are not familiar with gifted behaviors may observe some gifted behaviors and describe them as a qualitative impairment in social interactions. Polirstok and Houghteling (2006) warned that the behaviors of students with AS may appear even more discrepant than usual if compared to the perceived behaviors of gifted students. Yet being able to identify gifted students who also have AS is important in order to provide the appropriate assistance needed.

Schuler (2009) developed a chart differentiating characteristics of typical gifted children and gifted children with AS. The chart was developed based on the research presented in four previous studies done by other researchers. Schuler looked at early development, cognitive development, speech patterns, responses to preteens and flexibility, awareness of differences/social emotional, humor, motor clumsiness, insight, stereotypy, and interests. Schuler summarizes that both typical gifted children and students with G/AS have advanced early descriptive and factual memories, are early readers, spellers, writers, and mathematicians. Typical gifted students have more consistent cognitive development with low scores above the average, while students with G/AS have more variability with wider discrepancies of verbal and performance scores, wider subtest scatter, lower scores for visual perceptual, and visual motor

skills often below average. Speech patterns of typical gifted children are normal, although they may have language of older children; speech patterns of students with G/AS are pedantic, seamless, may be specific to their interest area, and might be described as “Little Professor.” Insight in typical gifted children is usually good, while insight in students with G/AS is usually remarkably absent. Schuler notes that there is a wide range of levels in both categories.

Lovecky (2004) described gifted children with AS in comparison to average children with AS and noted that they tended to have a greater passion to learn. There was usually a better chance that their area of special interest would be one which could eventually apply to a career or hobby that was productive and socially acceptable. Typical children with AS would likely have more difficulty applying their area of special interest to a productive career. Individuals with G/AS tended to learn to speak and use a more complex vocabulary at an earlier age than did typical individuals with AS. Strengths and weaknesses on test profiles may be much wider for children with G/AS than for typical children with AS.

Little (2002) compared the traits of gifted students and students with AS. The study compared the areas of vocabulary, thinking skills, language comprehension, introversion, memory, and sensitivity. students with G/AS presented the following traits: advanced vocabulary, unawareness of another's perspective, intensity of focus, excellent memory, sensory sensitivity, introversion, enjoyment of rote exercises, and poor language comprehension. As the author noted, there were considerable similarities between the characteristics of gifted, AS, and students with G/AS. In order to determine appropriate identification, emphasis should be placed on the motivation behind the behavior rather than on the behavior itself.

Amend (2001) reported that a lack of emotional or social reciprocity is a characteristic of students with AS, whereas students who had been identified as gifted tended to demonstrate a marked concern for the needs and feelings of others. The author also noted that although a gifted child's behaviors may appear to be qualitatively different than normal, it was likely demonstrated differently and probably had different causes than did the behaviors of students with AS. Gifted students would have long and complicated reciprocal conversations about topics of interest, while students with AS may have talked in great detail for an extended period of time about an area of interest but taken little account of the other person's interests or responses.

Webb et al. (2005) concurred with Amend (2001). Many of the characteristics of AS and giftedness were similar and could therefore be mistaken for each other. Webb noted that when placed with intellectual peers, gifted students seldom displayed inappropriate social behaviors. Being allowed to interact with true intellectual peers may be a method to determine appropriateness of social interaction for a student who displays characteristics of both giftedness and AS.

Educational implications for gifted students with Asperger's Syndrome.

Recommendations for Gifted classroom structure included student choice, assignment options, spontaneity, flexible grouping, teachable moments, varied materials and pacing, and also allowances for creativity and development of divergent thinking (Clark, 2002; Davis & Rimm, 2004; Karnes & Stephens, 2008). Schedules are often very flexible and change to meet the daily needs of social, spontaneous, and/or energetic students. Maker (1982) stated that both pacing of information presentation and variety in the number and range of activities were necessary to keep students interested and to avoid boredom in a class of gifted students. For example, an

elementary classroom of gifted students in central Florida may start the day on Monday with a presentation from a local doctor followed by a group discussion of the information, then a trip to the library to find additional information, after which there may be independent study until lunch time. On Tuesday, some of the children in the class may use the computer lab to look up information on the previous day's topic while other children complete previous projects and still others engage in self-selected reading on an entirely different topic for the entire morning.

On the other hand, classroom recommendations for students with AS are usually focused on maintaining a fixed schedule with a familiar order so that the students are not upset by the change in routine (Atwood, 2007; Myles & Adreon, 2001). Students with AS are usually said to value "sameness" and structure (Betts, Betts, & Gerber-Eckard, 2007; Simpson & Myles, 2008). As Simpson and Myles noted, instructional strategies that facilitate successful learning outcomes require predictability and structure so the student can anticipate future demands and prepare for them appropriately without stress. Students with AS find change challenging, partly based on the difficulty in sequencing the timing of events. A typical modification for students with AS might include visual schedules, mini-schedules, and task organizers which would let students prepare for upcoming activities and predict change.

As can be seen, the situation can be problematic for children with G/AS. In a Gifted classroom, each day, in fact each activity, may be determined by events and the needs of the students as they unfold, with little predictability. Input from other students may dictate the direction of whole group or small group decisions. The classroom teacher would not be able to provide the student with G/AS with the needed schedules and activity guides since the activities may not be predetermined or perhaps even predictable, except within a wide frame of options,

for the teacher. If the classroom were made predictable and consistent in order to meet the needs of the AS student, the flexibility and options needed by the other gifted students may be negatively impacted. This disconnect between the needs of the AS child for predictability and the recommendation for the gifted classroom of spontaneous learning may cause considerable difficulty for the child with G/AS.

Baum, Cooper, and Neu (2001) described how dual differentiation is needed to create a balance between nurturing strengths and compensating for the identified deficits when two contradictory sets of characteristics are present. Many students with AS, including gifted students, continue on through college (VanBergeijk, Klin, & Volkmar, 2008), so helping them succeed through the struggles of middle school is important for their future education. Jeweler, Barnes-Robinson, Shevitz, and Weinfeld (2006) stated that academically advanced students who also present learning difficulties needed to have careful analysis of their skills in order to ensure that weaknesses received supportive and scaffolded skill development while areas of strength received appropriate attention in order to provide the student with rigorous and demanding expectations.

Bianco, Carothers, and Smiley (2009) described their suggestions for educational strategies for students with G/AS centered on strength-based programming, in other words having the student use their strengths to compensate for their weaknesses. Strength-based instruction should be built around the student interest, should include interdisciplinary thematic instruction, authentic assessments in learning, and mentors when possible. All suggestions in this article were based on what the teacher could do, while none are reported as having been used or observed in the classroom. There is no indication whether or not these strategies are successful.

Geller (2007) noted that a larger than expected number of students who are identified as having AS are also extremely bright and warned that due care must be taken to ensure that bright children are not discouraged by being placed in non-stimulating environments because of their special needs.

Neihart (2000) gave many suggestions for working with students with G/AS. Part-to-whole verbal instruction, specially trained occupational therapists, concrete visual approaches, social stories, and brief concrete directives are recommended. However, again, the recommendations are all approaches designed specifically for students with AS and do not address the special strengths of gifted students.

Burger-Veltmeijer (2007) presented the theory of Dimensional Discrepancy which stated that AS characteristics in gifted students could be described through a comparison of the various levels of cognitive and social intelligence. The dimensional discrepancy model consists of two parallel and continuous horizontal lines; the top line indicates cognitive intelligence from two standard deviations below the mean, indicating cognitive retardation, on the left side to two standard deviations above the mean, indicating cognitive giftedness, on the right side. The lower line indicates social intelligence from two standard deviations below the mean, indicating social retardation, on the left side to two standard deviations above the mean, indicating social giftedness, on the right side. Points are placed on both lines indicating the level of performance on cognitive and social ability which are independent of each other. The grey zone is plotted on the line of social intelligence between the actual social ability and average social ability and indicates a gifted student with ASD and a gifted person without ASD.

As an example, a person with a cognitive IQ of 130 and a social IQ of 70 would show a discrepancy of four standard deviations between their cognitive and social abilities. This asynchrony in development indicates severe difficulties in what is expected of the child and what they can actually achieve. The grey zone indicates the areas of need for these students. Burger-Veltmeijer (2007) saw the grey zone as a way to address the concerns of dual identification by focusing on assessment: what are the needs this child exhibits? The focus must change from a labeling-based diagnosis to a needs-based diagnosis. While the model shows promise, it is basically designed to identify the specific needs of these students rather than ways to address them in the classroom.

Very little has been published that will assist a classroom teacher in meeting the needs of students with G/AS. Several of the articles which purported to give classroom recommendations focused on the difficulties of dealing with AS characteristics in the classroom but did not address how these needs interacted with gifted needs. Shaunessy & Farmer (2006) provide a chart of interventions for gifted students with AS. The chart is grouped into social skills, skills for school success, and academic skills. Social skills interventions include suggestions such as simulating conversations with peers and rehearsing scripted daily activities. Skills for school success include allowing for frequent breaks during long assignments, using signals to remind students to remain on task, providing an advance organizer of the day's activities, and signaling transitions using cues such as timers or visual posters. Academic skills include providing a hard copy of notes or close notes, allowing for extra time to complete assignments, and the use of graphic organizers for abstract or complex material. All of these suggestions focus on the typical AS classroom needs and none take into account the strengths found in gifted students.

Assouline, Nicpon, Colangelo, and O'Brien (2008) compiled a packet of information designed to provide professionals with information about students with G/AS. In the document, they provided suggestions on meeting the needs of these students in the classroom. Many of these suggestions were the same strategies suggested for students with AS, but some suggestions took into account the special characteristics of giftedness. Suggestions for reading included finding materials that address the area of interest, encouraging reading of more diverse genres, a focus on comprehension and enjoyment over speed, and pairing the child with another student with similar interests who was assigned the same reading material. Teachers should provide high level activities but allow time for the student to process before moving on. Repeating information is not usually needed for typical gifted students, but may be necessary for these students. Social differences must be made explicit so that the student can cognitively understand rules and use their problem-solving skills to apply those rules in new situations. This article was one of the few to include specific gifted assets to these suggestions for classroom teaching of students with G/AS.

VanBergeijk, Klin, & Volkmar (2008) presented suggestions for the transition to university level for students with G/AS. Courses should be of students' choosing and preferably in the area of strength. Smaller colleges may be better for individuals with G/AS as the sensory overload of a large university could be unbearable. Multiple unpredictable situations arise and the larger the university, the larger the number of situations the student with G/AS will be faced with. The possibility of home-based services in college may provide some support for the student. The use of laptop computers or scribes may be necessary. Universities will need to work

with students and families in order to meet the social, academic, vocational, and life skill needs of these students.

Grandin (2001) believed that depriving a gifted child of challenging educational opportunities because they have AS is a mistake. Educators need to be made aware of the fact that intellectually satisfying work can make life meaningful, especially for individuals with AS who have difficulty with social issues. Grandin noted that locating appropriate mentors for these students is critical and can help the student handle difficulties as well as be encouraged to excel. Mentors who are computer programmers, artists, draftsmen, and engineers are important as these are areas where students with G/AS can excel because of their AS characteristics.

Working under the hypothesis that mathematicians of genius may have met criteria for AS, Fitzgerald (2002) looked at 12 mathematicians from history that made important contributions to the field. Utilizing DSM-IV criteria, he determined whether or not each individual displayed characteristics of AS based on historical information. Criteria included failure to develop peer relationships, lack of seeking to share enjoyment, lack of social or emotional reciprocity, encompassing preoccupation, impairment in social occupation, no clinically-significant delay in language, and no delay in cognitive development. Eleven of the 12 mathematicians met his criteria for AS. The proposed explanation was that persons with AS have difficulty with human interaction and with context; mathematics is both dehumanized and decontextualized.

Another issue to consider is the implications of identifying students with G/AS for the classroom teacher. The emphasis in special education recently has been to “push in” rather than “pull out” students in need of special services. This has resulted in many self-contained ESE

classrooms being dissolved and their students placed in regular classrooms, sometimes with an ESE teacher providing occasional instruction and consultation. This often results in a student in a self-contained ESE class being in a regular classroom for part of the school day. Many teachers do not have positive attitudes towards including special education students in the regular classroom (Wilson-Younger, 2009). Teachers' general feelings are that they were trained to teach fairly typical children and they do not have the training required to deal with exceptional students on a regular basis. Many teachers feel this way about autistic students and students with AS as well (Mahmoud & Farrell, 2009).

Review

As is apparent, possible characteristics of students with AS have been repeatedly described and documented. Cognitive, emotional, and social experiences have been clearly delineated in many areas. Characteristics of gifted students have also been well described in the literature, even if a clear definition of giftedness has not been determined. However, the area of G/AS does not present the wealth of information found for students with AS and giftedness. There is a need for a presentation of clear profiles of students with G/AS in order to begin to differentiate them from AS and gifted students in order to identify and provide for their needs.

The literature on students with G/AS has several areas that are seen as weaknesses. There are very few quantitative studies, with little empirical support for most recommendations. The empirical studies are focused on biological characteristics and very specific academic skills, with no information concerning classroom behaviors or needs. Part of the reason for the dearth in the literature of articles specific to students with G/AS is likely the fact that it is an extremely small population. Locating enough participants to conduct an empirical study would involve

considerable resources. While several studies look at the commonalities of students with AS and giftedness, few studies look at how to combined the diagnoses, and misdiagnosis may be common.

Individual case studies are prevalent, often with savant and splinter skills being used as substitutions for holistic gifted identification. There is a lack of agreement on the definition of gifted, especially in its use with AS. While much information is presented to meet the needs of AS students in the classroom, little is available in the area of classroom recommendations and instructional strategies that are specific to the gifted strengths of students with G/AS. Middle school is a difficult environment in the best of situations. Add the emotional intensity of gifted students, the oversensitivities of students with AS, and a lack of understanding from peers and teachers, and it becomes apparent why middle school students with G/AS are at a high level of risk for not being successful in the classroom.

While there is considerable overlap in the characteristics of gifted students and students with AS, there is little overlap in the classroom structure recommendations for gifted students and students with AS. Hockett (2009) reviewed research on gifted education to determine best practices for gifted education curriculum. Among the five principles of high-quality curriculum that were agreed on by experts in gifted education, she included the need for high-quality curriculum to be flexible. Students should be allowed choice in the direction and content of their studies, adjustment in pacing, and variety in instructional approaches, content, and activities. Rayneri, Gerber, and Wiley (2006) noted that gifted students prefer a flexible classroom environment.

Gallagher & Gallagher (2002) stated it clearly: “The learning environment that is a part of basic training in gifted education – open, complex, free – will not support and nurture the AG/AS child. Rather, the AG/AS child requires structure, normalcy, focus, and freedom from distraction,” (p. 11). Montgomery (2003) noted that for students with AS, rote learning is recommended. However, “Rote learning is not at all recommended for ordinary gifted children!” (p. 161) How are these dichotomous recommendations successfully carried out in a gifted classroom, or are they? What do these children look like? How can they be described in academic, emotional, and social terms? How does the classroom teacher provide for structure, flexibility, normalcy, spontaneity, focus, and options all at the same time, or do they need to? Do the classroom needs of students with G/AS require high levels of accommodations, or do they fit in with the other students in the classroom?

By identifying students who legitimately meet the criteria for both gifted and AS services and describing their academic, emotional, and social characteristics, we can add to the body of knowledge that can be used to identify other students with G/AS so that they can receive the appropriate services they need. By interviewing the teachers of these students and observing classroom interactions, we can identify strategies and/or accommodations that may provide assistance to the teachers of students with G/AS as they try to meet their students’ needs. That is what this study was designed to do.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

Research Questions

1. How can these students with G/AS be described in academic, emotional, and social terms?
2. How do teachers of students with G/AS attempt to meet the academic, social, and behavioral needs of these students?
3. Does there appear to be an appropriate match between students and teaching styles?

Population and Sampling

Population identification was based on middle school students who were identified as both gifted and as having AS, were currently receiving services for both exceptionalities, and were attending one of the county public schools. The district gifted identification rules follow the state requirements and are based on an IQ score two standard deviations above the mean on an individual psychological test, a statement of need for a special program, and a majority of positives on a gifted characteristic checklist. All middle school gifted courses in this district are comprised only of students who meet the qualifications for the gifted program. The district AS identification is based on the ICD-10 definition, which states in part that AS is “Characterized by the same type of qualitative abnormalities of reciprocal social interaction that typify Autism, together with a restricted, stereotyped, repetitive repertoire of interests and activities” (International classification of diseases: ICD-10, 2010). It also states that there is no delay in cognitive development.

Originally, the population was to include only students meeting the criteria who were being taught by a certified, experienced teacher of the gifted in order to make sure that teachers had some experience in gifted education. However, as I talked with the school principals and gathered additional information on the teachers of the identified students, a problem developed. While two of the students were in a full-time gifted program for all of their core academic classes, one of the students was in regular education classes for all but one course. Many, in fact most, of the teachers were not certified in gifted education. For all three students, only two of their teachers had completed the required training, earned their gifted certification, and had experience teaching gifted students. Seven other teachers said they had experience teaching gifted students, but they did not have their certification. Thirteen teachers had no certification or experience in gifted education. Therefore, if the original criterion of only using certified, experienced teachers of the gifted was used, I would only be speaking with six teachers. This was unacceptable as it would result in too small a sample and would not provide a full picture of the true classroom situations the students were experiencing daily. Because of this, I decided to observe and interview all teachers in order to gain as much information as possible to be used in describing the students.

Permission from the Institutional Review Board (IRB), district, school principals, teachers, parents, and students was obtained following all IRB protocols. Once approval was received from the parents, approval was then sought from the student with the parents' cooperation which was obtained prior to interviews and observations.

Students were identified through the district gifted coordinator who ran a data search to locate all students who were receiving services for both gifted and AS needs. Students were

purposefully selected to meet the above criteria. Because gifted students comprise from three to five percent of the general population (Davis & Rimm, 2004), and students with AS comprise approximately 7.1:1000 in the general population (Klin & Volkner, 1997), I assumed that locating a population of students with G/AS would likely result in a very small number of students. At the time the data search was run, the county had five students on roll who met the criteria listed. Therefore, random sampling would have been an inappropriate method.

It was expected that getting all students from such a small population who met the above criteria, who agreed to participate, and whose parents and teachers also agreed to participate, might be difficult, so there was a possibility that the number of student participants might be slightly less than desired. Five students were identified with three students ultimately agreeing to participate in the study.

Procedures

Time frame.

After the five students meeting the established criteria were identified, e-mails were sent to the principals at each school where an identified student was attending requesting a meeting to discuss the study. All four principals agreed to have the study conducted at their school site, and three of the four school principals delegated an assistant principal as the contact person. At the meetings with the administrators I described the study, explained what would be involved, and requested the principals' assistance in contacting the parents of the identified students. I also requested a copy of the students' schedules and permission to contact, observe, and interview all of the teachers who worked with the identified student. All administrators gave their approval,

provided contact information for the students, and made available a schedule for each student so I could contact the teachers once parents had given permission.

Letters of explanation and IRB approval forms were sent to all five students' homes through the U.S. Postal Service. If the parents did not contact me within 10 days a second letter was sent through the U.S. Postal Service. If the parent did not contact me within 10 more days, after getting permission from the school site administrator a final letter was sent home through the school. At this point in the process I had received permission from two parents for their child to be included in the study. As there had been no contact from the three additional students, I did not attempt to contact those parents again. However, a classroom teacher of one of these three students spoke to the mother of the student and encouraged her to contact me after the final letter had been sent. Ultimately, this parent agreed to participate and their child was included in the study.

This resulted in the parents of three of the five identified students giving permission for their child to participate in the study and all three students agreeing to participate. After the parents had agreed to participate in the study, I contacted the schools to arrange an observation schedule. I also contacted all teachers that were on the students' schedules, explained the study, that I had received permission from their administrator and the students' parents, and requested their participation and a date for an interview. Ultimately, all teachers agreed and participated in an interview. Records reviews for all students were conducted after the classroom observations were begun. For confidentiality reasons, all names are pseudonyms. "Albert", "Blaine", and "Charlie" will be identified in interview excerpts by the initials "A", "B", and "C". while I will be identified by the initial "R".

Albert.

With Albert, I spoke with all seven teachers, plus his speech teacher and ESE consultation teacher, in a brief meeting before school the day of the scheduled observation. Albert was in gifted classes for reading, math, science, language arts, and civics and in regular education for his other courses. It turned out that he had a chorus performance that afternoon and would only be in school first through third periods. I observed those three periods and interviewed two of the teachers that day. I came back the next week to observe periods four through seven and the remaining teachers were interviewed. The student was interviewed after school, and then the parents met with me for their interview.

- March 7 – Meeting with administrator, parent was called and gave verbal approval for participation, met
- March 8 – Mailed participation letter
- March 29 – Called parent to request return of signed forms, parent again gave verbal approval
- March 31 – Met with teachers before school, observed periods one through three, interviewed some teachers
- April 7 – Observed periods four through seven, interviewed teachers, interviewed after school, interviewed parents that evening
- April 8 – Member checks sent for all interview transcripts
- September 19 – Member checks sent to teachers for summary of student description
- December 11 – Second notice sent for member checks of summary of student description
- December 16 – Total of six member checks received for summary of student description

Blaine.

For Blaine, I observed periods one through six and interviewed several teachers on the same day. Blaine was a gifted science class, advanced math class, regular education classes for technology and physical education, and courses with ESE support for language arts, reading, and civics. The student became very upset during sixth period and was removed from class, so I observed the seventh period class at a later date. I completed the remaining teacher interviews and parent interview after that and then observed in his seventh period class. The student interview was then completed.

- March 8 – Mailed participation letter
- March 24 – Sent third notice for participation letter through school mail
- April 6 – Mother called to give approval
- April 27 – Observed class periods one through 6, interviewed some teachers
- April 29 – Observed sixth period
- May 16 – Member check for transcripts sent
- May 24 – interviewed parents
- May 25 – Interviewed student
- September 19 – Member checks sent for student summary
- December 12 – Second notice member check sent for student summary
- December 16 – Total of seven member checks for student summary received

Charlie.

For Charlie, observation of all seven classes was completed and then interviews of the teachers were completed. Charlie was in gifted classes for reading, science, language arts, civics, and math and in regular education classes for physical education and band. After that, the mother was interviewed and then the student.

- March 4 – Met with administrator, received approval
- March 7 – Mailed participation letter
- March 25 – Classroom observations in all classes
- March 30 – Interview with parent and student
- April 8 – Member checks sent for transcripts
- May 22 – All member checks for transcripts received
- December 11 – Notice sent for member checks of summary of student description
- December 16 – Total of two member checks received for summary of student description

Observations.

Observations focused on behaviors, attitudes, social interactions, verbal responses to teachers and peers, nonverbal responses to teachers and peers, and other behaviors of the students that might help describe their emotions, reactions, and thoughts. Field notes were taken during all observations using a laptop computer. Observations involved a non-interactive method whereby I recorded my observations of the student in the classroom setting without interfering or intervening in their activities. For each classroom observation I sat in the back of the room if possible unless directed to a specific seat by the teacher. I avoided eye contact with all students

as much as possible. I began making observations from the moment the student walked in the room and continued taking notes until they had left the classroom.

Field notes and reflections were taken and then transcribed the same day, as often as possible. If they were not transcribed the same day, they were transcribed by the end of the next day. After the observations were complete, they were coded to indicate verbal, nonverbal, teacher initiated, peer initiated, student initiated, and other types and topics of discourse and behavior as needed. After transcribing and evaluating the data from the observations, I looked for categories of events and common themes across those data collection opportunities, using quotes and examples from transcripts and notes by following a variation of the participant observation procedure of Spradley (1980).

When possible, observations for an individual student were completed for all classes on the same day. After meeting briefly with Albert's teachers before school, I observed him in periods one through three, after which he left for the day to attend a chorus performance. I returned the following week to observe Albert in periods four through seven. Blaine was observed periods one through six on the same day. During sixth period he became very upset and had to be removed from the classroom, so seventh period was observed at a later date. Charlie was observed in all classes on the same day.

After the observations, each student was interviewed about their perceptions of their academic, social, and behavioral progress in the classrooms in which the observations took place. Each interview was conducted with only the student and me in attendance to ensure confidentiality and to encourage honesty in their responses. Albert gave very brief answers, Blaine expounded on certain topics that he was emotionally concerned about, and Charlie was

more talkative. The interview began with the completion of a short checklist asking for input on the academic, social, and behavioral perceptions of the student for their school life in general. The student was asked to indicate “No different,” “Better,” or “Worse” on three sets of questions:

1. In comparison with the other students at your school, how are you doing academically?

2. In comparison with the other students at your school, how do you get along with other students?

3. In comparison with the other students at your school, how do you enjoy going to school?

After the checklist, which was used to guide the interview, the remaining questions focused on student comfort in the classroom and began with general questions to allow the student to feel comfortable with me. The questions that followed were open-ended and focused on the student’s perception of their progress in the observed classes. Other questions addressed what the student thought of their teachers, their peers, their progress in the classes, what they liked or disliked about their classes, social situations within the classrooms, friends in the classrooms, feelings about being identified as gifted, feelings about being identified as having AS, areas of interest, etc.

The interview was meant to encourage students to express their perceptions in a free and open environment with as little talk from me as possible in order to allow them ample time to express their perceptions. Some students were very forthcoming with responses while others needed a fair amount of prompting on my part. The starting list of student interview questions is

included in the appendix. The ultimate goal in these interviews was to be able to describe the student in academic, social, and behavioral terms and to triangulate previous data and explore issues which developed during the observations. It was expected that each of the individuals would have a slightly different set of questions based on the data collected about that student during the observations, and there was some variation in the actual questions. All interviews were recorded and then transcribed as soon as possible - by the end of the following day at the latest.

The teacher interviews took place both before and after observations and covered the teachers' perceptions of the students' academic, social, and affective progress in their classes. The interviews began with the completion of a short checklist. The teacher was asked to indicate "No different," "Better," or "Worse" on three sets of questions:

1. In comparison with the other students in this class, how is ___ doing academically?
2. In comparison with the other students in this class, how is ___ during cooperative groups and in social interactions?
3. In comparison with the other students in this class, how does ___ seem to enjoy this class?

Questions were asked concerning teacher background and certification, experience in teaching gifted students and students with AS, perception of student progress, and efforts on the part of the teacher to meet the needs of this student. It was assumed that each individual teacher would be given a slightly different set of questions based on the previous observation and there were variations in the questions actually discussed. The starting questions used in the teacher interviews are included in the appendix. The ultimate goal in these interviews was to determine

how the teacher viewed the student's behaviors and success, his/her own efforts to ensure the student's success in their classroom, and to triangulate data from other sources.

Parent interviews covered the parents' perceptions of their child's academic, social, and behavioral progress, both in the classroom and outside the classroom, and usually took place after the observations had been completed. The interviews began with the completion of a short checklist. The parent was asked to check "Yes", "No", or "Unsure," on three sets of questions:

1. Are you satisfied with your child's academic achievement in school?
2. Does your child report any social problems in school?
3. Does your child like going to school?

Parents were asked to explain how their child behaved in both educational and social situations, how their child felt about school and peers, what strengths and areas of concern their child had, and other questions addressing the social, academic, and behavioral characteristics of their child. The starting list of parent interview questions is included in the appendix.

Only Albert's mother was interviewed, as his father lived out of state. Both parents were in attendance for the interviews with Blaine and Charlie. All five parents appeared eager to talk about their child and easily answered all questions asked. All parents gave a large amount of additional advice, examples, and clarifications. None of the parents appeared to be hesitant or to be carefully crafting their answers – each spoke easily and smoothly about their experiences with their child. The ultimate goal in these interviews was to determine how the parents viewed their child's academic, social, and behavioral success and to provide triangulation for other data.

All interviews were recorded with the participants' approval and then transcribed word-for-word using a voice recognition program. This allowed the focus to remain on responses to

the questions, rather than on writing down the answers. During the interviews, as points of interest arose, probes were used to further explore those points. Some examples of student probes for the question, “What do you think of your teacher?” were: “Does he/she seem to like the kids in your class? What do you like/dislike about the teacher? Does the teacher do anything to help you succeed in class?” Other examples of probes are included in the interview questions in the appendix. All interviews ended with a question asking the interviewee if there was anything else they wanted to say. Recordings of interviews were transcribed as soon as possible, by the following day at the latest. All interview transcripts were then sent to the interviewee for member checks and minor revisions were made as needed.

Record reviews looked at all information in the students’ cumulative folders. This included standard identifying information, transcripts, standardized test scores, report card comments, educational plans, individual educational plans, conference forms, teacher notations, planning meeting notes, referral reports, medical reports, and a variety of other materials. Parents had given permission to review the students’ cumulative records when they signed the permission forms. Records were reviewed in secure locations, usually the records clerk’s office or the ESE workroom. Using a laptop, several hours were spent on each student's folder recording any data that might have been pertinent to the research questions. By the end of the following day, all record reviews had been edited and revised to ensure accuracy.

IRB approval was obtained as required. Approval for the study had been obtained from the county school district where the observations took place.

Trustworthiness.

Following the guidelines of Brantlinger, Jimenez, Klinger, Pugach, and Richardson (2005) several actions were undertaken to increase validity. First, triangulation of data was done through data collection from multiple sources. These included observations of and interviews with the students, reviewing data in the students' cumulative folders including the IEP, teacher interviews, and parent interviews. All observations, interviews, and reviews were completed personally by this researcher.

After themes were reviewed for each of the research questions, disconfirming evidence was sought in order to ensure an accurate representation of the data. A bracketing statement was composed prior to data analysis in an attempt to become consciously aware of my beliefs and assumptions which may have influenced my evaluation of the data. The bracketing statement is included in a following section.

Member checks were done to confirm accuracy of both interview transcripts and result summaries. After every interview with all students, parents, and teachers, a transcript of that interview was sent and feedback was requested. If no response was forthcoming, a second notice was sent. Ultimately, all teachers and parents and two students responded. Several minor corrections were made in the transcriptions based on the responses. After completing the description of each student in academic, behavioral, and social areas, a summary was composed by assembling summary paragraphs for each section of the results. The summary document was then sent to the teachers of each student for feedback. If no response was forthcoming, a second notice was sent. Ultimately, six of Albert's nine teachers, seven of Blaine's 10 teachers, and two of Charlie's 10 teachers responded. All responses confirmed the summary as written.

Inter-rater reliability checks on the coding of data were attempted. When coding of data first began, a coded transcript was sent to all members of the dissertation committee requesting feedback on accuracy. Responses were taken into consideration for all future coding. This was done to increase the accuracy of the data coding.

To increase validity of the analyses in this study peer debriefing was done on both descriptions and final analysis. After the description of the first student was completed, it was sent to a committee member for evaluation and feedback. Comments were taken into account for the remaining students' descriptions. As the analysis was completed, feedback was requested at several points in the process and all comments were addressed until a final product was achieved.

Sincere attempts were made to keep an accurate record of interviews and observations, including dates and times. This was done in order to provide additional evidence that adequate attention was given to all interviews and observations. Every student was observed in every class for the full class period. Every student, parent, and teacher interview was continued until all appropriate interview questions had been addressed or as long as feasibly possible considering outside restraints on the time parents and students could spend in the interview. Records reviews for each student took between four and six hours, with two sessions being required for two of the students because the offices were closing before the reviews were completed. The records reviews included a range of relevant documents. The goal during records reviews and observations was thick descriptions in order to provide adequate data for evaluation. Cases were documented with a great deal of detail so that readers would be able to determine if the cases presented in this study could be applicable to their own situations.

By completing as many observations as possible before the students had met me, there should have been less chance that my presence would alter the student behavior during the class observations. The participants were students and teachers who did not know me personally (except for one teacher), thereby minimizing possible threats from personal bias by me or the participants. By completing the interviews and observations over a relatively short period of time, I attempted to reduce the possibility of student growth affecting the results.

Several indicators of within-research quality indicators have been addressed to increase the validity of the study results. Appropriate participants were selected. They were purposefully identified and recruited appropriately, and were representative of the target population. Although there are only three students involved in the study, all parents and teachers connected to those students were interviewed. The interview questions were carefully worded and attempts were made to avoid leading questions. The questions were sufficient to explore the topics of interest given the time restraints imposed. Appropriate devices were used to accurately record and transcribe the interviews. A digital voice recorder was used for all interviews, the files were saved, and transcriptions were made through a voice-recognition program. To ensure accuracy all transcriptions were sent to the person interviewed for feedback. Every effort was made to represent the participants in a fair and sensitive manner. Confidentiality of the interview information was maintained, as all sound and word files relating to the interviews are stored in a computer that was password-protected.

Multiple steps were taken to ensure that the observations completed were valid for this study. Appropriate settings were selected for the observations. As this study addresses students with G/AS and their school behaviors and behaviors of their teachers, observations were

completed in the students' daily classroom settings. Because of time restraints, the students could not be observed for multiple course observations. However, every student was observed in every class in order to include the range of academic and special area courses. I attempted to fit into the observation sites by being as unobtrusive as possible. Sitting in the back of the room, not communicating with the teacher or student during the observation, not telling other students why I was there, and avoiding eye contact with the participant were all methods used to remain as invisible as possible in order to observe as normal a classroom situation as possible.

Field notes were taken on a laptop during the observations and revised and edited at the soonest possible opportunity. Many times the field notes were revised and edited during the students' lunch time or in the parking lot after school. All field notes were revised and edited before the end of the following day in order to make any needed changes while the information was still fresh. Confidentiality was insured by minimal conversation with other students, not discussing the student with the teacher while other students were present, and maintaining all files on a password-protected computer.

Several steps were taken to ensure quality document analysis. Meaningful documents were used. All contents of the students' cumulative folders were reviewed and pertinent data recorded. Some additional documents, such as student work, were also reviewed when possible. No documents were removed from the classroom or secure locations. Documents were cited when appropriate. Confidentiality was ensured by maintaining files of all document reviews in a password-protected computer.

Data analysis was conducted in a systematic way. All transcripts from observations, interviews, and records reviews were coded based on topics pertinent to the research questions.

This list of codes was derived over a period of time as more topics became evident during the coding process. See Table 1 in Chapter 4 for the complete list of codes. Although other information was provided in the observations and interviews, only data related to the research questions was included in the coding process. I provided bracketing about my personal perspectives. Conclusions were supported by sufficient participant quotations, field notes, and document reviews. I have attempted to make connections between the data and related research.

Assumptions.

Of necessity some assumptions were made during the study.

1. Students identified as gifted had been accurately identified. It was assumed that all students identified as gifted have honestly met the district and state requirements.
2. Students and teachers would not alter their behavior during the observations. Although this could not be guaranteed, it was hoped that by completing as many of the observations as possible before the student had met me, or at least before we had our interview together, the student would act as they would normally act.
3. All participants gave honest answers to interview questions.

Limitations.

Some limitations to the study must be considered.

1. The sample may be biased in that only parents who felt their child was doing well would agree to participate in the study. In the same vein, the teacher sample may also be biased in that only teachers who felt they were doing an excellent job with students with G/AS students would agree to participate in the study.

2. Honesty may have been a limitation for all participants if they felt the need to present a “better” picture of themselves, their teaching, or their children, than was accurate.
3. Other students who may have been identified as having G/AS were likely present in the given population, but for various reasons had not met the identification requirements and were therefore not recognized in the system as both gifted and as having AS. Therefore, there were likely other students who may have qualified for the study had they held those identifications.

Delimitations.

Several factors must be taken into consideration when looking at the results of this study.

1. Due to the small sample size and small percentage of students with AS who are female, all participants are male, thus removing a segment of the possible population from the study. All three participants were also middle class, thus removing other socio-economic groups from the study.
2. Different factors affect behavior in elementary, middle, and high school. Therefore, descriptions will only apply to middle school students.
3. Private school students, especially students at schools specifically designed for special education students, as well as home-schooled students, may not be characterized by the same data that this study will obtain. Therefore, the descriptions must remain in the population of public school students with G/AS.

Data Analysis

Bracketing.

I became interested in gifted education as a career when I was in high school. I decided to become a teacher of gifted students, so I attended the University of South Florida, the only school in the state in 1976 with a graduate program for gifted education. I earned my bachelor's degree in elementary education and then my masters in gifted education. After two years of teaching in a regular sixth-grade classroom, I began my career in gifted education as a junior/senior high school gifted resource teacher. For the last 31 years I have taught gifted students in eastern central Florida in a variety of situations. I have taught resource, consultation, direct instruction, and full-time self-contained students. I have taught gifted students in every grade except fourth and have provided in-service education courses for teachers of the gifted in my district. Research in the field of gifted education has changed dramatically since I completed my Masters degree, so I felt it was important to retake the courses in gifted education at UCF in order to become current in the field.

About 10 years ago, the third grade teacher next to me received a gifted student with very distinct behaviors. He was extremely bright but appeared to have almost no social skills and obsessed about the smallest, seemingly inane situations. He could be an engaging child, but at other times he was extremely disruptive. The parents insisted there was nothing unusual about their child, although everyone else involved in the situation knew there obviously was something unusual. The teacher was at a loss as to how to help the student. On our own, the other teacher and I did some research and decided that the child may have had AS. By the time he was in eighth grade, he was receiving services for both gifted needs and AS.

From that time forward, I became intrigued with the dichotomies this child displayed and how helpless the teacher felt when faced with meeting this child's needs. I did some reading, attended some workshops, and found a great deal of information about Autism and AS, but practically nothing about gifted students with AS. When I first started my doctoral work, there was almost no information available about students with G/AS. As part of my UCF course on special populations of gifted students, I conducted a survey of the teachers in my county in regards to their feelings about students with AS: did they feel they had adequate knowledge about children with G/AS, how to identify them, how to meet their educational and behavioral needs, if they felt the need for more training, if they felt they had ever taught a gifted student with AS, etc.? Fifty seven percent of the respondents did not feel adequately trained to meet the educational and behavioral needs of gifted students with AS. By then, I had developed a belief that as more of these students with dual exceptionalities appeared in our classrooms, teachers would have little help in finding ways to correctly identify them, much less meet their needs. That was when I decided to focus my studies on gifted students with AS.

When I began to prepare for my dissertation, I realized that I had several preconceptions about what I might find in my study. Even though I had heard the phrase, "If you know one student with AS, then you know one student with AS," I felt that it was likely there would be some overarching truths that could describe all students with G/AS. Based on my experiences with the previously mentioned student and discussions with teachers of other students with G/AS, I believed that there was likely to be a mismatch between what was being provided by the teacher of the student with G/AS and what the student actually needed, probably because the teacher did not have sufficient information about the needs of students with G/AS to provide for

them appropriately. During the course of this study, I have purposely put aside those beliefs in order to be open to whatever results come from the data.

Data analysis.

I used the NVivo 9 Qualitative Software program (QSR International, 2010) to help analyze the data. After coding of data was completed, I evaluated data for each individual participant, looking for consistent patterns of behaviors and/or topics in the areas of academic, social, and behavioral characteristics that would describe the students. I evaluated each student by first describing their educational history, based mostly on records reviews and parent interviews. Next, I focused on each of the three areas in the research questions with particular attention to a description of the students. Academics were described by first summarizing the students' grades and performance in academic areas, accommodations provided by the teachers, organizational attributes, and any other areas that seemed to be developing into an area of interest. For example, I reported on Blaine's on-task behavior and Albert's identified exceptionalities. The social descriptions included both peer interactions and adult interactions and were followed by a description of the emotional/behavioral data. This was followed by information relevant to their gifted identification and then all information pertinent to their diagnosis of AS.

These descriptions were made by thoroughly evaluating the data for all entries with the appropriate coding across all sources of information. Multiple quotes and descriptions were used from every source available in order to provide a thick description of the topics of interest in order to identify themes pertinent to the research question.

After evaluating individuals, I looked for patterns of commonalities across subjects, as well as how Stage Environment Fit Theory might explain some of the relationships. Within the constraints of my knowledge of the NVivo 9 qualitative program software, I ran multiple reports and graphics to try to identify themes and relationships among the three individual participants based partly on the procedures of Spradley (1980) and mostly on Stage Environment Fit Theory (Eccles et al., 1993.)

I looked for common themes across the data collection opportunities, using quotes and examples from transcripts and notes. Spradley (1980) presents a method of analyzing data through domain, taxonomic, componential, and theme analysis. Domain analysis involves the following procedures in order: select a single semantic relationship, prepare a domain analysis worksheet, select a sample of field note entries, search for possible cover terms that fit the semantic relationship, repeat using a different semantic relationship, then make a list of all identified domains (p. 98). A taxonomic analysis shows the relationships among the items identified in the cultural domains by describing the subsets of a domain and how they are related to the domain as a whole. This is determined through a six step process: select a domain, look for similarities based on the same semantic relationship, look for additional terms which have been included, search for more inclusive domains which may include the specific domain, construct a tentative taxonomy, make pointed observations to validate the analysis (Spradley, 1980). This should result in a series of cover terms which encompass the major relationships and organization described in observations and interviews. Due to the limited number of data collection points, it was probable that a limited number of pointed observations designed to validate the analysis, the last step in the process, would be made.

Componential analysis organizes and represents the contrasts or attributes within cultural categories. Spradley (1980) lists the steps in this analysis as follows: select a domain which includes contrasts, inventory all contrasts, prepare a paradigm worksheet, identify dimensions of contrast with two or more values, combine related dimensions into ones with multiple values, construct questions for missing attributes, look for missing information, complete paradigm. This completed paradigm may appear as a chart, where values of importance can be discussed in more depth. This step was partly completed when designing and completing the coding of data. Minimal additional useful information within this area was found due to the focus of the research questions.

Theme analysis is defined by Spradley (1980) as a reoccurring relationship found across domains and is the central component of the analysis of my data. While he does not present a sequential routine as in the other analyses, Spradley does suggest making a componential analysis of domain cover terms, searching for a larger domain and similarities among contrasts, identifying organizing domains, and making a schematic diagram. He lists some possible universal themes to consider, such as social conflict, cultural contradictions, informal techniques of social control, managing impersonal social relationships, acquiring and maintaining status, and solving problems. Finally, a summary overview of the situations under study can be compiled presenting cultural themes.

I used a modified version of Spradley's methods which followed the main ideas and procedures he laid out, but with a focus on the characteristics of the students in the classroom and how the teachers attempted to meet their needs. Stage Environment Fit Theory informed my analysis of the relationships and interactions between the members of the identified set of

participants. The behaviors, type of student, and way of teaching were examined to determine if there was a mismatch between the needs of students and the in environment the classroom. I was aware that there might not have been substantive commonalities for all participants. I also looked for themes based on parent, teacher, and student information. Analysis was assisted by using the nodes concept of the NVivo9 qualitative software program. As an intermediate step, information was displayed using the program's data reporting options. After the analysis was completed, a committee member provided feedback on thoroughness, accuracy, and importance of my conclusions.

CHAPTER 4: ANALYSIS AND DISCUSSION

This study was conducted to describe students with G/AS in academic, emotional, and social terms and to look at how the teachers of the students attempt to meet their needs. This chapter is presented in two main sections. The results section contains descriptions of the qualitative information gathered during observations, interviews, and record reviews. The first research question is addressed as each student is individually described according to the following areas: history, academics, social, emotional/behavioral, Gifted, and AS. Thick description provides multiple examples of situations, interactions, and characteristics in each section. Next, all three students are looked at as a group. Charts are provided to illustrate how students compared with each other when discussing all coded text. The second research question is addressed by describing the teacher accommodations for each of the individual students, followed by a summary of the results. The third question is addressed by describing how student pull applied to the behaviors of classroom teachers and whether there appeared to be an appropriate match between students and teaching styles. The second main section is the analysis section. In this section, themes that were discovered during data analysis are discussed for each student, then for the three students as a group. The second research question is also analyzed in terms of themes that developed from the data. The third research question is analyzed to determine whether an appropriate match was found between students and teaching styles.

Exceptional Education students in Florida are required by state law to have an Individual Educational Plan (IEP) in place. The plan describes in detail the student's present levels of performance, test and assessment data, parental input, goals and objectives, extended services,

evaluations, time spent in special and regular education class, and all other aspects of the student's education. The IEP must be reviewed and updated at least every year. Students in a gifted program are required by state law to have an Educational Plan (EP) in place. The EP provides similar information to what is found in an IEP. However, the EP is designed to cover a range of years; kindergarten through second grades, third through fifth grades, middle school, and high school. The majority of the information in the history sections was found in the cumulative folders of the participants.

Results

1. How can these students with G/AS be described in academic, emotional, and social terms?

Albert.

Albert is a dark-haired seventh grader who lives in a suburban/rural area in central Florida. He was born in March of 1998 and lives with his mother, father, older sister, and little brother. He currently is enrolled in gifted classes for all of his academic coursework and receives accommodations and assistance in language and occupational therapy. He plays on a community baseball team and has become very involved in a competition to sell candy as a fundraiser for his chorus group.

History.

Albert's 1998 health records from Connecticut are unremarkable with no concerns listed. He attended kindergarten in Palm Beach County, Florida, where he was marked above or on grade level in all areas except for "works cooperatively" and "follows rules/routines/directions"

which were marked as areas of concern once each, and PE and “resolves conflicts appropriately” which were both marked as areas of concern all three assessment times.

On his first grade intake interview, it was noted that Albert had ADHD for which he was currently on medications. He also had received speech therapy for which he would probably need additional therapy and was to be retested at the end of the previous school year. A health note from Palm Beach County noted that Albert had three sets of ear tubes and had his adenoids removed, which caused the speech delay.

It was also noted that he had “a tremendous vocabulary and a lot of information,” he loved dinosaurs, and intended to be a paleontologist. His parents noted that at that time he had a nervous habit of covering his mouth and clearing his throat, which they felt may have been associated with the stress of moving to a new home and new school. Their pediatrician had recommended not bringing the physical behaviors to Albert’s attention, because, although he could control it if he focused on it, he was then unable to focus on anything else.

Albert’s first grade report card showed that he was progressing as expected in his academics and was on level in both reading and math. Most personal growth skills and behaviors were listed as satisfactory with the following exceptions: “listens attentively” and “practices self-control” were listed as “improvement needed” all four times, while “use his time wisely” received an “improvement needed” the last two grading periods, and “writes legibly” received the same evaluation the last three grading periods.

In April of 2005 Albert had accommodations recorded in his records based on ADD with hyperactivity. The accommodation plan included the following actions: extended time to complete testing/classroom activities, frequent breaks, a positive reinforcement plan, and

reminders/cues to build organizational skills. The major life activity affect was listed as academic/social-emotional functioning.

During his first grade year, an incident report was made for student battery during school hours, and a referral for expulsion in February of 2005 for “battery against another student” was sent to the principal. Albert inappropriately touched another student in music class and the other student’s parent decided to press charges.

Albert was referred for school psychological services at the request of the district student placement committee where he was sent with a recommendation of expulsion following the violation of the code of conduct. A WISC-IV in March of 2005 showed a Verbal comprehension score of 116, Perceptual reasoning 133, Working memory 116, Processing speed 115, with a Full-scale IQ score of 127, which was at the 96th percentile. A Woodcock Johnson achievement test showed broad reading at 126 and math at 127. The results of the evaluation stated, “The behavioral/emotional data collected from both the school and home settings are indicating some behavioral concerns with the pattern more characteristic of an ADHD child rather than one with a significant degree of emotional disturbance.” There was an initial staffing for placement in the gifted program at that time.

The social history indicated that Albert’s father remained in Connecticut when Albert and his mother and siblings went to live with his maternal grandparents in Palm Beach County. The family then moved back to their current home in August of 2004, where his father rejoined the family that fall.

Albert’s second grade report card showed that his reading and math were above level and he had an A or B in all academic areas with positive effort marks in all areas. He received one

“I” (improvement needed) under “uses time well,” three “I” grades under “writes legibly”, and for all four grading periods he had an “I” in “work is organized and neat.” All other personal growth areas were marked as satisfactory for each grading period.

His third grade Florida Comprehensive Achievement Test (FCAT) in 2007 showed the following: reading comprehension 42/54, literary 11/18, informational 15/18, functional 16/18, initial understanding of 11/12, interpretation 14/20, critical analysis 9/12, strategies 8/10, math problem solving 43/46, number sense 12/14, operations 11/11, patterns/relationships and algebra 5/5, data/statistics and probability 6/6, geometry and measurement 9/10, a reading comprehension score of 68% with a reading level of four, and a math problem solving score of 93% with a math level of five.

His fourth grade FCAT scores for spring of 2008 were reading level four, 40/51, math level five, 39/40. His fourth grade Norm-Referenced Test (NRT) showed a reading comprehension score of 95 and a math problem solving score of 93. Subtest scores were as follows: reading comprehension 50/54, literary 17/18, informational 17/18, functional 16/18, initial understanding 12/12, interpretation 20/20, critical analysis 10/12, strategies 8/10, math problem solving 43/48, number sense 12/12, operations 10/12, patterns, relationships, and algebra 5/6, data statistics and probability 8/8, and geometry and measurement 8/10. On his Florida Writes test, he showed a level 2 with a score of 250 (on grade level is 290) with the following scores: focus 7/8, organization 8/12, support 5/8, and conventions 16/16.

His fourth grade report card record indicated he was reading and performing math on level with the following grades: reading B, A, C, B; math B, B, B, B; language arts A, B, B, B; science C, B, B, B; social studies C, A, B, A; art B, B, B, A, music A, A, A, A, physical

education A, A, A, A. He was marked as satisfactory in all personal growth areas except “writes legibly” where he received two satisfactory marks and two “improvement needed” marks. He received mostly ones in effort. The FCAT in spring of 2009 showed science level 3 with 41/51, reading level 4 with 37/45, and math level 4 with 49/60.

Albert’s fifth grade interim report for the fourth grading period listed improvement needed in reading and science, listens carefully and follows directions, and completes and returns assigned work, with the notation asking the parents to use a clear backpack to help with organization and to have a system for keeping track of homework at home, as well as recognition of improvement in recent Greek and Latin test scores. His scores on the Stanford norms were Total Reading 97 and Total Mathematics 92.

Albert’s fifth grade report card reported he was reading above grade level with grades of C, B, C, C, and his math skills were on grade level with grades of B, B, B, C. Other academic grades included language arts B, B, C, A; science C, B, B, D; social studies B, B, D, A; art B, A, B, B; and music and physical education were both straight A’s. All effort grades were satisfactory except for the third grading period in reading. Under personal growth, Albert had straight “satisfactory” grades in all areas except for writes legibly with one I for improvement needed, accepts responsibility with two I grades, and straight I’s in “follows directions/instructions”, “uses time well”, and “work is organized and neat.”

In fifth grade, Albert was referred by his school’s Pupil Success Team (PST) for behavioral and adaptive rating scales due to behavioral issues. It was noted by the PST that they were not sending in a regular referral because Albert was already in the gifted program. Items noted on the referral included hygiene and food hoarding (medical, mental health, or health

concerns), writing, written response, completion (academic), and social (behavioral concerns). The PST forms referred to daily signatures in Albert's agenda by the parent, use of a teacher-created homework folder, use of an Alpha Smart where possible, a homework buddy, and the mother taking Albert to a new doctor for assistance. He continued to struggle with completion of work, effort, and motivation. The comments continued stating textbooks were to be taken home to be kept at home, and numerous phone and e-mail contacts were made. It was noted that teachers could consult the behavioral specialist for guidance and pursue the pupil maintenance plan to encourage more effective independent work habits. Specific areas of concern were hygiene, poor motivation/effort, lack of organizational skills, food hoarding, written response, and completion of class and home work. The following notes were added to the referral: "Due to the fact that Albert has ADHD, he has severe difficulties with maintaining focus and organization. Albert's lack of effort in absence of boundaries has caused him to have social and academic problems. He has poor organizational skills."

In March of 2009, multiple individual response forms were completed. Albert responded to the prompt, "What do you like about school?" with the following: "Everything I Think That's School Is School, All of the above and more, like Dinosaurs (Terrible – Lizards) Woodcutting and Cooking, Sports, MMA, feathers, and playing with friends." In response to a prompt about what he would like to improve in school, he responded, "Language arts, because I have a C on it so far." In response to a question about how organized he was, he replied, "I have complaints that I'm not organized." In response to a question about how cooperative he was, Albert responded with, "I am a kind person, but like I said, I'm not organized." His teacher noted:

My concerns for Albert involve his lack of initiative and drive. Albert doesn't always apply himself in areas that he isn't interested in. I would like Albert to find ways to be more enthused with reading and writing. Albert also needs to find ways to be more organized.

A note from the school psychologist dated in the spring of 2009 is included which is titled "Corrected Psychological". The psychologist noted that positive rapport was easily established with Albert, who attained the following scores: Verbal comprehension 116, Perceptual reasoning 117, Working memory 110, Processing speed 88, and Full-scale IQ 113, which is in the high average range.

In July of 2009 a clinical psychologist completed a consultation summary because: Concerns have been expressed to the parents regarding ADD as well as possibility of PDD such as AS. He excessively focuses on a particular subject area such as dinosaurs, has numerous sensory integration challenges, is unable to maintain normal social relationships for his age, and has significant fine motor difficulties in the context of his handwriting experience. Albert has been diagnosed with ADD and has been treated utilizing the Daytrana patch with some success. Other psycho stimulants in pill forms resulted in various side effects including tics.

Notes from the psychologist continue. "In mental status exam reveals a friendly and well engaged boy who clearly has the presentation of a child with AS." He was able to engage Albert in conversation over different subject areas, but Albert was enthusiastic discussing one or two particular areas of interest. He also noted that "Eye contact was normal and the engagement that he had with his sister during the evaluation showed the capacity for reciprocity, ruling out the

presence of any Autistic disorder.” He noted that the parent was concerned about Albert having to cross a major road for the next school year and about his social adjustment to the more challenging middle school environment.

The psychologist notes continue:

Based on the results of this initial interview it is appropriate to diagnose Albert with AS, ADD with mild hyperactivity, and a Grapho-Motor deficit that results in handwriting problems. It is recommended that Albert continue to receive an Alphasmart to minimize the need for writing with a pen or pencil, that he receives transportation services due to his psychological immaturity and impulsivity resulting from the ADD which make him unable to take responsibility for walking to school in a heavily trafficked area at this time. Pursuing the services of CARD to help network for any needed services in the future is recommended, and if any social skills counseling is available in the context of his AS experience, that support should be considered.

In October of 2009, in the fall of his sixth-grade year, Albert’s IEP listed ASD as his new primary exceptionality with secondary exceptionalities listed as OT and language impaired.

Goals on the IEP were as follows:

1. Albert will use appropriate social/conversational skills during structured language activities.
2. Given a homework/long-term assignment on sixth-grade level, Albert will organize and formulate a plan to complete the assignment when due.
3. Albert will think creatively and critically to identify and solve real world problems.

4. Albert will develop and deliver a variety of authentic products/performances that demonstrate understanding in multiple fields/disciplines.
5. Albert will write a draft appropriate to the topic, audience, and purpose at a sixth grade level.

The IEP also provided a transportation aide/monitor and supplementary aids and services, including organizational aids, a portable word processor, and test/picture/and/or objects schedule.

A social history update noted that according to the mother the only stressor was Albert having to adjust to middle school. It was also noted that he was currently on the Daytrana patch, needed dental treatment, the maternal grandmother was bipolar, there was no history of attendance problems, and no family history of Autism.

Another IEP was completed in January of 2010. This plan added the term gifted to the secondary exceptionality list. This section on Present Levels noted that the parent had completed an ASD questionnaire and had given a response of “often” to the questions about social interaction and restricted and repetitive behaviors, activities, and interests. A behavior assessment scale for children was given to the parent and the fifth-grade teacher, which found Albert at risk on the teacher rating scale and average on the parent rating scale. However, complaints of illness at school elevated the rating into the clinically significant range.

The results of an Adaptive Behavior Assessment were noted. Under conceptual communication, functional academics and self direction were borderline. Social, which contained leisure as well as social, was in the average range. Under Practical, which contained self-care, home/school living, home and safety, and community use, the ratings were in the

extremely low range. Records indicated that Albert had been seen for occupational therapy for 30 minutes weekly since the last EP for handwriting. Since he showed the ability to write legibly, it was recommended that occupational therapy change to the collaborative model as he entered middle school. The OT therapist would provide adaptive paper as needed. It was also noted that Albert ran in the hallway and required redirection from adults to function within the campus setting. The goals, transportation, supplementary aids and service, and test accommodations were the same as the October, 2009 IEP. His FCAT scores for spring of 2010 were a reading level 5, 37/42, and math level 4, 35/44.

Albert's next IEP was completed in May of 2010. Comments under the "Special Factors" section included the fact that a bus monitor/aide would no longer be provided. Present Levels noted that Albert was a language student with G/AS receiving ESE consultation support in all advanced general education classes. It was noted that he was able to understand the subject content areas with minimal support and was able to be successful in class with moderate support for independent functioning. His Lexile reading level was at 73%, Maze comprehension and vocabulary 33%, and Word analysis 40%. It was noted that Albert has a Neo writing aid to use on written assignments. However, due to his lack of organization, he sometimes did not have it with him or refused to use it. He was on the collaboration model for OT services.

Comments under the Social/Emotional section stated that Albert worked well with others and usually maintained appropriate classroom behavior. He sometimes handled change inappropriately and had some difficulty accepting constructive criticism. He did not self-advocate or demonstrate good self-determination skills. Comments under the Independent section noted that he was extremely bright, but often engaged in activities other than class work:

he liked to draw in class and needed frequent reminders to stay on task. Sometimes, Albert rushed through his work so he could draw. Usually, his teachers kept all his work and materials in the classroom. Albert did not ask for makeup work when out and teachers were concerned with his absences: he had missed 13 days and had nine early checkouts. Under the Healthcare section, it was recorded that Albert had a diagnosis of ADHD and Asperger's disorder. He also had absent seizures and was currently under medication management at home. Absent seizures, sometimes known as petit mal seizures, are a form of epilepsy characterized by the sudden onset of short periods of apparent loss of consciousness, usually a few seconds, during which the child will simply stare straight ahead (Devinsky, 2004). Under the Communication section, it was stated that, based on teacher observation and clinician data, Albert was able to express himself to teachers and peers. However, he still tended to avoid eye contact and used inappropriate voice and tone when communicating. It was stated that he needed to continue working on his conversational skills. Based on this information, it was recommended that Albert continue to receive itinerant language therapy for the next school year.

Under Priority Educational Needs, it was decided that Albert needed the “academic stimulation and enrichment of the compacted, differentiated, and advanced courses of study, with the freedom to explore many different areas of the curriculum in depth.” Also, it was recommended that enhancement of time management and organizational skills would be beneficial in assisting Albert to succeed in his classes, as he needed to develop independent functioning skills by asking for assignments when absent and completing assignments on time. Goals on this IEP were listed as follows:

1. Albert will think creatively and critically to identify and solve real world problems.

2. Albert will develop and deliver a variety of authentic products/performances that demonstrate understanding multiple fields/disciplines.
3. Given seventh-grade level instruction in the general education setting, Albert will recall specific facts, details, and general concepts with 80% accuracy as evidenced by curriculum-based assessment.
4. Albert will seek teacher assistance daily, according to classroom procedures, for completion of assigned tasks at a seventh grade level as measured by curriculum-based assessment.
5. Given a homework/long-term assignment on seventh-grade level, Albert will organize and formulate a plan to complete the assignment when due, earning a grade of C.
6. Given a classroom assignment on the seventh-grade level, Albert will complete the assignment when due, asking for assistance as needed, and earning a grade of C.
7. During instructional/independent work time, the student will participate in activities, following classroom procedures/rules, earning a conduct grade of “one” in five out of five subjects per quarter.

Albert’s IEP included provisions for OT monthly and ESE support for general education teachers one to two times per month. Organizational aids included test/picture/, and/or object schedules and a portable word processor. Test accommodations provided additional time for administration of the test and the ability to administer the test individually or in small group settings, along with the use of technology without accessing spelling or grammar. Additional

accommodations included the use of visual/aural aids, hands-on methods, use of organizational strategies, providing the student with a copy of the classroom/teacher's notes, and allowing extra time for assignments. Albert was scheduled for 45 minutes each week in ESE courses as he was participating in general education curriculum with support in language therapy.

The IEP showed that Albert was eligible for OT, language impaired, gifted, and ASD services, with the primary exceptionality of Autism. He received a change in service delivery model from consultation setting in reading, math, written language, and social studies, to a gifted setting for the 2010/2011 school year.

The consultation overview at the end of sixth grade included comments by several of his teachers. His geography teacher noted, "Albert is extremely bright, but is often engaged in activities other than class work. He does participate well in class and has a positive attitude. Organization is a concern." His reading teacher noted:

Albert definitely needs to keep materials in the classroom, and help stay focused.

Sometimes Albert rushes through his work so he can draw. One skill Albert needs to learn is to go back and check his work/make sure directions were followed.

It appeared that Albert was in the Springboard Program at his school, as the consultation overview included a list of skills for math and reading that the lead teacher wanted him to focus on during Study Island time.

Academics.

Albert's report card for the 2009/2010 sixth grade school year showed 11 excused absences, four unexcused absences, and the following grades: advanced geography C,A,B,C;

advanced math D,D,C,D; language arts C,B,B,B; art C,B; reading C,D,B,, advanced science C,B,B,D; chorus A,B,A,B; and agricultural science A,A.

When Albert was asked how he was performing academically in comparison with his peers, he saw no difference between himself and his classmates. Albert's parents were not satisfied with his academic achievement because they felt he could be doing much better. His mother noted an incident in sixth grade when his teacher told them she knew their son could get better grades and was ready to give him a higher grade because she knew he was capable of it, even though he was not turning in his homework assignments. The parents insisted that he be given the grade he had earned. They realized that he had the ability. His mother stated:

He can talk a good game, he can see the answers to anything, and he's right 99% of the time, but I need him to learn to be able to communicate in other ways than just verbal, he needs to be able to type, he needs to be able to write, he needs to be able to get that out. His parents stated that they were not happy with these academics but they didn't want to blame the school, as they knew it was Albert's attitude that was responsible.

There had been times that Albert said he didn't feel well when his parents knew he was not sick and they attributed this to him not wanting to attend school at times. He told his parents that he loved civics class, that it was easy and his favorite. Shortly afterwards, his parents got a voicemail from the civics teacher saying that he was not turning in his assignments, even though she had sent his homework home multiple times to redo or make up, and that he had a 37 average in the course at that time.

When Albert was in sixth grade, the gifted students were together in one class with one teacher all day except for their two electives and lunch. Albert's grades began to falter. The

school asked his parents for permission to put him in an advanced math class so that he would realize there was a beginning and end to each class, as they felt that part of his difficulty with completing assignments was that he thought he had all day to work on the assignment. His parents agreed, and then Albert got mad because he was being pulled away from his friends. When the change occurred, his grades went up and there was a notable improvement. The following year, he made honor roll the first quarter. His mother noted that when the father stayed home from work as an air-conditioning repairman in the winter, Albert's grades began dropping. This had begun again just before their interview.

His first period reading teacher described Albert as academically no different from the other students in his class. She noted that he was consistent with the class progress, always moving up in reading passages, including an eighth grade reading passage here or there, although she had not noticed anything more. She did note that he didn't always understand the directions and might not know what to do, but once she explained it to him he was fine. When asked about his reading class, Albert had little to say other than the fact that sometimes the work was easy. During this class observation, Albert participated often in the class discussion, usually with correct, even insightful answers. Although he often did not know where to begin reading because he wasn't paying attention, when he did read orally it was smooth and had good prosody.

His third period math teacher stated that, in comparison with the other students in this class, Albert was doing no different academically. When describing Albert's academic progress, she noted that he definitely grasped the material quickly and had a strength as an outstanding thinker. She described him as being well-versed in all subject areas, an excellent reader, and having no problem with interpreting the questions. A weakness she had noted was that he didn't

like to write things down, so some activities like solving equations were sometimes difficult for him:

As he progressed into equations that had five steps, because he could do the two-step equations in his head, and so therefore he kind of thought he could do the five steps in his head, and he had trouble with that. So he's going to resist a little bit writing things down, and he's again going to have to work through that process.

She also felt that the intricacies of higher-level math, the negative signs for example, were going to affect him a bit due to his handwriting. She described his ability as, “He is so bright, in fact, he probably has the answer ahead of 95% of the other people.” Albert had little to say about his teacher other than she was nice.

During the math class observation, he had some difficulty staying on task and watching the board and the teacher. Albert raised his hand to answer almost every question that was asked during this class period. Every answer that he gave was correct. Towards the end of class he wasn't raising his hand to answer quite as many questions, but was still participating. At one point the teacher said, “So, Albert, and what do you have for nine?” After getting the correct answer the teacher says, “Good! You must've got it in your head to do it that fast – very good.” The teacher praised him with “good” quite often. At one point, they were discussing a decagon and the teacher stated that a decade was 10 years and asked the class what they could think of to remember that a decagon is a 10 sided figure. Albert responded with the word December, because it was originally the 10th month, to which the teacher responded with a comment about not being aware of that trivia fact. At this point, not many students were raising their hands.

Albert continued to volunteer answers, and for the term nonagon he jumped up and gave the correct definition.

Albert's sixth period class was chorus. In response to the question of how Albert compared with other students academically in the class, his teacher stated that she saw no difference. When asked about his academic progress in the class, she explained that, because it was a participation class, she hoped he had mastered the skills that had been brought to him. She could not list any strengths or challenges with Albert's academic abilities. When Albert was asked what kind of teacher she was, he said she was nice, she explained things to them, for example about the soft palate and how to "pronounce consonants hardly and the vowels tall," but had no other comments about his teacher.

During the class observation, Albert followed directions most of the time. Because much of the class was taken up with a song and dance practice on stage, there was little academic activity going on. Albert did seem to have some difficulty with the finer points of the movement, although he made a conscious effort to correct what the teacher pointed out.

His seventh period civics teacher felt that Albert was performing no differently academically than the other students in his class. She did say that his academic progress was good because he remembered every word she said, so testing it became very easy. She noted that he could have an A in the class but usually fell around the B range because he did not use his assistive device, "And as a result when we do any long answer or essay things he doesn't want to fill up the whole thing and so he kind of gets shortchanged on the points, if you know what I mean." She said that if he would actually bring his assistive device to class, he would probably get the whole answer and they wouldn't have a problem, but that it had been that way the whole

year. When asked about his civics teacher, Albert said, again, that she was nice. For example, that day she had given him a printout with all his incomplete work attached to it and was allowing him to complete that make up work at his house. When asked if there was anything he liked or disliked about his teacher, his answer was that she usually found good substitute teachers. Albert said that math and civics for the most part were very easy classes.

During his civics class observation, Albert answered the first four questions that were asked. At one point, he answered a question and the teacher told him that he wasn't there yet, referring to the fact that they weren't at that topic yet. He replied that yes, he was, and the answer was Vatican City, to which the teacher responded positively. During the discussion about the EU, Albert was constantly talking about fairly on-task topics and asking on-task questions. Twice, the teacher told him to hang on so she could get back to him in a minute after she finished giving directions. When she did come over to talk to him, she had to give him individual instructions. When a student asked what exactly an anthropologist did, Albert yelled out, "Someone who studies people!" He also asked about why Ireland had a UK pound symbol on the map, something no one else noticed. Albert talked out loud rather like he was thinking out loud – a student mentioned that "They have a St. Petersburg," and Albert yelled out, "In Russia." He seems to be well informed on many aspects of global information. When partner work began, he appeared completely engaged in the activity. His civics folder has samples of his tests, quizzes, and written assignments. There was one 50% score on a short answer paper; otherwise, all scores are at least 90%. Handwriting varied from very poor and sloppy to acceptable. In one paper, he had "redo" written at the top, but it did not appear that it had been redone.

His remaining three teachers felt that, when compared with the other students in his class academically, he did worse than the other students. His technology teacher noted that it took Albert a little bit longer than some of the other students on some of his modules, but that wasn't that different from some of the other kids. He did note that if Albert was on a module that he really enjoyed, he may have excelled at it, whereas if Albert was on a different module he wasn't quite as into, then he wouldn't excel as much. Albert was asked what he thought of his technology teacher and he responded, "He's good. Every Wednesday we watch a movie," and when asked if he was a good teacher, Albert responded positively. When asked if his technology teacher seemed to like the kids in the class, Albert replied, "Not always. Because they're a pain sometimes." When asked if Albert agreed with his teacher that the students were sometimes a pain, he concurred with his teacher.

During his second period technology class observation, Albert worked alone at a module. He seemed to have a lot of difficulty with the manual dexterity required for some of the work, as well as some difficulty in understanding what was expected. He went to the wrong module to begin with and after a few minutes had to move to another one so he ran out of time to complete the assignment during the class period. He had to ask the teacher for help a few times during the class and still needed assistance several times.

Albert's fourth period class was science, where he had a special interest due to his fascination with paleontology. His teacher felt he was doing worse, but not by much, than the other students in his class academically. His teacher believed that Albert was very smart. For example he would come in and talk about shows that he watched on TV and he could grasp just about anything the teacher went over with him. The teacher also was aware that Albert knew

everything there was to know about dinosaurs. His teacher noted that Albert's problems usually occurred when he had to write down something. He got distracted very easily, so sometimes it would take him twice as long to do an assignment as everyone else. Because his writing was not very good, the teacher had to ask what he wrote since it was unrecognizable. The teacher again stated that he was very smart; he just didn't finish what he started. If Albert was asked verbally for the information, he could recite it right back but when asked to write down the information, he would become distracted and would not finish. "And that's what makes him get, in my class, he usually gets like a B or a C when I know he can actually get an A. It's just a matter of getting that down on paper." Albert stated that math and civics, for the most part, were easy classes for him and that in science they were learning about evolution, which was one of his strong points.

During his fourth period science observation, Albert answered a warm-up riddle about homozygous traits with almost the exact words that were then shown on the board. When the teacher came to help his partner, Albert answered the questions the student asked the teacher by pointing to the answer. The teacher then repeated what Albert said. At one point, Albert raised his hand to point out that the answer to number four could be an either/or solution. After a moment, the teacher noted that number four was a bad question. At another point, Albert asked a question which the teacher wasn't sure of at first and needed to look over the paper for a few seconds to find the answer. Then he said something to the effect of, "I think it says in the previous questions." Albert seemed to have finished the assignment sooner than most of the other students. When the teacher began talking about the paper, Albert raised his hand for every question and kept it up the entire time they were discussing that section, answering several questions correctly. Most of the other students are not raising their hands at all. Albert was called

to do the first Punnett square on the board, during which the teacher gave one quick comment on a small part of the answer, and then said, “Perfect.”

Albert's fifth period language arts teacher described his academics as worse than the other students in his class:

I would have to say he's my biggest disappointment this year because, either with me, or with himself, because he really hasn't made the progress that the rest of the class has as far as learning gained over the year.

She did note that his imagination was a strength, as he was very good with descriptive details, but still has inadequate support for his writing. For example, he didn't understand the basic concepts of a five paragraph essay. She noted that he did have a severe disability in writing as a whole, and was assigned a portable word processor which he had lost. Although Albert believed that language arts was a difficult class for him, he liked the teacher. “Well, she's nice. She helps me with my make up work because I go there almost every Tuesday and Thursday.” When asked what he liked about class, he responded that they sometimes watched movies. When asked what else he liked about the class, he responded, “Almost everything else.”

During his fifth period language arts classroom observation, Albert's class was in the computer lab with a substitute teacher. While completing an online survey, Albert was scrolling through his survey very quickly, and it was not apparent if he was giving thoughtful answers or just scrolling. Albert finished his survey almost 4 min. after all other students had completed theirs. During the time that Albert was to have been working on scoring another student's writing sample, he had many questions for the substitute, many more than the other students. He required a great deal of teacher assistance to complete the assignment.

Albert's speech pathologist worked with him in a therapy group of three students, one day a week. She found that Albert had much better communication skills and abilities than did a girl in the group who was also on the Autism spectrum at a relatively high level. The teacher noted that he did his lessons well and wrote strong sentences; however, his handwriting was not very good. When asked about specific IEP skills in communication, she explained that verbal skills in conversation, writing, and answering inferential questions were on his IEP. For example, when asked what the men were thinking about such and such, in reference to a story that had been read, Albert would be asked to give his opinion and the teacher described his response as “spot on with that. He does that really well.”

Albert's consultation teacher works with his classroom teachers on strategies and accommodations. She spoke about his difficulty with written language and his OT services. He had an assistive device for writing, but used it for his own personal writing rather than class work. The previous year, he would complain that his files were full, but they were full with his personal writings, not his schoolwork. According to his consultation teacher, he was still very resistant to using the device. She described his progress as: “He's doing really well grade wise, academically, in just about all of his classes, except that language piece.”

Special needs.

Albert had been diagnosed with several exceptionalities over the course of his public schooling. In the intake interview for first grade, it was noted that he had ADHD and was on medication for the condition. A health note from Palm Beach County explained that Albert had had three sets of ear tubes and that his adenoids had been removed, which resulted in a speech delay. It was also noted that he had received speech therapy in the past in Connecticut and was to

have been retested at the end of the previous school year, with the suggestion that he would probably need some additional speech therapy in first grade. The same intake interview discussed a nervous habit of covering his mouth and clearing his throat which may have been associated with the stress of moving to a new home and school.

The incident report of February, 2005, says Albert was charged with student battery during school hours and referred for expulsion. The resulting psychological report noted, "The behavioral/emotional data collected from both the school and home setting are indicating some behavioral concerns with the pattern more characteristic of an ADHD child rather than one with a significant degree of emotional disturbance." A social history taken at this time said that in 2004 he was evaluated, but did not qualify for, speech impaired services. His mother said that for the last six months he would not stop what he was doing and so would wet himself, was not aggressive, and was hyperactive, but was much calmer now. She also said he was referred for counseling in Connecticut because of an incident where he and his sister walked away from home and were returned by the police. His mother said he exhibited unusual fears and clung to her. She felt Albert was affected by the temporary absence of a father in the home prior to the family moving to the current county. Records from April of 2005 show his accommodations were based on ADHD.

In January of 2009, Albert was referred for behavioral and adaptive rating scales due to behavioral issues. Hygiene and food hoarding were listed under medical, mental health, or health concerns. The PST team recorded, "Due to the fact that Albert has ADHD he has severe difficulties with maintaining focus and organization...Albert's lack of effort and absence of boundaries has caused him to have social and academic problems." A psychological consultation

in July of 2009 referenced Albert's ADD diagnosis and the fact that he was being treated with medication. The examiner noticed that he, "clearly had the presentation of a child with AS." He was diagnosed with AS, ADD with mild hyperactivity, and a grapho-motor deficit. The psychologist recommended that he receive transportation services, "due to his psychological immaturity and impulsivity resulting from the ADD which make him unable to take responsibility for walking to school in a heavily trafficked area at this time."

His IEP of October 2009 listed ASD as a new primary exceptionality, with secondary exceptionalities of OT (review) and language impaired (new.) His IEP of January 2010 listed his primary exceptionality as Autism with secondary exceptionalities of OT, language impaired, and gifted. On the behavior assessment scale, he was rated as "at risk" by the teachers and "average" by the parent, but the complaints of illness at school elevated the rating into the clinically significant range. The IEP documented that he had been seen for OT for 30 minutes weekly since the last EP for handwriting, and, since he showed the ability to write legibly, it was recommended that OT change to the collaborative model as he entered middle school with accommodations. Transportation accommodations on this IEP included the use of an aide/monitor due to his disability. The May 2010 IEP described Albert as a "gifted/AS language student receiving ESE consultation support in all advanced general education classes," and noted that he was currently on the collaboration model for OT services as well as the fact that the teachers were concerned about his absences: 13 missed days and nine early checkouts.

In the May 2010 IEP, under healthcare, Albert was described as having a diagnosis of ADHD and AS, as well as absent seizures for which he was under medication management at home for. It was recommended that Albert continue to receive itinerant language therapy for the

next school year. There was a change from consultation setting in reading, math, written language, and social studies to gifted setting for the 2010- 2011 school year. Autism was listed as his primary exceptionality, along with being eligible for OT, language impaired, and gifted.

Albert's parents talked about his tendency to collect things like rubber bands, acorns, sticks, bottle caps, and broken pens, and about the fact that, "He's a hoarder in the making." His father said that as Albert has gotten older, he has become more uncoordinated, partly because his left leg turns in. The parents talked about him having "some OCDs" and how they were working on breaking him of them. For example, he couldn't touch anything without blowing on his hands, or he would kiss his hand before he did something.

When speaking with Albert, he said that he had NLD, OCD, ADHD ("attention deficit something something"), a curved toe and feet, AS, and "a break-off version of seizures". When I asked what "break-off version of seizures" was, Albert explained:

Instead of falling down I get like really excited and my, I can't stand and my head gets, I get lightheaded... Um, well last year it happened like three times throughout the year that I needed a wheelchair to wheel me around the rest of the day.

When asked to describe what the nonverbal learning disability was like, he described it as, "I think it's like, you're not as sociable, and stuff like that?" When asked if there was anything else that he would like to tell me or share about himself he replied, "I have two seizures, the Asperger's, the toe, the foot, the leg, ADHD, NLD, and OCD." None of Albert's teachers mentioned anything about ADHD, OCD, or NLD.

Organization.

Albert's organizational skills are an area of weakness that he appeared to struggle with in many situations. During his interview, Albert did not mention anything about organizational concerns, other than the fact that one of his teachers would get a printout of all of his incomplete work and allow him to make it up. Albert's parents commented that, as far as they were concerned, the biggest problem he had at school was not turning in his homework. His mother said, "Some of it is the writing, and it's not as important to him, you know, something else is more important."

In the records review for Albert, organizational skills were mentioned quite a bit. His third grade report card showed improvement was needed every grading period for "work is organized and neat." His fifth grade report card listed, under personal development, "improvement needed" for all four grading periods in "follows directions/instructions", "uses time well", and "work is organized and neat." The fourth period interim report in fifth grade also stated, "Please use the clear backpack to help with organization. . .Have a system for keeping track of homework at home. " Notes taken at a meeting in January of 2009 report the following: "Due to the fact that Albert has ADHD he has severe difficulties with maintaining focus and organization... He has poor organizational skills."

In March 2009, he was asked to write down his response to the question "How organized are you?" His response was, "I have complaints that I am not organized." In response to the question, "How cooperative are you in school?" His response was, "I am a kind person, but like I said, I'm not organized," but there is no indication how he made the connection between being cooperative and being organized. In the same document, his teacher noted, "Albert also needs to

find ways to be more organized.” Accommodations of April 2005 state, “Albert needs reminders/cues to build organizational skills.” In a sixth-grade consultation overview, his geography teacher stated that organization was a concern and his reading teacher felt that he needed reminders/cues to build organizational skills.

His IEP of April 2010 listed, under priority educational needs, “Enhancement of time management and organizational skills would be beneficial in assisting the student succeeding in his classes. Albert needs to develop independent functioning skills by asking for assignments when absent and completing assignments on time.” His IEP of January 2010 lists the following goal: “Given a homework/long-term assignment on 6th grade level, Albert will organize and formulate a plan to complete the assignment when due, earning a grade of B.”

Albert's classroom teachers noted several examples of organizational difficulties. For example, his reading, language arts, and civics teachers noted that he had lost his Neo assistive device for writing and therefore had not been able to complete assignments on time. His math teacher noted that, because he didn't like to write things down, he was beginning to have difficulty with some of the longer math equations:

And again, the organization impacts math a little bit, I think if you kind of write randomly and so forth, you know, as you get to higher level math – the negatives and the intricacies, I think that's going to affect him a bit, the handwriting a little bit.

His science teacher spoke about organization as a topic in a meeting the teachers held about Albert.

Organization is out of control, like bad. Uhm, he won't put things away that he thinks are important: he'll just hold them in his hand, and he'll keep holding them in his hand until

the day comes where he has to turn them in, so a lot of things get lost because he has them in his hand rather than putting them in a backpack. He thinks they're safer in his hands. We tried to move him towards using a folder, but it just didn't work. He just doesn't, he thinks that the safest place for important documents is in his hand, so. Uhm, there's a major weakness in his organization. We've been trying to work on that, but it's really not getting anywhere.

When interviewing Albert's consultation teacher, over half of her comments referred to organizational difficulties of some type. "A lot of the problem with him was organization, big-time: losing papers, not completing - he'd be working on something and then couldn't find it." She spoke about trying to get Albert to use a clipboard for his papers, but that they had been unsuccessful in that attempt. She mentioned that organization was "Where he struggles organizing his stuff, his writing, you know, and really not making as good a progress as he really should." Albert's chorus and technology teachers did not mention his organizational skills.

When looking at Albert's organizational coding, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Albert's data. Eight percent of coding text, 46 coding references, was attributed to "organizational." When looking at Albert's on-task behavior coding, a single code was utilized. Seventeen percent of coding text, 107 coding references, was attributed to "on or off-task behaviors.

Social.

Interactions with peers were an important area of research. When asked, "In comparison with the other students in your classes, how well do you get along with the other students: no

different, better, worse?” Albert's reply was, “Worse.” When asked to describe his peers in specific classes and what he thought of them, he usually mentioned the students that were friends from the previous years. When asked if he got along with the kids he was very specific: “Uhm, most of them like Gabriel, Sarah, sometimes Chandler, and JR and Jonathan, kind of James and John, I guess.” In the next class, when asked about the peers in math class and whether he liked them and if they were different than the ones of his previous class he responded, “Yeah, they are much different. Uhm, a lot of them I know. I know Julicia, and I guess Dylan Powell, and Marissa and Becca.”

When he was asked if the teacher seemed to like the kids in his technology course, his response was, “Not always. Because they're a pain sometimes.” When asked about the students in his chorus class – whether he got along with them and whether he had any friends in there – his response was, “Well, I have, like I guess, sometimes Ezekiel and Jonathan.” “Uhm, yeah, they're a little different, diversity, but most of them are my friends.” At one point he said, “Well, I'm different because my, uhm, I don't have as many friends because of the NLD.” At the end of his interview, Albert was asked if there was anything else that he would like to add and his response was as follows.

A: Probably working in groups more would help.

R: You would like working groups more?

A: Yeah, kids with Asperger's probably working groups.

R: It easier for you working in groups, or harder?

A: Easier.

R: Okay. Do you prefer working in groups, or working by yourself?

A: Groups.

Albert's parents stated that he didn't report any social problems in his classes, but they knew that there were issues. They felt he didn't care what other people said about him and wasn't fazed by other people being unkind to him. His mother did note that he had never been invited to any birthday parties and he didn't have friends over to his house, although at another point she spoke about his friends' behavior at their home during a birthday party. She spoke a bit about one friend he had had since second grade. Mom felt that the other students in his class knew that Albert was just the way he was – making funny noises and doing things that were different – and they expected that, but they didn't socialize with him. So his mother was aware of his social difficulties although she felt Albert was not. When he was moved to a different class in sixth grade, he complained that his parents were pulling him away from all of his friends, but his mother pointed out that he only ever spoke about one particular student. When his parents were asked about his social life outside of school, they reiterated that he had a single friend that he has been close to for a while. Albert's social interactions with his soccer team seemed to be normal but not particularly friendly.

His teachers talked about his limited social interactions in various ways. His reading teacher said it varied, but there was sometimes very little social interaction. She also said she had not noticed any significant difference in terms of social interactions; Albert preferred to work alone, but he got along well with others. The technology teacher described him:

He gets along with the other students. He's not real social, he's a little more withdrawn, though I did notice today, I was in the library this morning. He's selling these fundraiser gift cards or whatever, and I kind of saw him, a different side of him, as far as being

outgoing and trying to sell me one of these things, which was a little bit different, because, like I said, he's usually kind of reserved.

The math teacher saw a slightly different side of Albert's social situation: “Yeah, he has friends, I don't see anyone that stands out as a particular buddy in that class, but socially I thought he interacted really well with the class.”

The science teacher brought up the fact that many of the other students knew and accepted Albert's eccentricities.

He pretty much gets along with everybody. I've never seen anybody say they can't stand him, or they don't like him. Sometimes he annoys people, because he likes to sing a little bit once in a while under his breath, or, he'll just, he's kind of immature. He'll kind of just say something off-the-wall and they will turn their attention towards him. They've really, they've been together for a long time, so they kind of know. You know when I first started this year I didn't really know Albert, and I hadn't even seen him around and, he would do things and the kids would go, “Oh, that's just Albert. That's what he does.” And so, they've all been with him and they all know him. I don't see anybody hating Albert. Like I said, they just get annoyed with him sometimes. He's very friendly with everybody in the class. We'll be doing group work, he participates with the group. Uhm, besides from that, he's just a normal kid.

This idea was echoed by his language arts teacher:

As a whole, the entire class gets along. They've been together for years, and he's not been separated from that and included in, in that segregated environment, so his, really, interactions only with those gifted kids and, they tend to just accept people for who they

are. So they don't necessarily not get along with each other, they all just accept people for who they are.

She also noted, “The student is (pause) more along the lines of socially behind, I would say. He doesn't act the same as his peer group does. He's more childish, he's more immature compared to his even his peers in the gifted class.”

The chorus teacher gave an example of how Albert didn't quite fit in with the other students:

I would say he tends to be kind of goofy and clownish. Doesn't quite understand that he's not, I don't know how to quite say this academically, but like he's not quite gelling with the rest of the group? They think he's funny and he thinks he's being serious kind of a thing. Just the other day as we were getting ready for the performance, everyone else had changed, and he was still playing with a marshmallow that he had brought for lunch and he had stuck lots of pretzels in it to make it look like a bunny rabbit, and everyone else was already dressed and ready to go. My parents, he came in with his pants all the way up to his chest, like Urkel. My parent volunteers had to help him get himself together so he was ready for the performance.

When asked if Albert was aware of how the other students viewed him, she responded that no, she didn't think he was. His civics teacher had a completely different take on Albert's social interactions:

He has friends in the class. He works with partners when we do cooperative learning.

Uhm, he has no problem doing that. Uhm, he engages in the conversation with the kids, if

they're all talking about something like, you know, a TV show or something, and they, he'll also engage in the conversation. He's actually very social.

Albert's written records did not reflect a severe social problem. In kindergarten, three out of the four marking periods were satisfactory in the area of "cooperating with others", as well as a satisfactory all four marking periods in first grade. In sixth grade, his record cites: "Albert works well with others and usually maintains appropriate classroom behavior. Albert sometimes handles change inappropriately. He has some difficulty accepting constructive criticism." One of the goals in his January 2010 IEP is "Will use appropriate social/conversational skills during structured language activities 4 out of 5 opportunities in 10 randomly selected sessions as measured by performance based assessment." These are the only references to social skills in his written records.

During classroom observations, Albert did interact with other students repeatedly in most classes. In civics class, he initiated conversation with the student behind him, and, when told to work with a partner, immediately got up and walked over to another student and began working with that student. He did not appear reticent to initiate or continue social conversation. During the fire drill in chorus, he spoke with other students part of the time and seemed comfortable whether he was interacting or not. He spoke to the other people in his dance group and fooled around with another boy by putting an eraser on his head and moving around in imitation of the other boy, and both seemed to enjoy it. When the dance practice was over, Albert was giving the "high five" sign to several other students who were returning the gesture.

During computer lab in language arts class, he initiated conversation several times with the student sitting next to him who responded in a positive manner. When Albert moved from the

computers to sit with the rest the group, he chose to sit at a table by himself rather than with another student, even though there were available seats at tables with other students. In science, he spoke several times with the girl who was his partner. She usually smiled and responded to Albert's comments and the two of them laughed several times. At the end of the class, a boy took Albert's book and would not give it back to him for just a couple of seconds, then returned the book to Albert. He did not seem upset at all. In third period, Albert did not interact with other students, but neither did anyone else in the class as it was a lecture class with no socialization time and Albert came in a little late. I did not observe any interaction between Albert and other students during the technology class, mainly due to the fact that this course is set up as independent modules and Albert was alone at his module. In reading class, there was also no direct interaction with another student, but there was some interaction as far as responses to what other students said.

Teacher interaction was another aspect of social behaviors. During observations, the teachers appeared to call on Albert a great deal, partly because he raised his hand a lot and partly, I suspect, because they knew I was observing him. His math teacher did say that he is one of the few students that will always raise his hand in reading class to share his thoughts on an issue, so she felt that he was probably engaged in the participation more than most of the students. She also felt that they had a good relationship with each other. She mentioned that he liked to share things with her, for example an article about something they read in class. She described him as, "Very outgoing and I feel like socially, he really is good with the teacher."

His reading teacher paid a bit more attention to Albert's behavior than the other students in class, but not substantially more. In technology class, the teacher and Albert interacted more

than most of the other students, mainly because Albert was having a great deal of difficulty in successfully organizing and completing this assignment. In science class, Albert's teacher responded to all of Albert's inquiries and once quieted him down when he was getting too noisy, but overall nothing remarkable was evident in their interactions.

In chorus class, the teacher and Albert had a brief discussion about a problem with the class pictures which seemed very normal. The teacher did spend a little more time working with Albert on the dance sequence since he was having a great deal of trouble and she did not mention any specific concerns about their relationship. In civics class, the teacher spoke to Albert a few times in order to keep him organized and on track and, when talking about him, said, "I really like him. He's very, very, very great, he's great." When asked about her relationship with him she replied:

He really likes his teachers, really, really, and every time he sees me he makes a big deal, and I appreciate that. (pause) I mean not one negative, nothing negative ever (pause), it's always positive and happy and it's like he's the happiest kid on Earth.

Albert seems to like all of his teachers, and did not say anything negative about any of the adults in his life.

When looking at Albert's social interaction coding, several codes were utilized. All percentages are derived from the total number of coding references in all nodes attributed to Albert's data. Five percent of coding text, 32 coding references, was attributed to "classroom observation – social." Four percent of coding text, 25 coding references, was attributed to "student, parent, and records review – social." Four percent of coding text, 22 coding references,

was attributed to (teacher perceptions – social.” Nine percent of coding text, 62 coding references, was attributed to “teacher interaction with student.”

Emotional/behavioral.

Albert appeared to be a happy child who was content with his situation most of the time. When asked how he enjoyed his classes in comparison with his peers, Albert said he enjoyed his classes better than his peers. When the same question was asked of his teachers, four said he was no different than his peers and three said he enjoyed their class better than his peers. Albert played on a soccer team, enjoyed watching TV, and didn't seem to mind doing his required chores at home.

His parents noted that his behaviors differed from the norm. They believed that he didn't see anything wrong with wearing his winter coat in the summer or collecting acorns and scraps of paper. He seemed content with his school, friends, and activities. They reported that he enjoyed nonfiction reading, especially about dinosaurs, along with information from documentaries. He had begun making weapons based on a History Channel television show he has been watching, and had begun sharing some of that information with his little brother who then wanted to make weapons also. His parents reported that he did his homework better when standing up so that some of his extra energy was focused on remaining standing. In reference to him becoming easily distracted, they said:

He's like a puppy, you know, when a dog is walking down the street and all of a sudden he sees a car, chasing the car, that's Albert. It's like Albert has to do something, but as soon as he sees something shiny he's going in the other direction, no matter what you had in mind, so.

His parents and consultation teacher provided more information about his behavior in his sixth-grade gifted class. They felt he could do the work, but was not able to set appropriate deadlines for himself in class so that things were turned in on time. In order to help him manage his time better by providing a definite end to the class, and in order to accommodate his specific math skills, he was moved from his core gifted class with all of his friends to several courses where he had to change classrooms at the end of the period. He was very unhappy about this and very resistant to the move, protesting that they were taking him away from his friends. His grades improved when he was moved, however, and in seventh grade the rest of the students in his sixth-grade gifted class were then in the same class set-up situation that Albert was. He appeared satisfied with the fact that all of his friends from the past several years were then with him in his classes.

In kindergarten and first grade he was extremely active. His mother described his kindergarten behavior as, "Rolling around on the floor, jumping on the tables, bouncing all over the place, and I thought they were gonna just expel him then." In first grade, "They called me and the school said, 'We're expelling your son. We can't take it. He's driving us crazy.'" In first grade, he also was accused of inappropriately touching another student in music class, which his mother attributes to his hand being in the wrong place at the wrong time. The parent of the other student brought charges against Albert and the school decided to expel him. When the situation reached the county level, it was decided that instead of expelling him they would evaluate him carefully, at which time he was identified as having ADHD and being gifted.

His parents described Albert as a kind, caring child. Other parents would mention to Albert's mother that they knew Albert because he was always helping their child in math class, or

he would finish his work and help another student. In preschool, he would share his food and walk around asking the other students if they needed a snack. When his mother was not feeling well, he would ask her if she needed a pillow, behaviors that his parents identified as sensitive and caring.

At home Albert was extremely competitive when it came to intellectual pursuits. He seemed to take pride in excelling academically and, according to his parents; he could not “dumb himself down” in order to let someone else win a game. All the children slept in the same room, even though there are more bedrooms, because they didn't like to sleep alone. His parents were surprised that Albert didn't demand his privacy like many middle school students will do.

He was fairly coordinated when he was younger and playing tee-ball, although he would be singing on the ball field instead of paying attention to what was going on. At the time of the interview, his parents saw him as not being very well coordinated in middle school. In chorus class, while performing a dance routine, Albert had difficulty repeating the proper motions and finding the correct placement on the stage. His motions were much more exaggerated than they should have been because he appeared to be trying very hard, but was unable to execute the finer points of the dance movements.

He also had difficulty with fine motor control. He had difficulty keeping his papers and materials neat and organized. He had difficulty handling class materials, for example passing back a set of papers in an orderly manner and putting collected papers into a neat stack. His fine motor difficulty was also evident in his extremely poor handwriting and the need for an assistive device for his writing. In technology class, he had an especially hard time manipulating the

equipment, finding the right materials, and running the experiment, due to what appeared to be awkward motor skills.

Some of Albert's behaviors in school were not considered normal. He tended to hoard things, especially food, which had caused a problem with his organization and sanitary conditions. Once he kept shrimp in his backpack for over three days which caused, as you could imagine, tremendous concern.

He could be silly at times, even goofy and clownish, for example when he pulled his pants up to his armpits in chorus class and made a bunny rabbit out of marshmallows and pretzel sticks and played with it instead of getting ready for his activities, and smacking his candy very loudly. Several times he answered roll loudly or with a word that was different from what the rest of the class was answering. His chorus teacher gave this example:

Well, there's just, well one time that we were out in the community at a, when we were singing in a Christmas event outside during a tour of homes, and we had a break for 5 minutes, and he decided that it would be fun to play with the candles that were lining the streets and build a fire in somebody's yard. That was not very comforting to me. You know, it's just things like that, that he just doesn't think about of what the repercussions would be of that. You know, I don't think he was maliciously starting a fire, he just felt it would be fun to see if he could do that with the candles.

A couple teachers mentioned that he liked to draw or read instead of doing his assigned work, and he often brought small objects to class that he played with instead of doing his work. One teacher did note that he spoke up for himself and had become his own advocate, which she liked. In class, he often tended to be physically active, sometimes in a way which drew attention

from other students. He would make noises and repeat large and small movements which often distracted other students. He appeared very fidgety in a few of his classes, constantly moving his hands or feet or touching his fingers to his mouth or face. When I was interviewing him, Albert had a very obvious breathy catch before he spoke, which was not present during any of the class observations. I assumed it was a nervous response to the interview.

Nearly all of Albert's report cards show satisfactory progress in personal growth areas related to behavior, such as respecting rights of others, working and playing well with others, following classroom rules, appropriate behavior outside of the classroom, accepting responsibility, and displaying courtesy in speech and actions. On his first grade intake interview, it was noted that Albert had a nervous habit of covering his mouth and clearing his throat, which may have been associated with the stress of moving to a new home and school. In 2009, the PST team referred Albert for behavioral and adaptive rating scales due to behavioral problems and the fact that he continued to struggle with completion of work, effort, and motivation. His sixth-grade consultation overview noted that he participated well in class and had a positive attitude, worked well with others, and usually maintained appropriate behaviors.

When looking at Albert's behavioral coding, several codes were utilized. All percentages are derived from the total number of coding references in all nodes attributed to Albert's data. Eight percent of coding text, 51 coding references, was attributed to "classroom observation – behavioral." Nine percent of coding text, 52 coding references, was attributed to "student, parent, and records review – behavioral." Four percent of coding text, 24 coding references, was attributed to "teacher perceptions – behavioral."

Gifted.

Albert's parents gave several examples of his high intelligence from when he was very small. He had recently mentioned that he missed the walks they used to take around the neighborhood in Connecticut. His mother said he was two at the time and that that was one example of his excellent memory. When I spoke with him, he gave me the exact birth dates of his parents. Albert's mom spoke of his advanced vocabulary, and using words like “acclimated” and “diplodocus” when he was three years old. His first grade intake interview noted his tremendous vocabulary and the fact that he had a great deal of information. In first grade, the teacher handed out an oval and a triangle to make a fish and Albert asked for an additional triangle because he needed a dorsal fin, which is when the teacher said she knew he might be gifted. They used to play spelling games with Albert and he was by now too good a speller to play those games anymore. According to his parents, many of Albert's friends were very intelligent, too. When he had friends over for his birthday, his father referred to them as “brainiacs.”

His parents didn't have any other children his age to compare Albert with, so they felt they weren't aware of how bright he actually was. They did not push for gifted testing because of this, and the school told his mother that all children were tested in second grade for the gifted program so she should not worry about it. When he was identified during the psychological testing after the incident in music class, his mother felt that the reason he had been having behavior problems was because he had been bored in his regular class. The psychological scores from his first IEP are as follows: WISC-IV 3/3/05 Verbal comprehension 116, Perceptual reasoning 133, Working memory 116, Processing speed 115, Full scale 127. Scores from the

Woodcock-Johnson Achievement test showed broad reading 126 and math 127. His sixth grade consultation overview described him as extremely bright.

When asked how he felt about being in the gifted program, Albert replied, “Good.” (Many of his answers were extremely succinct.) When asked what it meant to him to be in the gifted program, his response was, “A gift, or privilege.” When asked what it was like to be in the gifted program his response was rather confusing: “Uhm, kind of the same, same as just being regular, I guess. It's only, sometimes, I get different work because Mrs. (?) classes we never get homework like other classes, but we get nine week projects.” When asked if he had ever had any problems in school because of being in the gifted program, he responded, “Uhm, I don't recall any. There might have been a couple, but I don't recall any.”

In Albert's 6th grade consultation overview, his geography teacher wrote: “Albert is extremely bright, but is often engaging in activities other than class work.” His IEP of May 2010 included the following: “Priority educational needs: Albert needs the academic stimulation and enrichment of a compacted, differentiated, and advanced course of study, with the freedom to explore many different areas of the curriculum in depth.” His IEP goals for gifted were: “1. Albert will think creatively and critically to identify and solve real-world problems 2. Albert will develop and deliver a variety of authentic products /performances that demonstrate understanding multiple fields/disciplines,” which were the same goals from his January 2010 IEP and his October 2009 IEP. This IEP also changed the delivery of services for gifted from a consultation setting in reading, math, written language, and social studies to a gifted setting for the 2010-2011 school year.

In May of 2009, a corrected psychological test was recorded. The scores were as follows: Full scale 113, Verbal comprehension 116, Perceptual reasoning 117, Working memory 110, Processing speed 88. These scores do not meet the county requirements for the gifted program. He continued to be enrolled in gifted courses, but there was no follow-up explaining why this “corrected psychological” test was given, how the scores were used, or why he continued in the program if the scores did not meet the criteria.

His language arts teacher felt he had a strength in imagination as far as using numerous descriptive details. His civics teacher felt that “Academic progress is good because he remembers every word I say.” His science teacher said:

Albert is really smart. He comes in and he'll tell me about shows he's watched on TV, on Nova, and things like that. He knows everything there is to know about dinosaurs. Uhm, he pretty much grasps everything I go over (pause) like if I were to ask him verbally for the information he can recite it right back to me.

In math, the teacher perceived him as being a strong math student:

I would say that he definitely grasps the material quickly. I think that his strength is that he's an outstanding thinker. I mean that he is so well-versed in all subject areas. He's an excellent reader, so he, you know, he doesn't have any problem with interpreting a question (pause) He is so bright, In fact, he probably has the answer ahead of 95% of the other people.

During classroom observations, his participation was usually higher than the other students in his classes, and his answers were always correct on a wide variety of topics. When looking at Albert's gifted coding, a single code was utilized. The percentage was derived from the total

number of coding references in all nodes attributed to Albert's data. Seven percent of coding text, 40 coding references, was attributed to “gifted.”

Asperger's Syndrome.

Albert was identified in fifth grade as having Asperger's Syndrome. When his mother was asked about his identification she said:

I had never really heard of Asperger's, but ever since he was little, I had sort of kind of had a feeling that something was different about him. You know, he's not like other boys. He kind of plays by himself a lot, doesn't really want to interact socially with other kids, he's kind to other kids, didn't really want to socialize with anybody else other than adults, or much older children. So I kind of knew something was going on. So, for a long time I thought it was autistic.

She said she mentioned the possibility to his psychiatrist who told her that she just wanted to label him so she dropped the issue. Later, the school counselor asked her to complete a questionnaire about AS and the mother began crying because she was relieved to see that she hadn't been completely wrong all those years: someone else was seeing what she was seeing. Albert's mom described his friend as “different, too,” and said both mothers wondered if the friend also had AS. When Albert was doing something unusual, his mother had a code word that she used to let him know that whatever he was doing was inappropriate and to stop it. She said that it has been successful when trying to get Albert to stop certain behaviors in public.

When asked how he felt about having AS, Albert responded, “Proud.” When asked why he felt that way his reply was, “Because I should feel proud I guess?” The conversation continued:

R: What do you think it means to other kids to have, if somebody knows that you have AS, what do you think they think about that?

A: Well, they probably tell them, they don't know what it is.

R: Do you ever explain it to them?

A: Yeah.

R: What do you say when you explain what it's like to have AS?

A: Like, I think, isn't Asperger's like one-sided here, like the intelligence side of your brain is bigger than the common sense side?

R: I've never heard it put that way. Might be. Is that, is that what you've been told?

A: Yeah.

When asked if there was anything else he would like to say that would help teachers help students with AS in the classroom, he replied, "Well, I really don't know because I don't know how to fix what I'm doing wrong if I'm doing something wrong."

Albert had an intense interest in dinosaurs. At the beginning of our conversation, he told me some specific information about dinosaurs and said his interest began when he was three years old and his aunt brought him a box of dinosaurs. He wanted to go to college, get his doctoral degree, and become Dr. Albert, the paleontologist.

In July of 2009, a psychological consultation summary stated the following information concerning Albert's progress:

Concerns have been expressed to the parents regarding ADD as well as possibility of PDD such as AS. He excessively focuses on particular subject areas such as dinosaurs, has numerous sensory integration challenges, is unable to maintain normal social

relationships for his age and has significant fine motor difficulties in the context of his hand writing experience.”

The clinical psychologist noted the following information concerning possible characteristics of AS:

A mental status exam reveals a friendly and well engaged boy who clearly had the presentation of a child with AS. Immediately upon meeting this examiner Albert reported his great interest in dinosaurs and while he was able to engage in conversation over different subject areas he was enthusiastic discussing one or two particular areas of interest. Eye contact was normal and the engagement that he had with his sister during the evaluation showed the capacity for reciprocity ruling out the presence of any Autistic disorder. Based on the results of this initial interview it is appropriate to diagnose Albert with AS, ADD with mild hyperactivity, and a Grapho-Motor Deficit that results in hand writing problems. It is recommended that Albert continue to receive an Alpha Smart to minimize the need for writing with a pen or pencil, that he receives transportation services due to his psychological immaturity and impulsivity resulting from the ADD which make him unable to take responsibility for walking to school in a heavily trafficked area at this time. Pursuing the services of CARD to help network for any needed service in the future is recommended and if any social skills counseling is available in the context of his AS experience that support should be considered.

His IEP of May 2010 states, “He still tends to avoid eye contact and use inappropriate voice and tone when communicating. Albert needs to continue working on his conversational skills to better assist him in the classroom.” In a parent-completed ASD questionnaire, under

social interaction, there were responses of “often” under restricted and repetitive behaviors, activities, and interests. A social history in October of 2009 recorded there was no family history of Autism.

Albert's speech clinician stated: “He's in a group of three students, and one is a girl (pause) and the girl is also autistic, but high-level Autism, but not the same as Albert, you know, Albert's got a lot more communication skills and abilities that she does.” She also read and commented on some of the comments made by the previous years’ teachers about Albert:

“Gain attention in a socially appropriate manner, wait appropriately for other’s attention, doesn't use an appropriate voice and inflection,” but I've never, he’s fine on that with me. I don't see anything so different that, that you kind of notice it more than what he is saying. You know, some Autistic kids, you notice the voice more than you notice what they say. Like the other student, she’s more monotone that way, where Albert's not that way.

She did note that Albert really needed work on gaining other's attention appropriately. Albert's other teachers did not address additional issues relevant to his identification as a student with AS, although all his teachers were aware of this identification. When looking at Albert’s AS coding, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Albert's data. Five percent of coding text, 29 coding references, were attributed to AS.

Blaine.

“Blaine” is a seventh grader at a suburban middle school in east central Florida. He is a little taller than most of his peers, slender, and on the quiet side. He is enrolled in a gifted science

course, two ESE co-taught classes, and four general education classes. He lives at home with his mother, father, two sisters, and a brother. He participates in a local chapter of the Civil Air Patrol along with his brother and enjoys experimenting with baking.

History.

Blaine was born in Missouri in 1998. In June of 2003, his parents indicated he had been enrolled in special education classes for speech and gifted. This is the only form available prior to January 2007. His parents noted that in elementary school his teachers had learned to recognize when Blaine was reaching a critical behavior point. If his teachers saw him, “Start to look like he's trying to get away inside,” they would ask him to take a folder down to another teacher. This was a teacher of the gifted in his school who had two children who were autistic, so the parents felt the teacher knew how to work with Blaine. Apparently, this accommodation was successful and the parents indicated they tried to develop it a little in the middle school setting.

In January of 2007, he was administered a WASI based on a teacher referral. The psychologist’s notes indicated the following: “Talkative, pleasant manner, interaction with the examiner increased as he became more comfortable. Rapport and eye contact were easily established and maintained. Spontaneous conversation was appropriate. Blaine had to be refocused on occasion.” His scores on the WASI were as follows: verbal problem-solving 119, Nonverbal problem solving 140, Abstract reasoning similarities and block design 136, Full-scale WASI 133. He also was administered a test of divergent thinking on which he scored 13/30 points, which was the cut-off score for the gifted program.

In June of 2007, Blaine was referred for a formal evaluation because of “Concerns in the areas of written expression, social/emotional language, sensorimotor, and gross motor.” The

referral explained that Blaine was in the Spectra Program (gifted), but was having difficulty in several areas. Those areas included written expression, interacting and conversing with peers, and handling frustration. It also stated that he tended to shut down or get angry easily when facing something that was a bit difficult. At that time, an educational diagnosis of Autism was considered and selected. There is no medical report from a doctor establishing a medical diagnosis of Autism.

The eligibility statement reads as follows:

Blaine meets the eligibility criteria for an Autism diagnosis. Blaine has demonstrated significant deficits in receptive and expressive verbal and nonverbal communication, including social communication, and significant disturbance of the capacity to relate appropriately to people, events, or objects. This condition adversely affects Blaine's educational performance and is not a result of an emotional disability, or lack of instruction in math, limited English proficiency, or lack of appropriate instruction in reading, including the essential components of reading instruction.

His statement of educational need noted that Blaine was in the Spectra program, received counseling support and one-on-one help in written expression, and “benefits from frequent reminders of the expectations set in all classrooms.”

In May of the same year, Blaine received an occupational therapy evaluation due to concerns regarding his ability to respond appropriately to sensory input from his environment, citing concerns noted by classroom staff: “Difficulty maneuvering around the classroom furniture/tasks/bags, difficulty learning new motor skills, distracted by environment, doesn't like unexpected touch, and a short attention span to task.” A Sensory Profile School Companion

Teacher Questionnaire indicated that his sensory processing skills were outside the mean for his age range. The questionnaire summary indicated the following:

Blaine may seek increased sensory experiences though at times may avoid or have an emotional outburst in order to avoid situations, may display distractions from tasks or difficulty organizing his body and materials within a busy/stimulating environment, may prefer structure and consistent routines, does best when seated in close proximity to the teacher with occasional verbal redirection to activities, and that his overall sensory processing skills may impact his ability to take in and respond to a variety of stimulus within his classroom environment.

His speech/language summary stated that Blaine “Has not yet acquired some skills in the areas of rituals, conversational skills, asking for/giving/responding to information and nonverbal communication skills. Consequently, his pragmatic skills are not considered age-appropriate.”

A social/emotional evaluation listed the following in the clinically significant range: depression, atypicality, withdrawal, adaptability, social skills, study skills, functional communication, internalizing problems, behavior symptoms, and adaptive skills. There was an extreme caution warning that Blaine “almost always seems lonely, is sad, avoids other children, is pessimistic, and acts strangely.”

On a Woodcock Johnson III, his scores were as follows: spelling 45%, writing fluency 61%, broad written language 50%, written expression 55%, writing samples 41%. On the Reynolds Intellectual Assessment scales he received a verbal score of 109 (73%), nonverbal 153 (99%), full-scale 139 (99 %.).

In March 2009, Blaine's achievement scores on the Missouri Grade Level Assessment Program 2010 were as follows: communication arts 704 - "advanced" (TerraNova national sample 86th percentile), mathematics 708 - "proficient" (Terranova national sample 83rd percentile), science 697 - "advanced" (Terranova national sample 99th percentile).

At the end of sixth grade in April of 2010, Blaine's Positive Behavior Support Plan targeted behavior was to recognize his frustrations and emotional triggers and develop appropriate responses to cope. The interventions included sensory breaks as needed, a safe place or person to go to where he knew he could regroup, a visual schedule so he could anticipate changes to his daily routine, social skills training and social stories to develop strategies, and the point that Blair needed to let an adult know when he perceived that a problem was occurring. The crisis plan for use when the planned interventions had not worked and behaviors had escalated and become dangerous/unsafe was for another teacher to be contacted along with the resource officer and the principal. It also stated that in the Spectra room there was a quiet area that Blaine could go to as another "safe place."

In May of 2010, a three-year reevaluation was completed with information included under the following topics: vision, hearing, health and medical, communicative status – all acceptable; general intelligence and memory-superior range of intellectual potential; adaptive behavior-able to do basic things without assistance; speech-mild voiced and voiceless /th/ distortions and connected speech, no concerns with fluency. Voice was appropriate for age and gender; language-"Pragmatic language deficits adversely affect Blaine's performance in the regular classroom setting, at times he uses poor word choices and disorganized thought patterns of discussions and when responding to questions." In addition, "His ability to ask for or provide

information and maintain a given topic of conversation is inconsistent.” Academic/pre-academic-average in co- taught math, science, and communication arts class. Regular education geography-C average. Spectra class “solid B every quarter; motor skills – adequate for school performance,” “Blaine does have some issues with sensory things, some noises bother him and he does not like being touched by others; vocational transitions – okay; social/emotional/behavioral – communication skills low compared with peers, prefers to be left alone.” “His candidness makes it difficult for him to form relationships with his peers. Needs a safe place to go to allow him distance, space, and quiet in order to work through sensory issues in order to prevent meltdowns.” He improved in many areas during fourth quarter, but, “Teachers need to just be aware of some of Blaine's unique needs.”

His sixth grade final report card from his Missouri school indicated challenge math with grades of B, B, C (no grade first grading period), science B, A, B, B, geography C, C, B, D, physical education C, B, D, B, Spectra six (gifted) B, B, B, B.

In July of 2010, Blaine's records were sent to his current middle school in Florida. Health records indicated everything was normal and AS was listed in answer to the question “Any specific illness or social/emotional or behavioral problems?” The transfer student intake information form from the Missouri school listed exceptionalities as Autism and gifted. The transfer form also stated a need for an approved psychological evaluation and updated testing in speech/language before permanent placement.

When he arrived at his current school (after the actual start of the school year), the ESE administrator reviewed his IEP. It listed AS as the primary exceptionality and there was no gifted placement or paperwork. The administrator noticed an IQ score of 134 and requested a

psychological evaluation from the county. Blaine was placed in the gifted science class with a gifted certified teacher based on his strength/area of interest. He was placed in regular or co-taught classes for his remaining courses. The mother stated that when they came to Florida they sat down and talked to the ESE administrator. The parents explained that Blaine “Was not having any meltdowns or issues at home, but it's cool. He was at school, as they had all these rules in place and when they broke those rules he didn't know how to handle it.” The administrator spoke with Blaine and explained that sometimes the rules didn't always work the way they were supposed to, so he shouldn't expect the school to be perfect, and when things change a little, it's okay. For example, if you're late once, it's not a big deal. Blaine's mother felt this helped him to relax about the rules a little bit – it's okay if something doesn't go exactly the way it's supposed to go in school.

In September of 2010, a re-evaluation committee recommended psycho-educational assessment and assessment of speech/language. At that time, his primary exceptionality was listed as “ASD-temporary, language impaired.” His secondary exceptionality was listed as “gifted-temporary.” Eight goals were listed on his IEP: two for speech (use of appropriate social/conversational skills and producing voiced and voiceless /th/), two for academic or gifted (problem-solving and applying study skills), and four for organization/behavior (seeking teacher assistance, use of coping skills, identifying personal strengths and weaknesses, and advocating for self when being teased.) There was no mention of gifted coursework. The IEP states, “Is a transfer student and meets eligibility for temporary assignment in gifted, ASD.” It was noted that the parent attended the meeting.

His scores on the Florida Assessment for Instruction in Reading (FAIR) given in September were Reading Comprehension 27th percentile and Word Analysis 39th percentile. An informal evaluation in November of 2010 listed strengths as “Definitive in answers – no speech errors noted in conversational speech” and needs as “Behavior somewhat awkward – noted differences in what is expected typically.”

A report was received from the school board county level psychological services that the psychological report from out-of-state was not approved because the testing instrument was not accepted by the county school system. They do not use the WASI in this county. In December of 2010, a WISC-IV was given which described Blaine as “well focused, socially appropriate, comfortable.” Scores were as follows: Verbal Comprehension 121, Perceptual Reasoning 131, Working Memory 102, Processing Speed 94, Full-scale 119 (90th percentile).

In January of 2011, a new IEP was written listing the primary exceptionality as ASD – new, secondary exceptionality of language impaired – new (related services) and gifted – new. It appears that the gifted placement was based upon the partial score of the perceptual reasoning subtests, which was 131, although there is no statement as such.

It was noted that he attended the gifted program for science class. Under present levels, Blaine was described as follows:

Expresses difficulty in communication and social skills with his peers and adults, struggles with initiating conversations and generally relating to his peers, while possessing high intelligence and a strong curiosity. His social communication skills are very low in comparison with his peers.

Teacher notes for each course were as follows: reading-does well with retention of vocabulary words, has trouble making inferences sometimes, if the answer is not clearly stated he can get frustrated; math-on grade level, occasionally demonstrates surprisingly advanced level of thinking on particular concepts, when Blaine perceives he will need to do a lot of writing he becomes resistant and often will not begin the assignment; physical education-quiet and tries his best; science-has a C at midterm, tries to complete his work and it is usually acceptable, works well with one of the other students in the class; social studies-B at midterm and doing well.

Social emotional comments stated that Blaine routinely believed that his peers were making fun of or imitating him and making noises to irritate him. He had difficulty making friends and preferred to be left alone. He was described as very routine driven and he responded emotionally when things do not occur the way he was expecting. A lack of organizational skills and difficulty dealing with change, appearing nervous at times, and seemingly overwhelmed (especially if asked to produce homework that he forgot to do) were also listed. His math teacher noted that he kept to himself and was quiet in class.

Under independent functioning, it was noted that his poor organizational skills lead to frustration, he could process visually and respond well to written information, needed copies of teacher notes to help him understand verbal instructions, and needed assistance with organization including reminders to write all assignments in his planner. No health issues were noted at this time.

Under the topic of Communication, a mild distortion of /th/ sounds and conversational deficits in pragmatic language skills were listed. Poor word choice and disorganized thought patterns and discussions when responding to questions were noted, as well as the fact that Blaine

engaged in a variety of conversations and maintained turn taking but still tried to steer the conversation to what he wanted to talk about. It was noted that he often struggled in interactions with peers and some classroom activities and was inconsistent in his ability to ask for or provide information and maintain a given topic of conversation. This often varied based on the level of interest or knowledge he had in the topic. He continued to have a difficult time problem-solving situations and being an advocate for himself appropriately. Some of Blaine's social behaviors appeared awkward or different from what was typically expected, such as the fact that he often brought his hand to his forehead when speaking with his arm in front of his face or did not typically respond to greetings in the hallway. The fact that Blaine loved to create and draw (according to his mother) and the fact that he processed information visually were listed as strengths.

The goals and objectives did not change from the September IEP. Language impaired was listed under related services. Under supplementary aids and services, the following were listed: assignment planner, test accommodations, demonstrate understanding of directions e.g. repeat/paraphrase, individually or in small group setting, additional time up to double, use organizational strategies, use assignment notebook/planner, extra time for assignments.

Under curriculum and learning environment, Blaine was listed as participating in general education curriculum with accommodations and supporting organizational skills, self advocacy skills, language and social skills, and a gifted science class. He received adaptations to the general curriculum, consultation, and differentiated curriculum assistance for some learning activities

Under social and emotional behavior, Blaine received specialized training in self advocacy and understanding of his exceptionality, independent functioning, organizational strategies or adaptations for independent functioning, no healthcare, communication weekly speech/language therapy or instruction. He received 30 minutes of communications/speech weekly, remaining in non-ESE situations for 98.48% of his school week.

In February of 2011, another IEP was written. The present levels were identical to the IEP of January 2011. The reason for the new IEP was a gifted review to approve a schedule change for math. Blair moved from a daily co-teacher support class in a general education seventh-grade math class to pre-algebra (advanced class) with monthly consultation support.

Academics.

Testing had indicated that Blaine had a strength in science. His final sixth grade report card indicated he maintained a B average in science, as well as a B average in Challenge math and his Spectra class (presumably language arts). He had a C average in geography and physical education.

His seventh grade ESE administrator felt that he was probably placed in a separate ESE class in his last school, based on behavior, which likely had resulted in enrollment in some rigorous classes and some classes with low academic expectations. When asked what she saw as his academic strengths and weaknesses, she said he was strong in math and science, but not languages. His parents said that on his progress report he had straight A's, so he was working very hard hoping to get a 4.0 the last quarter, a goal that he had set for himself. He had been on honor roll each quarter this school year. When Blaine was asked how he was doing academically

in comparison with the other students at his school, his answer was that he was performing a bit better.

Math was his first period class. He began the year in the co-taught math class, but eventually his teacher noticed an exceptional strength in some mathematical thinking and she felt that he demonstrated the ability to handle pre-algebra. At the beginning of the year, he was very quiet and nervous, but as time wore on he occasionally would raise his hand to give some input on the question. The teacher stated that she could quickly see a difference. According to this teacher, when most children learn math, they're learning more of the rote methods, and they don't really understand the concepts and why they work. Blaine would raise his hand occasionally and say, nervously, "I did it a different way." Then he would show an alternate method which seemed brilliant to the teacher. The more she worked with him and responded to him with positive praise, telling him just how brilliant this was or how great that was, he began to respond well. He would do most of his homework most of the time, not always. He would do the work in class and kept up with the class with no trouble, but in the beginning he maintained a C average, which the teacher thought was curious. As time wore on, she came to see him working ahead. By the time the class began Chapter 5, Blaine had already finished all of Chapter 5, so she gave him the quizzes and the test before anyone else. He aced them several weeks before the class actually finished the chapter. At this point, he had come out of his shell a little bit. So the teacher asked Blaine's permission to give him the FCAT Test for their grade level from previous years and he missed one question on the entire test. The teacher stated that this test was done over two sessions, about 80 minutes for each session, and that he took it in a noisy classroom with lessons going on and people talking in less than half the allotted time.

Noting how well he did, she asked if he would be willing to try the eighth grade test for her. He only missed four, putting him on a level 5, which is well above eighth grade level. At this point, they were just past the Christmas holiday and she decided he needed to be moved up to pre-algebra immediately so that he could begin algebra in eighth grade. She spoke with the seventh-grade pre-algebra teacher who let him take their midyear assessment test. He scored in the high 60s, but there was an entire section he had not been taught, so she felt he would have had an easy C if he had been in her class. There was also the fact that it was a test that many of her other students who had been in the class all year had failed, so the pre-algebra teacher said he would be okay. It was explained to the mother that this change in schedule would be needed to put him on track for algebra the next year and that he seemed to have a real gift for math. The mother agreed, so he was moved to the pre-algebra class which was next door to his current classroom. The felt he had made the transition very nicely.

When Blaine was asked how he felt about moving up to the pre-algebra class, he said:

That would be great. I don't feel challenged in this class that all. When I lived in my other state, the same thing happened; they took me out of the program and I was put in a different program when they realized I could do more.

However, when I asked Blaine during our interview what he liked about his pre-algebra class, his response was, "Ah, not much."

His pre-algebra teacher felt that in comparison with the other students in her class Blaine was no different academically. However, she stated that he was one of her top students in pre-algebra, is on track for algebra next year, and that he is doing wonderfully. Blaine liked math class because it's, "A bit simple."

Blaine was in a gifted science course for fourth period. He was initially placed there because of his strengths in science, as evidenced by the information in his IEP. According to his ESE administrator, his teacher felt he was not excelling academically but fit in socially very well. He enjoyed the activities that were done in science class, although he believed they did many more activities in his old school in Missouri. He described an experiment his previous science teacher did using hydrogen, balloons, a match, and protective glass. When asked what else this year's teacher did that he enjoyed, he stated: "There's some projects, but I mostly learned all of them. States of matter, wavelengths, genetics, and I've practically already done those." When his teacher was asked about his academic progress in the class, she said there was no difference in comparison with the other students in the class academically. When Blaine was paying attention, he seemed to be able to follow along well and retain details. For example, when the teacher was talking about where they had left off on the video last class period, Blaine told her the numerical stopping data. He grasped the material very quickly, but occasionally needed extra time to complete assignments. When his parents were asked if he had any class that he considered his favorite, or that he talked about or enjoyed, their first response was science because he got to be more involved than in his other classes.

The ESE administrator spoke about his science fair project which was a hovercraft he made from a vacuum cleaner and a disk. She explained he stood on it, turned on the motor, and it came off the ground, which impressed the ESE administrator. His science teacher spoke about his passion about his hovercraft. He knew his project and was able to defend it well.

Blaine's sixth period technology teacher described him as very quick:

He's one of the quickest students in the class, actually. He picks up all of the stuff very quickly. He seems to understand it, all the processes, all the step-by-step processes that we do, he doesn't have any problem with it.

The teacher felt Blaine was performing better academically than the other students in his class. He also explained that Blaine was very efficient and did everything very well on his own. When asked if he enjoyed the class, Blaine stated, "Yeah. I'm usually the first one done all the time.... Even though I'm a seventh grader I get, like, about 7 minutes ahead of them." He did mention that somehow he ended up getting in a class full of sixth-graders and was thinking it had something to do with scheduling.

Seventh period civics was a class Blaine enjoyed. He liked some of the topics like economics and said it was like math but a bit simpler. His parents also identified civics as a course he seemed to really like. For this course Blaine received support facilitation where an ESE teacher was available in the classroom on Thursdays and Fridays to assist the identified students. When asked about his academic progress the support facilitation teacher felt he was doing well. She explained his strengths were that he "Actually studies and tries to memorize things," and that he seemed to have good study skills. His classroom teacher felt he was doing better than the other students academically in her class. She said that he "Had a wonderful brain... he's on the money," and she was impressed that he wrote in cursive, even though it was a little rough, especially since 90% of her students couldn't read cursive. She stated he was very engaged when she used the Promethean board, videos, and DVDs. She also described her relationship with him this way:

You know, if you get a feel for them, and like I said, right about October I got a feel for him and knew what he was about, and I kind of just let him do his thing because he gets it. He is doing better than the majority of the gen ed (students) in here. So, I don't know, I don't force him to do anything he doesn't want to do because I know he's getting it. He's just a really good student.

Third period was a co-ed physical education class where his teacher felt he was academically no different than the other students in the class. When asked to describe Blaine's academic progress, for example did he grasp the rules of the game and the things that he needed to learn that had academic aspects, the teacher responded, "Yes, he does really well, and he dresses out every day, and sits there and actively listens while I give the directions of what to do, and he participates and pretty much does what he supposed to." His parents said that he liked everything (all subjects) except maybe not gym class all the time. Blaine's impression of his physical education class was rather neutral: "He just gives us what we are playing, or what (*sic*) we're going, where we are heading or where we're playing, so it's not really bad or good."

For second period, Blaine was in a co-taught language arts class. A special education teacher was in the classroom working with some of the children at the same time the regular education teacher was working with them and the other general education students. The special education teacher was responsible for grading all of Blaine's tests and papers while the classroom teacher was responsible for planning and conducting the class, along with some grading. When asked if there was anything he liked about his class or his teacher, his response was, "It's neutral." The teacher did say that when it came to class participation he could participate and almost always gave her the correct answers. His parents thought he liked his language arts class.

According to his regular education teacher, he was doing better than most the other kids and his special education teacher saw him as no different than the other students.

The special education teacher talked about a writing essay he had just finished grading for Blaine, who scored four out of a possible six which met the criteria for the writing prompt. However, Blaine did not answer the prompt accurately, but then again neither did many of the other children. He also said that in looking at all of the components of the essay, Blaine did a phenomenal job constructing his ideas, putting them together in a logical sequential order, including a thesis statement with a body, paragraphs, and conclusion. He wrote logically and coherently and gave good factual details, including transitional words. He could construct good sentences without disjointed vocabulary and had subject verb agreement.

The special education teacher also spoke of Blaine's vocabulary as being miles ahead of the other ESE students. This teacher described Blaine's strengths as verbal and vocabulary, mentioning that he wrote in cursive. He seemed impressed that Blaine studied his vocabulary, stating that Blaine was able to go home and remember the information, study and retain it, at the end of the week take an exam on it, and apply that skill in actual writing. During his observation, Blaine gave the correct definitions of "thesis" and "irony". Although on the initial question this teacher stated that Blaine was no different academically than the other students in the class, at this point in the interview the teacher stated, "He's one of the better kids in there, academically, I would have to say." It was also reported that "he's just a little bit deeper than the average kid."

When his regular education language arts teacher was asked to describe his academic progress in her class, the response was:

I don't grade his test papers. He has answers to things that I ask. I mean, when we are in a group, we are a group. But when the papers are done, they go to Mr. X. I don't see them.

Blaine's sixth period reading teacher stated that in comparison with other students in the class Blaine did better in his academics, noting that it was nothing for him to read a book (meaning it was easy for him to read an entire book). He grasped new material quickly and was extremely quick. When speaking about previous students with AS, she explained:

So, in the past, the students that have Asperger's have been very, they take everything literally and, so not as great at the inference type thing, and Blaine seems to really be with it as far as that kind of thing goes.

She remembered when he first came into her class he turned in a pretest in perhaps 5 minutes while everyone else was working for about 15 minutes. She remembers thinking, "This kid's just Christmas-treed in, just doesn't care, whatever." Then she saw that his paper was perfect and said that's very typical of him. He would turn his paper in first and she knew he pretty much would always get a 100 because he was very quick.

She also said that he was extremely smart, very detail oriented, and if there was an assignment that she wanted a lot of detail for, she would assign it to him. He would get on the computer and the next day he would come in with about 10 times more information than she actually needed. She also noted he was very interested in scary stories and crime TV, like "Criminal Minds." She stated, "He loves reading. He likes reading, he loves reading scary stories, that's his obsession, any scary stories he get his hands on he just reads it, takes the test, and passes it." When asked what he liked about reading class, Blaine said it was that no one could bother each other because they were always reading and he thought the teacher was nice.

When looking at Blaine's academic coding, several codes were utilized. All percentages are derived from the total number of coding references in all nodes attributed to Blaine's data. Three percent of coding text, 25 coding references, was attributed to “classroom observation – academic.” Four percent of coding text, 32 coding references, was attributed to “student, parent, and records review – academic.” Six percent of coding text, 47 coding references, was attributed to “teacher perceptions – academic.”

On-task behavior.

Blaine showed a mix of both on-task and off-task behaviors during observations. His teachers did not mention any difficulty with Blaine staying on task, nor did Blaine or his parents. A few teachers described situations in which Blaine appeared to not be listening, when in fact he was indeed listening and could answer questions. His civics teacher described Blaine fidgeting and not looking at her, but knowing the answer the instant she asked a question.

I observed Blaine’s pre-algebra class when he had a substitute teacher. He came in the room and went directly to his seat where he began taking out papers and writing on them. He stood appropriately for the pledge and completed his assignment in a timely manner. However, he did seem to have difficulty staying on task. He did not write down his homework assignment, even though his teacher asked him about it, and she finally had to hand him a copy of the teacher notes since the class needed to move on. When the instructional video began, he did not look up at the screen except briefly. He was playing with a calculator when he should have been working on a practice problem. The teacher was standing next to him when another practice problem appeared, yet he did not begin work on the problem and she finally told him that he needed to begin the problem. He started writing, but when the teacher walked away he stopped. When the

next practice problem appeared on the screen he immediately began solving it. I noted in my observation that it, “Appears he was a little slow to get started on math today but once he got started he is involved.” At different times during the class period he was on task – completing problems, focused, involved, and at other times he was not on task – looking around the room, resting his head in his hands, playing with a calculator. After the instructional video, the homework assignment was given in the textbook, and the students were told to begin. Blaine immediately got his text out and opened it, but it did not appear he was on the same page the other students were.

In his language arts class, Blaine also alternated between on-task and off-task behaviors. He answered several vocabulary questions correctly, he noted that another student moved the game piece to the wrong location at one point, helped his team clean up, and sometimes knew when it was his turn. On the other hand, he didn't know what to do when the teacher called on him because he had not been paying attention again, didn't know which piece belonged to his team or where to move it, was not watching the game most of the time, although the rest of the class did seem to be attentive, played with his folder, and looked around the room quite a bit rather than at the game in progress.

In physical education class, Blaine answered roll appropriately and immediately ran to the soccer field when given the choice of activities. During the entire soccer game, he displayed both on-task and off-task behaviors. More often than not, he was not paying attention to the game. Although he participated and often played when the ball came towards him, he was not really aware of what was going on unless the ball came very close to him. When a football was thrown into the soccer game, he looked at it but did not try to remove it from the game. He was

at the head of the group running back to the locker room after class. When asked about strengths or weaknesses, Blaine's physical education teacher described a situation which demonstrated some off task behaviors. In playing a game called Sharks and Minnows, the teacher described him as follows:

Kind of in his own world and if there are flags lying on the ground he starts picking them up and connecting them all into one long flag. You need to coach him to try and catch the other people.

During science class, Blaine was often not paying attention. The teacher was taking notes on the overhead and the students were supposed to be copying down what she was writing. After the third statement was written, Blaine still had not written anything on his paper. At one point, when the teacher called on him, he didn't know what to say because he didn't have anything on his paper. He couldn't read his notes because he hadn't written anything down, so he was making it up as he went. The teacher had to finally come over and tell him to get started writing down the information and he did. When the class was told to complete their classwork assignment, he started working on coloring his paper. The teacher came over to tell him to complete the writing when she realized that he was done with the assignment except for the coloring, so he was actually ahead of the rest of the class.

There was a substitute teacher when I observed Blaine in his reading class, but he was very on task the entire time. Shortly after he entered the classroom, he began reading. He answered roll appropriately and continued his reading assignment, basically ignoring the rowdy behavior of his classmates. When the substitute started talking about a worksheet, he didn't look up but continued to read. When he got the worksheet, he continued reading, but after about 60

seconds began working on the worksheet. For the remainder of the class, he continued reading and completing the worksheet and was much more on task than the rest of students.

Blaine stayed on task during most of his technology class. They were continuing a project making a hot air balloon from tissue paper. Blaine took the lead and did most of the work while his partner did very little. As soon as the students were told to get started, Blaine got their materials, laid them out according to directions from the teacher, and began work. His partner was playing – gluing his fingers together and doing a Vulcan “live long and prosper” sign. Blaine watched and showed his partner he could make the symbol also, but then immediately went back on task. His partner pretended to poke Blaine in the eyes but Blaine sat with a fixed stare to show he could control himself and was not bothered by the fingers jabbing at him. His partner continued to be off-task, but Blaine stayed very on-task until the end the activity when things became complicated. He and his partner were attempting to glue together two pieces of tissue paper by holding them up in the air, rather than laying them down on the table, and it became increasingly difficult for Blaine. At this point he began to be highly frustrated, but before that he was one of the more focused students in class.

At the beginning of civics class, Blaine did not get out his paper when told to do so, but when the teacher asked about it he looked a little startled, sat up straighter, and then got out his paper, although it was not the correct one. It took redirection from both his general education teacher and his support facilitation teacher to get him organized correctly. Once they begin reading an excerpt from *The Jungle*, Blaine appeared to be listening and understanding what they are discussing, but his writing was not on task. He was completing the T-chart incorrectly, not erasing the appropriate items, and not writing everything he should have been. When talking

about the excerpt, Blaine gave some very thoughtful, detailed answers and was a major contributor to the discussion.

His parents stated that, “He seems to have a saturation point. He's good with things to a point and then sometimes if he's not interested, or if it overloads him, then he'll withdraw. He doesn't like being pushed in that sort of thing.” When looking at Blaine's on task coding, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Blaine's data. 19 % of coding text, 132 coding references, was attributed to “on or off task behaviors.”

Organization.

Blaine's organizational skills were not very strong regarding paperwork. His IEP included study skills and asking the teacher for assistance when needed. Neither Blaine nor his parents mentioned anything about organization in their interviews. However, several of his teachers mentioned organizational situations and they were noted during several of his observations. His language arts teacher noted Blaine didn't like to copy notes or copy things into his planner from the board. His previous math teacher noted that sometimes there were problems when it was time to get their planners out to write down their homework:

On days that he had his planner, it was fine. He would do that, and then he would get his work out and everything was okay. But on days that, he doesn't have the best organizational skills and he needed help keep its folders and whatnot organized.

When she would ask if he left it at home, he would just shake his head without responding verbally. She noted that his backpack was a mess, he wouldn't put things in his folder, would

take out his planner and not put it back in correctly, and that obviously organization was not a priority for him.

The general education language arts teacher did not mention organization, nor did his language arts exceptional education teacher, the technology teacher, civics teacher, or his physical education teacher. The science teacher mentioned that the logistics of completing his science fair project were difficult, but once she gave him a little bit of direction he was fine.

Classroom observations noted instances of poor organization in almost every class, most dealing with copying notes or getting out the proper materials. In math class, he had his planner out when he was supposed to, but he was not writing down the assignment, even after the teacher spoke with him. She eventually needed to give him teacher notes to copy. It took him a very long time to tear a piece of paper out of his notebook and then find the right page and problem, much longer than the other students. At the end of the class, the teacher asked to see a specific paper and Blaine couldn't find it in his backpack.

Students were playing a game during language arts class which did not allow much opportunity to observe organizational skills. He did help his team clean up at the end of the day, got on his backpack, and was ready to go when the bell rang. Physical education class also did not provide many opportunities to observe Blaine's organizational skills.

During most of science class, Blaine was playing with a blue stick toy which seemed to occupy his attention at times. Several times during class he was not writing notes as instructed, as well as not paying attention to what was being said until the teacher had to speak to him individually about getting on task. Near the end of class when they began changing activities, he

got ready to leave, even though they were given an assignment to work on, so he then had to sit back down and reorganize to work on the assignment.

Blaine appeared more organized in reading class. As soon as he got in the room, he began reading. There were no notes to take, just a worksheet to complete as he read, which Blaine did in an efficient manner.

He appeared very organized in technology class. He gathered his materials quickly and efficiently, laid everything out neatly, and followed the directions given by the teacher and on a handout. Blaine finished the gluing of the tissue paper balloon ahead of the rest of the class and spent his free time looking at the directions on the handout. At one point, he needed to work with a partner to turn the tissue paper balloon inside out, which required gentle manipulations. He continued to work smoothly until the final piece had to be glued, at which time he became highly frustrated.

Blaine walked into civics class and immediately sat down, put his papers on his desk, his backpack on the floor by his desk, and looked at an invitation that had been handed out. At the beginning of class, the students were told to get a piece of paper which he did not do until after the teacher asked him specifically. He got out the wrong paper and needed help to get settled. Several times in this class he did not follow the directions completely, which resulted in confusion. At the end of class, he put his papers in his folder and began to get his backpack organized, but the teacher needed to tell him to have a seat until they finished with class.

When looking at Blaine's organization coding, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Blaine's data. Five percent of coding text, 37 coding references, was attributed to “on or off task behaviors.”

Social.

Peer interactions were an important part of the research study. The area of concern most noted by Blaine's teachers was in his social interactions. When asked to compare Blaine with other students in the class during cooperative groups and in social interactions, two teachers described him as "no different" and eight described him as "worse." Although several noted he communicated with them, they saw his peer interactions as minimal to nonexistent. It was also a repeating theme in Blaine's interview.

Blaine's pre-algebra teacher stated that he avoided groups. Since she always gave the option of working with others or alone, it was not a concern to her. However, she noted he did interact with certain people in the class:

Blaine came late in the year, too, so I didn't know if that would be an issue because he's the new kid, but they've wonderfully supported him. If he brings in something, they ask about it and ask him to explain it, they are just, they're wonderful kids.

When asked if Blaine seemed to be aware how other students view him, she stated that it didn't seem to be an issue with him:

His previous math teacher also noted social interaction with a specific student.

There was a boy who sat behind him that was not doing well (academically) and he would tap on Blaine's shoulder and Blaine would help him with his work during class. So that was great because that was the only social interaction I ever saw him have.

She noted that an exception was a candy sale at school where he took pride in winning certain prizes. She noted that in comparison with the other students in the class, "Socially he is quite withdrawn, he does not initiate interaction with other students at all, and as the kids realized that

he was really smart in math they would start seeking him out.” When they did, he would respond to their requests for help. “He would reciprocate, yeah, and he was perfectly happy to help, but does not initiate in my observations.” When asked if Blaine had any friends, she replied:

No. People seem indifferent and, everybody probably likes him, but nobody goes out of their way because it's an effort, you know, it's an effort to have a conversation with him. (pause) From what I've observed, it just doesn't seem comfortable for him to interact with other students. There have been kids who have reached out to him. So I think that the kids like him, but they don't really, it would be a lot of effort to be Blaine's friend, to develop a friendship.

When his language arts teacher was asked about his social interactions in class, her response was:

He has none. (pause) Nobody talks to him. He doesn't socially interact. He comes and talks to me, but the kids, you know he stutters and he flits and they don't think he's cool, so they don't talk to him, and then he hides.

When asked if he was aware how the other kids viewed him, she said it didn't seem to upset him. She stated that no one was mean to him, or made fun of him; they just didn't talk to him. His language arts special education teacher said that 95% of the class time had been direct instruction, so there hadn't been cooperative groups or many instances to observe social interactions. The classroom management was very strict, very organized, very formatted for routine, with no talking allowed, so there were not a lot of chances for social interaction.

His physical education teacher described his social interactions as, “Blaine is pretty standoffish; he kind of does his own thing.” He noted that Blaine usually worked pretty well with

the other kids who tried to help him. Blaine's science teacher noted, "He kind of isolates himself a little bit. Some of the children were sitting with him at lunch, and the others were bullying him, and the other children stuck up for him... He is kind of the loner." When his reading teacher was asked about his social interaction, she said that if the other kids interact he will talk to them.

When asked about Blaine's social interactions his technology teacher responded as follows:

Sticks to himself for the most part, I wouldn't call him very sociable (pause) If he's ever interacted with, he's always very respectful, he speaks well with them. Beyond that, he's kind of in his own world, like I kind of get that impression. He's not really interacting, or trying to interact with any of the other students.

The same question was asked of Blaine's civics teacher who then observed that in class: He's withdrawn as far as the kids in this classroom because, unfortunately, wisdom doesn't say, "Let's make a good mixture in the classroom." (pause) My seventh period, there's maybe six gen ed, and 13 ESE. So Blaine is withdrawn because the children are aggressive, I'm constantly on them as far as discipline is concerned. (pause) I believe that if Blaine was in one of my better classes then he would be flourishing, he would be more verbal.

She explained he didn't like cooperative learning groups and she didn't blame him. She believed the other students picked on him sometimes because they are jealous of him. "I think that they believe he's always the one who's looked or appeared to be the slow kid, so it kind of blows their minds."

The civics support facilitation teacher noted that he may have talked to nearby students, but “Doesn't seem to really want to come out of his little shell too much. (pause) I would say that he is not as social as his classmates. He doesn't mingle real well with the other kids. If we have a cooperative learning, he usually works on his own.” During the observations, interim reports were passed out and the student in front of Blaine asked him if he thought he did well on his interim. Blaine replied, “Yeah, probably.” When he received his report, he did an arm pump and the student in front turned around and asked if he got straight As. He replied in the affirmative and seemed very pleased with his interim. The peer then told another student that Blaine got straight As. The other student did a high five twice with Blaine who responded physically but did not say anything.

When asked if Blaine reported any social problems in school, his parents stated, “Not very many.” They noted that in his previous school there were some situations where he thought the other students were “Messing with him.” They noted that Blaine had gotten injured a few times because of a bottleneck coming out of the gymnasium and had occasionally been pushed into something, but he recognized it as an accident and didn't consider it a huge deal. They noted he didn't consider it a conspiracy against him, which was an improvement from the Missouri school. They also reported that he had gotten some attention from a girl around Christmas and Valentines Day. They explained, “We've always taught him that you're supposed to hold the door open for people, that sort of thing, but I think that some of the girls do pick up on that and actually appreciate it.” They felt he did “Okay with the kids,” noting there were ones he liked and didn't like, but had not heard him talk about anyone he would describe as a friend that he could name. When asked about friends outside of school, for example in the Civil Air Patrol

group, they said Blaine would characterize those peers as acquaintances as he has not bonded with any of the members. He would sometimes hang around with his brother's friend from the neighborhood, and he got along with an out-of-state cousin with whom he had several things in common. His parents characterized Blaine's relationship with his brother as an "I'm your friend: I can't stand you," sort of thing going on.

During Blaine's interview, he brought up social situations several times. When asked to describe how well he got along with the other students in comparison to his peers, he replied, "I have to say somewhat between no different and worse." When asked about his math classmates, he said, "I don't really talk to them that much, they don't really bother me, either." He complained that his grade on his game in language arts ended up as a C because, when he handed out prizes, the kids swarmed around him and he didn't think it was fair to grade kids on leadership skills. He described the other kids in that class as "some of them are nice, some of them are rotten. Like they end up, they're snobbish because they say, 'great game,' (said in a very sneering voice) when they found out my grade for it." When asked about the students in his PE class, he described a student who was intentionally blocking him from coming down the bleachers. When asked if there were any good kids in that class, he replied that the remaining students were neutral.

When asked if there was anything he didn't like in science class his reply focused on the following social situation:

It's, the kids that, in class. They use foul language and, they, the kids I sit with at lunch, well they start picking on me in like a gang. And I'm not able to move to another table because, it's assigned seating. But the motto that they'll talk to the students doesn't really

help much. It's just that they get talked to, they don't really care. They get a detention, they don't really care. They get a referral, they don't care. They get a detention they think, 'Hooray, no days of school.' But then there's in-school suspension where they can still pick on other kids.

When asked what he liked about reading class, he said, "It's that no one can bother each other because we're always reading." He also described a situation where a couple of students who sat by the computers always bothered him when he was taking tests on the computer. When asked about the other kids in the class, he replied, "The kids in that class, only like about five people, about 1/5 of the class is rotten like that."

When asked if there was anything about technology class he didn't like, his response was, "Sixth-graders apparently are thieves." After further discussion, when I asked if they got punished for taking things from him, he replied, "Yeah. I warned them. They didn't get in trouble so..." In describing his civics class, he said he didn't like that there were some goof-offs in class, but that they didn't really bother him. There was no one that he disliked and some people that he did like. At the end of the interview, I inquired if there was anything else he would like to tell me and his response was, "Yeah. There are, there are a lot of mean kids and I don't think that they, that they really get that many punishments when they, when they get like referral or sent to the office."

Blaine has had some bullying issues at the school. His September 2010 IEP had a goal to "Advocate for himself when being teased 1/3 times during randomly scheduled observations." He described several instances of bullying in class and the lunchroom. His parents said that Blaine didn't have many problems but that his sister had been having difficulty with bullying and

he had gotten some bullying by proxy when she's been there. His previous math teacher described her own daughter observing a student in the cafeteria making fun of Blaine. The daughter reported it to the teacher and they changed Blaine's seating. The science teacher noted a bullying situation in the cafeteria as well. The students in civics class were described as aggressive and tended to pick on Blaine. The teacher noted she had to get on the other students about the new bullying policy and is okay with Blaine not socially interacting because "that keeps him safe". The ESE administrator noted there had been some bullying in the locker room, which they addressed. No bullying was noted during classroom observations.

Teacher interactions were also an important part of Blaine's social behaviors. Blaine appeared more comfortable initiating adult interaction than he did initiating peer interaction. The pre-algebra teacher stated that Blaine liked to come before class and tell her about things that are going on and show her different objects he had brought. His previous math teacher reported that when he was selling candy she would check in with him each day to see how many candy bars he had sold. "And he would see me in the hall and say, 'I sold another box,' so he was initiating conversation a little bit, which again, for him was very rare." On occasion, he would raise his hand to answer questions or offer a different way of doing things. During the observation he did not initiate conversation with the substitute teacher, but did respond when asked questions, sometimes after some prompting.

His language arts teacher reported that he did talk to her:

He didn't at first, he'd only hide from me, so he has grown there. When I come by he'd hide from me. I would say, "I see you." Now he actually stops me at the door and starts to

tell me a story. And he's so slow with the story, to get it out, (laughs), maybe it's better to go back to step one, I don't know, but, "I've got to go in the room, honey."

His language arts special education teacher noted that Blaine would talk to him. During his classroom observation, he did not initiate conversation with the teacher, nor did he initiate any adult conversation during physical education class. The physical education teacher did not mention any specific examples of adult interaction with Blaine.

The science teacher did not mention any specific examples of adult interaction, either. Blaine did respond when the teacher asked him specific questions and he volunteered several answers. At one point, he volunteered the information of the exact time data where they had stopped the video during a previous class.

The reading teacher noticed that he seemed more comfortable talking to her and talking through her. For example, if the student behind him was tapping on his desk, Blaine would raise his hand and say, "They're tapping on my desk," so that the teacher would intervene rather than saying something himself. "If the other kids interact he won't talk to them, but he usually seems to, he seems to talk to me and kind of expect me to then relay the message to the other students." She feels he is more comfortable with adults. During his classroom observation, he did not initiate conversation with the substitute teacher.

During the technology class observation, Blaine raised his hand to ask a question once, but put his hand down after about eight seconds. At one point, Blaine was having difficulty with his hot air balloon and, even though the teacher was right near him, he did not ask the teacher what to do. He ultimately became very frustrated with his inability to glue the tissue paper together properly and began pulling his hair and scratching his face. When the teacher came over

and calmly talked to him, Blaine became more upset and was not communicating well with the teacher, although he did seem to be listening most of the time.

The civics teacher did not mention any specific examples of adult interaction with Blaine. His civics support facilitation teacher reported that he did talk to her and would tell her anything that he felt like talking about at the time. If they were doing group work or were given the last five or seven minutes to talk at the end of the school day, he would talk to her: "I usually talk to Blaine, or Blaine starts a conversation with me, either way." During the observation, he raised his hand to answer several questions the teacher asked. The teacher noted that during the observation the support facilitation teacher wanted to baby Blaine and she had to hint to her to leave him alone. It was after that point that he started raising his hand to answer questions. Other than bringing his paper up to the teacher to be stapled, Blaine did not initiate any other adult interaction.

When his parents were asked if he related well to adults in general, they stated that he could, but sometimes it was difficult for some people to have a conversation with him. He had a habit of raising his hand to talk because that was one of the things that they pushed on him in school in Missouri, and they had to remind him that he could put his hand down. His father stated that sometimes he inserted non sequitur thoughts or started to discuss something that was not related, although he was a little better with that at the time of the interview. He now waited to find an opening in the conversation, so they saw an improvement in that area. "With adults, I think he does, from what I've seen, he does okay. He doesn't just randomly start talking to people, like other children of ours do." In Blaine's interview, he never mentioned social interaction with adults.

When looking at Blaine's social coding, several codes were utilized. The percentage is derived from the total number of coding references in all nodes attributed to Blaine's data. Six percent of coding text, 44 coding references, was attributed to “classroom observation – social.” Six percent of coding text, 41 coding references, was attributed to “student, parent, and records review – social.” Four percent of coding text, 31 coding references, was attributed to “teacher perceptions – social.” Twelve percent of coding text, 85 coding references, was attributed to “teacher interaction with student.”

Emotional/Behavioral.

The WASI examiner in 2007 noticed that Blaine had to be refocused on occasion and a referral for testing the same year noted that he may do best when seated in close proximity to the teacher with occasional verbal redirection to activities. The physical education teacher noted that he sometimes needed coaching to stay with the game. During the classroom observations I saw teachers redirecting Blaine to the appropriate work several times. The substitute in his math class spoke to him several times about being on task, as did his science teacher. In language arts the teacher had him move his chair closer to her because he was not paying attention. Civics class also required some redirection. His current IEP included a goal to “Seek teacher assistance daily according to classroom procedures for completion of assigned task.”

Blaine's 2011 IEP stated, “Blaine is very routine driven and responds emotionally when things do not occur the way he was expecting. This lack of organizational skills can be a source of frustration for him. Behaviorally, Blaine has difficulty dealing with change.” Blaine's 2007 Sensory Profile School Companion Teacher Questionnaire noted that his sensory processing skills were significantly different from his peers, and his referral from the same year noted that

“His overall sensory processing skills may impact his ability to take in and respond to a variety of stimulus within his classroom environment “ with sensory processing skills falling outside the mean for his age range. It was noted that he, “May seek increased sensory experiences, though at times may avoid sensory experiences or have an emotional outburst in order to avoid situations.” During the same time period a social/emotional evaluation noted that depression, atypicality, withdrawal, adaptability, social skills, study skills, functional communication, internalizing problems, and adaptive skills were in the clinically significant range. Blaine's ESE administrator noted that his previous IEP noted tantrum-like behaviors and other negative and/or strong behaviors which were not being seen at his current school.

There were several references to handling frustration in Blaine's records and interviews. His parents described difficulties in his previous school because, “His concept of school was pretty much the black and white thing (pause) and if they did anything that threw a monkey wrench into that he would get very upset.” They also talked about him having a saturation point: he was good up to a point but then he needed to take a break. His parents spoke about this in his elementary school, how when his teachers noticed he was becoming upset they would give him a break by asking him to take a folder to another teacher which gave him a chance to settle down and regroup. The previous math teacher said, “He doesn't handle you coming down on him for anything. You have to approach very gingerly and with a lot of kindness and with a lot of patience and never harshness.” His previous IEPs talked about providing a “safe place” to go to when he became upset. When discussing his Civil Air Patrol activities his father said that he needed to have, “An opportunity to take extra breaks from things, perhaps reconcile his thoughts a bit. He doesn't like it when people get into his face or try to be hypercritical.”

They explained to Blaine that people were not necessarily picking on him although it may be easy to get that impression, and noted that “It’s a perceptual thing.” They tried to help Blaine develop strategies to deal with those situations and to keep him from allowing himself to become upset. He could not necessarily withdraw from everything or become angry: he needed to be able to modulate his responses and temperament based on context, according to his parents. They explained that there were some signs to warn that Blaine was approaching his saturation point:

If there are some people who are misinformed and they go after him and try to get in his face and, “Blaine! You need to...!” And that exacerbates the situation, and those things, he’s being over stimulated. He probably needs to withdraw and regroup his thoughts a bit. And once he calms down he can rejoin and be functional, but if he’s pushed, when people don’t recognize that, you know, okay he’s there, then it’s going to go like that.

Blaine talked about a situation in his language arts class in which he became frustrated, although he didn’t use those words. He had finished presenting his class game, which included a grade for leadership, when:

There was a two team tie, so I had to try and divide the candy, but before I could, kids started grabbing at it and left, so there wasn’t enough for another kid, and then I, that’s why I got a C.

He spoke about snobbish kids, people picking on him at lunch and not being able to change seats, kids bothering him when taking tests on the computer, students stealing from him: all situations which could easily lead to frustration. His previous math teacher noted that, “He would probably get to the point where he was frustrated with something and not ask for help, and possibly get upset in the larger classes, too.”

The reading teacher noted:

He's very regimented, and if anything changes even just a little bit, he gets nervous.

(pause) His demeanor changes and he gets nervous (pause) Like we go to the Media Center, and they're assigned to a specific number computer, then there was someone at his number so he had to go to another one, it just totally set him off the whole day. He said "I can't work, I only worked at number seven, that's my only (pause)" Just things like that. I'm more sensitive to him because I know that he reacts, and he's really only reacted, kind of almost panicked, a couple of times.

His 2011 IEP included the goals "Will use coping skills appropriate to the situation to deal with his frustration," and "Will set and achieve personal, academic, and career goals by identifying personal strengths and weaknesses and accepting challenges in those areas to maximize learning." These two goals would address Blaine's difficulty in handling extreme frustration appropriately.

During six of his seven classroom observations I did not notice any situations where he appeared frustrated. However, in his technology class he had a major frustration episode. He had done a very good job putting together a tissue paper hot air balloon until the last step where he was trying to glue together two pieces of tissue paper by holding it up in the air, rather than laying it on his desk. It was not working well and he couldn't get it to work. He began using both hands to hit his forehead, not hard or from a distance but obviously unhappy and said, "No, no, no, no, no." He continued attempting the task and put both hands on his forehead and began to get more agitated. The teacher came over and gave some explanation, Blaine seemed to calm down and start the final gluing, but then he continued getting more agitated: hands in fists, slamming

his fist on his legs, raising his hand for the teacher, complaining to the teacher about lack of completion. Then he began using both hands at his forehead to pull his hair and scratch his face with his nails, although he never broke the skin. He was trying to pull his hair out and look at it. The teacher tried to calm and assure him, but Blaine continued to violently pull on his hair with his fists and continued hitting his head with his fists. The teacher continued calmly explaining to him that it was all right and Blaine appeared to listen somewhat, but the back of his neck was very red, hands clenched, and he continued to scratch his face and pull his hair. He did not calm down and would not leave the room when the bell rang, so the teacher had to eventually call the ESE office to have someone come and escort him from the room.

Because I wasn't sure if I was exacerbating the situation I left the classroom. I later e-mailed the teacher asking if Blaine was okay. The teacher responded that Blaine had had a better class the following day, and he still had some frustration with the project but not like the day I observed. The teacher noted:

I've honestly never seen him that upset before. He usually keeps to himself and completes the work efficiently. However, the current hot air balloon project we are working on does have some challenges to it which caused some minor imperfections. He seems to be bothered when it doesn't work out the first time.

Problem-solving is seen as both a difficulty and strength for Blaine, depending on who you are talking about and the situation. Obviously personal problem-solving in frustrating situations is an area that Blaine needs to develop further. Both his September 2010 IEP and his 2011 IEP include goals to address problem-solving. It is not clear whether this is problem-

solving used to address social and emotional situations, or problem-solving to address academic situations in the curriculum.

His parents believe he is very good at problem solving. His mother described a situation when they were moving from Missouri to Florida in which he took charge and handled a difficult situation quite well. He liked to play the role of peacemaker if he could, which was a problem solving area they felt was well-developed.

Blaine did not mention problem solving in his interview. He did display strong feelings about injustice in reference to other students not being appropriately disciplined for breaking the rules or causing problems. He talked about the injustice of basing his language arts grade partly on leadership skills, student always getting in his way in physical education, use of foul language, and theft by other students. He elaborated on the fact that even though those students “get talked to,” it doesn't seem to stop their misbehavior, despite detentions. At the end of his interview, when I asked if there was anything else he would like to tell me, he said:

B: Yeah. There are, there are a lot of mean kids and I don't think that they, that they really get that many punishments when they, when they get like referral or sent to the office.

R: It doesn't seem to be bad enough punishment to make them stop misbehaving?

B: Nope. It just makes them more agitated.

R: Can you think of any suggestions that might help?

B: Like, extra homework or something like that.

There were a couple instances where Blaine exhibited behaviors which showed some self-confidence and/or attempts at social acknowledgment. In his civics class:

He brought in his coin collection and that was something that really interested him. And he was kind of like the expert on it, and he had to explain different points in where they were coming from, when he got them, and he was the star of the show there.

The ESE administrator remembers him demonstrating his hover craft science project. According to the administrator he was talking one-on-one with another student about his project and seemed to be doing fine socially. The reading teacher remembered a time he came into the class with a bag of Tootsie Rolls, went around, and gave every student in the class a Tootsie Roll. Teacher interviews did not address other behavioral characteristics.

The ESE administrator stated that he was loquacious and you needed to keep him focused when he was talking. For example, they gave a time limit for him to talk with countdown reminders like “Okay, I want to hear what you have to say and you have three minutes. Okay two minutes. Okay one minute. Okay, thank you and you are done for today. You can talk again tomorrow.” The language arts teacher talked about him stopping at the door on the way into the classroom to tell her a story. He was sometimes so slow with the story that she would have to say, “I’ve got to go in the room, honey.” His parents reported:

Every once in a while (he will) want to talk about a cartoon in the middle of, you could be watching the news, you could actually be having a conversation and he’ll want to just jump in and tell you (pause) something that’s not related. He’s a little better with that now, he kind of waits to find an opening so he’s improved with that.

During classroom observations, Blaine was seldom sitting still except when he was reading. He often was playing with something – a calculator or toy for example. His movements were seldom large muscle, usually just fiddling with pencil, paper, folder, or textbook. Generally

speaking he was not more active physically than his classmates. The exception was when he had extreme frustration when working on the hot air balloon project. When he became highly agitated he clenched his fists, banged them on his thighs and forehead, scratched his face with his nails, and grabbed fistfuls of hair which he tried to pull out. Other than this episode his physical activity seemed very similar to his peers.

Blaine seemed to be a little bit disoriented during transition times in the classroom. This was not mentioned by Blaine, his parents, or his teachers, but it was evident during his observations. Coming into the classroom did not seem to be a problem as he was often the first student in the room. He usually came in, went straight to his seat, and got out some materials, although sometimes they were not the correct materials. He was the first student out of the door after dressing out in physical education class and the first student to head back in to change clothes. At the end of class he generally seemed able to pack up his belongings and leave the classroom without much problem, sometimes being the first one out, although there were exceptions.

The difficulty seemed to come in changing activities during the class period, which often involved a change of materials. When videos began in both math and science class, it took him a while to focus on the video. In math it took him a while to get into the flow of the class, but once he was in the routine he seemed to be fine. When told to start taking notes in science class he did not record the first three notations and had to be spoken to by the teacher, but after that he took notes appropriately. In reading he took a worksheet and did not look at it for a while, but when he did he began filling it in inappropriately. With the hot air balloon project he quickly and efficiently gathered and organized the materials to begin the project, but when time was running

out and he was not completing it to his satisfaction, he became very frustrated. When the teacher said that it was time to stop work and clean up Blaine became very agitated. Although he had some difficulty making transitions in class they were not major upheavals.

No teachers mentioned any specific area where Blaine had shown intense interest, and there was no notation in any records. When Blaine was asked what he liked to do after school he replied, “I like to go on Facebook sometimes. Then, it's either that or I'll watch TV or do one of my hobbies like, lately I've been working on basket weaving.” He had just given his teacher a small paper basket and still had one with him. His parents did not mention basket weaving as an area of interest, although his mother did mention the fact that he had begun to spend his spare time baking cookies, brownies, and sometimes breads. When asked what prompted his interest in baking, his parents did not know.

He's just always liked it. Stuff that's been around I suppose. I think it originally was a matter of, I don't bring home cookies from the store and the only way to get them was to put them in the oven himself, so...

Blaine did not mention baking when asked about his interest. When asked if he thought about what career he wanted, his response was, “I don't really know.” There were no other indications of areas of interest.

When looking at Blaine's on task coding, multiple codes were utilized. The percentage is derived from the total number of coding references in all nodes attributed to Blaine's data. Eleven percent of coding text, 77 coding references, was attributed to “classroom observation – behavioral.” Five percent of coding text, 37 coding references, was attributed to “student, parent,

and records review – behavioral.” Six percent of coding text, 45 coding references, was attributed to “teacher perceptions – behavioral.”

Gifted

In June of 2003 Blaine's mother answered the question, “Has your child ever been enrolled in a special education class?” She answered in the affirmative for speech and gifted. In January of 2007, a Wechsler Abbreviated Scale of Intelligence test and a divergent thinking test was administered to Blaine with the following results: “There is a statistically significant difference between Blaine’s ability to solve problems verbally (119) and nonverbally (140). General Mental Ability– Full scale WASI 133, Abstract reasoning WASI similarities and block design 136, divergent thinking – 103. He made 13/30 points where 13 was the cutoff for the gifted program. In 2007 Blaine participated in the Spectra program for gifted students at his school. The Transfer Student Intake Information form from Missouri listed exceptionalities as Autism and gifted, and stated the need for approved psychological evaluations and updated testing before permanent placement. In 2007 he received the following scores on the Reynolds Intellectual Assessment Scales: verbal 109 (73%), nonverbal 153 (99%), full scale 139 (99).

In May of 2010 Blain's IEP noted that “Blaine is functioning in the superior range of intellectual potential,” and “Blaine is in the Spectra Class and has earned a solid ‘B’ every quarter.” The evaluation report indicated, “Blaine is in the Spectra program but experiences difficulty academically in the area of written expression,” and under educational needs of the student it read “Blaine benefits from and currently participates in the Spectra program.”

Blain's IEP from September 2010 states, “Blaine is a transfer student and meets eligibility for temporary assignment in gifted, ASD.” However, the psychological report from out-of-state

was not approved because the instrument was not accepted by the county school system: they don't use the WASI for placement. A referral was then made for psychological testing by the county system. Blaine began the year in a gifted science class based on his strength in science and the recommendations from his previous school.

The test given in December of 2010 showed that Blaine was well focused, socially appropriate, and comfortable when taking the WISC-IV. The scores were as follows: Verbal comprehension 121, Perceptual reasoning 131, Working memory index 102, Processing speed index 94, Full scale IQ 119. As the IQ score needed for placement in the gifted program is 130, Blaine's full scale IQ of 119 did not qualify him for placement in the program. There is no indication of how placement was determined, although placement on a partial score is sometimes allowed and his score for perceptual reasoning does fall within the gifted range, so it may be that he was placed in the program on a partial score. In January of 2011 Blaine's IEP listed gifted as a new exceptionality. His February 2011 IEP lists the following goal for gifted: Will demonstrate the ability to generate effective and efficient strategies to solve a problem independently as measured by curriculum based assessment/student product in a seventh grade level classroom.

During Blaine's interview the following exchange occurred:

R: How do you feel about being identified as gifted? What do you think about that?

B: Makes me, well, I don't really know.

R: Do you think it's a good thing, or a bad thing?

B: I'd say a good thing.

R: Okay. Have you ever had any problems because you're in the gifted program?

B: Only that somehow, those, some people were able get to get into the gifted class and able (*sic*), and there's still, like people who pick on others.

Blaine told his sister if she wanted to get away from the problem students she needed to get into advanced placement classes, so his perception of gifted classes seems to be based more on behavior than academic ability. His parents said that Blaine sometimes reminded his siblings how smart he was, but he didn't hold it over them in a bragging sense. They state that they had not really talked over what it meant to be identified as gifted. His parents spoke about a cousin with whom Blaine was friends:

Ben is about a year younger, a year and a half younger, and I think Ben's got some special needs as well. He's, Ben is also one that is very intelligent, not super social, and the two of them seem to hit it off really well.

Blaine's co-taught language arts teacher stated that, "When I grade his paper and compare him to other ESE kids, his vocabulary is miles ahead of them, so that would be a strength for him." His previous math teacher explained that he was so far beyond most of the students in her class that, after testing, she had him moved into a pre-algebra class. Because Blaine did not interact often in his classes during my observations, I did not see any many indications of gifted ability at that time. When looking at Blaine's gifted coding, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Blaine's data. Six percent of coding text, 41 coding references, was attributed to "gifted."

Asperger's Syndrome.

In May of 2007, Blaine was referred for a formal evaluation because of concerns in several areas:

Including social/emotional, language, sensorimotor, and gross motor... He has difficulty interacting and conversing with his peers. He has difficulty handling frustration. He tends to shut down or get angry easily when faced with something that may seem a little hard for him. An educational diagnosis of Autism was considered and selected.

The eligibility statement reads:

Blaine meets the eligibility criteria for an Autism diagnosis. Blaine has demonstrated significant deficits in receptive and expressive verbal and non-verbal communication, including social communication, and significant disturbance of the capacity to relate appropriately to people, events, or objects. This condition adversely affects Blaine's educational performance.

The three-year reevaluation states, "Blaine continues to be a student diagnosed with Autism under IDEA." The following information was listed under present levels of performance: Motor: Blaine's motor skills, both fine and gross, are adequate for school performance. Blaine does have some issues with sensory things. Some noises bother him and he does not like being touched by others. Vocational/transitions fine, Social/Emotional/Behavioral:

Blaine's social communication skills are very low with his peers, and he prefers to be left alone. His candidness makes it difficult for him to form relationships with his peers.

Blaine needs a go-to person and a place to go when he needs to regroup, which will prevent meltdowns. This will allow him distance and space and quiet in order to work

through some of his sensory issues. During the fourth quarter of this year Blaine has improved in many of these areas, but his teachers need to just be aware of some of Blaine's unique needs.

In July of 2010, Blaine's health record completed at his Florida middle school asked, "Any specific illness or social/emotional or behavioral problems?" with a response of "Asperger's Syndrome." The transfer student intake information form from the Missouri school lists exceptionalities as Autism and gifted, and states the need for an approved psychological evaluation and updated tests in speech and language before permanent placement. In September of 2010 the reevaluation committee recommended psycho-educational assessment and assessment of speech and language, and Autism spectrum disorder was listed as the primary exceptionality on the IEP.

Under present levels Blaine's IEP of February 2011 noted the following in regard to his Autism and AS:

Present levels, Autism in the form of AS to a significant degree that it impacts across all areas of the curriculum. – expresses difficulty in communication and social skills with his peers and adults, struggles with initiating conversations and generally relating to his peers, while possessing high intelligence and a strong curiosity his social communication skills are very low with his peers.

Blaine's goals on his current IEP included the following:

1. Will use appropriate social/conversational skills during structured language activities 4/5 opportunities in 4 randomly selected sessions as measured by performance based assessments.

2. Will seek teacher assistance daily according to classroom procedures for completion of assigned task at his instructional level as measured by curriculum based assessment.
3. Will demonstrate the ability to generate effective and efficient strategies to solve a problem independently as measured by curriculum based assessment/student product in a seventh grade level classroom.
4. Will apply study skills to complete an assigned activity(ies) and /or classroom assessments on seventh grade level by earning a C or better in academic classes.
5. Will use coping skills appropriate to the situation to deal with his frustration $\frac{3}{4}$ times during randomly scheduled observations for a quarter.
6. Will set and achieve personal, academic and career goals by identifying personal strengths and weaknesses and accepting challenges in both areas to maximize learning.
7. Will advocate for himself when being teased $\frac{1}{3}$ times during randomly scheduled observation for a 9 week period.

When interviewing Blaine the only thing he had to say about AS was the following:

R: How do you feel about being identified as having AS?

B: I don't really care.

R: Okay. Have you had any problems in school because, that you could say was because you have AS?

B: I don't work well with people, with partners.

When Blaine's parents were asked if they thought he understood what AS meant they responded:

Oh, we've discussed it in detail. I've worked with him on perceptual issues that sometimes things that you perceive are not necessarily what other people perceive: it doesn't necessarily mean that they're not real, but other people don't pick up on those sorts of things. And I've informed him that he might recognize patterns and things like that. Hopefully attempting to be somewhat of a guide, and you know, help him recognize things before they become problematic for him. Give him strategies to work around and stuff. I don't know of any thing that he's identified in terms of having Asperger's, but, you know it's just that, I don't think he makes a differentiation out of it: that is his norm.

Blaine's parents wanted to talk about his meltdowns. They were concerned that people should be made be aware of the symptoms leading up to a meltdown for Blaine. They explained how in elementary school the teachers learn to recognize the symptoms, and would send him to a “safe place” with another teacher down the hallway until he could calm down. They found that this worked well for him in elementary school and tried to bring it into the middle school environment also.

Blaine's reading teacher had taught students with AS before and compared Blaine to those previous students.

Blaine is definitely, (pause) more advanced. I've never seen as high functioning [*sic*] as him. I mean, he just processes everything. In the past I've always taught intensive reading, this is my first year that I'm teaching all general education tier 3 reading. So, in the past, the students that have Asperger's have been very, they take everything literally and, so not as great at the inference type thing, and Blaine seems to really be with it as far as that kind of thing goes.

His civics teacher was a bit surprised by the abilities and characteristics he observed in Blaine:

So, yes, I have had a few Asperger's. Blaine is one of the first that I really couldn't tell. He was nice and quiet, polite, and his character brought out my nurturing side. But then I found out that he had a wonderful brain. He's withdrawn as far as the kids in this classroom because they are very aggressive and have behavioral challenges...So Blaine is withdrawn because the children are aggressive... I believe that if Blaine was in one of my better-mixed classes then he would be more verbal. I did not know that he had Asperger's until I read the cum (folder) and saw his IEP.

When looking at Blaine's coding for Asperger's Syndrome, a single code was utilized. The percentage is derived from the total number of coding references in all nodes attributed to Blaine's data. Four percent of coding text, 31 coding references, was attributed to "Asperger's Syndrome."

Charlie.

Charlie is a self-confident teenager with dark hair, a round face, and is a little shorter than his peers. He lived at home with his maternal grandparents, mother, older brother, and two younger brothers. He attended a large middle school in a semirural central Florida community. He participated in Boy Scouts and enjoyed playing computer games. He was very proud of his accomplishments in science and seemed to enjoy talking about himself.

History.

Charlie was born in May of 1998. In January 2002 records indicated that he exhibited echolalia and had a monotone quality to his voice for much of his conversation. Under social skills there was a notation that AS was suspected and a neuro-developmental assessment by a doctor was recommended. In February of 2002 he was diagnosed with high functioning Autism. In June of 2002 an IEP meeting was held where it was determined that he met criteria for inclusion in the autistic program with AS and language impaired listed. In March of 2003 an occupational therapy evaluation was conducted and it was determined that he would continue with services for Autism and language impaired needs, including occupational therapy. In June of 2003 his doctor in Sarasota noted on the medical evaluation that everything was normal, except under the heading “This child has the following problems that may impact the educational experience: social/behavioral.” Under “specify” he had listed “AS/Autistic Spectrum.”

In April of 2004 a psychological report from his elementary school was conducted in order to help assist in determining eligibility for the gifted program. It was noted that he received ESE services for autistic, language and occupational therapy programs. The psychologist stated:

Charlie talked easily with the psychologist and answered all questions asked, though he demonstrated an unusual voice quality with a “singsong” type of inflections, directions were easily understood... Moving is the hardest part about school for Charlie ...demonstrated logical approaches to problem-solving, friendly and cooperative, indicating adequate conversational skills.

The results of the testing were as follows: WPPSI-III - verbal 124 – 95%, performance 131 – 98%, full-scale 129 – 97%, Woodcock Johnson broad math 99.9, reading comprehension 99.7, math calculation skills 99.9.

In May of 2004, his IEP reported that he was receiving services for autistic, language impaired, occupational therapy, and speech impaired needs, where he was making good progress in occupational therapy and meeting all goals in speech. Gifted services were added to his IEP at this time. Under present levels of performance it was noted that his vocabulary was advanced and he had good critical thinking skills. It was sometimes difficult for Charlie to express himself during times of stress, and his priority educational need was to increase pragmatic language skills. The goal for this need was to increase speech intelligibility and attain more typical voice features. Another goal was to improve strength and dexterity for greater success in school and self-help tasks, and to continue to improve quality of fine motor skills in school environments, following staff instructions, 95% of the time, as measured by staff, every grading period, using observations.

In his May 2004 IEP, gifted was listed as the primary exceptionality with the secondary listing of autistic, language impaired, and OT. The parents did not attend. Goals included work on fine motor skills, sensory modulation strategies, being able to process and express emotions properly in order to work effectively with his peers, and the ability to become proficient in use of information, concepts, and ideas. He was to receive instruction in social and personal skills, have an Autism coach, and would be taught to use visual strategies and cues during instruction. His report card for kindergarten reported all satisfactory markings by the end of the fourth quarter.

The IEP of May 2005 showed that he was receiving gifted services daily in all academic areas, 30 to 50 minutes weekly instruction in social and personal skills, consultation for language impaired, OT twice a week for 30 minutes, Autism coach weekly, continued use of visual strategies for cueing and classroom instruction. His goals for the gifted program included recognition of fact and opinion, and locating data from primary and secondary sources. His goals for Autism included being able to process and express his emotions properly in order to work effectively with his peers and OT goals were to continue to work towards grade level in fine motor skill use and sensory modulation strategies in the school environment. His parents attended the meeting.

His first grade report card showed straight As in math, reading, written communication, and spelling. Science and social studies were outstanding and special areas were satisfactory. Under work habits in the first quarter he was marked down for “follow school/classroom rules and/or direction”, the second quarter was the same and included “does not complete homework,” with the third grading period the same as the second. He was absent 15 times and tardy 13 times.

An IEP meeting was held in August of 2005 when Charlie transferred from Sarasota County to Volusia County. His parents stated they were concerned with his academic success. His priority educational need was pragmatic language skills. His four goals included critical and complex thinking, effective leadership skills, writing legibly, and completing tasks relating to story elements in structured language activities. Related services included OT, test accommodations, cueing to stay on task, and ESE support for general education teachers.

In November of 2005 his parents again expressed concern with his academic success. The IEP continued Gifted and OT, and discontinued language therapy as his language was within normal limits.

Hearing and vision screenings were passed in 2006. His IEP of April 2006 listed gifted as his primary exceptionality and OT and Autism as his secondary exceptionalities. The parent conference was held on the phone. The goals for this IEP included critical and complex thinking, effective leadership skills, and initiating and ending an effective conversation or activity with a familiar person. OT was provided once or twice a month, transportation, test accommodations, social skills instruction, cueing student essay on task, and ESE support for general education teachers were also listed.

Stanford achievement scores posted at the same time indicate total reading 95% eight stanine, word study skills 82% seven stanine, reading vocabulary 98% nine stanine reading comprehension 97% nine stanine, total mathematics 92% 8 stanine, math procedures 75% six stanine, problem-solving 97% nine stanine, language 99% nine stanine, spelling 99% nine stanine. Scores on the CogAT were a Verbal of 89, Quantitative 86, Nonverbal 93, and Composite 92. Charlie's second grade report card grades were as follows: reading A,A,A,B, above level; math B,B,C, A, above level; language arts A,A,A,B; science C,B,A,A; social studies B,A,B,B; all special areas satisfactory. Personal growth was all satisfactory except for "one improvement" needed in the fourth quarter on "follows rules/directions," and one "improvement needed" in the third and fourth grading period in "accepts responsibility."

Charlie's IEP of April 2007 listed his primary exceptionality as gifted with the secondary identification of autistic. Under present levels it stated that Charlie demonstrated high intellectual

ability in the superior range and excelled above his gifted peers in all subject areas. He thrived in a classroom that followed routine procedures with a schedule, although he sometimes got frustrated if routines were not followed or if he misplaced items. He was dismissed from OT at this time as his handwriting was described as legible and neat. It was noted that he needed verbal help to organize his work in class as well as his homework, and he used a daily communication folder to help develop routine responsibilities. No weakness in communication was noted. His goals included critical and complex thinking, and assuming responsibility for his belongings, behavior, and assignments. Test accommodations were provided but no supplementary aids or services were listed.

The scores for the spring 2007 FCAT for grade three were as follows: reading comprehension 94, mathematics problem-solving 99, five in both math and reading. His Stanford achievement math was 92, reading 95, with a total of 94. His third grade report card indicated the following: reading B,B,A,A; math C,A,B,B; language arts C,B,B; science A,A,A,A; social studies B,A,B,B; art B,A,A,A; music A,A,B,A; PE B,A,A,A. Improvement was needed in effort twice in language arts and once in math. Personal development was satisfactory except for the following: improvement needed twice in “follows directions/instructions,” improvement needed twice in “uses time well,” improvement needed once in “self-control,” improvement needed once in “follows rules,” and improvement needed three times in “accepts responsibility.”

In August of 2007 Charlie moved to the Charlotte-Mecklenburg Schools where he entered the elementary talent development program for differentiated education. The description of his program included reading grouping on grade level, flexible grouping on grade level, cluster grouping, math within class grouping, flexible grouping on grade level, cluster grouping,

content modification in math and reading, and special programs including Odyssey of the Mind, William and Mary Language Arts, Math Superstars, Singapore Math, Math Olympiad, Hands on Equations, and Jacob's Ladder. In the Transfer Student Intake Information his exceptionalism was listed as gifted/autistic. He received gifted program instruction once a week, and the notation was made that the parent refused services for ESE. He withdrew from the Charlotte-Mecklenburg School district in June of 2008, after which he was home schooled. His mother made no mention of homeschooling Charlie.

In fourth grade Charlie was in a public elementary school where he made all As and Bs, and the teacher noted that he was pleased with Charlie's academic performance. On his report card under character development and work and study habits, a score of three indicated that he consistently met expectations for grade four while a score of two indicated that he inconsistently met expectations for grade four. His scores are as follows: observes school and class rules 3,2,2,2; respects authority, property, and rights of others 3,2,2,2; accepts responsibility for one's actions 3,3,2,; demonstrates self-control in all settings 3,2,2,2; refrains from unnecessary talking 2,2,2,2; works cooperatively in groups 3,3,2,2; completes class work on time 3,3,3,3; organizes for daily activities 2,2,3,2; listens attentively 2,2,3,2; works well independently 3,3,3,3; uses time effectively 3,2,2,2; demonstrates neatness in written work 3,3,3,3; shows effort 3,3,2,2.

His spring 2009 FCAT scores placed him in a level 5 out of 6 in science, reading, and math. His 2009 report card from a Florida elementary school was for the third and fourth grading periods only, where he made all As and Bs with a one (satisfactory) in effort and an S (satisfactory) and personal development. In the last two grading periods of the year he was absent 14 times and tardy 29 times. He was listed as a transfer student from the elementary

school in Charlotte. In January of 2009 his IEP showed his primary exceptionality as gifted with the secondary exceptionality of Autism and the parent was in attendance. In February of 2009 the teacher noted that he would receive an incomplete on his report card because he had six missing assignments. In February of 2009 he received a letter in his folder for excessive tardies.

In May of 2009 his IEP indicated the same social emotional, independent functioning, health, and academic areas. It also noted that Charlie had been receiving home instruction for several months. "Parent reports he has been working from his sixth-grade literature book and is currently reading *The Hobbit*. In math parent reports working on pre-algebra lessons." Goals included thinking creatively and critically, examining the complexity of knowledge, and completing assignments when due.

Hearing and vision screenings were passed in February of 2010. Charlie's FCAT scores that year were a level five in both reading and math. A new IEP was written in September of 2010 where it was noted that Charlie excelled in academics, was reading above grade level, doing math and language arts above grade level, and was in an honors algebra class, and included the fact that he tended to lack facial expression in conversation, use a monotone voice when talking, and would talk in random conversation about things he noticed that were off-topic. When Charlie became frustrated he would sometimes shut down and not communicate what the problem was and therefore needed to work on better communicating his needs. He showed responsibility but was disorganized and needed the help of a planner, and responded well to routines.

His goals included creative and critical thinking, research and multiple fields, completing long-term assignments, using appropriate body language, voice, and facial expressions, and

seeking teacher assistants at needed. Supplemental aids and services included an assignment planner. Test accommodations were rather lengthy and addressed repeating, clarifying, or summarizing test directions, providing verbal encouragement, individual or small group setting, opportunity for movement, additional time, and allowing him to repeat phrases.

Academics.

His 2010 report card from the middle school showed straight A's except for one B in science and one B in Agri-science, with 16 absences. In February of 2011 he took the ACT through the Duke University talent search. With a composite score of 26 ranked against ACT tested students, he performed better than 89% of students in Florida and better than 84% of students in the United States and qualified to attend the Duke TIP's Center for Summer Studies which is reserved for the top 5% of academically talented students in the seventh grade.

Charlie's mother described him as “supersmart” and described his intellect as amazing. She described how he spent many years leafing through books on the planets and the solar system and then won the Science Olympiad his sixth grade year and came in second in the state of Florida for the solar system test. The previous year he won an award for being the top science scholar in his grade.

The language arts teacher felt Charlie was very creative in that, where a lot of children write in the literal sense, Charlie used his imagination. He also grasped the material very quickly and she felt that his academics were no different than the other students in his class. She pointed out that if he had the choice he would read every day all day, no matter what. While this was great, they pointed out it could be a problem when he was reading a book rather than doing what he was supposed to be doing in class.

Charlie played in the school band and his teacher perceived his academics as no different than his classmates. She stated that anytime she had him play by himself he did a great job, so she was pleased with his progress. His algebra teacher saw no difference academically between Charlie and her other students. She also reported that Charlie often walked down the hallway reading: “And it's almost like he put himself in a little bubble because he walks the halls reading, and so he's not talking to other students or anything, he's really involved in what he's thinking of.” When asked to describe his academic progress in her class, she said:

He's great. He's uhm, it's a hard curriculum, and he's kept an “A” average through the whole year. Every once in a while he will struggle on a concept, but it's kind of funny because he's one that, when he gets his quizzes back and we go over it, he'll say (?) and he gets over, gets it real quick and he doesn't make that mistake again. So academically, he's great. He's really far up there, so. I think the main thing is he just picks it up really quick. You don't really have to show him more than once.

Charlie's reading teacher felt that he was doing better academically in her class than his peers. She described his abilities as, “He has a strong wit and higher order vocabulary. His reasoning and logic, as well as comprehension are beyond those of his peers.” She found that his performance in class has required differentiation on her part:

My challenge for this student is to give him the right leveled work. He is bright, and is a talented writer. He wrote an excellent, witty, and informative essay on the Titanic from the point of view of the ship itself.

His civics teacher also felt that Charlie was performing better academically than his peers. In describing his academic abilities the teacher stated: “He is a very bright student but, his

main thing is he loves to read, constantly read; in fact I'm constantly taking books from him.”

When asked if there were any problems with Charlie in class the teacher responded:

No, no problems. In fact, when I say that they know more than you, he's one of them.

He's, as far as history goes, he's like a walking encyclopedia, I mean he's unbelievable.

He's corrected me a few times and I've gone and done a little research and come back the next day and said, “Charlie’s right.”

He described Charlie as very bright and very good student.

Charlie's physical education teacher noticed no difference in Charlie's academics compared to his peers. As this was a physical education class the question was clarified by asking if Charlie had any difficulty in mastering the material or learning the rules, but the teacher did not address those points. Charlie’s science teacher believed that he was doing better academically than his peers. When asked to describe Charlie's academics the teacher replied:

Academics, obviously he is very capable: he is knowledgeable, always interjecting something into discussions about, generally informed about, or he read about it, I think he's very informed, about all aspects of science. We've talked about energy, and he's very interested in, like robotics, like in DNA that were working on and heredity now

When Charlie was asked about his academic progress compared to his peers his response was: “Better by far. Well, not by far, but I'm doing, like I'm doing better.” He would like to be a particle physicist because he read a book on antimatter he found very interesting. When asked what his least favorite thing about his science teacher was he replied:

C: (Pause.) She always gives me a C for some reason.

R: You don't know why she does?

C: Well, apparently she says because I'm reading, in class.

When asked about civics class Charlie responded with:

C: "Civics class is like, sometimes we watch videos, and sometimes we do book work which I never do because it's only like 5% of my grade.

R: So, you figured out ahead of time how much you have to do to get the grade you want?

C: Yeah.

R: What do you dislike about civics?

C: Book work.

When asked what he liked about his algebra class he replied: "I'm ahead of the other people." He also described himself this way:

I'm basically a super genius, and, that means that I'll get a really good high-paying job because I'll go to a really good, high like really good college, and then the people will be like going, "Wow, you went to this college – shoot, you're in. Like, if I were gifted without Asperger's, I would be, like, my IQ would be like 140, 130, but now its 180."

He also described himself as "...a strange super genius." Even though he is considerably off on his IQ score, Charlie's confidence in his academics seems to be well placed. Being in the top 5% of seventh graders in the country does indicate exceptionally strong academic ability. On his 2010 report card he earned straight As for the entire year in all of his courses in gifted classes, except for one B in science and one B in agri-science.

During the observation of Charlie's reading class he responded correctly to several questions and provided thoughtful answers to evaluative prompts. He turned in his paper first,

then sat down at his desk and began reading a book which remained open for the rest of the class. A substitute was in the room during science and Charlie participated but spent a great deal of time reading his book he had brought. In fourth period he again participated, providing correct answers each time, and again, spend a great deal of time engrossed in his book, to the point that he was not ready to leave when the bell rang and ended up being the last student out of the room. Charlie and his partner were the first computer group finished in civics class. In answer to a question about where a poor country could go to get a loan, Charlie replied, “They could get a loan from China.” In algebra Charlie reported doing a difficult problem in his head and was the first student to turn in his paper. In band the students were doing individual performances for a grade and Charlie performed very well with no mistakes.

When looking at Charlie's academic coding, multiple codes were utilized. The percentage was derived from the total number of coding references in all nodes attributed to Charlie's data. Six percent of coding text, 22 coding references, was attributed to “classroom observation – academic.” Five percent of coding text, 18 coding references, was attributed to “student, parent, and records review – academic.” Five percent of coding text, 19 coding references, was attributed to “teacher perceptions – academic.”

Organization.

In third grade Charlie received all satisfactory grades in organization on his report card. His 2007 IEP reported that: “Charlie needs verbal help to help him organize his work in class and his homework as well, using a daily communication folder to help him develop routine responsibilities,” and one of his goals was “Charlie will assume responsibility for his belongings, behavior, and assignments in 4 out of 5 randomly observed trials per quarter.”

A 2009 correspondence between his teacher and parent included the fact that he was missing assignments, two quizzes, language arts main idea, science fair timeline flip book, weather, and notes on plants, all of which resulted in an incomplete on his report card. On his interim report that spring he was marked down under “completes and returns all assignments on time.” One of his goals for his 2009 IEP was: “Given a homework/long term assignment on grade level, student will organize and formulate a plan to complete the assignment when due earning a grade of C.”

His 2010 IEP noted that: “According to his previous IEP Charlie shows responsibility, but is disorganized. He needs the help of a planner in order to keep track of assignments, homework, etc.” Two of his goals on that IEP concerned organization: “Given a homework/long term assignment on current grade level, Charlie will organize and formulate a plan to complete the assignment when due, earning a grade of C,” and “Charlie will seek teacher assistance daily according to classroom procedures for completion of assigned tasks at a current grade level as measured by curriculum based assessment.”

Charlie's mother made the following comment:

The teacher whose lesson plan is exactly the same every day is definitely where he does better. I mean, he has a better outcome grade wise because he knows exactly what to do, so that I find that, in his math class for example, the teacher is, you know math is one of those classes that lends itself to, to really little bits every day, and everything's the same, and he's been doing that, and he's done really well in his math.

His reading teacher states: “I have to redirect him when it comes time to turn in an assignment, as organization is a growth area for him.”

During classroom observations Charlie's science teacher had to remind him to turn in his paper – all the students except Charlie had turned them in. On the other hand, in the same class he calmly and efficiently put materials together for an assignment, but then ended up turning it in later than the other students. Below is a description from the observation of his language arts class:

Picks up papers, straightens them, neatens – taps together tops and sides a few times each, picks up, stack into a neat bundle again, picks up pages, glances over each of them, puts back in order, rearranges for neatness, taps in, then gets up goes to the back of the room to turn in his assignment, staples them together and puts in the assigned place.

Most of the other students were being much more efficient about the process.

At one point in his civics class Charlie had to be prompted by his teacher to begin writing the notes. When she prompted him he seemed a little surprised, looked around the room, and quickly began copying his notes as if he was not aware that was what he was supposed be doing. When the teacher told the class to begin cleaning up it took Charlie several seconds before he began cleaning, and he was the next to the last one to leave the room. He was the last one to leave the room in algebra, language arts, and science.

When looking at Charlie's organizational coding, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Charlie's data. Five percent of coding text, 19 coding references, was attributed to “organizational.”

Social.

Peer interaction was an integral part of Charlie's social situation. Very little reference was made in Charlie's records to his social skills. In his IEP of September 2009 it stated that his previous IEP found Charlie would make friends with other students who included him. His IEP of 2004 noted that he would receive instruction in personal and social skills. No other references to peer interaction were found in his records.

Charlie's physical education teacher reported that he was no different than his peers during cooperative groups and in social situations:

He has one student he's friends with, and they kind of revert to elementary behavior when they are together, but then when it's time for class or you know, group activities, he interacts fine, and I don't think he thinks that anybody thinks differently of him.

During PE class Charlie and this other boy sat down and were interacting pleasantly before the bell rang, playing some type of finger game.

His language arts teacher also believed there was no difference between Charlie and his peers in social situations. She explained:

He, these gifted kids are in group together, so they have plenty of classes together, and in sixth grade they were self-contained. So he knows the other gifted kids quite well, and they accept him. They know he's got answers to things: they will ask him questions. He works in group situations fine. I don't think they treat him any differently, I don't think he treats than any differently.

The algebra teacher saw no difference in Charlie's social skills when comparing them to his peers. However she described his social behavior as follows:

He, you know most of the time he pretty much keeps to himself. You know, you can tell that he talks to other students, and that they have been around him a lot, so I think that they are used to him, so they kind of just, at times he just (pause) well, he'll speak out or say something that just is something off topic and they just really just don't even, it just really doesn't even faze anybody, so they seem to accept him as one of their grade level gifted peers, you know some of the kids kind of get like that. And yeah, so he interacts in that aspect, but I can see him walking in the halls not in my class, and it's almost like he put himself in a little bubble because he walks the halls reading, and so he's not talking to other students or anything, he's really involved in what he's thinking of.

When the math instructor was asked if Charlie seemed to have any friends in the class, as opposed to just classmates she responded: “Not that I've noticed. No. I see him in the halls sometimes. I have never seen him in the hallways walking with just one particular person in the hall, either.”

His reading teacher described his social behavior as follows:

The particular student's classroom interactions are awkward. ...He raises his hand and tries to be funny, fit in like most middle school people do. The trouble is that many of the students don't understand, and it tends to be alienating. There are a few quiet students who like working with this student, as he is more than willing to take charge in a group situation. He participated in our dress up as a vocabulary word day, wearing pajama bottoms to school.

She did report that at the start of the year when there was an issue with bullying in P.E., several of the students in the class spoke up on his behalf.

The science teacher believed Charlie was doing worse than his peers in social situations and elaborated as follows:

I don't know if he's real aware of the other students, or is really, he fits in to work with another couple of students usually, they pair up, they kind of naturally go together. I don't think he's very concerned whether, well, no, sometimes he is, so he'll kind of like, say things for a little attention sometimes, I think. So, for the most part, I think he keeps up and is doing real well, and it doesn't seem to be awkward for him or the other students.

Charlie's civics teacher also believed he was doing worse than his peers socially and explained as follows:

He doesn't do well with groups. He does well on his own. He is a very bright student but, his main thing is he loves to read, constantly read; in fact I'm constantly taking books from him. But as far as social interaction, that doesn't go so well.

When asked if he changed anything in class in order to help Charlie he responded:

I don't change anything because, even though he might not work well with groups because he is so independent, on his own, when I do put him with groups there's no problems. He's, it's just that when I say he doesn't work well with groups, he still likes to be kind of the Lone Ranger, but there's never a problem with the other students around.

The band director also believed Charlie was doing a little worse socially than his peers.

She described his social skills this way:

I would say he does work pretty well with other students, there, especially the other kid that plays his instrument, they get along really well. Uhm, he does say, he will say certain things where the kids are just kind of confused with why he is saying things,

or why he's talking in a certain way. But they've really been pretty good about just going along with it and, you know, that's who Charlie is, and they accept that. The kids have (?) it pretty well, but some of them have definitely noticed that he's a little bit different than, than the other kids.

Charlie's mother described his social behaviors in great detail. She was very aware that he had had negative experiences socially in school. She described the students at his North Carolina school picking on him at the bus stop, to the point that neighbors called her to report the bullying. She found that he had been unhappy the entire school year but had never said anything to her.

She described Charlie as “a little different.” “I know that he's different, and I know that people perceive him as different because it's hard not to.” She described his friends as “nerds” but seemed pleased that he had a group of friends. She had recognized that Charlie didn't seem concerned with other people's views of him: “... His attitude is, ‘I don't care what those people think.’ You know he really doesn't. He just, it's like, he doesn't need affirmation.” She talked about how winning the school Science Olympiad helped him make a place for himself in the school, and then he felt more comfortable. She did feel that having AS had presented some difficulties for Charlie: “Well, socially, again, he's been at a disadvantage in forming close relationships with people. But for me, that's kind of nice. I have him: he's close to me.”

When Charlie was asked how he got along with his classmates he described his interactions as no different than his peers. He did say his least favorite thing about physical education was the “shaved apes,” and his least favorite thing about band was the sixth-graders.

When asked to describe how he got along with other students at school, for example any friends he had, Charlie had some difficulty expressing himself:

C: I have like four or five friends.

R: Are they in most of your classes?

C: Nope.

R: Okay, are they friends that you meet up with like at lunch or after school?

C: Yeah I meet them at lunch.

R: Tell me about your friends.

C: And then I have several associates. Like they aren't really my friends but I know them.

R: So in all of your classes you have some associates, at least?

C: Yeah.

R: Okay, so tell me about your friends. Like, what kind of people are they?

C: (Pause). I don't know, I can't describe them.

R: You get along with them well? Do you have the same kind of interest? Y'all are usually nice to each other, that kind of thing?

C: Yeah.

Even with further prompting Charlie did not provide further responses to this question.

Charlie also perceived himself as a bit of the class clown as evidenced by the following exchange:

B: Okay, good. So, if you could describe yourself in one sentence, how would you do it?

S: Can I use as many commas as I want?

B: Within reason.

S: Pause. Super genius, strange, like I make a fool of myself a lot.

B: On purpose.

S: Yeah.

B: Why do you do that?

S: I don't know, just for the laughs. Like my day isn't complete until I've made a fool of myself in more than one way.

B: So you like the other kid's laughter?

S: Yeah.

B: Okay, they enjoy your sense of humor then?

S: Yeah.

Adult interactions were another component of Charlie's social behaviors. When Charlie was asked about each of his teachers he had generally positive comments to make. He described his teachers as fun and inventive, imaginative, difficult to make angry, and cool. He did describe one teacher as negative because: "Like, her motto is like, like, her motto is like, if you need to pull your grade up, do your work and hand it in on time." Charlie's mother did not mention adult interaction at all during her interview, nor was it mentioned in his cumulative record. Only one of Charlie's teachers made any mention about their personal interactions with Charlie. His band teacher noted:

I would say the only difference is, if he comes up and talks to me I will sort of approach, approach him a little bit differently than I might another student, and I'm a little more patient. And, kind of understanding, I try to figure out what he means, so I guess I would take a little bit more time with him than, maybe say, another student.

Charlie's adult interactions during his observations generally displayed patience on the part of the teachers. In reading class Charlie and his teacher had a brief exchange after Charlie raised his hand during the middle of directions the teacher was giving:

C: After I'm done can I practice my trumpet?

T: I think that would be disruptive, don't you? Yes, Then you already know the answer to that.

This was said with a smile and then the teacher continued with her directions. When they were playing a game which involved catching a ball the following occurred:

C: He's gonna get it.

Another student: I know.

C: I know I know I know I know I know I know I know.

T: If you keep doing that...

C: Okay.

During language arts class, which Charlie did not particularly like, there were some inappropriate comments. When asked to read a sentence describing themselves he read: "I'm a strange outgoing Mario lover and Sonic hater, a super genius who can tell American coke from Mexican coke." The teacher said, "I'm sure he is talking about Coca-Cola," at which the whole class moaned loudly. Later on in the same class Charlie was on task with his assignment when the teacher walked by, stopped, and stared at him with big eyes for a few seconds. Finally Charlie said, "What!?" And the teacher said quietly, "Write with words." Charlie replied, "I am!" At which the teacher replied "Okay," with an uplift in her voice as if to say "If you say so."

In civics class the teacher needed to redirect Charlie to finish his assignments or get on task at five different points during the class period. In algebra class Charlie was kneeling on one knee instead of sitting in his seat properly. When the teacher said to sit flat he very slowly slid his foot out from underneath him and sat properly. He then took the calculator out of his backpack and put it on his desk. When the teacher inquired about it Charlie asked if he could use it. The teacher replied that no, remember they were not allowed to use calculators on their assessments. The teacher then walked away and Charlie kept the calculator on his desk, still using it for a few seconds. He did stop using it, but it remained on his desk. In general, Charlie's adult interactions during classroom observations were minimal.

Charlie did not live with his father, who had some mental health issues. His mother was describing a time when Charlie and his siblings flew up to visit their father and when he came back Charlie said, "Well, now I know what mental illness looks like." He said it very matter-of-factly and did not seem upset by the revelation.

When looking at Charlie's social coding, multiple codes were utilized. The percentage was derived from the total number of coding references in all nodes attributed to Charlie's data. Nine percent of coding text, 35 coding references, was attributed to "classroom observation – social." Three percent of coding text, 12 coding references, was attributed to "student, parent, and records reviews – social." Four percent of coding text, 16 coding references, was attributed to "teacher perceptions – social." Eight percent of coding text, 31 coding references, was attributed to "teacher interaction was student."

Emotional/Behavioral

“Improvement needed” was marked twice in Charlie's second grade report card under the heading “accepts responsibility.” Charlie's third grade report card indicated difficulties in the areas of following directions/instructions, using time well, and accepting responsibility. On his fourth grade report card a marking of 2 indicated that the student inconsistently met expectations. Charlie received two or more marks of 2 for the year in the following areas: observed school and class rules; respects authority, property, and rights of others; demonstrates self-control in all settings; refrains from unnecessary talking; listens attentively; uses time effectively.

His 2007 IEP noted, “He sometimes gets frustrated if the routine is not followed or if he misplaces items.” In 2010 his IEP noted, “When Charlie becomes frustrated he will sometimes shut down and not communicate what the problem is that he is having. He needs to work on better communicating his needs and learning better self advocacy skills.”

Charlie's interview uncovered only a few references to emotional/behavioral issues. He indicated his day was not complete unless he had made a fool of himself at least once, and he enjoyed getting the other students to laugh. Other than that, he made no references to emotional/behavioral issues.

His mother had more to say on the topic:

Oh, Charlie's strengths are, oh, he has a good work ethic, that's one thing that I really like about him. That, if you tell him he should do something, and you explain to him why it's important, like, in a habitual way he has good work habits. He always does his homework, he always practices his trumpet. He's not so great about Boy Scouts - he's a

little less dedicated, but still he'll do it if you tell him, but. He does what he's supposed to do, and that's refreshing.

His mother talked about him being on the schedule that he followed closely. There was a routine to follow when he came home from school, chores to complete, and activities scheduled in the evenings. She believed Charlie was a good role model for his younger brother: “I've encouraged him to set goals. (pause) I've gotten him pretty excited and since he's had some success he's really excited about, he knows he can reach his goals because he has the ability, the stick-to-it-ness.”

His mother also talked about Charlie's temper:

He does have, let's see, he does have a little temper, he does have a little temper, He kind of jumps down peoples' throats when they bug him to much –cause he has the two little brothers and he really has a good relationship with (his brother). I think he understands (his brother) and he's very patient with him and more so since he saw his dad, I think...., it is not a short temper he's actually got a pretty long fuse, but when the little kids get on his nerves he gets like a little like an exaggerated “grrrr” you know, and there is a lot of tension in it and it kind of scary, it doesn't scare me, but it but it does a little, like I don't know if he feels like, I can tell that he feels more emotion than he knows what to do with like when he's annoyed. She also mentioned that, “So when he's really stressed out, he does kind of like, become a little more inarticulate, and really like rigid.”

The physical education instructor relayed an interesting anecdote concerning Charlie's behavior in gym class:

I've had a problem in the past, I don't know if he's not listening or he's not hearing me, that when something is, "Okay, stop, bring in the stuff," and he'll keep going. That's happened a few times and I've asked him about it. I said, "You know, are you just not listening to me, or he's not hearing me?" and his reply was, "I don't know maybe I have a hearing problem." and I'm so, like, "Okay," but he was serious. That wasn't a joke to him. I mean he's like, "Oh, well, maybe I have a hearing problem," you know. Yeah, it wasn't like a kid going, "Well, I guess I have a hearing problem," he was definitely, like, "Oh maybe I should have that checked," kind of thing. It seemed like, he was serious.

His reading teacher reported that he embarrassed easily and that he genuinely appeared to want to do what was right. She also said she had never had any behavioral issues with him such as rudeness or back talking. His science teacher reported that he was friendly, and "He's not a behavior problem, ever. He does try to crack jokes once in a while, so he's been a delightful student in addition to having, in my classes." The algebra teacher explained, "He gets real involved in reading and books and stuff and all I do with him is I just tap on his desk and redirect him to the activity, and he's very good at redirecting, so I've never really had any problems with him."

During classroom observations and physical education class Charlie did not always follow instructions immediately, but he did eventually follow all directions. The teacher reported that Charlie didn't seem to be the kind of kid who would do something because someone was watching him. She said, "He just is – who he is," which seemed like a complement and was definitely not a criticism. During PE out on the field he was wandering around with his team, definitely participating and watching what he should be doing. He was keeping up with the team

action. He wasn't making any extra effort to participate, but then neither were most of the other players.

During reading class Charlie made a few inappropriate comments, but was not disruptive. He occasionally was chewing on his fingernails which he had somehow made black – not sure if it was nail polish or marker. Many of his reactions and responses in class were very physical – arms over his head, jumping up, large body movements. In science there was a substitute teacher and Charlie came into the room making a lot of noise. Several times there was absent-minded scratching and other movements, including hitting the ball at the bottom of the rope attached to the overhead projector screen on his way out to make it swing wildly.

In language arts Charlie again made some inappropriate comments, possibly to draw attention, but in general stayed on task. A few times he made extra noise, for example he rapidly clicked his pen open and closed for about 20 seconds. He is left-handed and held his paper with his right hand in a rather awkward manner. He also held his pencil with an odd grip, much like a younger child. In civics class he was also physically active: bouncing his foot, picking up and putting down his book, scratching.

In band class he was even more physically active. He clapped his hands wildly over his head, bounced his foot constantly, tilted his chair back onto the back two legs and then plopped it down, exaggerated breathing, swung his trumpet back and forth hitting the child sitting next to him, and made noises to annoy the student next to him.

When looking at Charlie's emotional/behavioral coding, multiple codes were utilized. The percentages were derived from the total number of coding references in all nodes attributed to Charlie's data. Thirteen percent of coded text, 50 coding references, was attributed to

“classroom observation – behavioral.” Four percent of coded text, the team coding references, was attributed to “student, parent, and records review – behavioral.” Four percent of coded text, 15 coding references, was attributed to “teacher perceptions – behavioral.”

Gifted.

Just before Charlie turned six years old he was given a WPPSI-III where he earned the following scores: verbal 124 -95%, performance 131-98% full scale 129-97%. On the Woodcock Johnson he earned the following: broad math 99.9, reading comprehension 99.7, math calculation skills 99.9. These scores qualified Charlie to participate in the gifted program. In seventh grade he participated in the Duke University talent identification program receiving a positive score on his ACT of 26 which placed him in the 89th percentile rank begets students in Florida and in the 84th percentile when rank begets students in the United States. The following is an excerpt from the letter he received from Duke University: “Only the top 5 percent of academically talented student in the seventh grade are invited to participate in the Talent Search, making this a very distinguished pool.... On the basis of your child’s score, I am also pleased to inform you that your child has qualified to attend Duke TIP’s Center for Summer Studies.”

In North Carolina he participated in a program for the Gifted which included the several academic programs such as Odyssey of the Mind. . He was placed in this program based on his Stanford Achievement scores of math 92, reading 95, and a total 94. His CogAT scores were verbal 89, quantitative 86, nonverbal 93, composite 92.

Gifted goals on his IEP's included recognizing fact and opinion, finding data from primary and secondary sources, thinking creatively and critically to solve real world problems, research/explorations in multiple fields by using a variety of research tools and methodologies;

by using and manipulating information sources: by detecting bias and reliability in the process of research, and by applying ethical standards to research and analyses, demonstrate effective leadership skills, will become a proficient user of information, concepts, and ideas.

Charlie's mother felt that his mental abilities were his great strength, referring to his amazing intellect and the fact that he was "supersmart." She mentioned his very intense focus and his ability to concentrate on areas of interest – for example planets. He won the Science Olympiad for his school and came in second in the state on the solar system exam for which he won the school's Science Scholar Award. She credits Charlie with moving his school's Science Olympiad team from last place to fifth place within one year. She noted that he seemed to remember everything and knows more than she does about a lot of things.

His mother also feels that being in the gifted program has somehow protected Charlie from negative interactions with other students. She felt that, while he was in the gifted program, he dealt with much less of the negative interactions that he experienced in the non-gifted classroom in North Carolina:

He used to go to pieces in that school where he was not in gifted because he was so stressed. He would actually, they would have to take him to this lady's room and he just wouldn't talk: he would just go "uh, uh" like a real actual breakdown.

But the gifted has definitely, for that reason, and because of that experience where he wasn't in the gifted population, I definitely think his being gifted has saved him from being exposed to a group, like, gifted, he's always been in the self-contained gifted classroom - all through elementary school, and that has allowed him to be around kids that have, maybe, a broader perspective, they can be taught that, you know about people's

disabilities. You know they have they've worked it into the curriculum on several occasions with the gifted kids that, you know, "Why is Charlie different and things were better for him fifth grade, sixth grade.

She believes that having gifted abilities has made his life easier.

Charlie appears very proud of his gifted abilities. When asked to describe himself, he used the term "super genius." When asked how he felt about being in the gifted program he replied:

I feel good about it because I am like, I'm basically a super genius, and that means that I'll get a really good high-paying job because I'll go to a really good, high like really good college, and then the people will be like going, "wow, you went to this college – shoot, you're in."

Charlie's grades are consistently excellent and his teachers are aware of his strong academic abilities. As noted in the section on academics, several of his teachers describe him as bright and a very strong student. When looking at Charlie's gifted coding, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Charlie's data. Six percent of coding text, 25 coding references, was attributed to "gifted."

Asperger's Syndrome.

In June of 2003 a pediatrician completed a form which stated that Charlie had a problem that may impact the educational experience, and under the heading of social/behavioral he had written AS/autistic spectrum. In June of 2004 a psychological report noted that Charlie received services for gifted and autistic. "Charlie talked easily with this psychologist and answered all

questions asked, though he demonstrated an unusual voice quality with a 'sing song' type of inflections, directions were easily understood... moving is the hardest part about school for Charlie." In January 2002, records noted that Charlie displayed "lots of echolalia, monotone quality to voice for much of conversation." All IEP's after this point record Autism as one of Charlie's exceptionalities.

In 2004 his IEP read, "It is sometimes difficult for Charlie to express himself during times of stress. Priority educational need; increase pragmatic language skills." His goals included demonstrating pragmatic skills in the classroom and the therapy room, increasing speech intelligibility and attaining more typical vocal features.

For the first several years he received language therapy as well as occupational therapy for sensory modulation strategies, among other things. By 2005 he was dismissed from language therapy because language was within normal limits. In 2005 he also received instruction in social and personal skills, had an Autism coach, and received assistance training in visual strategies for queuing as well as organizational skills. His goal for Autism was to be able to process and express his emotions properly in order to work effectively with his peers. The following note was included in his IEP, "Charlie needs instruction and modeling in pragmatic language skills." Accommodations included cueing Charlie to stay on task and providing ESE support for general education teachers.

When transferring to central Florida from Sarasota the IEP noted, "His fine motor needs and social skills/communications needs may interfere with his success in class." One of his goals was to initiate/end an effective conversation/activity with a familiar person. Test accommodations were added on this IEP.

In 2004 through 2010 Autism was listed as a secondary exceptionality. His 2007 IEP notes, “Thrives in a classroom that follow routine procedures and a schedule. He sometimes gets frustrated if the routine is not followed or if he misplaces item.” He was dismissed from OT in 2007. His goals included making gains towards grade level and fine motor skills, using sensory modulation strategies in the school environment, processing and expressing his emotions properly in order to work effectively with his peers.

His 2010 IEP noted, “He tends to lack facial expression in conversation. He will talk in random conversation about things he notices that are off-topic, Charlie uses a monotone voice when talking” and “When Charlie becomes frustrated he will sometimes shut down and not communicate what the problem is that he is having. He needs to work on better communicating his needs and learning better self advocacy skills.” One of his goals was to use appropriate body language, facial expressions, and voice.

On the transfer student intake information form for 2010 Charlie's exceptionalities were listed as gifted/autistic along with the quote, “Parent refused services for ESE. Withdrew 6/08. Was homeschooled after that.” At that point the family moved back to central Florida.

During the classroom observations and his interview I noted that Charlie's voice was slightly monotone but not remarkably so. None of Charlie's classroom teachers indicated any specific concerns about behaviors that are generally indicative of AS. When observing the classrooms no specific behaviors manifested themselves that were so far away from the norm that it could be clearly said these were indicators of AS.

When describing the peer difficulties Charlie experienced in North Carolina his mother attributes had those problems to both being gifted and having AS, but mostly to having AS.

When asked how AS had affected Charlie she replied, “Well, socially, again, he's been at a disadvantage in forming close relationships with people.” His mother was asked how she felt Charlie felt about being identified as having AS and she replied:

Well, I'm sure he probably wishes he doesn't have it, but I don't know, we, we have fun with it. First of all, it has a funny name so, he says sometimes, if he does something, felt like I have, like, like, a senior moment, he'll have like an Asperger's moment. He'll be like, “That's my ass burger,” even though he's not allowed to swear.

She elaborated:

Charlie is much, much more pragmatic and more, he knows what he wants to do, and he has that dogged determination that they have, err, I think that the Asperger's has that Asperger's thing, where they, you know he has his goals. I've encouraged him to set goals. I built on that habit thing, his habit, ritualistic, his desire to be ritualistic, and I've built on that into making him want to set goals.

His mother saw advantages in some of the characteristics that come with AS, and had worked on harnessing those with Charlie. In a brief telephone discussion she said that she felt that AS had been an asset for Charlie because it helped him focus and be organized and take his education seriously. She believed that AS had given Charlie good habits that he used in class:

Things happen to (brother), you know, nothing happens to Charlie - Charlie happens to everything. You know, he does it, he says, “I'm going to do it, and I'm going to do it,” and there's no, there's very little emotion; there's very little hoo-ha, there's no drama. We can have all kinds of things going on with the babies, the five-year-old doing something, bugging out, the kids are running around, the dog will come in and do something, and

Charlie will be sitting here working a really complex math problem. All by himself. Nobody's telling him, "You have to do this," or "Do your homework," you know? He's good to sit down at the same time every day and do it, and it doesn't matter what's going on around him. And I know that he views that as, I think that gives him confidence in knowing that he can attain the goals that he set for himself. And I think he's really excited about it, cause it's a huge part of his identity that, he's learned to harness his, his, the ritualism into good habits. And he knows that he doesn't, he just really doesn't need any of that nonsense that other people, like his brother, like he's just "I could, I can't do this, I can't do that, and I a failure," you know and Charlie is just like, "Shut up and do it."

When asked how Charlie saw his social interactions with his peers she described him as follows:

He has some inappropriate, especially when he started middle school, he had an inappropriate, he was a little off with his, he would talk about things, he'd say something, he just had an odd practice, about the way he talked, that just didn't fit in with the topic. He would have liked, how, like, on his IEP, you can look at his IEP, it's like "utterances inconsistent with what was going on," or you know, not objectionable, just not, at the moment what you would expect someone to say. Like "Why is Mars aligned with something silly: "Did you know that Mars was 713 miles across in diameter?" You know, and they're talking about, you know, how to train a dog, or something, You know, just like little whack out things like in his head, would be in a different place.

She also described some behavioral problems that she ascribed to AS When asked how the diagnosis of AS was arrived at his mother explained in detail. She thought Charlie had been

bitten by a spider so she took him to the doctors. The doctor watched him move around the room and ask about his speech. He didn't talk normally at that point but his mother said he could count up to 100 easily. The doctor took prescription pad and wrote the word "autistic" on it. "She writes Autism, underlines that, hands it to me and I'm like, she's like, 'I'm going to refer you to a developmental psychologist, no, a developmental pediatrician.' And I was like, 'But I think he was bit by a spider.'" His mother talked about that being the final blow in an already difficult situation – Charlie was diagnosed with Autism, her older son had severe problems in third grade, and she divorced her husband, so she had a lot to deal with.

She states:

I've been relieved and grateful, ever since that is only what it is, that it is only a little, I really just view it as a communication disorder, and that he needs to be explicitly taught communication skills. And, I mean, I have always (brother) to compare to, and (brother) is way worse. I mean if I had to pick between mental illness and a developmental disorder I would pick the, you know, I think he's awesome.

Her view of Charlie is extremely optimistic and upbeat.

Charlie himself had very little to say about his AS diagnosis. His only real response was:

R: Okay. How do you feel about having AS?

C: It contributes to my super geniusness, which I like about it.

R: Okay, how does it help?

C: I don't know, it just does. Like, if I were gifted without Asperger's, I would be, like, my IQ would be like 140, 130, but now it's 180. Oh yeah, and there's one drawback to

Asperger's. It's like sometimes I'm, like really spacey, like I don't know what's going on, and I'm like "duh, duh, duh."

R: Do your friends notice that? Does that bother them at all?

C: No.

When looking at Charlie's coding for AS, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Charlie's data. Seven percent of coding text, 28 coding references, was attributed to "Asperger's Syndrome."

Overview.

Table 2 presents the information gathered across all three participants. As can be seen, nearly 20% of coding references concerned on or off task behaviors. Both classroom observations of behavioral issues and teacher interactions were individually responsible for 10% of text coverage. These three codes alone are responsible for nearly 40% of all coded references. The remaining codes varied in coverage from 4% to 6%. The two codes with the least amount of coverage were teacher accommodations (4%) and teacher perceptions-social (4%). While it should be remembered that the amount of data recorded for each student and the responses were directly impacted by the questions asked in the interviews and are therefore not numerically equal across all areas, the above information is still useful in noting areas of interest. While classroom observations generated a large amount of text, that text was separately evaluated for academic, behavioral, and social observations.

Table 2: Coding References for All Participants

Rank and Node description	% coverage	No. of References	No. of Items
1. On or off task behaviors	19	310	36
2. Classroom observations – behavioral	10	178	22
2. Teacher interactions	10	178	39
3. Classroom observations – social	6	111	21
4. Gifted	6	106	35
5. Student, parent, and record review – Behavioral	6	104	10
6. Organizational	6	102	33
7. Teacher perceptions – behavioral	5	89	26
8. Asperger’s Syndrome	5	88	37
19. Student, parent, and records review – Academic	5	85	11
10. Teacher perceptions – behavioral	5	84	29
11. Student, parent, and record review – Social	5	78	9
12. Classroom observations – academic	4	77	18
13. Teacher perceptions – social	4	69	25
14. Teacher accommodations	4	62	30

Table 3 presents a comparison of the rankings of each node for each student. The node descriptions are listed in the rank order they were produced in Table 1. Note that on or off task behaviors has the largest percentage of coded references for all three participants. Teacher interactions were either second or third for all participants. In classroom observation behavioral was second, third, or fourth for the three students. For teacher perceptions social was ranked 15th, 13th, and 11th. In student, parent, and record review social was ranked 14th for two students but eighth for Blaine. Teacher accommodations was ranked last for two students and 11th for another.

As can be seen, three areas contributed to nearly 40% of all coded references – on or off task behaviors, classroom behavioral observations, and teacher interactions. Teacher accommodations, while an important focus of this study, only accounted for 4% of coded text, ranking last in the summary of the three participants, and last for two of the three participants.

2. How do teachers of students with G/AS attempt to meet the educational, social, and behavioral needs of these students?

Albert.

Albert's parents did not specifically mention any accommodations that the teachers made for him. They did note that his civics teacher called and left a voicemail concerning Albert's missing assignments and having a 37 class average, but made no other mention of accommodations.

Table 3: Number of Coding References for All Participants³

Code	Albert	Blaine	Charlie
1. On or off task behaviors	1	1	1
2. Classroom observations – behavioral	4	3	2
2. Teacher interactions	2	2	4
3. Classroom observations – social	8	6	3
4. Gifted	6	7	6
5. Student, parent, and record review – Behavioral	3	9	12
6. Organizational	5	10	8
7. Teacher perceptions – behavioral	12	4	9
8. Asperger’s Syndrome	9	12	5
19. Student, parent, and records review – Academic	7	11	10
10. Teacher perceptions – behavioral	13	5	13
11. Student, parent, and record review – Social	14	8	14
12. Classroom observations – academic	10	14	7
13. Teacher perceptions – social	15	13	11
14. Teacher accommodations	11	15	15

When his reading teacher was asked if she made any accommodations for Albert, she said :

I haven't really, besides sometimes I will have to tell him things orally, or, like verbally, versus having to write everything down... And so, often times I will, will like, "Albert can you, like you verbally tell me what this says?" because I'm unable to read often times what he has, and I would often times have to just read directions to him because he wouldn't sometimes understand the directions on his own.

She also noted that he could be given additional time to complete assignments. She knew that he was very interested in dinosaurs, and as his father had mentioned that he was always reading nonfiction books and wanted to introduce him to fiction, the teacher introduced him to a book called *The Revealers*. The characters were obsessed with dinosaurs and related everything in their lives to dinosaurs. She felt this was a simple way to entice him into reading nonfiction texts. She also allowed him to read his dinosaur books as long as he completed his work. Albert sat near the front of the room in this class, but it was not clear whether this was a teacher decision based on his needs, or some other reason.

Albert's technology teacher was asked how his needs fit into the regular classroom structure; for example, did he assign students to specific partners in order to make things work more smoothly. The teacher replied that no, the computer did all that; the students were automatically partnered up so Albert just fit in like everyone else. When asked if he changed anything in his interactions with Albert, compared to his interactions with other students, the teacher replied, "No. I haven't because I haven't really been aware that he had this." During the

class observation Albert required more direction from his teacher than did most of the other students.

Albert's math teacher specified that she tried to make her directions clear for him and him and sometimes would wait for him because he had a bit of an organizational problem: she would wait to make sure he had his handout out, make sure he had the materials he needed, and make sure that he was on task because he would try to slip into reading or drawing. During the observation of his math class the teacher checked with him a few times to make sure he was on task or had his materials out on his desk.

His science teacher was asked about changing his interactions with Albert as compared to interactions with the other students. He responded that he really didn't have to do that with Albert; he treated him basically like everyone else. He said the most that he had to do was occasionally ask Albert if he was finished and tell him to get back on task: there was nothing really special he felt he had to do. During classroom observation there was nothing noted that the teacher did specifically for Albert that appeared to be accommodations.

His language arts teacher said that she had to be much more hands-on and one-on-one with him:

He's not always able to work in groups because he doesn't finish his assessments in a timely manner like the rest of the class, so he is constantly playing catch-up. So I have to change most of my instruction for him to focus not on, say, like, creative writing strategies, or increasing the writing scores, I have to get him to the basics, so it's more one-on-one instruction with him than it is whole class instruction.

Albert noted that he went to her at lunch for help with his academics almost every Tuesday and Thursday.

When asked if his chorus teacher did anything special to help him do well in her class he replied that he never really needed help. His teacher noted that she had a special place to put his backpack and all of his papers, including the little knickknacks that he brought, and that he was the only child that she did that for in that class. When his class was practicing their song on stage, Albert needed one-on-one instruction from the teacher at one point about hand motions: none of the other students needed this individual attention. The teacher actually took his hands and put them in the correct positions after he did not do well imitating her demonstration.

Albert's civics teacher provided accommodations with note taking. The rest of the students kept an interactive notebook using the notes on the PowerPoint, which they usually wrote out themselves. For Albert, she prepared notes in advance which allowed him to fill in the blank since that way he didn't have to write as much, or even try to keep up by using the assistive device. If they had a situation where Albert would be expected to write in a very small space, she allowed him to cut and paste instead of writing in the small area. She also let him choose whether he was going to work with a partner or by himself, as he sometimes preferred to work alone. She did say that she provided accommodations like she was supposed to, but there wasn't a lot that was needed. At the beginning of civics class during his observation, Albert had asked a question, and twice the teacher had told him to hang on and she would get back to him in a minute after she finished giving the class directions. She continued giving directions, asked if there were any questions, and then came over to Albert. She asked him where his pencil was, which was in his hand but it was almost like he didn't know it was there, then leaned over his

desk and gave individual instructions showing him where the answers were. After the fire alarm went off and the intercom came on to say they should ignore it, the teacher came over to Albert and asked, “Are you all set?” before she continued teaching. The teacher stopped by his desk and asked questions several times, keeping him on task with verbal reminders.

His speech pathologist was aware of the accommodations listed on his IEP and used those as needed during his group time. She also worked on his writing skills in her class. “I feel like if he's got time in here, he doesn't have to do a lot of writing, to let him work on it here if he can.” His consultation teacher spoke about some of his organizational problems and how they tried to convince him to use a clipboard to keep his papers rather than holding them in his hand. Several of his teachers were aware of his need for the assistive device when writing.

School records of accommodations began in 2005, based on ADHD with hyperactivity. It was noted that Albert needed extended time to complete test and classroom activities, needed frequent breaks, a positive reinforcement plan, and reminders/cues to build organizational skills. In the psychological evaluation of 2009, it was recommended that Albert continue to receive an assistive device to help with his writing and to receive transportation services, “Due to psychological immaturity and impulsivity resulting from the ADD which makes him unable to take responsibility for walking to school in a heavily trafficked area at this time.”

His January 2010 IEP noted occupational therapy for 30 minutes a week for handwriting, with the recommendation that there be a change to the collaborative model when he entered middle school, providing adaptive paper as needed, and requiring redirection from adults to manipulate within the campus setting. The same IEP noted that for transportation an aid/monitor

was required due to his disability, as well as organizational aides, test/picture/and/or object schedule, and a portable word processor.

In May of 2010, his IEP removed the bus monitor/aid from his accommodations. The same IEP notes that Albert was able to be successful in class with moderate support for independent functioning and had a Neo to use on written assignments. Other accommodations on this IEP are listed as follows: OT monthly, ESE support for general education teachers one to two times per month, additional time for administration of the test, test administration individually or in small group settings, use of organizational strategies, providing the student with a copy of the classroom teachers notes, allowing extra time for assignments, and use of visual/aural and hands-on methods.

Some of Albert's teachers were not aware that he had accommodations in his IEP. Most of his teachers seemed aware of his need for the assistive device for use in his writing, but not all of them mentioned that. The biggest area of accommodation by his classroom teachers seemed to be in his organizational skills and keeping him on task. Several teachers noted that he needed additional instruction and clarification of directions in order to be successful in class, but during observations their actions appeared to be the type of interactions any teacher would use for a student who was having some difficulty – not necessarily for a student with special needs. In general his teachers felt that the accommodations they made for him were minimal, and only his speech pathologist made any mention of his IEP accommodations. When looking at Albert's accommodation coding, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Albert's data. Five percent of coding text, 30 coding references, was attributed to “teacher accommodations.”

Two special education teachers were involved in Albert's education; his Speech teacher and his ESE Consultation teacher. His speech teacher was well aware of Albert's IEP goals and accommodations and worked with him on those specific goals. The ESE Consultation teacher did not work directly with Albert on a regular basis, but appeared to be available for assistance to teachers when the need arose. The ESE administrator was also familiar with Albert and some of his special needs.

Blaine.

Several of Blaine's teachers noted they did not make specific accommodations for him in their classroom. His pre-algebra teacher noted that he didn't like to copy notes or to copy things in his planner from the board. She said however, that he didn't need to write it down: "We come to quizzes and tests, while everyone else is looking at their notes, he's doing the work, getting As on it. So, that to me is a style issue, because his style doesn't affect his grades, I have no issues with it." The teacher did state:

The only thing that I've learned is that, in an advanced class, I'll say, "Do number one, do number two, do number three," this set of directions, we might be using different materials. I have to go one at a time for him, or he'll pick the one he wants to do first, not the one I wanted to do first.

He had chosen to sit in the back row. The teacher shifted the class seating around periodically but allowed Blaine to remain in his seat.

His previous math teacher noted that, because he was not behaviorally difficult in the classroom setting, she had to seek him out to make sure she was paying attention to where he was and what he was doing because he could easily be overlooked in the classroom setting. She

was concerned that Blaine would get to the point where he was frustrated with something and not ask for help, and possibly get upset in the large classes, too. To this teacher his exceptionality made her feel like she needed to be more on top of his situation in order not to overlook him. She also spent extra time helping him organize and use his planner. Because she knew he had difficulty with organization she made a point of directing him to record his homework in the correct place at the correct time.

His regular education language arts teacher explained that, in a co-taught class, she does things differently for the entire class: “This is a co-taught class so we do accommodations and they've mainstreamed everybody so, I go slowly, I get handouts, I do that, I walk around, I interact, I do most of those things in all my classes now.” She did not mention doing anything differently for Blaine than she did for her other students. During the class observation she did have him move next to her where he could see the game board better after he didn't know what he should have been doing. His seating appeared to be flexible in this class

His exceptional education language arts teacher also did not cite any specific examples of things he did differently in the classroom for Blaine. As the exceptional education teacher, he was used to meeting the individual needs of several students, so perhaps he did not feel that the accommodations he was making for Blaine were any different than those he was making for his other students.

Blaine's physical education teacher said:

I always try to pick captains who are respectful and understanding of his needs and get him on the team and get him in a good spot. I'll talk to them ahead of time and let them

know that Blaine is part of the team and that he's included. I tell them that he is a member of their team and they understand that.

His science teacher put in quite a bit of after school time to help Blaine with his science fair project. She helped him get the board together and catch up on some of the computer skills outside of class. She noted that once he got going he didn't need additional help. She also gave him extra time to complete assignments when necessary. He sat with a partner at his science table in the center back of the classroom.

Blaine's reading teacher worked with him one on one if there was something he was upset about or if he reacted differently. She pulled him aside to talk to him separately but said it was not necessarily accommodations, just being more sensitive to Blaine because he reacts. She did say he has almost panicked a couple of times because, "He's just very, 'this is the way it is' and if you tell them that it's not, he has such a hard time realizing that there's, you know." He did sit in the front row right next to the window which put him directly in front of the teacher's desk.

The technology teacher stated that he didn't do anything specific as far as accommodations, but Blaine did sit in the front row. The teacher stated he didn't have to repeat anything for Blaine or talk to him on the side, as he was very efficient.

His civics teacher acknowledged that Blaine had some accommodations that were written in her plan book, but that he didn't really like those accommodations. He liked to be treated normally, so if she came by to check on him and he told her he was set, she backed off. She stated that she knew what the paperwork said, but Blaine liked to be independent and didn't want her hovering over him. She would browse by just to see if he was on task, and he would usually be ahead of everybody else. She also expressed her view that with the 504 and IEP

accommodations in the general education class, the students disliked the accommodations because there is no way to be discreet. She stated, that he was very independent, and “So, whatever he does, his quirks, it doesn't bother me because I know he's paying attention.” The support facilitation teacher in civics said that although she would, “Kind of make sure that he's on task doing what we're doing at the time.” She didn't really do any special accommodations for Blair, “I didn't do anything differently for him that I wouldn't do for any other student in the room.” With all of the students, she walked around to make sure they had copied their homework and she initialed their planner. But other than talking to Blaine a little bit more than the other students, there wasn't anything special that she did. He sat at the front of the room facing the teacher's desk.

Blaine's teachers generally did not feel that they make many accommodations for him academically. However many of them listed small accommodations such as giving him more time, making sure he had his homework recorded properly, and speaking to him privately. His special education teachers did not feel they made many academic accommodations for Blaine that they didn't make for all of their other students. It would seem that perhaps Blaine's accommodations were a natural part of the teachers' instructional planning, rather than special procedures delivered just for Blaine. When looking at Blaine's accommodation coding, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Blaine's data: three percent of coding text, 23 coding references, was attributed to “teacher accommodations.”

Blaine received services from two ESE teachers on a regular basis. His language arts class was co-taught by both a regular education teacher and an ESE teacher. The ESE teacher

was responsible for all grading and individual special needs. His civics class was also a co-taught class with the ESE teacher assisting two or three days a week. The ESE administrator was also familiar with Blaine and some of his special needs.

Charlie.

Charlie's IEP's all discussed multiple accommodations to ensure his academic and behavioral success in school, and to assist him in dealing with some difficulties he experiences. He began OT at five years of age and quickly added speech therapy and services for Autism. He received instruction in social and personal skills, had an Autism coach, and was taught to use visual strategies and cues during instruction. Starting in 2005 he began receiving testing accommodations and ESE consultation with his general education teachers. In 2006 he began receiving transportation accommodations as it was decided that he was unable to safely cross a busy street near his school due to his ADHD. In 2007 it was noted that he needed verbal help to organize his work in class as well as his homework, and he used a daily communication folder to help develop routine responsibilities. The Mecklenburg County School System had multiple grouping variations designed to meet his high academic levels. In February of 2010 his test accommodations were rather lengthy and addressed repeating, clarifying, or summarizing test directions, providing verbal encouragement, individual or small group settings, opportunity for movement, additional time, and allowing him to repeat phrases.

Charlie did not mention any of his teachers providing specific accommodations for him, nor did his mother; however, several of his teachers did mention specific strategies. His language arts teacher said that she has to prompt him to stay on task more than the other students and that she tries to keep things quiet when he needs to be redirected. His band teacher stated:

I would say the only difference is, if he comes up and talks to me I will sort of approach, approach him a little bit differently than I might another student, and I'm a little more patient. And, kind of understanding, I try to figure out what he means, so I guess I would take a little bit more time with him than, maybe say, another student. But he really fits right in with the rest of the class. So, not too much difference in my teaching.

His algebra teacher stated:

He's the only one that I do sometimes have to use some visual cues for him, or just kind of walk over and tap his desk, or give him a little look, and it redirects him, but it doesn't interrupt class at all.

His reading teacher noted that:

I have to redirect him when it comes time to turn in an assignment, as organization is a growth area for him. If he is late, I don't make a big deal about it, because it happens so infrequently, and I have noted that he embarrasses easily.

His civics teacher did not do anything differently for Charlie than for any other students in the class, nor did his PE teacher.

His science teacher reported:

I have him sit close and near to get him on target right at the beginning of class so that, give him structure, like habit forming, like positive habits forming things, and there's like one thing in particular, he's an avid reader and that's one of his things, so, If I see that right away, I try to tap on his desk or try to cue him so that, you know, "You need to be doing this," for that structure, or for the just the routine things, getting his routine down

pat, so, it still, even closer towards the end of the year, sometimes it's still somewhat of a challenge, so, but it's progressing nicely.

He also provided extended time for assignments and work.

During the classroom observations no obvious accommodations were observed. The teachers did not appear to need to remind Charlie to be on task more than the other students. Although he was sitting near the front of the room in some classes he was not in others, and his behavior did not seem to be different based on his seating. It appears the accommodations the teachers provided were minimal, woven seamlessly into the instruction of the class, or dealt with a perceived method of interaction.

While Charlie's IEP's listed multiple accommodations designed to address his organizational and social needs, Charlie and his mother do not seem to be aware of these accommodations. None of his teachers mentioned that they were aware of any accommodations on his IEP. Most of his teachers were consciously aware of making some type of accommodations, usually in reference to refocusing him onto his class work, but it appears they did it because they saw a need rather than because they were aware of listed accommodations. When looking at Charlie's accommodations coding, a single code was utilized. The percentage was derived from the total number of coding references in all nodes attributed to Charlie's data. Two percent of coding text, nine references, was attributed to "teacher accommodations."

Charlie apparently did not interact with any ESE teachers. His IEP indicated accommodations but it was unclear who was responsible for overseeing those accommodations. As the principal was the administrator who handled all communications, Charlie's ESE administrator was not interviewed.

Overview.

The cumulative records of these three students list multiple accommodations to be implemented in the classroom in order to meet their academic, social, and behavioral needs. However, what actually takes place in the classroom is sometimes very different than what is to be found in written records. By reviewing only teacher interviews and direct student observation, a clearer picture can be formed of what accommodations were actually occurring.

When analyzing the types of accommodations teachers discussed and displayed, several categories of actions were identified. Some categories were identified based on the focus of the intended assistance, while some were identified based on whether the teacher felt any accommodations were being made or not. Categories that were formed based on the focus of the intended assistance included organization, behavioral/social, and extra help, as seen in Figure 1. Categories that were formed based on teacher recognition of whether or not accommodations were being made included no accommodations, no accommodations “but”, and no different, and will be addressed in the analysis section of this chapter.

In the category of organization, nine coded passages referred to assisting the student in some form of organization. It may have been asking Albert where his pencil was so that he could begin his work or assisting with the logistics of organizing a science fair project. Providing a place in the classroom to leave his belongings, helping to fill out the daily planner, and providing a printout with all incomplete work attached also addressed teacher organization assistance. There were 17 coding references concerning behavioral or social situations addressed by the teachers that were specific to these students’ needs. Social accommodations included assigning students to specific groups to make things work more smoothly and talking to the team captains

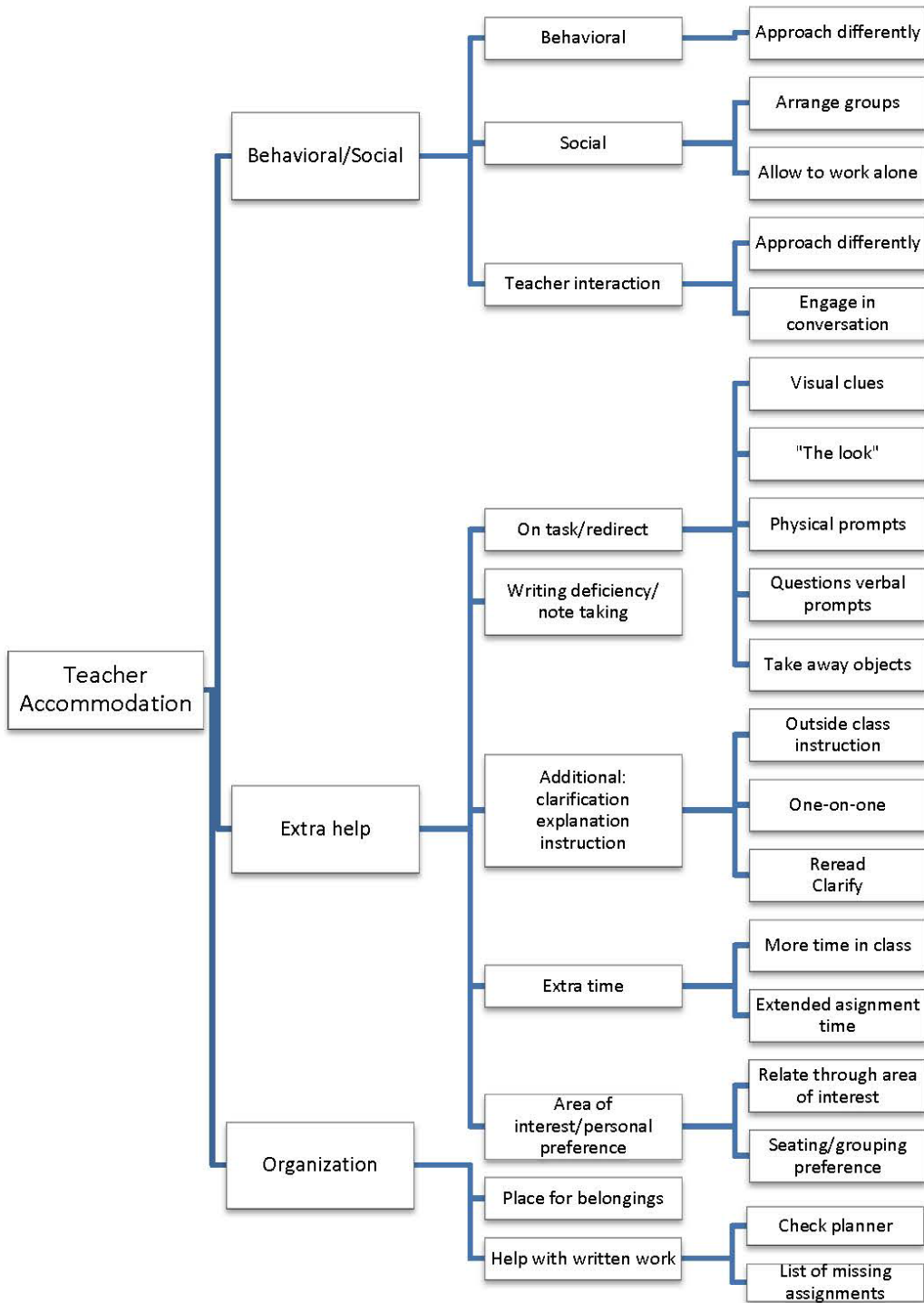


Figure 1. Teacher accommodations based on the focus of the intended assistance

in physical education to ensure that they included these students fully in the team activities. One teacher initiated conversations during class free time with this student after she noticed that the other students didn't talk to him very much. Another teacher allowed the student to work on his own rather than with a partner since he was more comfortable that way.

A different aspect of social accommodations was apparent in the way the teachers approached the students. They may have consciously been a little more patient or understanding than with another student. They may have noticed that the student embarrassed easily so they didn't make a big deal about problems. Being aware that the student reacted differently and pulling him aside separately, rather than speaking to him in front of the class, is an indication that the teacher was being sensitive to the student's need. Another teacher found that she would have to seek the student out to provide positive praise, kindness and a lot of patience, and described her approach as "gingerly" working with him. Being aware that this student was easily frustrated, or backing off when the student wanted to be independent, or not forcing the student to look at the teacher during instruction were other indications of accommodations for social needs.

The largest category that focused on the intended area of assistance involved various types of extra help provided to the student which resulted in 50 coding references between the three students. Four coding references addressed helping the student by focusing on an area of interest or personal preference. For a student fascinated by dinosaurs and showing no interest in fiction, the teacher introduced the student to a novel about teenage boys who focused their world on information about dinosaurs. Allowing student choice in seating and grouping were other examples. Allowing extra time to complete assignments was recorded six times.

Activities that accommodated for weaknesses in writing or note taking were referenced 10 times. Providing PowerPoint notes with fill-in-the-blanks rather than requiring the student to write down the notes was one example of this accommodation. Providing a portable word processor, allowing the student to provide answers verbally, and sometimes not requiring a student to keep notes at all since he knew the information, are also included.

The two most prevalent accommodations in this category focused on redirecting for on-task behavior and additional clarification, explanations, or instruction as needed. There were 15 coding references of redirecting for on-task behavior. Several of these were illustrated when the teacher would go by the student's desk and ask if they were set, if they had any questions, or if they needed anything to get started. Quite a few others involved redirecting the student in order to keep him on task. One teacher described her behaviors as prodding. Another described having to take away all the little objects the student brought into the class and was playing with. A few teachers make sure the students sat near the front of the room so that they could easily make sure the student was on target at the beginning of the class and to make it simpler to redirect their behaviors when necessary.

There were also 15 coding references of clarification, additional explanations, or additional instruction. The chorus teacher provided individual instruction and clarification several times when working on the movements to a dance. Changing instructions, clarifying directions, providing extra instruction after school or during lunch, rereading instructions, and providing additional one-on-one help were common examples of this category.

When looking at the role of the special education teacher in the education of these students it is difficult to summarize as each student had different interactions or lack of

interactions with the special education teachers. Albert worked with a speech and language teacher. The consultation teacher was familiar with some of his difficulties but I did not find evidence to indicate regular involvement in his education. I also did not find evidence to indicate Charlie had contact with special education teachers or collaboration among his teachers. Blaine had daily or weekly contact with at least two special education teachers, but there was no indication that his teachers collaborated in discussing his education. .

Looking at only teacher interviews and classroom observations, there were a total of 102 coding references concerning specific accommodations teachers made to meet the educational, social, and behavioral needs of the students. The accommodations categories and percentage of total coding concerning specific accommodations follow: organizations 8.8, behavioral/social 16.6, additional help 49, no accommodations provided 3.9, no accommodations “but” 7.8, no different from other students – 13.7.

3. Does there appear to be an appropriate match between students and teaching styles?

In order to address the interactions of behaviors, kind of student, and way of teaching described in BPE analysis, focus was placed on the relationship between the three components. Research question one addressed behaviors and the kind of student: research question two addressed way of teaching. Much of the previous discourse can be evaluated to address the question of whether there is a match or mismatch in the components when looking at student pull evidenced in the study.

Student pull is evidenced by the teacher's way of teaching being influenced by student behavior. When a teacher modifies their teaching based on how they perceive the student behaviors and needs then student pull is demonstrated. Albert's language arts teacher found she had to be much more hands-on with him and worked individually on the basics of writing with him rather than advanced curriculum when she found he had difficulty finishing assignments in a timely manner. His math teacher, along with making directions clear and making sure that he was on task, waited for him occasionally because she was aware he had an organizational problem and needed extra time to handle materials like handouts. The chorus teacher found that he would try to sneak toys past her to play with during class so she provided a specific area for him to keep all of his papers and knickknacks so that he could focus on his class work, something she didn't do for anyone else. During dance rehearsal she physically took his hands and placed them in the proper position when it became apparent that he was not able to do so, again something she didn't do for anyone else.

His science teacher found that she would need to check on whether he was finished with his work, and if he wasn't she would need to get him back on task because he would often be off task. This civics teacher found that Albert had great difficulty writing and couldn't keep track of his assistive device so she prepared fill-in-the-blank notes in advance. Even with this accommodation she found that it was difficult for Albert to write in small areas on the paper so she then arranged a way for him to cut and paste rather than having to write the words down. When letting students pick their own partners she found there were days that he would work with a partner and days that he wanted to work alone, and she allowed him to do so because she found it worked better for him. Albert's speech teacher would allow him to tell her answers rather than

write them down since he found writing very difficult. After often being unable to read what had been written, his reading teacher also allowed him to respond orally because of his difficulty with writing and because he had trouble keeping track of his assistive device.

Blaine's science teacher found that the organizational aspects of a science fair project were very difficult for Blaine so she spent considerable after-school time helping him get organized and prepared. She also worked with him individually when she found that his computer skills were not up to par with the rest of the class. When Blaine began to be stressed in technology class because of difficulty with a project, his teacher repeatedly reassured him in a calm, quiet manner. When Blaine ultimately had to be removed from the classroom the teacher removed the other students from the classroom first and waited with Blaine until administration arrived, all the while attempting to soothe him. Blaine's ESE civics teacher noticed that the other students didn't talk to him very much so she made a point to talk to him when they had free time at the end of the day. His reading teacher had found that he reacted differently than the rest of the students especially when he was upset and has almost panicked a couple of times. Because of this she was more sensitive to him and would pull him aside to speak to him separately in order to avoid upsetting him. The PE coach had talked to the team captains ahead of time to let them know that Blaine was part of the team and should be included because Blaine is the type of child who would typically be chosen last on the team and the teacher wanted to head off any problems.

Blaine's previous math teacher found that the more she responded to his work and behaviors with positive praise the better his response. She found she had to approach him gingerly, with kindness, and with patience because he did not respond to harshness. She also found that because he was not behaviorally difficult, and there were children in the class who did

cause behavior problems, she had to be careful not to overlook him. She was worried he would reach a point where he was frustrated with something and wouldn't ask for help and the problem would escalate, so she made a point to look out for him. She said that organization was obviously not a priority for Blaine so she needed to help direct him in that area. Blaine's pre-algebra teacher found that he didn't like to copy notes or to copy things from the board, but she realized that he didn't need to write it down because he was excelling academically so she chose not force him to do so anymore. She also shifted seating arrangements in the class periodically, but found that, because it was very important to Blaine to stay in his seat, it was best to allow him to remain where he wanted to be. Blaine's civics teacher had found that Blaine didn't want her to implement certain accommodations so she backed off and allowed him to be more independent. She also found that he was uncomfortable being forced to look at her during instruction so she no longer required that from Blaine, especially because she knew that he was understanding the material adequately.

Charlie's reading teacher tried to make it quieter in the classroom when Charlie was redirected in order to help him focus. The band teacher stated that she needed to approach Charlie a little differently than other students; she often had to try to figure out what he meant and was careful to do so with understanding and patience. Charlie's algebra teacher had found that she needed to provide visual or physical cues to redirect him in class: the only student that she needed to do this for. Charlie's reading teacher had helped him find a routine in the classroom. She allowed him to keep a book on his desk for when he finished his work. She had found that he embarrassed easily but genuinely appeared to want to do the right thing, so when she redirected him she was very careful to

do it gently. She also found that, “organization is a growth area for him,” so she redirected him as needed. Charlie's science teacher had found it best to have him sit close to her in order to help keep him on target at the beginning of class. She had found it necessary to provide visual or physical cues to help him get his routine down pat. She also found it necessary to provide extended time for him as he had difficulty completing assignments on time. In all of these examples the teacher was responding to a student's behavior by altering their way of teaching; this is the definition of student pull and demonstrates a positive interaction between the student and the teacher.

In observing the classrooms and the ways of teaching for these students, attention was given to whether the classrooms appeared to provide the appropriate environment for the success of students with G/AS. Success could be determined in many different ways therefore in this study success was looked at through teacher impressions of student academic and social success, and student impressions of academic and social success, along with perceived enjoyment of the class by the student. See Table 4.

For the areas of academic, social, and class enjoyment, success was assumed if the student or teacher indicated that performance was no different than or better than peers. Academic and social indicators were taken from the questionnaire given at the beginning of the interviews which asked if the student was performing better, worse, or no differently than their peers. Teacher perception of enjoyment of class was determined by the same questionnaire asking if the student enjoyed the class better than, worse than, or no different than their peers.

Due to the fact that student responses were discussions, rather than a simple yes/no response about a specific class, there may be some variance in the accuracy of the reported

perceptions. Care was taken to determine student perceptions based on all available information.

When student perception was difficult to assess no response was listed.

Table 4: Perception of Student Success in the Classroom

<u>Class</u>	<u>Teacher perception</u>			<u>Student perception</u>		
	<u>Academic</u>	<u>Social</u>	<u>Enjoyment</u>	<u>Academic</u>	<u>Social</u>	<u>Enjoyment</u>
Albert				Nd	Worse	Better
Chorus	Nd	Worse	Better	-	Nd	-
Civics	Nd	Nd	Nd	-	Nd	Nd
Lang. Arts.	Worse	Worse	Nd	Worse	-	Better
Math	Nd	Nd	Better	-	Nd	Nd
Reading	Nd	Nd	Better	-	Nd	-
Science	Worse	Nd	Nd	-	-	-
Tech.	Worse	Nd	better	-	Nd	Nd
Blaine				Better	Nd/worse	Nd
Math	Nd	Worse	Better	Better	Worse	Nd
Civics	Better	Worse	Better	Nd	Nd	Nd
Civics (ESE)	Better	Worse	Better			
Lang. arts.	Better	Worse	Nd	Nd	Worse	Nd
Lang. arts (ESE)	ND	Nd	Better			
Math	Better	Worse	Nd	-	-	-
P.E.	Better	Nd	Nd	-	Worse	Nd
Reading	Better	Worse	Nd	-	Worse	Nd
Science	Better	Worse	Better	Better	Worse	-
Tech.	Better	Worse	Better	Better	Nd	Nd
Charlie				Better	Nd	Better
Algebra	Nd	Nd	Better	Better	-	Nd
Band	Nd	Worse	Nd	-	-	Nd
Civics	Better	Worse	Nd	-	-	Nd
Lang. Arts.	Nd	Nd	Nd	-	-	Worse
P.E.	Nd	Nd	Nd	-	-	Nd
Reading	Better	Worse	Nd	-	-	Better
Science	Better	Worse	Nd	-	-	-

Note: Nd is “No difference”, (-) is used when the information was difficult to assess.

When looking at the classroom structure used by the observed teachers it was noted that a wide variety of activities and structures were implemented. All teachers use a variety of activities and strategies throughout the year, so only observed strategies can be described. All of Albert's academic core classes were self-contained gifted classes. Classroom activities in the gifted classes were as follows; reading: discussion, oral reading; math: individual practice, group discussion of answers, PowerPoint; science: discussion PowerPoint individual practice, seat work; language arts: computer lab group work; civics: discussion, worksheets, PowerPoint, partner work, free time. His electives were regular education classes; technology: lecture, hands-on lab; discussion warm-ups practice song and dance.

Blaine had one gifted science class and the remainder of his classes were regular education classes. Activities used in the gifted class were discussion, PowerPoint, note taking, video, and worksheets. The remaining classes were regular education classes; algebra: note taking, video, individual practice, worksheets; language arts: game played by entire class; physical education: choice of choice of field activities; reading: independent reading, worksheets; technology: hands-on construction; civics: discussion, worksheet, note taking, free time.

Charlie's core academic classes were self-contained gifted classes. Activities in these classes were as follows; reading: discussion, music, game, another game; science: foldable, free time, silent reading; language arts: discussion, independent work, independent reading, free time; civics: discussion, group work, computers, note taking; algebra: discussion, board work, test. Charlie's two electives were general education courses; physical education: warm-ups in gym, choice of outdoor activities; band: individual performance.

As can be seen, both gifted and regular classes provided a wide variety of activities depending on the nature of the course. Because electives require specific class activities that do not usually transfer to core academic classes, the following classes were not included in the comparison of classroom activities found in Table 5: band, chorus, physical education, technology. Some classes engaged in multiple activities during the same class period.

Table 5: Comparison of Classroom Activities in Gifted and Regular Classes

<u>Activity</u>	<u>Gifted Classes</u>			<u>Regular Education Classes</u>		
	<u>Albert</u>	<u>Blaine</u>	<u>Charlie</u>	<u>Albert</u>	<u>Blaine</u>	<u>Charlie</u>
Board work	-	-	1	-	-	-
Computer	1	-	1	-	-	-
Discussion	3	1	3	-	1	-
Foldable	-	-	1	-	-	-
Free time	1	-	3	-	1	-
Game	3	-	2	-	-	-
Group work	1	-	2	-	-	-
Independent reading	-	-	2	-	2	-
Individual practice	2	-	1	-	1	-
Music	-	-	1	-	-	-
Oral reading	1	-	-	-	-	-
PowerPoint	3	1	-	-	-	-
Test	-	-	1	-	-	-
Video	1	-	-	-	-	-
Worksheet	1	-	-	-	4	-

Note. (-) indicates zero

Both Albert and Charlie participated in 11 different types of classroom activities each while Blaine participated in seven different types of activities. Albert and Blaine both participated in discussions in three different classes while Blaine participated in a discussion

only once. Blaine's regular education classes used worksheets four times where Albert and Charlie used worksheets only once in gifted classes. While the gifted classes appear to provide a wider variety of activities and less worksheets, the numbers are too small to allow a significant comparison of the activities.

Analysis

1. How can these G/AS be described in academic, emotional, and social terms?

Albert.

When analyzing the data gathered about Albert, various topics continually resurfaced, all of which came back to a central theme: Albert's awareness of external expectations and how he dealt with them. This theme seems to encompass much, if not most, of the issues brought up by Albert's teachers, parents, and written records. Being aware of external expectations is an important skill for anyone and one that may need to be developed. The fact that many expectations are unstated, and are assumed to be understood, can cause difficulties for anyone, especially students with AS. Middle school is a time when social skills and peer relations are based firmly on meeting expectations of others. Not being aware of these expectations could make it nearly impossible to be "socially accepted." Trying to figure out what an individual teacher's expectations are for their class can be overwhelming for students who may not have the ability to identify the important criteria the teacher has. Multiply that difficulty by seven teachers and you can see where middle school itself could be very stressful. Add to that expectations by

parents, siblings, and other people outside of school, and the amount of information that must be perceived and internalized can become too much to handle.

On the other hand how a person responds to external expectations – once they are known – determines to a large part their satisfaction with their life. If you know what someone else's expectations are you may be concerned about meeting them or not concerned. It appeared that in many areas Albert was not terribly concerned about meeting expectations across a variety of areas.

For example, Albert's awareness of external expectations and how he dealt with them was evident in his academics. He consistently showed strong academic ability and appeared very proud of his academic strengths. He participated very actively in class – much more so than most of the other students, and during the seven class periods in which I observed him he never gave an incorrect answer. He had a broad background of factual knowledge in everything from geography to mathematics and word history. However, his grades did not demonstrate this strong ability as you might expect. Several of his teachers noted that he was capable of much better work than he actually produced. He seemed to often be late with assignments, and appeared to be unaware that it was a problem. After telling his parents that he liked a particular class they received a voicemail from the teacher stating that he was practically failing the class due to missed assignments.

Albert's grades have been hurt by several factors: poor handwriting, a lack of organization, inability to write extended answers, losing papers, and not staying on task. However, when asked how he enjoyed his classes in comparison with his peers his response was “better.” When his teachers were asked the same question four teachers said that comparatively

there was no difference with how well he enjoyed the class when compared to his peers, and three teachers said he enjoyed their class better than his peers. Yet when his teachers were asked how he compared academically with his peers four teachers said there was no difference and three teachers said that he performed worse academically.

You would think it likely that a student who was struggling to meet assignment deadlines and complete class work, and was performing worse than his peers in three out of four of his classes, would not have been enjoying his coursework. Yet he and his teachers had a positive outlook. When Albert was asked how he was performing academically compared to his peers his response was “no different.” Based on Albert's interview and his description of his classes it would appear that he was aware that he needed to work harder to succeed in the classes, but this didn't seem to affect his perceptions of how he' was doing academically. It may be that Albert did not recognize that he was not meeting the expectations that his teachers had for him. If he did recognize that, it did not appear to be much of a concern to him.

Another example of the theme of Albert's awareness of external expectations and how he deals with them is evident in his social relationships. In comparing Albert's social behaviors with his classmates, two of his teachers described him as worse and five described him as no different. However, during their interviews most of his teachers described his social experiences with a mild negative rather than positive spin, although one teacher said that he seemed very sociable. They spoke about him being socially immature, and about peers accepting his behaviors since they had known him for a long time, but not being particularly friendly. The same was true of his soccer team peers. Teachers spoke about his odd behaviors, food hoarding, and inappropriate

actions and behaviors. Albert listed several friends in each class but according to his mother had very few friends outside of class.

When some of his teachers were asked if Albert appeared to be aware of, or concerned about, the way his classmates viewed him their response was “no.” Yet, when Albert was asked how he compared socially with his peers his response was “worse.” Albert did not seem frustrated, embarrassed, or uncomfortable when he was by himself or when others did not seem to want to engage him socially. If the question was did he know that he was socially less competent than his peers, then the next question would be did it bother him? From his behaviors and responses the answer would seem to be no. It should be pointed out that, although his social behaviors were an area of concern, they did not seem to be a huge detriment to his success in school. There were issues, but they appeared to be relatively mild. Perhaps this was why he was aware of not meeting the social expectations of his peers, but it did not seem to really concern him.

When talking about his exceptionalities Albert quickly and easily completed a litany of special needs. When asked how he felt about having all of these identified needs his response was that he felt proud. When asked why he felt proud he replied with, “I guess proud, cause I've got like, I've got a curved toe on one foot, and like they're kind of curved and my feet are curving inwards, and I have like, uhm, a break off version of seizures. I have Asperger's.” It appears that he may not have an understanding that other people may not see these exceptionalities as something to be proud of. When asked how he felt about having AS he replied “proud.” When asked why he replied, “Because I should feel proud I guess?” Again it appears he may not share the same perceptions of his exceptionalities that other people may

have. His response to the external expectations of others was not necessarily what one would expect. On the positive side though, Albert seemed to be quite comfortable with discussing his exceptionalities.

Based on my observations and interviews, what sets Albert apart from his peers was a possible lack of awareness of external expectations and an unusual way of dealing with those expectations as he saw them. Albert appeared to be fairly well grounded and, while not succeeding to his highest ability academically, was progressing adequately. Socially he seemed, to a large extent, unaware of external expectations by his peers and teachers, and therefore was not pressured by them. Although in observations and when talking to him he generally seemed comfortable with his social abilities, he did state that he was doing worse socially than his peers, so he was aware of some discrepancies.

Another theme which appeared was Albert's method of dealing with contradictions, which was actually related to the previous theme of a lack of awareness of external expectations and how he dealt with them. Albert dealt with many contradictions in his daily life. He was bright and academically advanced but his grades were relatively weak. He had good ideas in class but had trouble getting them down on a test. He didn't like to write in class yet he kept losing his assistive device. He was very disorganized yet was expected to produce advanced work in gifted classes. He had been with the same group of students for many years but didn't seem to have any close friends in the group. What is interesting is that through all of this Albert still said that he liked school better than his peers and he appeared to be relatively unaffected by these constant contradictions

For example, Albert had poor handwriting and had been given an assistive writing device, a Neo, to type his answers rather than write them down. He said that he did not like to write and he did not give extended answers on essay sections of tests. His Neo was to be used to complete class assignments and take notes. Albert would often complain that there was no room on his Neo for the class work. As it turned out, he had composed copious amounts of personal writings on the Neo and therefore did not have room for his class work. He also often did not bring his Neo to class and at one point had lost it. The contradictions between saying he didn't like writing yet filling up his Neo with personal writings, and having a Neo and not bringing it to class, would seem to be situations which would cause frustration, or at least some concern. However there were no indications that Albert was experiencing either of those emotions.

Albert was very bright and was very proud of his academic the ability. His parents said he would never pretend he didn't know an answer to a question. He participated much more often in class discussions than most of the other students did. He wanted to be a paleontologist and was very quick to share some of his knowledge about dinosaurs. On the other hand his grades in his gifted classroom were roughly a C average. There was a contradiction between what Albert was capable of and proud of, and what he actually produced. Four of his teachers said he performed no differently than his gifted peers while three said he performed worse than his peers. Did this affect him? When asked how he performed academically compared to the other students in his class his response was "no differently." It is possible he was ignoring the contradiction. These two themes of dealing with contradictions and his awareness of external expectations and how he dealt with them impacted much of Albert's success in school, both

academic and social. Based on observations and interviews, he had not let others' expectations or the contradictions he experienced negatively impact his outlook in any significant way.

Blaine.

Two themes stand out from the information collected about Blaine: what the school system saw as his priority needs, and his need for justice. In reference to his need for justice, middle school is not a place where justice – at least in the minds of some students – is served. Blaine was having a great deal of trouble socially in his classes. Two of his 10 teachers stated that socially he was no different than his peers, however eight of his teacher stated that he was worse than his peers in social situations. They used terms like “sticks to himself,” “loaner,” “standoffish,” and “in his shell.” Every teacher described difficulties Blaine was having socially, including instances of bullying in PE and the cafeteria. When Blaine was asked how he compared to his peers socially his answer was “between no different and worse.”

Like many gifted students Blaine had a highly developed sense of justice, although in his case it seemed focused on the injustice he saw as it applied to himself and those peers who were bothering him. During his interview he had something to say about unpleasant social situations in every class, many of them dealing with what he perceived as a lack of appropriate consequences for other students who had broken the rules. He had been bullied in the lunchroom and the locker room, unfortunately another common situation for students with Asperger's Syndrome. He did describe in detail how other students purposely annoyed him, made fun of him, picked on him, or actually bullied him. While some of the offenses he described are rather typical for immature middle schoolers, the fact was that they are not behaviors that are correct and he was justified in being upset that the students were not “adequately punished.”

I believe he was acutely aware of the fact that he followed the rules – sometimes to the letter – while other students didn't, and they did not feel badly about breaking the rules or being punished for breaking rules. Both teachers and his parents had noted that Blaine saw many things as black and white; therefore it would make sense to assume that someone who breaks a rule was punished accordingly. Perhaps because he has been the victim of unpleasant middle schoolers, he felt strongly that the school was not doing its job in protecting him.

His classroom teachers said he didn't interact socially much, if at all. During my observations of seven class periods Blaine never once initiated conversation with his peers, although he did respond appropriately to others. It is possible that Blaine had realized he didn't communicate well with his peers and so had chosen to avoid difficulties by simply not relating to them at all. Gifted students are often aware of their strengths and weaknesses, and avoiding an area of weakness could appear to be a good problem solving technique for a middle school student.

Yet Blaine obviously felt he has no power to bring about social justice with his peers. He talked about how, when students were reported for misconduct, all they did was gloat about getting to be out of school when they were suspended, and it didn't stop their misconduct. Blaine's parents talked about difficulties he had had in previous schools with bullying, but they felt that things were much better in his current situation. Blaine did not appear to agree. The fact that he didn't talk with his parents about the situation could indicate that he felt they couldn't do anything to help him – a sense of powerlessness. His teachers knew that he had social difficulties but it was very unlikely they realized how deeply upset he was about the perceived injustices.

This concern with injustice was clearly demonstrated during his interview and was supported by parent and teacher comments.

Another theme that emerged was what the schools perceived as Blaine's priority needs. When Blaine first came to his current middle school there were records from his previous school indicating tantrums and extreme behaviors. The current ESE administrator indicated that Blaine was likely placed in a separate ESE class in his last school based on his behaviors rather than on academic ability. If this was the case, it may partially explain why an academically talented youth was receiving grades of B, C, and some D's. Students who are not receiving instruction on the correct instructional level seldom excel. Had Blaine been in academically challenging classes with his gifted peers, thus receiving the appropriate level of instruction, there's a good chance his academic performance would have been higher.

There is some support for this in his grades for science and math in seventh grade. His advanced academic gifted science class provided him with challenge and academic peers who shared his level of understanding in science. (This teacher said he fit in socially with his classmates.) Blaine had an A in science at the fourth-quarter midterm report. When entering the school he was originally placed in a regular seventh-grade co-taught math class where it became evident that he had already mastered much of the material, even though he made Cs on most of the tests. He was moved to a pre-algebra class where he had an A at the fourth-quarter midterm report. These are two instances where appropriate academic placement had resulted in high performance. Most of the teachers in his other academic classes felt that he was performing better than his peers academically.

Is not uncommon for students with dual exceptionalities to be “treated” for one exceptionality while secondary needs are treated lightly or even ignored. It appeared very likely that Blaine was placed in classes based on his difficulties, rather than considering placement based on his gifted aptitude. It is conceivable that if Blaine’s educational plan focused on strength based programming then some of his other social and attentional needs may have been diminished. By focusing on what the school perceived as his priority needs (behaviors), Blaine likely had been shortchanged in his areas of strength.

These two themes – what the school system saw as his priority needs, and his need for justice, affected Blaine academically, emotionally, and socially. The two themes likely are interrelated in that if the gifted student is placed with intellectual peers they often are more comfortable socially.

Charlie.

Two interrelated themes seem to arise from the data collected on Charlie. One was the advantages of being part of a gifted social group, and the other was his attempts at social acceptance. Several of Charlie's teachers and his mother made reference to the fact that Charlie was accepted by his gifted peers because they had been together for several years and understand him. His teachers talked about the fact that this group of students (all of his academic courses are gifted courses) had been together for several years. They knew each other, they knew how Charlie behaved, and they accepted it. One of his teachers noted that when the teacher first arrived and Charlie did something unusual in class the students told him that it was okay, that was just how Charlie behaved. The teachers made it clear that the other students generally were very tolerant of Charlie.

His mother credited his peers in the gifted program with protecting him from “negative interactions with others.” Charlie did have serious social problems in North Carolina before he moved back to Florida, and the serious problems were not evident anymore. Charlie's mother insisted that being in the gifted program had reduced stress and encouraged positive behaviors and accomplishments. A teacher noted that when there was an incident of bullying in physical education class the previous year several students in his class stood up for him. When Charlie was asked about friends in his classes he had some difficulty expressing himself but he did describe some students as friends and some as associates. He seemed to draw a clear distinction in the levels of friendship within the group, but he did seem to view his peers in a positive light.

Another theme that was uncovered was his attempts at social acceptance. While Charlie's teachers and mother saw him as fitting in with the group, Charlie saw himself as actively trying to fit in. He talked about his behavior in class in terms of making a fool of himself at least once a day. When asked for details he explained that he liked making the other students laugh and that they appreciated his humor.

His teachers had a different take on the situation. Several of his teachers noted that Charlie often tried to tell jokes or make comments that would make the other students laugh, but that it was often not successful. The other students didn't understand what Charlie was talking about or didn't understand the level of humor, and so didn't appreciate Charlie's attempts. During observations there were several instances where Charlie acted out in attention-seeking behaviors. Nearly all of the observed behaviors were inappropriate, although not terribly different from other middle school attention-seeking behaviors.

A third theme that emerged was Charlie's self identity as a brilliant student. He described himself as a super genius with an IQ of 180. His WPPSI-III score was actually 129 which qualified him for the gifted program in the state of Florida using the standard error of measure. Charlie consistently excelled in all academic areas. All of his core classes are gifted courses which expect a higher level of learning and achievement, and he had an A average in all classes. He also had an A average in his electives. Qualifying for the Duke Talent Program was something he was very proud of.

Charlie was quick to tell people that he was a genius, that he was better academically than his peers, that he won the Science Olympiad for his school, and that he placed second in the state on the Science Olympiad Solar System Test. He very much liked to show off his abilities in class by giving out answers and pointing out mistakes. He volunteered to read part of his writing in class in which he described himself as, “a super genius.” Charlie appeared to want to impress his teachers as much as the other students with his high intellect. It was obvious that this was a very important part of his identity and he was constantly advertising his abilities. This may also be part of his attempts at social acceptance – he saw intelligence as very important and probably assumed that his peers placed the same importance on the characteristic.

Three themes surfaced while studying Charlie's data: his self identity as a brilliant student, the advantages of being part of a gifted social group, and his attempts at social acceptance. The themes were consistently supported across his interview, his mother's interview, classroom observations, and teacher interviews. These three themes impacted Charlie's entire day and were interrelated in many ways.

Overview.

After evaluating each of the three participants individually, an attempt was made to look for overarching themes that could apply to all three participants collectively. Four different themes emerged: addressing social interactions, benefits of group membership, negative consequences from a lack of expected behaviors, and teacher perception of student needs.

The theme of social interactions was consistent across all three participants although it manifested itself slightly differently with each student. All teachers were asked to describe how the particular student compared to their peers socially and the responses from the 24 teachers were as follows: better 0%, no different 42%, worse 58%. Almost 60% of these students' teachers found that their social skills were worse than their peers, and no teachers found that the students' social skills were better than their peers. Considering that the major characteristics of AS are socially connected, this is not surprising.

When the students were asked how they compared themselves to their peers socially, Albert responded with worse, Blaine responded with between no different and worse, and Charlie responded with no different; none responded with better. It appears that two of the three students themselves are aware of some degree of social deficit. The data is replete with examples of difficulties in relating to peers. The examples run the gamut from inability to tell a joke the other students will appreciate to being bullied. Parents, teachers, and written records provided multiple examples. While it is not surprising that there was social difficulty, what may be unexpected was the effect of this difficulty on the students themselves. One of the students was severely impacted by his social awkwardness, did not initiate conversations, and felt

overpowered by his unkind peers. One of the students didn't seem to care very much what his peers thought. One of the students actually seemed to enjoy performing in class for his peers.

Each of these students was dealing with the difficulties of social interactions in their middle school environment. Overall, the teachers and parents were clearly aware of the fact that there were difficulties of different levels. There was considerable variability in how the students themselves perceived their social situations.

A second theme was the benefit of group membership. For two of the students this group membership was positive and for the third student the lack of this membership had a negative effect. The group in question was the peers in the gifted program that had been together for several years. Both Albert and Charlie had comments made by their parents indicating that the other students knew their specific behaviors and accepted them. Many of Albert and Charlie's teachers also indicated that the other students in their gifted classes were tolerant of differences in behavior from these students because they had been together for several years and knew each other well. These comments were not forthcoming from the elective teachers where the class was not homogeneously grouped and therefore was comprised of students outside the G/AS student's gifted peer group. It should be noted that this peer group is a much smaller subgroup of the student population, and since the students have most of the same classes together, they spend a great deal of time with each other.

Blaine on the other hand was new to the school and therefore did not have a history with the peer group. He also was in only one gifted class and one advanced math class, so his peer group was different in each class. Because of this Blaine did not receive the benefits of group membership – in this case a history of knowing and understanding the student and their

behaviors and therefore being tolerant of unusual behaviors. Blaine did not initiate conversations with other students although he did respond positively when he was addressed positively by another student. The teacher of the one gifted class he attended said that he fit in well socially with the other students in the class. Perhaps if he were in mostly gifted classes, with a smaller group of students, who could get to know him and he could get to know them, that he would not only respond to other students but begin to initiate conversations. However, without this benefit of group membership Blaine is very much alone in his classes.

The next theme is the negative consequences from the lack of expected behaviors. The specific behaviors in this study which were most prevalent – outside of social behaviors – were the areas of on or off task behaviors and a lack of organizational skills, which are closely related in the classroom. On or off task behaviors were ranked number one in percentages coded in the data both in the summary for all three participants and for each of the three students individually. In fact, 19% of coded text was about on or off task behaviors. The majority of those references were about the student being off task, and occasionally what it took to bring the student back on task. Being off task resulted in many negative consequences including missed information, missing notes, missing materials, negative verbal attention from the teacher, the student feeling flustered or surprised, being late to complete an assignment or to leave the classroom, and having to spend additional time outside of class to complete class work.

While organizational coding only comprised 6% of the coded text, there were still 102 coding references to organizational issues. Organization ranked fifth in percent coded for Albert, 10th for Blaine, and eighth for Charlie, out of 15 different rankings. Not being organized results in many of the same negative consequences as being off task, but can include increased

frustration on the part of the student. Some examples from the data of organizational problems include not being able to find notes or materials, not being able to smoothly handle materials, not writing information in the correct place or the correct format, and not having materials or tools when required therefore not being able to complete assignments appropriately. All of these negative consequences add to the frustrations of the day for these students. When the 6% of coding attributed to organization, and the 19% of coding attributed to on or off task behaviors are combined, a quarter of the coded text can be attributed to the lack of expected behaviors in focusing and handling materials in class. This theme is supported by multiple field notes and teacher and parent interview comments for each of the three students, and appeared to be a major concern across all three students.

The fourth theme is the teacher perception of student needs. How the teacher perceives the needs of the student is possibly the most critical factor in how the teacher meets the needs of that particular student. If they perceive that the student has extreme needs they will usually go to great extremes to meet those needs. If they do not perceive that the student has special needs it would be assumed that they do not go out of their way to be sensitive to possible needs. In this study the code of teacher accommodations was used to identify the ways that teachers attempted to meet the special needs of these students. When looking at rankings based on percent of text coded, teacher accommodations ranked 11th out of 15 for Albert, 15th out of 15 for both Blaine and Charlie, and 15th for the summary of all three participants combined.

While analyzing the results of the coding for teacher accommodations, two categories became apparent. The first was the different ways in which the teachers provided additional assistance, and the second was how they perceived the needs of the student. Four coded

references were teachers saying they did nothing additional for these students. Eight coded references referred to teachers who said they did nothing different for these students, “but...,” and then proceeded to tell what they did differently. However 14 coded references were teachers saying that they did nothing different for these students. This fourth theme is explained further in the analysis of research question number two: How do teachers of students with G/AS attempt to meet the educational, social, and behavioral needs of the students?

2. How do teachers of students with G/AS attempt to meet the educational, social, and behavioral needs of these students?

The central theme that became apparent was teacher perception of student needs, and was focused on whether the teacher felt accommodations were needed or actually provided. Fifteen percent of the coding references focused on the teacher providing no accommodations for the student because he/she did not feel they were needed. There were eight coding references, 31%, where the teacher said they didn't do anything different for this student, “but”, and then proceeded to describe what they considered an accommodation of no consequence. It may have been anything from, “I've had to change a little bit...,” or “there's nothing really special I feel like I have to do with him other than...,” to “I don't do anything really different for him. He's the only one that I do sometimes have to use visual cues for...”

The last category in this section was the “no different than anyone else” comments. There were 14 coding references, 54%, where the teacher expressed a specific accommodation for this student but followed it with the clarification that this wasn't anything they wouldn't do for any other student in the class. “I do most of those things in all my classes now,” “I treat him basically

like everybody else,” “There's nothing really special I feel like I have to do with him,” and “So, with me helping him and them helping and telling him what to do, there aren't any issues.”

The key to this theme hinges on what the teacher perceives as “extra help.” The actual question was worded similarly to the following: “How do this child’s needs fit into your normal classroom structure?” Follow-up clarification included prompts similar to the following: “Do you assign students to specific groups in order to make things work more smoothly? During your interactions with the student do you change anything compared to your interactions with other students?” The stated purpose of asking these questions was to determine if the teacher was consciously making accommodations to meet the needs of this student, and if so, what were they and why those accommodations.

There was little evidence that the regular education teachers and the exceptional education teachers of each of these students collaborated with each other to discuss the educational needs of the students. Exceptional education teachers are familiar with accommodation strategies the other teaches may find very useful. Collaboration among regular education, gifted education, and exceptional education teachers would benefit all three students.

The large percentage of coding references where the teacher clarified that this was something they would do for any other student in the class may be partially explained by the wording of the follow-up prompts (they are doing nothing differently than what they would do for other students.) This may point to their perception of this student – that he was not in need of any accommodations beyond those usually provided to all students. Although several teachers did not seem to be aware of the accommodations listed on the IEP, 85% of the teachers were doing something additional to help the student succeed while only 15% presented no indication

whatsoever of providing accommodations. Based on this theme of teacher perception of student needs, it would appear that the vast majority of teachers in this study did not find the accommodations they provided to be extraordinary or extensive; it's just part of what they do as a teacher.

3. Does there appear to be an appropriate match between students and teaching styles?

Middle school can be an especially difficult time for students with AS (Myles & Adreon, 2001.) Changing classes, going to the cafeteria, and dressing out in physical education class can exacerbate sensitivity to sound and touch. Getting to know the schedules and expectations of seven teachers rather than one and difficulty reading peer expectations and social situations may cause many students with AS who were progressing in elementary school to begin struggling once they enter middle school. Determining whether there was an appropriate match or mismatch was based on a modified version of Stage-Environment Fit theory where interaction between the kind of student and the behaviors of the student should affect the way of teaching. A method of determining if the way of teaching is being altered would be by looking at student pull: the student's influence on the behavior of the teacher. In this study multiple examples of student pull were identified for each of the three participants. The majority of teachers demonstrated or explained ways in which they changed their classroom techniques because of the perceived needs of the student. When a teacher saw a problem or area of concern evidenced by the student's academic, social, or behavioral difficulties they changed their classroom structure or technique to improve the student's chance for success.

These significant examples of student pull would suggest that the teacher was responsible for a large part of the positive interaction between the way of teaching, the behaviors, and the kind of student. These classroom strategies enacted by the teachers included such things as altering seating arrangement rules for a particular student, responding differently to a student's behavior based on their previous sensitivity or embarrassment, repeatedly checking that a student was on task who they had found to be easily distracted, and providing additional help outside of the classroom when a deficit was noted. It would appear that the teachers were attempting to provide a positive match between the students and their teaching styles by adapting techniques as needed. This appeared to be equally evident for both regular education teachers and for teachers of gifted classes.

While there is strong evidence of student pull and teacher flexibility, there is less evidence to confidently state that there was a match between all components involved. Student academic success varies across the three students as did social success. Perhaps most strikingly, Blaine was performing at an exceptional level academically compared to his non-gifted classmates, but was not happy with his social situation and was also in only one gifted class. If there was an appropriate match he should have been successful not only in his academic classes but also in his social perceptions, which was not the case. Although most of Blaine's teachers were adapting their classroom techniques in an attempt to improve Blaine's success there appeared to be a major problem. It is possible that while there was a certain level of matching in the area of academics, there was a mismatch in the area of social needs. Blaine did not appear to have a social peer group that he related to: in fact, he disliked some social situation in every one of his classes. This should be an indicator that a significant mismatch was present. Part of the

mismatch may be due to an incorrect academic placement which denies him academic peers; becoming part of a social group of gifted peers may provide him with both social continuity and academic rigor thereby improving the match.

Charlie appeared to indicate a better match across both academics and social areas than did Blaine. He was being challenged academically and appeared to be comfortable. Charlie's academics were strong in all areas indicating a good match with the way of teaching. While there was evidence of difficulties in social skills Charlie did not seem to be aware of them and they were not a major impediment to his success in school, so while it was likely that there was an acceptable though not perfect match between Charlie and the teaching styles he was exposed to, it was not a definitive match.

Albert's match/mismatch was to be found somewhere between the ranges of Blaine and Charlie. He exhibited very high performance in class yet his grades did not always demonstrate his skill, and while he identified himself as worse than peers in social situations it didn't seem to bother him. It cannot be said that his academic match was wonderful, or that his social situation was wonderful. Yet, Albert appeared to be fairly content with his situation.

It should be noted that many students with AS are aware of their social deficits. It could be that both Charlie and Albert knew they had difficulties, weren't terribly concerned about it, and therefore should be considered to have a match in social areas as they were content with their social situation. While this is an interesting idea it is one better left to the theorists to consider. While many more areas could be considered in order to make a final determination of an appropriate match or a mismatch, it would be most accurate to say that the answer to research question three is: It varies considerably with the student.

Recommended classroom structure for AS students is usually described as structured, routine, and consistent with a quality of “sameness.” Recommended classroom structure for gifted students is usually described as open, flexible, and spontaneous. How do these dichotomous recommendations co-exist in the observed classrooms? Very nicely. It appears that the idea of complex, open learning works well when applied to typical middle school classroom instructional strategies; observed students could follow along with the rest of the class and seemed to be able to change activities with minimal difficulty. The content of rigorous course work, when present, challenged their cognitive abilities and skills. The observed learning structures and activities appeared to be appropriate for the entire class of students, including the student with G/AS.

However, there did appear to be a serious need for structure, predictably and “sameness” when applied to organizational and “housekeeping” situations. Generally speaking, the observed students had weaknesses in organizing and keeping track of materials, turning in assignments in a timely manner, staying on task during class, writing or note keeping skills, and organizing larger projects. The classroom teachers often noted that they needed to make certain accommodations only for the student with G/AS, not the other students in the class. These appeared to be areas where their AS characteristics could interfere with success and are therefore areas where explicit instruction and additional accommodations must be made in order to keep the students on track for success.

Does it appear that students with G/AS can have their needs met in a classroom with gifted peers? Again, it appears to vary considerably with the student. Albert’s organizational difficulties appeared to be keeping him from excelling, yet he continued to exhibit strong

academic skills. Blaine's academic needs were perhaps being underserved in a regular class, yet his social skills in his gifted class did not seem to vary markedly from those in his regular classes. Charlie's academic skills were being met and his social skills did not seem too much of a concern in his gifted classes. As with many exceptional students it appears that each individual must be carefully evaluated to determine how to best meet their unique needs. It does appear that those needs could be adequately met in a gifted classroom if appropriate accommodations are provided.

Summary

This chapter discussed the results of data collected on three participants through interviews, observations, and records review. The data was evaluated separately for each of the three participants and then the entire population was reviewed as a whole. Each participant was described in academic, emotional, and social terms, individually and collectively. Data results were also reported that addressed how the teachers of the students attempted to meet the educational, social, and behavioral needs of this population – both individually and collectively. Data was also presented to address matches or mismatches between students and teaching styles. Results were then analyzed to discuss themes that emerged during review of the data. The next chapter will present findings, conclusions, and implications found in the study.

CHAPTER 5: FINDINGS, CONCLUSIONS, AND IMPLICATIONS

This chapter is divided into four sections. The first is a brief review of all findings presented in the same sequence as they were presented in Chapter 4. Next is the conclusion section which details conclusions based on the research questions in Chapter 1. Following that is implications for addressing the findings that emerged during data analysis. Then future research is addressed in the next section, followed by a summary of the entire study.

Findings

Thick description was used when discussing the academic, behavioral, and social characteristics of the three participants. The percentage of coded text was also evaluated when analyzing the data. Information from parents, teachers, students, observations, and written records were all taken into account when addressing the first research question.

Albert was not performing academically to his potential in his gifted core classes and struggled with severe organizational difficulties and poor on-task behaviors. He displayed multiple dual exceptionalities. He did have some difficulties with social situations, but it was not a major problem for him. He initiated conversation with his peers who responded appropriately to him. He appeared happy and enjoyed school and his classes, despite some unusual behaviors. He was an avid reader and actively participated in all his classes. Albert's awareness of external expectations and how he dealt with them, along with how he dealt with expectations, were two themes that developed from the research.

Blaine was in one gifted class and several ESE co-taught classes where he excelled academically, especially when challenged. He had difficulty staying on task in all of his classes, unless it was an activity that he was very interested in such as reading. Organizational skills were also a weak area. Blaine had minimal interaction with his peers and during the seven class observations he did not initiate a conversation even once. He had difficulty handling frustration, but usually did not let it interfere with his academic work. What the schools saw as his priority needs and his strong sense of justice were two themes that developed from the data.

Charlie excelled in all academic areas and had achieved several scholastic honors. He was an avid reader with some difficulty in organizational skills, although it did not seem to be a major difficulty for him. His social skills were a little bit weak, with his teachers seeing him generally as less socially competent than he himself did. Charlie displayed several behaviors which, while possibly annoying to some, did not appear to be seriously impacting his learning or that of his peers. The advantages of being part of a gifted social group, and his attempts at social acceptance were two themes that were examined in the analysis of the data.

Each of the students was a unique individual with different strengths and weaknesses. They may have been strong academically or weak, outgoing or withdrawn, part of the group or not, happy or frustrated. The students varied on their self-perceptions, the perceptions of their teachers, and the perceptions of their parents. The students were so markedly different from each other that at first glance it appeared they had nothing in common, and indeed their profiles were very dissimilar. Yet, a few commonalities did arise from the data.

A telling bit of information was that, among the 24 teachers who responded, 58% stated that the student's social skills were worse than their peers and 0% said that they were better.

When asked the same question, the students themselves responded with the following answers: no different, between no different and worse, worse. Clearly, when triangulating data from all sources, difficulty with social skills was a common factor across all three participants.

Another theme common to the three participants was the benefits of belonging to a social group. According to the parents and teachers, two of the students had found acceptance, or at least tolerance, from the social group of gifted students to which they belonged. They had been in the group for a period of years and not only did they seem generally comfortable with their gifted peer group, but the peers seemed accepting of their idiosyncrasies. The third student, who did not have a history with his peers, had much worse social relations. He was highly frustrated with the lack of punishment his peers received for their perceived unkindnesses.

All three students also dealt with the negative consequences of not performing, specifically being off task and having poor organizational skills. Coding references to on or off task behaviors comprised 19% of all coding references. Field notes from observations on all three students contained multiple examples of off task behaviors, although the severity of the behaviors differed from one student to another. Poor organizational skills accounted for another 6% of coding references and were obvious both during observations and to the teachers.

A fourth theme common to all participants was directly related to research question number two: How do teachers of students with G/AS attempt to meet the academic, social, and behavioral needs of the students? The answer appears to be that many of them do not see these students' needs as notably different than the needs of their peers – at least not different enough for the teachers to clearly state how they accommodate these students' needs differently than other students' needs. When looking at rankings based on percent of text coded, teacher

accommodations ranked 11th out of 15 for Albert, 15th out of 15 for both Blaine and Charlie, and 15th for the summary of all three participants combined.

Categories that were formed based on the focus of the intended assistance included organization, behavioral/social, and extra help. Nine coded passages referred to assisting the student in some form of organization, 17 concerned behavioral or social situations, and the largest category focused on various types of extra help provided to the student – 50 extra help coding references between the three students.

Student pull was clearly evidenced for all students, indicating distinct efforts by the teachers to alter their way of teaching based on student behaviors. Determining a match or mismatch between students and teaching styles was difficult as each student presented distinctly different profiles. There was evidence that the teachers attempted to provide a match between students and their teaching styles yet the success of those matches varied considerably within and between students.

These three students with G/AS appear to be able to successfully handle the complex, fluid instructional style found in their classes: the rigorous, challenging academic expectations provided strength based programming. However, all students were in need of some type of structure and routine to help them deal with organizational and “housekeeping” types of activities. The need for “sameness” reported in the literature for students with AS appear to apply more directly to focus and organization, while the need for complex challenge reported in the literature for gifted students appears to apply more directly to the instructional content of the classes.

Discussion

Many of the findings of this study were not surprising. There are copious references in the literature to describe many of the AS characteristics that were reported. Also, many of the characteristics for gifted students and middle school students were not particularly unusual. However, there were some unexpected results in the descriptions of these students and their teachers' attempts to meet their needs.

1. How can these students with G/AS be described in academic, emotional, and social terms?

The lack of awareness of external expectations is common in students with AS. An inability to read other people's communication signals (Dapretto, et al., 2005; Lovecky, 2004; McCroskery, 2000; Simpson & Myles, 2008), difficulty understanding nonverbal communication (Myles & Adreon, 2001; Simpson & Myles, 2008), and a disability in social interactions are some of the defining characteristics of AS (Rowe, 2003), and this study supports that research.

Myles and Adreon (2001) proposed that the difficulties of having AS were magnified by the additional difficulties that come with being an adolescent. They felt the greatest impact for adolescent students with AS was in the areas of cognition, language and social issues, sensory issues, behavior, and motor skills. As this study demonstrates, social issues are definitely a concern for all three students (Myles et al., 2007; Stokes, 2008), although to varying levels of concern. Motor skill deficits appeared relatively mild in the participants except as applied to the fine motor skills needed to help with organization in the handling of materials and in handwriting (Myles & Adreon, 2001; Wing, 1981; Yssel, Prater, & Smith, 2010). Some mild language issues were addressed with one student, but in general language issues were not a problem across the

board. It is likely that the participants' gifted abilities allowed them to compensate somewhat for possible language deficits (Bianco, Carothers, & Smiley, 2009; Silverman, 2000). Surprisingly, sensory issues were not brought up in the interviews and observations, whether with the student, the teachers, or the parents, as this is an area often mentioned in relation to students with AS (Bashe & Kirby, 2005; Little, 2002; Myles & Adreon, 2001).

In this study cognition was not only not a problem, but was a definite strong point for the students (Bianco, Carothers, & Smiley, 2009; Shaunessy & Farmer, 2006; Silverman, 2000). Two of the three students were exceptionally high achievers, even in their gifted classes. The third student was maintaining a C average, but this was in gifted classes. His teachers felt that he was very bright and could do the work, but his disorganization got in the way of high performance which has been reported in the literature (Bashe & Kirby, 2005; Myles & Adreon, 2001). It would be expected that students who have been identified as gifted would have a strength in areas of cognition (Fehrenbach, 1994; Sweetland, Reina, & Tatti, 2006; Yates, Berninger, & Abbott, 1995). Therefore, this study supported some of Myles and Adreon's (2001) areas of impact, but contradicted others.

Social issues were concerns for all three students with G/AS, which is strongly supported by the research (Bonnycastle, 2006; Shaunessy & Farmer, 2006; Webb, Amend, Webb, Goerss, Beljan, & Olenchak, 2005; Yates, Berninger, & Abbott, 1995). However, it was not as serious an issue for all three of the participants as had been expected based on the research. In reading through the literature so much attention was focused on the poor social skills (Dapretto, et al., 2005; Lovecky, 2004; McCroskery, 2000; Simpson & Myles, 2008) that there was an assumption

that all participants would have severe difficulties in this area. This was not the case in this study.

Eight out of 10 of Blaine's teachers described him as worse socially than his peers, four out of seven of William's teachers described him this way, and two out of seven of Albert's teachers described him as worse socially than his peers. So, while Blaine had a serious social deficit, William's teachers were nearly evenly split between worse and no different, and the majority of Charlie's teachers felt he was no different socially than his peers. Considering that social difficulties are one of the earmarks of AS (Cohen & Volkmar, 1997; Myles et al., 2007; Stokes, 2008), it was a bit surprising to find that while all participants had some social issues they were dealing with, at least one of the participants was not severely impacted by social problems.

It is not clear why this is the case, however some possibilities can be found in the research. Because of the advanced cognitive abilities of most gifted students, including insight into cause and effect, the ability to quickly see generalizations (Clark, 2002; Davis & Rimm, 2004; Maker, 1982; Silverman, 1993) and being a keen observer, (Clark, 2002; Davis & Rimm, 2004; Maker, 1982), it is plausible that the students with G/AS were able to understand the effects their behaviors were having on other students. If they were able to understand this they could change their behavior in order to avoid, or at least mitigate, some of the negative consequences of their idiosyncratic behavior. This may well be a case where their gifted abilities were allowing them to overcome the personal challenges brought on by AS (Bianco, Carothers, & Smiley, 2009; Silverman, 2000).

On the other hand, two of the three students did not appear to be markedly concerned with the opinions of their peers. As one teacher said, the student didn't seem to care what his peers thought of him. People with AS are sometimes described as emotionless or robot-like, and as having difficulty understanding the motivation of others (Atwood, 2007; Cohen & Volkmar, 1997). There is a possibility that, between this fact and having a weak Theory of Mind (Atwood, 2007; Cash, 1999; Little, 2002; McPartland & Dawson, 2005; Miller, 2005), the participants in this study might either not understand their peers' opinions, or simply did not have strong opinions about them. While this situation supports existing theory it also could explain why these students appear not to be too concerned with others' opinions. This might also address why Albert reported that he felt proud for having multiple exceptionalities. It appears this student may not share the same perceptions of his exceptionalities that other people may have, perhaps due to the reported deficit of Theory of Mind found in students with AS (Myles and Adreon, 2001; Polirstok & Houghteling, 2006; Spek, Scholte, & Van Berckelaer-Onnes, 2010).

Another theme which is strongly supported by the literature is Blaine's difficulty dealing with the perceived injustice and the lack of appropriate punishment for unkind classmates. One characteristic common to gifted students is a strong sense of justice (Clark, 2002; Davis & Rimm, 2004; Silverman, 2012.) Students with AS prefer structure and following rules and routines, sometimes to a fault (McPartland & Dawson, 2005; Neihart, 2000). Combining these two sets of characteristics could well result in a student with G/AS who follows the rules himself, expects others, especially administration, to follow them, and becomes very upset when the rules, in this case punishments, are not imposed. Add to this the fact that many students with AS have difficulty handling frustration (Atwood, 2007; Barnhill, 2001; Peterson & Ray, 2006).

Combining these characteristics in the dual exceptionality student may well exacerbate the frustration involved when justice is not served.

Blaine's previous schooling is a non-example of meeting the individual needs of dual exceptionality students. His current administrator felt it was likely that Blaine's previous educational program focused on controlling his overt behavioral problems, and that his gifted aptitude was ignored in class placement. When he arrived at his current school and was placed in the gifted science class he performed very well. He was making a C in his basic math class, but when placed in an advanced pre-algebra class his grade immediately improved to an A. According to the research, students with AS can have a strength in math and possibly language, which may explain why Blaine is doing well in his math and science class but is not in advanced courses in his other subjects (Barnhill, Hagiwara, Myles, & Simpson, 2000; Chiang & Lin, 2007; Griswold, Barnhill, Myles, Hagiwara & Simpson, 2002). Then again, it may be that he was not being adequately challenged in these courses, and was therefore not putting his best effort into his work (Geller, 2007).

There were no references found in the literature concerning the advantages to students with G/AS of belonging to a social group, specifically a social group comprised of intellectual peers. Both Charlie and Albert, according to their teachers and parents, have benefited from belonging to this specific social group. There was no indication that they had made especially close friends within this group, but there are several indications that the other members of the group had more tolerance and acceptance when it came to dealing with these two students with G/AS. Both boys had belonged to this group for several years, as they had shared the same core academic classes together since they were placed in the gifted program. It is plausible to assume

that having a common history and shared experiences would provide a type of bonding for all members of the group. Perhaps this is why Charlie and Albert are doing better socially than Blaine. Blaine has no common history, no shared experiences, no group of intellectual peers, and apparently very little sense of fitting in.

All three students are also proud of their intellectual abilities. While many gifted students may be aware of and pleased with their intellectual gifts (Assouline, Colangelo, Ihrig, & Forstadt, 2006; Saylor & Brookshire, 1993) there might be a different spin on the advanced academic abilities of a student with G/AS. Because there are other areas with glaring difficulties it may be necessary for the student with G/AS to embrace his cognitive gifts in order to mentally compensate for his other challenges. Being intellectually advanced may give the students the self-confidence boost they need to be better adjusted socially.

An observation that supports existing theory involves the three participants' off task behaviors, which accounted for nearly 20% of coding references. One student had been identified as having ADHD, so in his case this would not be a surprising find. However, the other two students did not have a diagnosis of ADHD, yet off task behavior is ranked number one in their coded data. ADHD is a common misdiagnosis when looking at AS (Bashe & Kirby, 2005; Chae, Kim, & Noh, 2003; Fitzgerald & Corvin, 2001) so it could be expected that students with AS would display many characteristics of ADHD, including a great deal of off task behavior. What is surprising is that only Albert has been identified as having ADHD. Blaine displays considerable characteristics of ADHD yet there is no mention of this in his records or by his teachers.

2. How do teachers of students with G/AS attempt to meet the academic, social, and behavioral needs of the students?

Teachers were questioned about their attempts to meet the needs of the students and what, if anything, they did differently for these students than for the other students in the classroom. From the total group of teachers 15% stated they did nothing different for the student with G/AS, 31% said they did nothing different “but” and listed an accommodation, and 54% stated that what they did for this student was no different than what they would do for any other student. The accommodations provided fell under the categories of organizational accommodations, behavioral/social assistance, and providing extra help (Assouline, Nicpon, Colangelo, & O’Brien, 2008; Jeweler, Barnes-Robinson, Shevitz, & Weinfeld, 2006). The most prevalent types of assistance were redirecting for on-task behavior and additional explanation or instruction as needed. A wide variety of accommodations were provided for the students, varying from letting the student work alone, approaching differently, physical prompts, extended time for assignments, and providing accommodations for weaknesses in writing (Shaunessy & Farmer, 2006). None of the accommodations appeared extreme, but the fact that 85% of their teachers professed to some type of accommodations is noteworthy. These students displayed behaviors in class that required teachers to plan, create, and implement differentiated techniques of teaching.

3. Does there appear to be an appropriate match between students and teaching styles?

One of the preconceived ideas I discussed in the section where I bracketed my personal biases was that it would be very difficult for teachers of students with G/AS to meet the dichotomous needs of the students; therefore, there would be a mismatch between the type of

student, classroom management, and teacher strategies resulting in a lack of success for the students. Because I felt sure that this was a likely outcome I had to very consciously set aside this idea while conducting the study.

Hunt (1975b) proposed using B-P-E analysis which required first identifying the three units in the specific situation. B (the behaviors) would be jointly determined by P (the kind of student) and E (the way of teaching). Hunt also described “student pull” – the student’s influence on the behavior of the teacher - and proposed that this interaction between P and B affected E. Stage-Environment Fit (SEF) theory focuses on the matching of students and teaching styles, and has been used to address success for young adolescent students. The researchers propose that some of the difficulties connected with adolescent development come from a mismatch between the needs of the young adolescents and the social environment of their classrooms (Eccles et al., 1993.)

For the purpose of this study, B was the classroom behaviors of the G/S student – their learning success, verbalizations, peer relations, reactions to various stimuli in the classroom, etc. P was the students with G/AS participating in the study. E was the classroom strategies enacted by the teacher – seating arrangements, style of instruction, response to student behavior, etc. As Hunt suggested, I looked at how B might be jointly determined by P and E, as well as “student pull” and how it might affect the teacher and thus the classroom environment. Based on Hunt’s proposal, I predicted that an appropriate match between the student, behaviors, and environment would result in classroom success for students with G/AS, while a mismatch of these components would result in poor outcomes for all involved.

What I found was that the teachers appeared to be closely tuned in to the specific needs and behaviors of their students. Many teachers said they didn't do anything different for these students; however, they were able to describe many accommodations they implemented based on the specific needs of the students. Most of the teachers for any given student generally presented a consistent accommodation profile that matched the profiles of the child's other teachers, so it appears the teachers were able to identify P (the kind of student), partly based on B (the behaviors). E (the classroom strategies enacted by the teacher) were clearly chosen to meet the needs of that particular student. Seating arrangements, style of instruction, and response to student behavior were, consciously or unconsciously, appropriate to the students' special needs in a majority of the classrooms.

When looking at “student pull” it becomes apparent that these students' influence on the behaviors of the teachers were profound, and caused the teachers to enact E that would contribute to the success of the students. As a result B was within acceptable limits during student observations. The one exception was when Blaine became so distressed that he had to be removed from the classroom, but the teacher still attempted multiple strategies to affect his behavior.

Despite the fact that the majority of these teachers have had no training in how to work with students with AS, and most of them are not certified in gifted education, they appeared to be actively trying to match the environment to the student need, even if it was subconsciously. As a result I found very little evidence of a serious mismatch between classroom management and teacher strategies. However, none of the students were completely successful in all areas, so it can not be stated that the matches were totally appropriate.

Observing these students in regular education classrooms, gifted classrooms, and co-taught classrooms, there was very little evidence that the classroom structure, as the teacher had prepared it for the entire class, was inhibiting the success of these students with G/AS. Recommendations for gifted classroom structure usually are expected to include flexibility, options, and spontaneity (Gallagher & Gallagher, 2002; Montgomery, 2003). Recommendations for students with AS are usually focused on maintaining a fixed schedule with a familiar pattern so that the students are not upset by the change in routine (Bashe & Kirby, 2005; Grandin, 2002; Myles and Adreon, 2001). The classrooms that were observed included all of the above recommendations to one extent or another, and generally speaking all three participants were successful to some extent in the classroom. How could this be?

One possible answer is that the teachers were adjusting their classroom strategies automatically as situations occurred. If they found a certain situation didn't work for a particular child, they went to Plan B, then plan C. An experienced teacher is expected to do this anyway, but it may be that these teachers have found it is required if they are going to maintain an environment that matches the needs of their students, particularly their students with G/AS.

Another possible answer is related to the fact that AS is on a spectrum and that these three students may have a relatively mild set of AS characteristics. The B-P-E analysis may not have been as favorable if any of the students had a more profound set of AS characteristics.

It is also plausible to assume that, due to the advanced learning abilities found in gifted students, these three participants have learned how to work with their AS characteristics, thereby mitigating their seriousness. Research has shown that having dual exceptionalities often depresses the characteristics of both as they tend to counteract each other (Kay, 2000; Silverman,

2000). A gifted student's problem-solving and evaluation abilities may allow them to compensate for challenges caused by their AS characteristics.

Implications

Several implications for these three students can be drawn from this discussion.

1. Because Albert has high ability but does not work up to his potential, it would be helpful to attempt to design a strength-based program where he could use his strong academic skills to support or improve his difficulties with organization and handwriting.
2. Due to his poor handwriting and supposed dislike of writing, it may be helpful for Albert to work with a voice recognition software program.
3. Blaine may benefit from individual instruction in problem solving and possibly stress reduction in order to find a way to deal with his frustration. By using problem-solving strategies he could formulate solutions to his problems with injustice in the school, present those solutions to the administration, and feel that he has some power in the situation. Problem-solving skills would of course benefit Blaine in situations he will find himself in the future.
4. Blaine likely would benefit greatly from being placed in gifted academic classes whenever possible. He displays strong academic skills and has been shown to improve his grades when placed in an academically appropriate classroom. He would also receive the benefit of being more involved in a social group of his intellectual peers which may give him more self-confidence in social situations with his classmates.
5. Albert, Blaine, and Charlie would all benefit from specific social skill instruction focusing on peer-accepted behaviors. Each would need an individual program designed

for their specific areas of challenge, but the use of social stories and role playing could be an effective way to improve their social skills.

6. Albert, Blaine, and Charlie would also all benefit from a course that would teach them organizational skills. There are several such courses available, both through private tutoring centers, university programs, and through some schools and school systems.
7. All three families would greatly benefit from getting in touch with their local CARD center in order to avail themselves of the services offered. Help for the students, parents, and teachers are available if requested by the parents.

Some implications are indicated for students with G/AS and teachers in general.

1. It appears that the most important factor teachers can control that will contribute to success in the classroom for students with G/AS is to know their students. The teachers in this study knew what the student needed and adjusted their behavior and their classroom situations in order to increase the success of their student. Had they not known their student so well it is doubtful the success would have been as solid. As quite a few teachers were not aware of the accommodations on the IEP for these students, it is highly recommended that they read the students' folders.
2. There are a wide range of accommodations being used by these teachers to assist their students. Only one teacher mentioned that he talked with this student's other teachers. It is suggested that the teachers talk to each other, sharing their knowledge, perceptions of the student, successful accommodations, and any other pertinent information, in order to know their student better and strengthen the chances of his success. Collaboration among

regular education teachers, gifted teachers, and exceptional education teachers would benefit all participants.

Future Research

During the course of this study several issues arose that could be addressed by future studies. First, this study only looked at three students. Although this was the maximum number of available due to constraints of time and resources, it does severely limit any generalizability about the results. Identifying a population of sufficient size may be possible through contacts such as CARD. A greatly expanded study could not only confirm or contradict the findings of this study; it would very likely generate new themes in this area.

Secondly, this study looked at three middle school males. By looking at elementary and high school age students a very different set of results would likely emerge. Likewise, girls with AS are a much smaller percentage of the population and have unique characteristics of their own. By describing females who have G/AS, a unique population could be described, although it may be difficult to locate an adequate number of participants.

It was proposed that combining the strong sense of justice found in gifted students and the strict adherence to rules found in students with AS may exacerbate the characteristics and frustration involved when justice is not served for students with G/AS. A study designed to determine if the sense of justice and the resulting frustrations is a characteristic of students with G/AS could be helpful in identifying the students.

Another possible research study would address whether or not students with G/AS strengthen their self-concept by focusing intensely on their advanced cognitive abilities in order to compensate for the challenges they face in other areas. Also, it may be beneficial to compare

the classroom teaching activities found in gifted classes to the teaching activities in regular classrooms to determine first, if they are substantially different from each other, and secondly, which if any teaching activities appear to be particularly appropriate for or detrimental to students with G/AS.

Summary

In the last several years there has been an increase in the population of students identified with Autism and with ASDs, including AS (Rice, 2009). Much research on Autism and AS has appeared in the literature, with a focus on classroom recommendations that will meet the special social and academic needs of this population. A specific group of students with AS has also been identified as gifted which places them in a somewhat difficult situation.

Without a clear understanding of the common characteristics of students with G/AS, recommendations for classroom strategies would not be well supported by research. What are these students like? How do they see themselves? What are their peer relationships like? How do they view themselves in comparison with their peers? What are their strengths and areas of concern? Without answers to these questions, recommendations would be baseless.

Therefore, there is a need for research that will add to the limited body of knowledge we now have that describes students with G/AS and what is being done in the classroom to help them succeed. The purpose of this study was to help provide an improved understanding of the varying profiles of students with G/AS and to discover what teachers of these students are doing to meet their needs.

By examining student, teacher, and parent perceptions of positive and negative experiences and situations in the classroom, some understanding has evolved as to what special

needs students with G/AS have, and how their teachers have attempted to provide for their success in the classroom. Information about various appropriate classroom strategies for these students was described that may provide options in planning by gifted classroom teachers, which will allow this study to contribute to the improvement of classroom practice for these students.

Each of the students in the study presented a unique profile; however, some themes did develop from the data. These included awareness of external expectations, methods of dealing with contradictions, what the school system sees as priority needs, the need for justice, attempts at social acceptance, self identity, social interactions, benefits of group membership, negative consequences from a lack of expected behaviors, teacher perception of student needs, and flexibility/structure in the classroom.

Conclusions addressed several points. Social issues are definitely a concern for all three students, although to varying levels of concern. Motor skill deficits appeared relatively mild except as applied to the fine motor skills needed to help with organization in the handling of materials. Some mild language issues were addressed with one student, but in general they were not a problem across the board, while cognition was not only not a problem, but was a definite strong point for the students.

Social issues were concerns for all three students, which is strongly supported by the research. However, it was not a serious issue for all of the participants as had been expected based on the research. This may be because the advanced cognitive abilities of most gifted students may have allowed them to compensate somewhat.

It is plausible to assume that having a common history and shared experiences would provide a type of bonding for all members of a group. Participating in a social group with intellectual peers appeared to provide a positive environment for two of the students.

Off task behavior and organizational issues plagued all three students. Very little evidence of a mismatch between the type of student, classroom management, and teacher strategies were found. In fact, teachers appeared to be actively attempting to adjust the environment in order to meet the needs of their students. There was very little evidence that the classroom structure, as the teacher had prepared it for the entire class, was inhibiting the success of these students with G/AS.

Recommendations for gifted classroom structure usually are expected to include flexibility, options, and spontaneity. Recommendations for students with AS are usually focused on maintaining a fixed schedule with a familiar pattern so that the students are not upset by the change in routine. While flexibility and options were evidenced in academic content and presentation, structure and routine appeared necessary in organizational areas. The classrooms that were observed included all of the above recommendations to one extent or another, and generally speaking, all three participants were somewhat successful in the classroom. This may be explained by the fact that the teachers were adjusting their classroom strategies automatically as situations occurred, that these three students may have a relatively mild set of AS characteristics, or that, due to the advanced learning abilities found in gifted students, these three participants had learned how to work with their AS characteristics, thereby mitigating their seriousness.

It is hoped that the descriptions of these students and the ways that their teachers attempted to meet their needs has provided information that will be helpful in identifying and meeting the needs of this special group of students with G/AS.

**APPENDIX A:
INITIAL STUDENT INTERVIEW QUESTIONS**

“Please answer the following questions. You do not have to answer any question you do not wish to answer.”

Questions	Probes	Desired Information
Preliminary – What do you like to do after school? Have you thought about what you want to do as a career?	None	Preliminary – Help the student feel comfortable talking with the interviewer.
1. What do you like about ____ class?	1. Why do you like it? Do you like this subject area? If so, what area do you like best? If not, why? What is the most interesting thing about this class?	1. What are the positive aspects of this class from the student’s perspective? What about the course is working for them?
2. What is your least favorite thing about ____ class?	2. Why don’t you like it? What part of the class don’t you like? How do you feel when ____ occurs? How would you change it?	2. What are the problem areas of this class from the student’s perspective? What is not working for them? What is the emotional/social impact of the problems?
3. What do you think of your teacher?	3. Does he/she seem to like the kids in your class? What do you like/dislike about the teacher? Does the teacher do anything to help you succeed in class?	3. How does the student describe the teacher? How does the student view the teacher in regards to helping them succeed in class?
4. What do you think of your peers in the class?	4. Do you have any friends in the class? If so tell me about your friend. Why do you think they like you? If not, is there anyone you would like to be friends with? Why?	4. How does the student view the other students? Does the student perceive the feelings of others in an accurate way? Does the student understand why they do or don’t have friends?
5. How do you feel about being in the gifted program?	5. Do you ever have any problems because you are in the gifted program? What kinds of problems?	5. Does the student see any positive or negative ramifications of being in the gifted program? What are they?
6. How do you feel about having Asperger Syndrome?	6. Do you ever have any problems in school because you have AS?	6. Does the student see any positive or negative ramifications of having AS?
7. Is there anything else about this class or yourself you would like to share with me?	7. Is there anything else you would like to mention?	7. Any additional information the student wishes to share.

**APPENDIX B:
INITIAL PARENT INTERVIEW QUESTIONS**

“Please answer the following questions. You do not have to respond to any question you do not wish to answer

Questions	Probes	Desired Information
1. Tell me a little about your child’s strengths.	1. What do they like to do after school? How do they spend their free time?	1. Provide a positive start to the interview. What are the parents’ perceptions of their child’s strengths?
2. Please tell me how your child functions at school.	2. Does your child view this as a difficulty? How do they react when this occurs? Have you done anything to help them succeed? Do they seem to like the class?	2. What are the parent’s perceptions of their child’s difficulties? Does the parent know how these difficulties affect the student? What techniques work for the parent to solve problems with the student?
3. How does your child feel about school?	3. Do they like the teacher? Do they ever talk about any friends in this class? How do you think they like this subject area?	3. What is the parents’ perception of the relationship between the student and the teacher, other students, and content?
4. Describe any situations your child has dealt with that you feel they attribute to being identified as gifted.	4. When did they understand the label “gifted”? Do you ever talk about the positives or negatives associated with being identified as gifted with your child?	4. What are the parents’ perceptions of their child’s view of being gifted? How does this view relate to family views of being gifted?
5. Describe any situations your child has dealt with that you attribute to their being identified as having Asperger Syndrome.	5. How does your child look at being identified as having Asperger syndrome? How do they explain having Asperger syndrome?	5. What are the parents’ perceptions of their child’s view of having AS?
6. Please describe your child’s social interactions.	6. Do they talk about friends at school? Who are their friends outside of school? How do they get along with peers? Does your child ever express their feelings about friendships?	6. What are the parents’ perceptions of their child’s social skills? How do they see their child’s relationship with peers?
7. Is there anything else you would like to tell me about your child?	7. Is there anything else you would like to mention about your child?	7. Any additional information that the parents wish to share.

**APPENDIX C:
INITIAL TEACHER INTERVIEW QUESTIONS**

“Please answer the following questions. You do not have to respond to any question you do not wish to answer.”

Questions	Probes	Desired Information
1. Tell me about yourself.	1. How did you get started in the field of teaching? How did you choose this subject to teach? What do you like about teaching?	1. Provide a positive start to the interview. What is the teacher’s general attitude towards teaching?
2. What is your background or experience with gifted education?	2. How long have you had your gifted certification? Why do you teach gifted students? What do like about teaching gifted students compared to teaching regular students?	2. How experienced is the teacher in working with gifted students? What is their attitude toward gifted students? Are they teaching gifted students voluntarily?
3. What is your background or experience with Asperger Syndrome?	3. Have you taught any AS students before this year? If so, would you please describe what that was like? Have you had any training in AS students? Do you feel prepared to teach this particular student with their dual G/AS identification?	3. Does the teacher have any experience in working with AS students? What is their general understanding of AS students? Do they feel prepared to teach a student with AS?
4. Please describe this student’s social interactions in class.	4. Do they have any friends in class? How do they get along with the other students? Do they work well in groups? Do they seem to be aware of the other students’ feelings about them?	4. What is the teacher’s perception of this student’s social skills?
5. Please describe this student’s academic progress in your class.	5. Do they grasp the material quickly? Are there any areas of the course they are having problem in? Do they show a particular strength in any area of the class?	5. What is the teacher’s perception of this student’s academic progress in their class? What do they view as the student’s academic strengths and weaknesses?
6. How do this child’s needs fit into your normal classroom structure?	6. Do you assign students to specific groups in order to make things work more smoothly? During your interactions with the student do you change anything compared to your interactions with other students?	6. Is the teacher consciously making accommodations to meet the needs of this student? If so, what are they and why these accommodations?
7. Is there anything else about your relationship with this student that you would like to tell me?	7. Is there anything else you would like to mention?	7. Any additional information the teacher wishes to share.

**APPENDIX D:
INITIAL OBSERVATION GUIDING QUESTIONS**

1. How does the student attend to the teacher or activity?
2. How does the student respond to verbal prompts by the teacher?
3. Describe relationship between teacher and student.
4. How does the student stay on task with writing assignments?
5. How does the student respond to verbal prompts by peers?
6. How does the student relate to peers in social situations?
7. Does the student seem to be able to “read” social cues from peers?
8. Describe relationship between peers and student.
9. How does the student handle stress?
10. How does the student react when there is a change of activity?
11. What is the class structure being observed?
12. What aspects of the class structure appear successful?
13. What aspects of the class structure appear unsuccessful?
14. Does the student appear to be successful in the academic aspects of the class?

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